0012368

SINGLE-SHELL TANK WASTE CHARACTERIZATION FOR TANK 241-U-110 CORE 12
SEGMENT 2 3 4

DATA PACKAGE

SECTION

4 OF 10

2.16

012368

4 of 10

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

222-S/RCRA Analytical Laboratories

Project:	Single-Shell Tank Waste Characterization
Tank:	241-U-110
Core:	12
Segment:	2
Customer Id. Number:	89-070
Report Revision:	1
Date Printed:	October 5, 1990

OCT 1990
RECEIVED
J.H. KESSNER

54 7600 075

Hanford Operations and Engineering Contractor for the US Department of Energy

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This report consists of pages 1 - 175.
The appendix consists of pages 1 - 41.

I have reviewed this report and certify that the package is in compliance with "Quality Assurance Project Plan for the Chemical Analysis of Highly Radioactive Samples in Support of Enviromental Activities on the Hanford Site" - WHC-SD-CP-QAPP-002. I found it to be a true and accurate accounting both technically and for completeness of the laboratory analyses performed on this sample.

Dennis K. Sato — Date Oct. 12, 1990

Dennis K. Sato
Data Coordinator

Cary M Seidel — Date Oct. 12, 1990

Cary M. Seidel
Unit Manager

Larry H. Taylor — Date Oct. 16, 1990

Larry H. Taylor
Laboratory Q.A. Officer

INTRODUCTION

INTRODUCTION

Westinghouse Hanford Company Analytical Laboratories are supporting the characterization efforts of the single shell tanks. The characterization of tank 241-U-110 was performed under Phase 1A and 1B of the "Waste Characterization Plan for the Hanford Site Single-Shelled Tanks" (WHC-EP-0210).

Tank 241-U-110 has a 500,000 gallon capacity. Construction was completed in 1944. The tank received first cycle waste, REDOX high-level waste, coating waste, and laboratory waste until 1975. Between July 7, 1975 and February 2, 1976, P-10 pumps were installed, and 41,700 gallons of liquid waste were pumped from the tank. Tank 241-U-110 still contains an estimated 195,000 gallons of waste.

Analytical Laboratories performs all analytical analysis to the specifications of the "Quality Assurance Project Plan for the Chemical Analysis of Highly Radioactive Samples in Support of Environmental Activities on the Hanford Site", WHC-SD-CP-QAPP-002. In accordance with WHC-SD-CP-QAPP-002, the following laboratory policies are being followed. Spikes are performed on either the undissolved sample, or the sample after dissolution, as directed by the chemist. If the spike addition is found to be less than 20% of an analyte concentration, the spike recovery is not reported due to errors introduced by the precision of the sample analysis. The concentration of spike additions will be re-evaluated before the start of phase 1C. Two spiking routines are being used during phase 1A and 1B. For the following analyses, Ion Chromatography, Inductively Coupled Plasma, Mercury Hydride, Total Organic Carbon, and Carbonate analyses the solid sample is spiked independently from the sample digestion. Any non-homogeneity of the sample could adversely affect the spike recoveries. For the radio-isotopic analysis and other analyses not specified above, the spikes were performed by spiking an aliquot of sample after digestion.

The laboratory does not report sample results from batch analyses that are questionable. The results from questionable batches are discarded and the analysis is repeated. Sample cards (laboratory travelers) for the repeated analysis are reissued for analysis after they have been stamped "rerun". Laboratory travelers are issued using a computerized routine according to a "sample point". This sample point label (segment-n) on the Laboratory travelers and on the GEA analysis reports has no relationship to the sampling activities or the sample identification. All results in this data package relate only to the sample identified as segment 2 from core 12 taken from tank 241-U-110.

The organic analysis of this sample will be performed by Pacific Northwest Laboratories (PNL). Due to instrument and procedure problems, PNL has been unable to separate organics from the normal paraffin hydrocarbon present in the samples. The results from the organic analysis will be provided when available.

All sample results reported here by weight are reported as the "wet weight" of the sample. Some samples did noticeably lose moisture during the process of aliquoting and weighing the sample for digestion. In order to minimize errors due to loss of moisture, the percent moisture was determined at the earliest

opportunity. Attemps to dry the sample before analysis resulted in approximately a ten fold increase in radiation levels. In order to reduce and control radiation exposure to laboratory personnel, the samples were not dried before aliquoting and digestion. This may result in some laboratory results being biased high.

This report is formatted into sections corresponding to the type of dissolutions performed prior to analysis. A brief summary of analytical results is reported, followed by calibration data and an analysis are noted on the batch report. Any notable observations regarding an analysis are noted on the batch report for that analysis. Copies of laboratory travelers can be found in Appendix A.

SAMPLING AND CUSTODY DATA

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number S-032-89 (2) Sample Number 89-070 (3) Supervisor DC Hartley

(4) Tank 110 U (5) Riser 2 (6) Segment #2 (7) Cask Serial Number C1016

Radiation Survey Data:	(8) FIELD	(20) LABORATORY
Over Top Dose Rate	<0.5 mr/hr	
Side Dose Rate	<0.5 mr/hr	<0.5 mr/hr
Bottom Dose Rate	2.3 mr/hr	
Smearable Contamination	<DET (alpha)	<DET (alpha)
	<DET (beta-gamma)	<DET (beta-gamma)
	RPT BJ Fulson (Signature)	RPT [illegible] (Signature)

(9) Shipment Description:

A. Work Package Number	2W/89/01060/W
B. Cask Seal Number	For Future Use
C. Sampler Number Used	27
D. Date and Time Sampler Unseated	11-29-89 1346
E. Expected Liquid Content	10%
F. Expected Solid Content	90%
G. Dose Rate Through Drill String	120 mr/hr
H. Expected Sample Length	191"

(10) INFORMATION (*Include statement of laboratory tests to be performed.**)

Core #12 WHC-EP-0210 Waste Characterization Plan for the Hanford Site Single Shell Tanks

*Reference laboratory work request, if available.

Comments:

(11) POINT OF ORIGIN	(12) SENDER NAME / SENDER SIGNATURE	(13) DATE AND TIME RELEASED	(14) DESTINATION	(16) RECIPIENT NAME / RECIPIENT SIGNATURE	(17) DATE AND TIME RECEIVED
241-4 110	DC Hartley / DC Hartley	11-29-89 2045	2225 [illegible]	John C Abercrombie / [illegible]	11/29/89 2147

(15) Seal Intact Upon Release? ☒ Yes ☐ No

(18) Seal Intact Upon Receipt? ☒ Yes ☐ No

(19) Seal Data Consistent with this Record? Shipment No. ☒ Yes ☐ No Sample No. ☒ Yes ☐ No

Single Shell Tank Waste Characterization
Summary of Core Sample

TANK ID:	241-U-110
RISER ID:	2
CORE ID:	#12

DATE SAMPLING INITIATED:	11-29-89
DATE SAMPLING COMPLETED:	11-29-89

SEGMENT		
1	Lab Serial No.	F-0393
	Customer ID No.	89-069
	Last Segment?	NO
2	Lab Serial No.	F-0415
	Customer ID No.	89-070
	Last Segment?	NO
3	Lab Serial No.	F-0441
	Customer ID No.	89-071
	Last Segment?	NO
4	Lab Serial No.	F-0465
	Customer ID No.	89-072
	Last Segment?	YES
5	Lab Serial No.	
	Customer ID No.	
	Last Segment?	
6	Lab Serial No.	
	Customer ID No.	
	Last Segment?	
7	Lab Serial No.	
	Customer ID No.	
	Last Segment?	

SEGMENT		
8	Lab Serial No.	
	Customer ID No.	
	Last Segment?	
9	Lab Serial No.	
	Customer ID No.	
	Last Segment?	
10	Lab Serial No.	
	Customer ID No.	
	Last Segment?	
11	Lab Serial No.	
	Customer ID No.	
	Last Segment?	
12	Lab Serial No.	
	Customer ID No.	
	Last Segment?	
13	Lab Serial No.	
	Customer ID No.	
	Last Segment?	
14	Lab Serial No.	
	Customer ID No.	
	Last Segment?	

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SAMPLE DATA SUMMARY

DATA SUMMARY

Report results are wet sample weight.

Single Shell Tank Project

Tank: 241-U-110
Core: 12
Segment: 2
Customer ID: 89-070

Undigested Results

	Sample	Duplicate
pH	12.99	12.84
% Water	38.19%	43.60%

FUSION ANALYSIS

		Sample	Duplicate
Fusion Digestion		2.72 g/L	2.32 g/L
Total Alpha		1.03 uci/g	8.32E-01 uci/g
Total Beta		1.23E+03 uci/g	1.46E+03 uci/g
GEA			
	Cs-137	3.18E+01 uci/g	3.33E+01 uci/g
Uranium		1.19E+04 ug/g	1.33E+04 ug/g

Water Digestion

	Sample	Duplicate
Water Digestion	10.39 g/L	10.59 g/L
Ion Chromatograph		
Fluoride	1.66E+03 ug/g	1.47E+03 ug/g
Chloride	1.64E+03 ug/g	1.65E+03 ug/g
Nitrate	2.92E+04 ug/g	3.32E+04 ug/g
Phosphate	<9.72E+03 ug/g	<9.54E+03 ug/g
Sulfate	2.90E+03 ug/g	2.98E+03 ug/g
Total Organic Carbon	7.94E+02 ug/g	7.79E+02 ug/g

ICP Results

	Sample	Duplicate
Aluminum	134047 ug/g	138868 ug/g
Antimony	LT	1492 ug/g
Arsenic	LT	LT
Barium	169 ug/g	166 ug/g
Beryllium	LT	LT
Bismuth	7660 ug/g	7283 ug/g
Boron	LT	LT
Cadmium	LT	LT
Calcium	942 ug/g	956 ug/g
Cerium	2352 ug/g	2473 ug/g
Chromium	1306 ug/g	1245 ug/g
Cobalt	LT	LT
Copper	LT	LT
Europium	54 ug/g	56 ug/g
Iron	21473 ug/g	34058 ug/g
Lanthanum	307 ug/g	300 ug/g
Lead	2501 ug/g	2942 ug/g
Lithium	85 ug/g	97 ug/g
Magnesium	3262 ug/g	3077 ug/g
Manganese	9208 ug/g	8516 ug/g
Mercury	LT	LT
Molybdenum	96 ug/g	106 ug/g
Neodymium	LT	LT
Nickel	371 ug/g	324 ug/g
Potassium	LT	LT
Samarium	2962 ug/g	3127 ug/g
Selenium	1703 ug/g	1507 ug/g
Silver	LT	LT
Sodium	81120 ug/g	79479 ug/g
Strontium	1257 ug/g	1219 ug/g
Tantalum	LT	LT
Thallium	4339 ug/g	4313 ug/g
Thorium	1805 ug/g	1949 ug/g
Tin	LT	LT
Titanium	226 ug/g	240 ug/g
Uranium	38459 ug/g	37872 ug/g
Vanadium	231 ug/g	242 ug/g
Zinc	274 ug/g	462 ug/g
Zirconium	460 ug/g	445 ug/g

LT: Less Than
NC: Not Calibrated
NOT CALC: Not Calculated
Instrument Standards Outside Control Limits

PHYSICAL TEST RESULTS

Single Shell Tank
Extrusion of Segment -- Physical Tests

Lab Segment Serial #: F0417 Customer ID: 89-070

Analyst: Richard L. Weiss Date Extruded: 01-29-90

Drainable Liquid Liquid Submitted for Segment Analysis? -- NO

Gross 20ml	Tare			Net
Serial	Date/Time			Estimated
Specific	Calculated			

Appearance of Liquid: No liquid was collected

Dimensions of Segment

Completed Segment Obtained? No	Length: 4.0 in.	Calculated Volume: 3.14 in^3
Remarks None		

Appearance of Solids: Very dark brown in color with firm crumbles of solids. At least one 1/4" hard chunk of solid found in the sample. There was insufficient material to perform a penetrometer test.

Penetrometer N/A lbs/sq in Remarks: None

Homogenization

Procedure: T038A-00712 Revision: F	Quantity of Material: 91.19	Grams
Date Homogenized: 02-14-90	Time Homogenized: 5.0	Minutes
Operator: K. J. Patterson		

Laboratory Notebook Reference

Notebook No.	Page No.
WHC-N-313-4	26 and 31

Single Shell Tank
Segment -- Subsamples

Lab Segment Serial #:	F0417	Customer ID:	89-070

Volatile Organic Analysis

VOA Sample	Lab Serial #: 89-070-281	Date Sampled: 01-29-90

Particle Size Distribution Analysis

Particle Size Sample	Lab Serial #: F0417	Date Sampled: 01-29-90

Homogenized Solids

Undigested Solids Analysis

Laboratory Serial Number For Sample:	F0417	Date Sampled: 02-14-90
Laboratory Serial Number of Duplicate Sample:	F0418	

Fusion Analysis of Solids

Laboratory Serial Number of Sample:	F0422	Date Sampled: 02-14-90
Laboratory Serial Number of Duplicate Sample:	F0423	
Laboratory Serial Number of Spiked Sample:	F0424	

Acid Digestion Analysis of Solids

Laboratory Serial Number of Sample:	F0432	Date Sampled: 02-14-90
Laboratory Serial Number of Duplicate Sample:	F0433	
Laboratory Serial Number of Spiked Sample:	F0434	

Water Digestion Analysis of Solids

Laboratory Serial Number of Sample:	F0427	Date Sampled: 02-14-90
Laboratory Serial Number of Duplicate Sample:	F0428	
Laboratory Serial Number of Spiked Sample:	F0429	

Laboratory Notebook Reference	WHC-N-313-4	31
	Notebook No.	Page No.

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TANK 241-U-110, CORE 12, SEGMENT 2

B r i n k m a n n

Particle Size Analyzer

PROCESS CHEMISTRY LABS PARTICLE ANALYSIS
VIA BRINKMANN 2010

STATISTICS

SAMPLE NAME : SST,B000280,F0417,GLY,ETOH,SBK
FILE NAME : F0417.001

DATE	: 22/02/1990	ACQ. RANGE	: 0.5-150	COUNTS	: 159055
TIME	: 13:22	ACQ. MODE	: SAMPLE	S.N.F.	: 0.98
CONFIG.	: 1 (0.7 S1)	ACQ. TIME	: 834 SEC	S.D.U.	: 3437
CELL TYPE	: MAGNETIC (3)	SAMPLE SIZE	: 4	CONCENTR.	: 2.1E+06 #/ml
SAMPLE TYPE	: REGULAR	REQ. CONF.	: 95.00%(V)	SOLIDS	: 6.8E-03 %

	MEAN Diameter	S.D.
Number, Length :	2.07 µm	1.90 µm
Number, Area :	2.81 µm	2.04 µm
Number, Volume :	3.97 µm	2.68 µm
Length, Area :	3.81 µm	3.95 µm
Length, Volume :	5.49 µm	4.29 µm
Area, Volume :	7.91 µm	9.30 µm
Volume, Moment :	18.84 µm	15.72 µm

	MEDIAN Diameter	MODE	CONFIDENCE
Number :	1.33 µm	0.75 µm	100.00%
Area :	4.80 µm	4.75 µm	98.01%
Volume :	11.67 µm	34.41 µm	99.05%

Organics present in sample; dispersed in EtOH-glycerine

B r i n k m a n n

Particle Size Analyzer

PROCESS CHEMISTRY LABS PARTICLE ANALYSIS VIA BRINKMANN 2010

STATISTICS

SAMPLE NAME : SST,B000280,F0417,GLY,ETOH,SBK
FILE NAME : F0417.002

DATE	: 22/02/1990	ACQ. RANGE	: 0.5-60	COUNTS	: 155100
TIME	: 13:43	ACQ. MODE	: SAMPLE	S.N.F.	: 0.94
CONFIG.	: 1 (0.7 S1)	ACQ. TIME	: 796 SEC	S.D.U.	: 3644
CELL TYPE	: MAGNETIC (3)	SAMPLE SIZE	: 4	CONCENTR.	: 2.4E+06 #/ml
SAMPLE TYPE	: REGULAR	REQ. CONF.	: 95.00%(V)	SOLIDS	: 5.8E-03 %

	MEAN Diameter	S.D.
Number, Length :	1.86 µm	1.77 µm
Number, Area :	2.57 µm	1.90 µm
Number, Volume :	3.59 µm	2.47 µm
Length, Area :	3.54 µm	3.51 µm
Length, Volume :	4.98 µm	3.79 µm
Area, Volume :	7.02 µm	8.30 µm
Volume, Moment :	16.83 µm	15.66 µm

	MEDIAN Diameter	MODE	CONFIDENCE
Number :	1.10 µm	0.55 µm	100.00%
Area :	4.61 µm	4.86 µm	98.28%
Volume :	9.03 µm	4.86 µm	98.01%

SAMPLE NAME : SST,B000280,F0417,GLY,ETOH,SBK
FILE NAME : F0417.001

DATE	: 22/02/1990	ACQ. RANGE	: 0.5-150	COUNTS	: 159055
TIME	: 13:22	ACQ. MODE	: SAMPLE	S.N.F.	: 0.98
CONFIG.	: 1 (0.7 S1)	ACQ. TIME	: 834 SEC	S.D.U.	: 3437
CELL TYPE	: MAGNETIC (3)	SAMPLE SIZE	: 4	CONCENTR.	: 2.1E+06 #/ml
SAMPLE TYPE	: REGULAR	REQ. CONF.	: 95.00%(V)	SOLIDS	: 6.8E-03 %

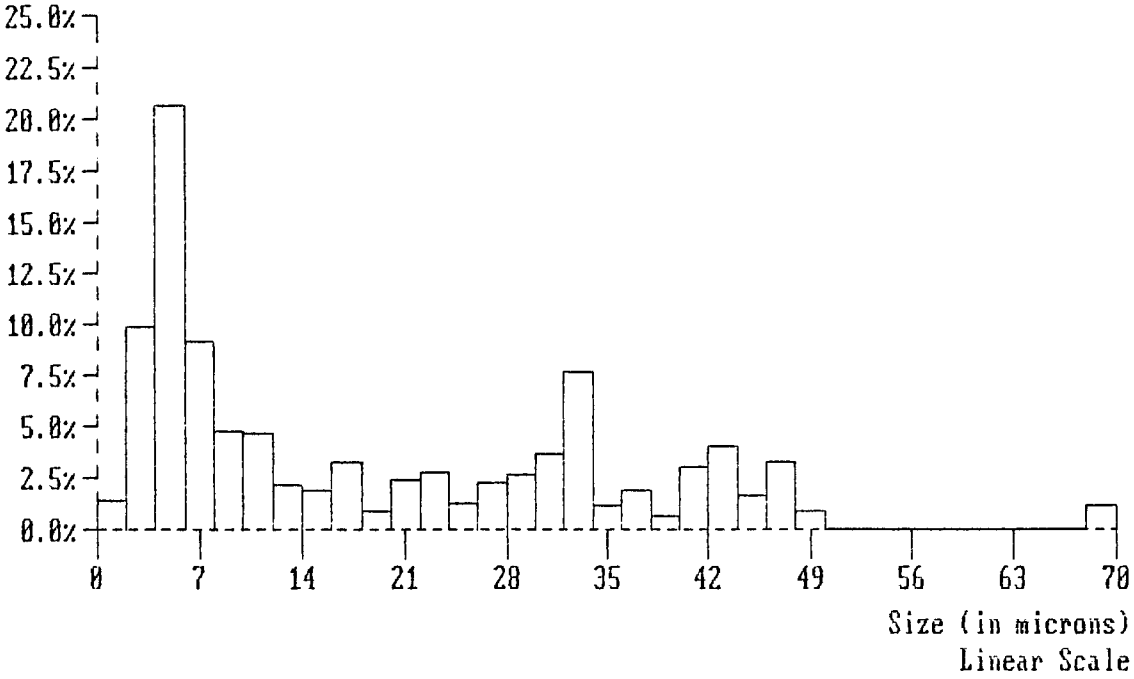
PROBABILITY VOLUME DENSITY GRAPH

Name: SST,B000280,F0417,GLY,ETOH,SBK
6.8E-05 cc/ml(100.0%)
Mode at 5.00 µm

Mean(nv): 3.97µm
S.D.(nv): 2.68µm

Median : 11.67µm
Mean(vm): 18.84µm
S.D.(vm): 15.72µm
Conf(vm): 99.85 %

<< SCALE RANGE (µm): ADJUSTED >>



SAMPLE NAME : SST,B000280,F0417,GLY,ETOH,SBK
FILE NAME : F0417.001

DATE	: 22/02/1990	ACQ. RANGE	: 0.5-150	COUNTS	: 159055
TIME	: 13:22	ACQ. MODE	: SAMPLE	S.N.F.	: 0.98
CONFIG.	: 1 (0.7 S1)	ACQ. TIME	: 834 SEC	S.D.U.	: 3437
CELL TYPE	: MAGNETIC (3)	SAMPLE SIZE	: 4	CONCENTR.	: 2.1E+06 #/ml
SAMPLE TYPE	: REGULAR	REQ. CONF.	: 95.00%(V)	SOLIDS	: 6.8E-03 %

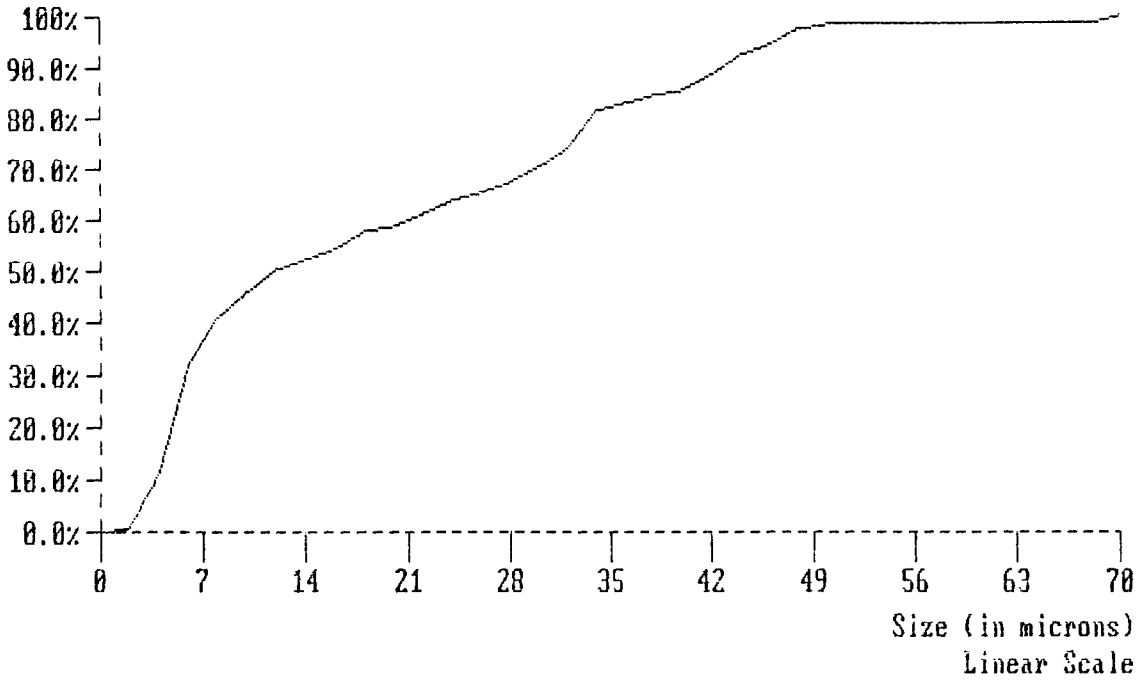
PROBABILITY VOLUME DISTRIBUTION GRAPH

Name: SST,B000280,F0417,GLY,ETOH,SBK
6.8E-05 cc/ml(100.0%)

Mean(nv): 3.97µm
S.D.(nv): 2.68µm

Median : 11.67µm
Mean(vm): 18.84µm
S.D.(vm): 15.72µm
Conf(vm): 99.05 %

<< SCALE RANGE (µm): ADJUSTED >>



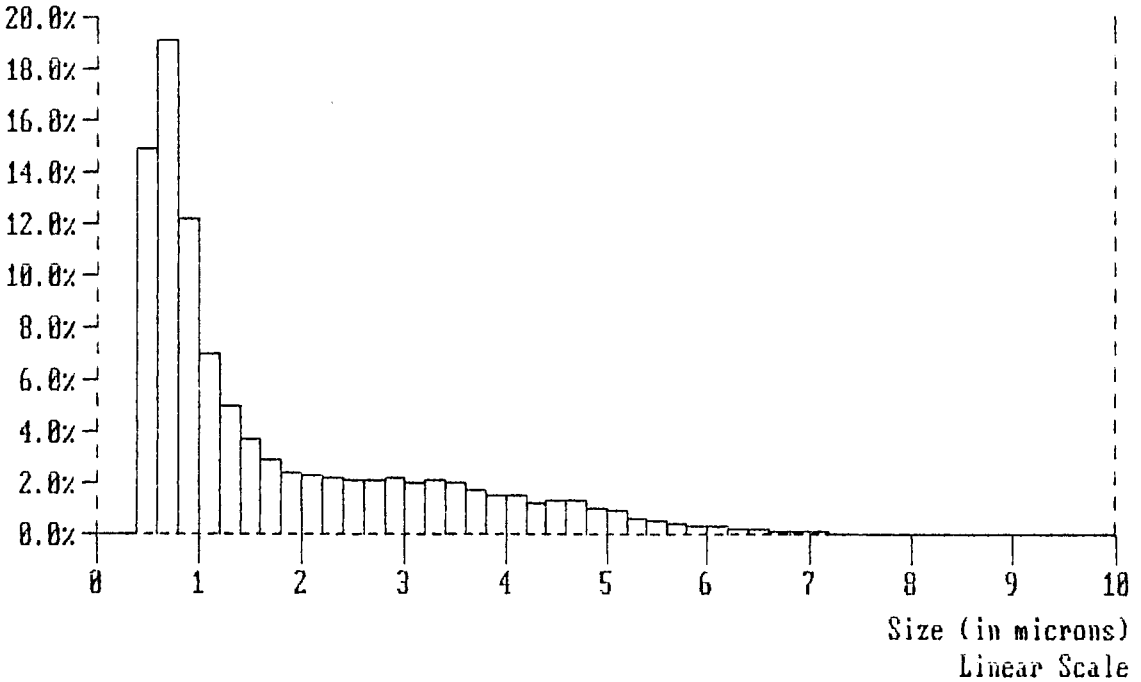
SAMPLE NAME : SST,B000280,F0417,GLY,ETOH,SBK
FILE NAME : F0417.002

DATE	: 22/02/1990	ACQ. RANGE	: 0.5-60	COUNTS	: 155100
TIME	: 13:43	ACQ. MODE	: SAMPLE	S.N.F.	: 0.94
CONFIG.	: 1 (0.7 S1)	ACQ. TIME	: 796 SEC	S.D.U.	: 3644
CELL TYPE	: MAGNETIC (3)	SAMPLE SIZE	: 4	CONCENTR.	: 2.4E+06 #/ml
SAMPLE TYPE	: REGULAR	REQ. CONF.	: 95.00%(V)	SOLIDS	: 5.8E-03 %

PROBABILITY NUMBER DENSITY GRAPH

Name: SST,B000280,F0417,GLY,ETOH,SBK
2.4E+06 #/ml(99.7%)
Mode at 0.70 µm
<< SCALE RANGE (µm): 0 - 10 >>

Local Median : 1.10µm
Local Mean(nl): 1.81µm
Local S.D.(nl): 1.53µm
Local Conf(nl):100.00 %



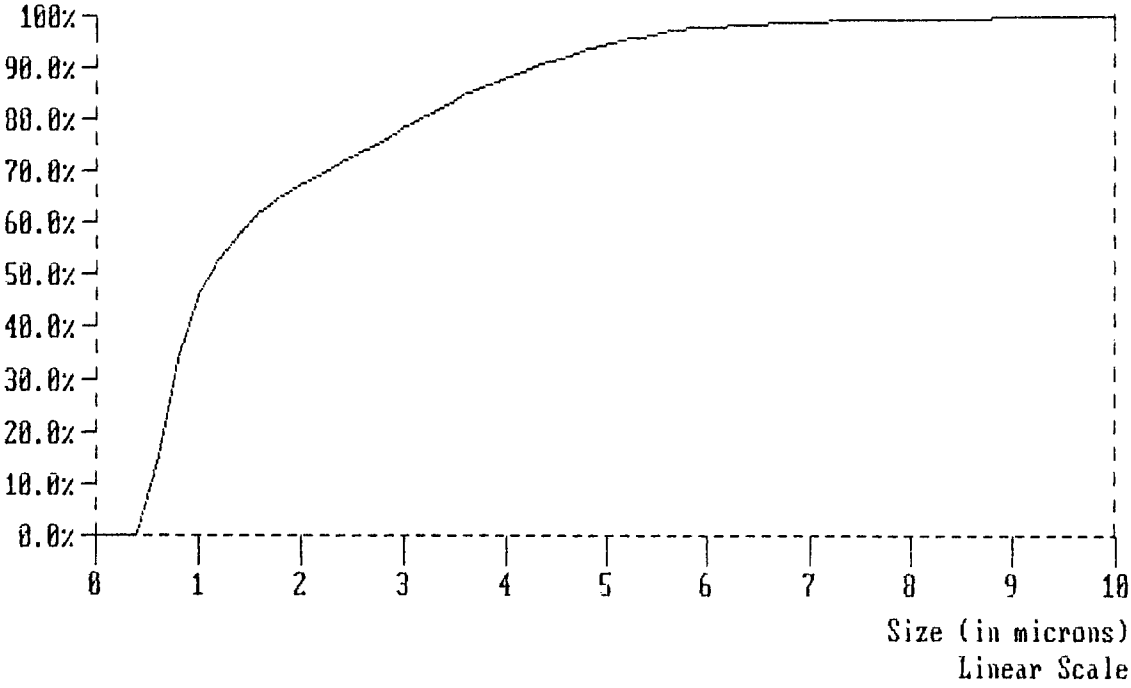
SAMPLE NAME : SST,B000280,F0417,GLY,ETOH,SBK
FILE NAME : F0417.002

DATE	: 22/02/1990	ACQ. RANGE	: 0.5-60	COUNTS	: 155100
TIME	: 13:43	ACQ. MODE	: SAMPLE	S.N.F.	: 0.94
CONFIG.	: 1 (0.7 S1)	ACQ. TIME	: 796 SEC	S.D.U.	: 3644
CELL TYPE	: MAGNETIC (3)	SAMPLE SIZE	: 4	CONCENTR.	: 2.4E+06 #/ml
SAMPLE TYPE	: REGULAR	REQ. CONF.	: 95.00%(V)	SOLIDS	: 5.8E-03 %

PROBABILITY NUMBER DISTRIBUTION GRAPH

Name: SST,B000280,F0417,GLY,ETOH,SBK
2.4E+06 #/ml(99.7%)

Local Median : 1.10µm
Local Mean(nl): 1.81µm
Local S.D.(nl): 1.53µm
Local Conf(nl):100.00 %



UNDIGESTED SAMPLE ANALYSIS

Single Shell Tank Project

Untreated Sample Results

Tank: 241-U-110
Core: 12
Segment: 2
Customer ID 89-070

	Check Standard	Blank	Sample	Sample Duplicate	Check Standard
Laboratory ID:	F0416	F0437	F0417	F0418	F0420
pH	100.80%	5.84	12.99	12.84	99.90%
Laboratory ID:	F0416	F0437	F0417	F0418	F0564
% Water	98.30%	6.2 mg	38.19%	43.60%	96.95%

Analytical Batch

LAB SEGMENT SERIAL #:F0417

CUSTOMER ID:89-070

INSTRUMENT	N/A
PROCEDURE/REV	LA-212-103/A-1
TECHNOLOGIST	Mary Franz
DATE	March 02, 1990
TEMPERATURE	24.65 C
STARTING TIME	0900
ENDING TIME	1430
CHEMIST	R. E. Brandt

pH analysis of the solid samples

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std.	F0416
2	Blank	F0437
3	Sample 89-070	F0417
4	Duplicate Sample 89-070	F0418
5	Final LMCS Check Std.	F0420
6		
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	72C11-B/1.0ml			1.0 ml

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Analytical Batch

LAB SEGMENT SERIAL #:F0417

CUSTOMER ID:89-070

% Water in Sample 89-070

INSTRUMENT	N/A
PROCEDURE/REV	LA-564-101/D-2
TECHNOLOGIST	R. D. Hale
DATE	March 05, 1990
TEMPERATURE	120 C
STARTING TIME	1400 3-1-90
ENDING TIME	1430 3-2-90
CHEMIST	R. E. Brandt

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std.	F0416
2	Blank	F0437
3	Sample 89-070	F0417
4	Duplicate Sample 89-070	F0418
5	Sample 89-071	F0441
6	Duplicate Sample 89-071	F0442
7	Sample 89-072	F0465
8	Duplicate Sample 89-072	F0466
9	Sample 89-073	F0489
10	Duplicate Sample 89-073	F0490
11	Sample 89-074	F0513

	DESCRIPTION	LAB ID
12	Duplicate Sample 89-074	F0514
13	Sample 89-075	F0537
14	Duplicate Sample 89-075	F0538
15	Sample 89-076	F0561
16	Duplicate Sample 89-076	F0562
17	Final LMCS Check Std	F0564
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	11C11AH/1.0ml			1.0 ml

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KOH FUSION ANALYSIS

Single Shell Tank Project

FUSION ANALYSIS

Laboratory Results of Solids
Units are Sample Wet Weight

Tank: 241-U-110
Core: 12
Segment: 2
Customer ID: 89-070

	Check Standard	Blank		Sample		Sample Duplicate		Spike of Sample	Check Standard
Laboratory ID:	N/A	F0436		F0422		F0423		N/A	N/A
Fusion Digestion	N/A	Complete		2.72		2.32	g/L	N/A	N/A
Laboratory ID:	F0421	F0436		F0422	g/L	F0423		F0424	F0425
Total Alpha	104.60%	<9.94E-05	uci/L	1.03	uci/g	8.32E-01	uci/g	119.00%	103.60%
Total Beta	104.90%	6.59E-04	uci/L	1.23E+03	uci/g	1.46E+03	uci/g	121.20%	103.40%
Laboratory ID:	F0421	F0436		F0422		F0423		F0568	F0569
GEA Cs-137	98.30%	<4.81E-04	uci/L	3.18E+01	uci/g	3.33E+01	uci/g	93.50%	97.30%
Laboratory ID:	F0421	F0436		F4022		F0423		F0424	F0425
Uranium	98.80%	<7.60E+01	ug/L	1.19E+04	ug/g	1.33E+04	ug/g	106.80%	96.20%

SINGLE SHELL TANK PROJECT

FUSION ANALYSIS

RESULTS ON LABORATORY DIGESTIONS

Tank: 241-U-110
Core: 12
Segment: 2
Customer ID: 89-070

	Check Standard	Blank	Sample	Sample Duplicate	Spike of Sample	Check Standard
Laboratory ID:	N/A	F0436	F0422	F0423	N/A	N/A
Fusion Digestion	N/A	Complete	2.72 g/L	2.32 g/L	N/A	N/A
Laboratory ID:	F0421	F0436	F0422	F0423	F0424	F0425
Total Alpha	104.60%	<9.94E-05 uci/L	2.80 uci/L	1.93 uci/L	119.00%	103.60%
Total Beta	104.90%	6.59E-04 uci/L	3.35E+03 uci/L	3.39E+03 uci/L	121.20%	103.40%
Laboratory ID:	F0421	F0436	F0422	F0423	F0568	F0569
GEA Cs-137	98.30%	<4.81E-04 uci/L	8.64E+01 uci/L	7.72E+01 uci/L	93.50%	97.30%
Laboratory ID:	F0421	F0436	F0422	F0423	F0424	F0425
Uranium	98.80%	<7.60E+01 ug/L	3.24E-02 g/L	3.08E-02 g/L	106.80%	96.20%

Analytical Batch

Lab Segment Serial #:F0417

Customer ID:89-070

Instrument	N/A
Procedure/Rev	LA-549-141/A-1
Technologist	R. D. Hale
Date	March 10, 1990
Temperature	450 C
Starting Time	0800
Ending Time	1200
Chemist	S. A. Catlow

Fusion Dissolution

	Description		Lab ID
1	Reagent Blank		F0436
2	Sample	89-070	F0422
3	Duplicate Sample	89-070	F0423
4	Sample	89-071	F0446
5	Duplicate Sample	89-071	F0447
6	Sample	89-072	F0470
7	Duplicate Sample	89-072	F0471
8	Sample	89-075	F0542
9	Duplicate Sample	89-075	F0543
10	Sample	89-076	F0566
11	Duplicate Sample	89-076	F0567

	Description		Lab ID
12	Sample	89-077	F1095
13	Duplicate Sample	89-077	F1096
14	Sample	89-078	F1119
15	Duplicate Sample	89-078	F1120
16	Sample	89-079	F1143
17	Duplicate Sample	89-079	F1144
18	Sample	89-080	F1167
19	Duplicate Sample	89-080	F1168
20			
21			
22			

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Bk# & Alqt.Vol.	Final Vol. of Std.
N/A				

SST-102 Rev. F 9/7/90 Interim

Analytical Batch

LAB SEGMENT SERIAL #:F0417

CUSTOMER ID:89-070

INSTRUMENT	WA57276
PROCEDURE/REV	LA-508-101/C-2
TECHNOLOGIST	Mary Franz
DATE	March 23, 1990
TEMPERATURE	N/A
STARTING TIME	0830
ENDING TIME	1030
CHEMIST	S. A. Catlow

Total Beta & Total Alpha Analysis of the Fusion Dissolution.

Detector 14 WA57276

Samples were prepared in batch, but counted randomly.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std.	F0421
2	Reagent Blank	F0436
3	Sample 89-070	F0422
4	Duplicate Sample 89-070	F0423
5	Spike of Sample 89-070	F0424
6	Final LMCS Check Std.	F0425
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	132B44/10 mL			N/A
Spike	132B44/10 mL	F0422/1.0 uL		N/A

SST-102 Rev. F 9/7/90 Interim

Single Shell Tank

Calibration Record

ANALYTE:	Am^{241}		
PROCEDURE:	LQ-508-002	REVISION:	A-0
INSTRUMENT:	Detector #14	PROPERTY NUMBER:	WA45709
TECHNOLOGIST:	R.A. Jones	PAYROLL NUMBER:	65801
DATE:	November 28,1988		
CALIBRATION STANDARD ID:	36B40A8; 36B40B7; 36B40C7; 36B40A3; 36B40B3; 36B40C3; 36B40A6;36B40B6; 36B40C5		
ANALYTE CONCENTRATION:	N/A		
TYPE OF CALIBRATION:	Efficiency		

SST-103 Rev. (Draft) 9/15/90 Short Interim

CALIBRATION SHEET FOR ALPHA/BETA SYSTEMS: USING PROCEDURE LQ-508-002

DETECTOR No. 14

TIME ZERO DATE (HD): 15897

RADIONUCLIDE: Am-241
HALF LIFE: 154497
COUNT TIME: 5
CPM BKG: 0.5

DATE COUNTED (HD): 16135

CALIBRATED BY: RA JONES HD 0 = 09/25/44

STANDARD ID	SIZE	DATE	TIME	COUNTS @ 0 DEG.	COUNTS @ 90 DEG.	COUNTS @ 180 DEG.	COUNTS @ 270 DEG.
36B40A8	1	11/28/88	1115	83719	83889	83820	84087
36B40B7	1	11/28/88	1128	147778	147414	147378	147313
36B40C7	1	11/28/88	1142	212324	211727	211106	211442
36B40A3	2	11/28/88	1155	67029	66485	66532	66137
36B40B3	2	11/28/88	1207	116432	117580	116643	116507
36B40C3	2	11/28/88	1221	167025	166472	166682	166167
36B40A6	5	11/28/88	1234	64835	64744	63542	64860
36B40B6	5	11/28/88	1246	132366	127335	127267	127511
36B40C5	5	11/28/88	1300	176904	172226	170187	173840

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
36B40A8	1"	60570	16775	1.00	16793	0.2773
36B40B7	1"	109900	29494	1.00	29525	0.2687
36B40C7	1"	159700	42329	1.00	42375	0.2653

AVERAGE, 1" = 0.2704 +/- @95% 0.0121 4.46 % ON 11/28/88

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
36B40A3	2"	61800	13309	1.00	13323	0.2156
36B40B3	2"	110700	23358	1.00	23383	0.2112
36B40C3	2"	161400	33317	1.00	33352	0.2066

AVERAGE, 2" = 0.2111 +/- @95% 0.0088 4.15 % ON 11/28/88

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
36B40A6	5"	59470	12899	1.00	12912	0.2171
36B40B6	5"	109800	25723	1.00	25751	0.2345
36B40C5	5"	160100	34657	1.00	34694	0.2167

AVERAGE, 5" = 0.2228 +/- @95% 0.0199 8.95 % ON 11/28/88

NEW EFFS FOR DET 14 Am-241 1" = 0.2704 2" = 0.2111

5" = 0.2228

Single Shell Tank

Calibration Record

ANALYTE:	Co^{60}		
PROCEDURE:	LQ-508-002	REVISION:	A-0
INSTRUMENT:	Detector #14	PROPERTY NUMBER:	WA57276
TECHNOLOGIST:	R.A. Jones	PAYROLL NUMBER:	65801
DATE:	November 28, 1988		
CALIBRATION STANDARD ID:	32B40A8; 32B40B7; 32B40C7; 32B40A4; 32B40B3; 32B40C4; 32B40A5; 32B40B6; 32B40C5		
ANALYTE CONCENTRATION:	N/A		
TYPE OF CALIBRATION:	Efficiency		

SST-103 Rev. (Draft) 9/15/90 Short Interim

CALIBRATION SHEET FOR ALPHA/BETA SYSTEMS: USING PROCEDURE LQ-508-002

DETECTOR No. 14

		2",5" STD	TIME ZERO DATE (HD):	15883
RADIONUCLIDE:	Co-60	1" STD	TIME ZERO DATE (HD):	15883
HALF LIFE:	1925		DATE COUNTED (HD):	16135
COUNT TIME:	5		DATE COUNTED 1" (HD)	16135
CPM BKG:	19			
CPM 1" BKG:	19			

CALIBRATED BY: RA JONES HD 0 = 09/25/44

STANDARD ID	SIZE	DATE	TIME	COUNTS @ 0 DEG.	COUNTS @ 90 DEG.	COUNTS @ 180 DEG.	COUNTS @ 270 DEG.
32B40A8	1	11/28/88	1313	94851	93909	94136	94073
32B40B7	1	11/28/88	1325	180320	178550	178878	179065
32B40C7	1	11/28/88	1338	260104	258654	259795	259469
32B40A4	2	11/28/88	1349	90411	89596	89705	90717
32B40B3	2	11/28/88	1527	170657	169556	169500	170301
32B40C4	2	11/28/88	1540	244082	244246	243016	249016
32B40A5	5	11/28/88	1551	83403	82448	82728	84312
32B40B6	5	11/28/88	1603	160402	163149	162823	159622
32B40C5	5	11/28/88	1616	237343	232578	231827	23179

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
32B40A8	1"	69550	18829	1.09	20618	0.2964
32B40B7	1"	134700	35822	1.09	39224	0.2912
32B40C7	1"	201000	51882	1.09	56810	0.2826

AVERAGE, 1" = 0.2901 +/- @95% 0.0137 4.71 % ON 11/28/88

STANDARD ID		STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
32B40A4	2"	70480	18002	1.09	19712	0.2797
32B40B3	2"	135100	33982	1.09	37209	0.2754
32B40C4	2"	202400	48999	1.09	53653	0.2651

AVERAGE, 2" = 0.2734 +/- @95% 0.0147 5.38 % ON 11/28/88

STANDARD ID		STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
32B40A5	5"	70160	16626	1.09	18205	0.2595
32B40B6	5"	135700	32281	1.09	35347	0.2605
32B40C5	5"	201900	46658	1.09	51090	0.2530

AVERAGE, 5" = 0.2577 +/- @95% 0.0079 3.07 % ON 11/28/88

NEW EFFS FOR DET 14 Co-60 1" = 0.2901 2" = 0.2734

5" = 0.2577

Analytical Batch

Lab Segment Serial #:F0417

Customer ID:89-070

Instrument	WA401934
Procedure/Rev	LA-548-121/C-2
Technologist	R. D. Hale
Date	March 14, 1990
Temperature	23 C
Starting Time	0900
Ending Time	1000
Chemist	S. A. Catlow

GEA Analysis

Fusion Dissolution

Samples are prepared in batch, but counted randomly.

	Description		Lab ID
1	Initial LMCS Check Std.		F0421
2	Reagent Blank		F0436
3	Sample	89-070	F0422
4	Duplicate Sample	89-070	F0423
5	Sample	89-071	F0446
6	Duplicate Sample	89-071	F0447
7	Sample	89-072	F0470
8	Duplicate Sample	89-072	F0471
9	Sample	89-071	F0442
10	Duplicate Sample	89-071	F0443
11	Sample	89-076	F0566

	Description		Lab ID
12	Duplicate Sample	89-076	F0567
13	Spike	89-076	F0568
14	Final LMCS Check Std.		F0569
15			
16			
17			
18			
19			
20			
21			
22			

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Bk# & Alqt. Vol.	Final Vol. of Std.
LMCS Check Standard	122B44/500 uL			22 mL
Spike	122B44/500 uL	F0447/50 uL		22 mL

SST-102 Rev. F 9/7/90 Interim

Single Shell Tank Calibration Record

Analyte:	Isotope, Mixed Gamma		
Procedure:	LQ-508-003	Revision:	A-0
Instrument:	GEA Detector #1	Property Number:	401934
Technologist:	J. L. Anderson	Payroll Number:	
Date:	02-14-89		

Calibration Standard ID: 56B40 D1

Analyte Concentration: N/A

Type of Calibration: Gamma Energy Analysis (Efficiency)

Comments:

SST-103 Rev. (Draft) 9/4/90 Interim

DETECTOR: 1
GEOMETRY CODE: 42
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 2
CALIBRATION DATE: 14-Feb-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	5.721347E-03
88.032	1.512568E-02
122.0614	2.041958E-02
165.853	1.856472E-02
279.1967	
391.668	1.042777E-02
513.99	7.856059E-03
661.65	6.838966E-03
898.021	5.300244E-03
1173.237	4.218416E-03
1332.501	3.785537E-03
1836.129	2.931033E-03

EQUATION 0-165 KEV

```
LOG(EFF) =   -5.343694E+01
         +    2.034704E+01 *LOG(ENERGY)
         +   -2.088264E+00 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =    8.372735E+00
         +   -7.762489E+00 *LOG(ENERGY)
         +    2.017698E+00 *LOG(ENERGY)^2
         +   -2.447560E-01 *LOG(ENERGY)^3
         +    1.067720E-02 *LOG(ENERGY)^4
```

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

DETECTOR: 1
GEOMETRY CODE: 43
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 3
CALIBRATION DATE: 16-Feb-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	1.397695E-03
88.032	3.641448E-03
122.0614	5.035820E-03
165.853	4.620516E-03
279.1967	
391.668	2.619018E-03
513.99	1.890740E-03
661.65	1.782478E-02
898.021	1.392563E-03
1173.237	1.117189E-03
1332.501	1.007670E-03
1836.129	7.782502E-04

EQUATION 0-165 KEV

```
LOG(EFF) =   -5.354869E+01
```

```
                    +    1.975356E+01 *LOG(ENERGY)
                    +   -2.020858E+00 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =          4.001880E+01
                    +   -2.857555E+01 *LOG(ENERGY)
                    +    6.748440E+00 *LOG(ENERGY)^2
                    +    7.173093E-01 *LOG(ENERGY)^3
                    +    2.821780E-02 *LOG(ENERGY)^4
```

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

```
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                     *
*          G A M M A   S P E C T R U M   A N A L Y S I S              *
*                                                                     *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

CANBERRA SPECTRAN-F V2.06  SOFTWARE

222-S COUNTING ROOM                                 27-AUG-90  12:15:18


                A N A L Y S I S   P A R A M E T E R S

MCA UNIT NUMBER:   2     /     ADC UNIT NUMBER: 1.0
DETECTOR NUMBER:    1    /     GEOMETRY NUMBER:  42
SPECTRUM SIZE:  4096 CHANNELS
ORDER OF SMOOTHING FUNCTION:     5
NUMBER OF BACKGROUND CHANNELS:  4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD1070
ANALYZED BY:        VR

SAMPLE DESCRIPTION: F421 SEG F
GEOMETRY DESCRIPTION:
SAMPLE SIZE:   1.0000E-03 LI       / CONVERSION FACTOR: 5.0000E-01
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 14-MAR-90 AT 11:00:58

COLLECT LIVE TIME:    3000. SECONDS
        REAL TIME:    3005. SECONDS
        DEAD TIME:     0.17 %

 DECAYED TO      0. DAYS,  0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 23-NOV-89
EFFICIENCY CALIBRATION PERFORMED  2-MAR-89
```

222-S COUNTING ROOM 27-AUG-90 12:15:18

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1C	1127.46	563.20	1.34	417.	456.	13.9	CS-134, EU-152
2C	1139.52	569.23	1.34	456.	822.	12.2	CS-134, BI-207
3C	1210.35	604.63	1.41	394.	5339.	3.3	CS-134
4C	1219.45	609.18	1.41	323.	79.	30.4	BI-214, RU-103
5	1324.22	661.55	1.47	366.	9209.	2.1	CS-137
5B		661.82			35.	46.4	
6C	1592.53	795.69	1.55	258.	3769.	4.0	CS-134
7C	1604.74	801.80	1.55	227.	359.	14.3	CS-134
8	2347.09	1173.10	1.74	186.	4807.	3.0	CO-60
9	2665.49	1332.42	1.97	37.	4508.	3.0	CO-60
10	2731.21	1365.31	2.48	13.	101.	22.6	CS-134
11	2921.74	1460.68	2.12	11.	187.	15.5	K-40
11B		1461.77			182.	11.2	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY
B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0011
BACKGROUND DESCRIPTION: BK0011
BACKGROUND COLLECT STARTED ON 10-JAN-85 AT 12:00:00
BACKGROUND LIVE TIME: 6000. SECONDS

222-S COUNTING ROOM 27-AUG-90 12:15:18

SAMPLE: F421 SEG F
DATA COLLECTED ON 14-MAR-90 AT 11:00:58
DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI MEASURED	ERROR	DECAY CORRECTED	ERROR	ENERGY COMPARISON (KEV) EXPECT	DIFF
AC-228	LLD<7.86E-01		LLD<7.86E-01		911.07	
AG-108M	LLD<1.96E-01		LLD<1.96E-01		433.94	
AG-110M	LLD<8.94E-01		LLD<8.94E-01		657.76	
AM-241	LLD<8.34E-01		LLD<8.34E-01		59.54	
AM-243	LLD<2.10E-01		LLD<2.10E-01		74.67	
AR-41	LLD<1.48E-01		LLD<1.48E-01		1293.64	
AU-198	LLD<1.70E-01		LLD<1.70E-01		411.80	
BA-133	LLD<2.57E-01		LLD<2.57E-01		356.02	
BA-139	LLD<5.05E-01		LLD<5.05E-01		165.85	
BA-140	LLD<7.04E-01		LLD<7.04E-01		537.27	
BA-141	LLD<5.12E-01		LLD<5.12E-01		190.23	
BE-7	LLD<1.78E+00		LLD<1.78E+00		477.59	
BI-207	LLD<1.69E-01		LLD<1.69E-01		569.70	
BI-212	LLD<2.47E+00		LLD<2.47E+00		727.27	
BI-214	1.70E-01	+-1.58E-01	1.70E-01	+-1.58E-01	609.32	-0.14
CD-109	LLD<3.08E+00		LLD<3.08E+00		88.03	
CE-139	LLD<1.14E-01		LLD<1.14E-01		165.85	
CE-141	LLD<1.77E-01		LLD<1.77E-01		145.44	
CEPR144	LLD<1.51E+00		LLD<1.51E+00		133.51	
CO-56	LLD<1.88E-01		LLD<1.88E-01		846.76	
CO-57	LLD<9.58E-02		LLD<9.58E-02		122.06	
CO-58	LLD<1.83E-01		LLD<1.83E-01		810.75	
CO-60	2.14E+01	+-6.73E-01	2.14E+01	+-6.73E-01	1332.50	-0.08
					1173.24	-0.14
CR-51	LLD<1.38E+00		LLD<1.38E+00		320.09	
CS-134	1.36E+01	+-5.63E-01	1.36E+01	+-5.63E-01	795.84	-0.15
					604.70	-0.07
CS-136	LLD<1.85E-01		LLD<1.85E-01		818.51	
CS-137	2.85E+01	+-7.04E-01	2.85E+01	+-7.04E-01	661.65	-0.10
CS-138	LLD<1.38E-01		LLD<1.38E-01		1435.86	
EU-152	LLD<3.23E-01		LLD<3.23E-01		1408.01	
EU-154	LLD<3.09E-01		LLD<3.09E-01		1274.45	
EU-155	LLD<3.73E-01		LLD<3.73E-01		105.31	
FE-59	LLD<4.20E-01		LLD<4.20E-01		1099.25	
HF-181	LLD<1.95E-01		LLD<1.95E-01		482.20	
HG-203	LLD<1.60E-01		LLD<1.60E-01		279.20	
I-131	LLD<1.97E-01		LLD<1.97E-01		364.48	
I-132	LLD<2.60E-01		LLD<2.60E-01		667.69	
I-133	LLD<1.90E-01		LLD<1.90E-01		529.69	
I-134	LLD<2.70E-01		LLD<2.70E-01		847.03	
I-135	LLD<4.06E-01		LLD<4.06E-01		1260.41	
K-40	LLD<1.90E+00		LLD<1.90E+00		1460.75	
KR-85	LLD<4.08E+01		LLD<4.08E+01		513.99	
KR-85M	LLD<1.12E-01		LLD<1.12E-01		151.17	
KR-87	LLD<4.37E-01		LLD<4.37E-01		402.58	
KR-89	LLD<6.52E+00		LLD<6.52E+00		220.90	
LA-140	LLD<7.35E-02		LLD<7.35E-02		1596.20	

LA-142	LLD<3.84E-01	LLD<3.84E-01	641.83
MN-54	LLD<1.75E-01	LLD<1.75E-01	834.83
MN-56	LLD<2.12E-01	LLD<2.12E-01	846.76
NA-22	LLD<1.03E-01	LLD<1.03E-01	1274.55
NA-24	LLD<1.68E-01	LLD<1.68E-01	1368.60
NB-94	LLD<1.59E-01	LLD<1.59E-01	702.63
NB-95	LLD<1.60E-01	LLD<1.60E-01	765.78
NB-97	LLD<1.08E+00	LLD<1.08E+00	657.92
NP-238	LLD<8.25E-01	LLD<8.25E-01	984.45
NP-239	LLD<8.99E-01	LLD<8.99E-01	277.60
PA-233	LLD<4.03E-01	LLD<4.03E-01	311.98
PA-234M	LLD<3.46E+01	LLD<3.46E+01	1001.03
PB-210	LLD<4.65E+00	LLD<4.65E+00	465.03
PB-212	LLD<2.86E-01	LLD<2.86E-01	239.00
PB-214	LLD<4.25E-01	LLD<4.25E-01	351.92
PO-210	LLD<1.64E+04	LLD<1.64E+04	804.00
PO-214	LLD<6.88E+03	LLD<6.88E+03	799.70
PO-216	LLD<1.32E+04	LLD<1.32E+04	804.90
PU-239	LLD<1.30E+03	LLD<1.30E+03	129.30
PU-241	LLD<4.57E+04	LLD<4.57E+04	148.57
RA-224	LLD<3.12E+00	LLD<3.12E+00	240.99
RA-226	LLD<2.72E+00	LLD<2.72E+00	186.10
RB-88	LLD<6.32E-01	LLD<6.32E-01	1836.00
RB-89	LLD<9.12E-01	LLD<9.12E-01	1031.88
RN-220	LLD<1.46E+02	LLD<1.46E+02	549.73
RU-103	LLD<1.78E-01	LLD<1.78E-01	497.08
RURH106	LLD<3.28E+00	LLD<3.28E+00	621.80
SB-124	LLD<3.08E-01	LLD<3.08E-01	602.72
SB-125	LLD<1.46E+00	LLD<1.46E+00	176.33
SC-46	LLD<2.22E-01	LLD<2.22E-01	1120.45
SE-75	LLD<2.20E-01	LLD<2.20E-01	264.66
SN-113	LLD<2.49E-01	LLD<2.49E-01	391.67
SR-85	LLD<1.79E-01	LLD<1.79E-01	513.99
SR-91	LLD<3.03E-01	LLD<3.03E-01	555.60
SR-92	LLD<7.70E-02	LLD<7.70E-02	1383.94
TA-182	LLD<6.21E-01	LLD<6.21E-01	1121.30
TC-99M	LLD<1.02E-01	LLD<1.02E-01	140.51
TE-123M	LLD<1.09E-01	LLD<1.09E-01	159.00
TE-125M	LLD<2.77E+01	LLD<2.77E+01	109.27
TE-132	LLD<1.34E-01	LLD<1.34E-01	228.16
TH-228	LLD<9.61E+00	LLD<9.61E+00	84.37
TL-208	LLD<2.18E-01	LLD<2.18E-01	583.14
U-235	LLD<1.81E-01	LLD<1.81E-01	185.71
U-237	LLD<5.53E-01	LLD<5.53E-01	208.00
W-187	LLD<5.51E-01	LLD<5.51E-01	685.74
XE-131M	LLD<4.72E+00	LLD<4.72E+00	163.98
XE-133	LLD<3.42E-01	LLD<3.42E-01	81.00
XE-133M	LLD<1.18E+00	LLD<1.18E+00	233.21
XE-135	LLD<1.44E-01	LLD<1.44E-01	249.79
XE-138	LLD<1.09E+00	LLD<1.09E+00	258.41
Y-88	LLD<6.00E-02	LLD<6.00E-02	1836.06
Y-91	LLD<4.84E+01	LLD<4.84E+01	1204.90
Y-91M	LLD<2.29E-01	LLD<2.29E-01	555.60
ZN-65	LLD<4.36E-01	LLD<4.36E-01	1115.55
ZR-95	LLD<3.02E-01	LLD<3.02E-01	756.73
ZR-97	LLD<1.59E-01	LLD<1.59E-01	743.33
	---	---	
TOTAL	6.37E+01 +-1.14E+00	6.37E+01 +-1.14E+00	

STANDARD DEVIATION = 0.04

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.44E-09 UC/LI
TOTAL MEASURED ACTIVITY = 6.37E+01 (+-1.14E+00) UC/LI
% TECH. SPEC. = ****** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1127.46	563.20	456.	13.9	1.95E+01
1139.52	569.23	822.	12.2	3.55E+01
1604.74	801.80	359.	14.3	2.06E+01
2731.21	1365.31	101.	22.6	9.06E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2921.74	1460.68	187.	15.5	1.77E+01

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* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                     *
*          G A M M A   S P E C T R U M   A N A L Y S I S              *
*                                                                     *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
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CANBERRA SPECTRAN-F V2.06 SOFTWARE

222-S COUNTING ROOM 27-AUG-90 12:56:44

A N A L Y S I S P A R A M E T E R S

MCA UNIT NUMBER: 2 / ADC UNIT NUMBER: 1.0
DETECTOR NUMBER: 1 / GEOMETRY NUMBER: 42
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD1071
ANALYZED BY: JLA

SAMPLE DESCRIPTION: F-436 SEGMENT-U
GEOMETRY DESCRIPTION:
SAMPLE SIZE: 1.0000E-01 LI / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 14-MAR-90 AT 12:26:23

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3001. SECONDS
DEAD TIME: 0.03 %

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 23-NOV-89
EFFICIENCY CALIBRATION PERFORMED 2-MAR-89

222-S COUNTING ROOM 27-AUG-90 12:56:44

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1	1324.38	661.63	1.53	40.	52.	45.6	CS-137
1B		661.82			35.	46.4	
2	2922.13	1460.87	2.07	8.	194.	14.8	K-40
2B		1461.77			182.	11.2	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0011
BACKGROUND DESCRIPTION: BK0011
BACKGROUND COLLECT STARTED ON 10-JAN-85 AT 12:00:00
BACKGROUND LIVE TIME: 6000. SECONDS

222-S COUNTING ROOM 27-AUG-90 12:56:44

SAMPLE: F-436 SEGMENT-U
DATA COLLECTED ON 14-MAR-90 AT 12:26:23
DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI MEASURED	ERROR	DECAY CORRECTED	ERROR	ENERGY COMPARISON (KEV) EXPECT	DIFF
AC-228	LLD<1.24E-03		LLD<1.24E-03		911.07	
AG-108M	LLD<2.52E-04		LLD<2.52E-04		433.94	
AG-110M	LLD<4.41E-04		LLD<4.41E-04		657.76	
AM-241	LLD<1.52E-03		LLD<1.52E-03		59.54	
AM-243	LLD<4.29E-04		LLD<4.29E-04		74.67	
AR-41	LLD<3.67E-04		LLD<3.67E-04		1293.64	
AU-198	LLD<2.12E-04		LLD<2.12E-04		411.80	
BA-133	LLD<4.21E-04		LLD<4.21E-04		356.02	
BA-139	LLD<9.27E-04		LLD<9.27E-04		165.85	
BA-140	LLD<8.81E-04		LLD<8.81E-04		537.27	
BA-141	LLD<9.08E-04		LLD<9.08E-04		190.23	
BE-7	LLD<2.21E-03		LLD<2.21E-03		477.59	
BI-207	LLD<2.47E-04		LLD<2.47E-04		569.70	
BI-212	LLD<3.74E-03		LLD<3.74E-03		727.27	
BI-214	LLD<8.46E-04		LLD<8.46E-04		609.32	
CD-109	LLD<5.88E-03		LLD<5.88E-03		88.03	
CE-139	LLD<2.10E-04		LLD<2.10E-04		165.85	
CE-141	LLD<3.38E-04		LLD<3.38E-04		145.44	
CEPR144	LLD<2.82E-03		LLD<2.82E-03		133.51	
CO-56	LLD<2.05E-04		LLD<2.05E-04		846.76	
CO-57	LLD<1.79E-04		LLD<1.79E-04		122.06	
CO-58	LLD<2.81E-04		LLD<2.81E-04		810.75	
CO-60	LLD<3.73E-04		LLD<3.73E-04		1332.50	
CR-51	LLD<2.03E-03		LLD<2.03E-03		320.09	
CS-134	LLD<3.00E-04		LLD<3.00E-04		795.84	
CS-136	LLD<2.68E-04		LLD<2.68E-04		818.51	
CS-137	LLD<4.81E-04		LLD<4.81E-04		661.65	
CS-138	LLD<7.32E-04		LLD<7.32E-04		1435.86	
EU-152	LLD<1.04E-03		LLD<1.04E-03		1408.01	
EU-154	LLD<1.01E-03		LLD<1.01E-03		1274.45	
EU-155	LLD<7.24E-04		LLD<7.24E-04		105.31	
FE-59	LLD<4.30E-04		LLD<4.30E-04		1099.25	
HF-181	LLD<2.61E-04		LLD<2.61E-04		482.20	
HG-203	LLD<2.61E-04		LLD<2.61E-04		279.20	
I-131	LLD<2.93E-04		LLD<2.93E-04		364.48	
I-132	LLD<2.98E-04		LLD<2.98E-04		667.69	
I-133	LLD<2.29E-04		LLD<2.29E-04		529.69	
I-134	LLD<3.08E-04		LLD<3.08E-04		847.03	
I-135	LLD<1.49E-03		LLD<1.49E-03		1260.41	
K-40	LLD<9.27E-03		LLD<9.27E-03		1460.75	
KR-85	LLD<7.79E-02		LLD<7.79E-02		513.99	
KR-85M	LLD<2.17E-04		LLD<2.17E-04		151.17	
KR-87	LLD<5.54E-04		LLD<5.54E-04		402.58	
KR-89	LLD<1.15E-02		LLD<1.15E-02		220.90	
LA-140	LLD<4.13E-04		LLD<4.13E-04		1596.20	
LA-142	LLD<6.29E-04		LLD<6.29E-04		641.83	
MN-54	LLD<2.72E-04		LLD<2.72E-04		834.83	

MN-56	LLD<2.31E-04	LLD<2.31E-04	846.76
NA-22	LLD<3.24E-04	LLD<3.24E-04	1274.55
NA-24	LLD<3.15E-04	LLD<3.15E-04	1368.60
NB-94	LLD<3.18E-04	LLD<3.18E-04	702.63
NB-95	LLD<2.93E-04	LLD<2.93E-04	765.78
NB-97	LLD<5.34E-04	LLD<5.34E-04	657.92
NP-238	LLD<1.38E-03	LLD<1.38E-03	984.45
NP-239	LLD<1.46E-03	LLD<1.46E-03	277.60
PA-233	LLD<6.42E-04	LLD<6.42E-04	311.98
PA-234M	LLD<5.40E-02	LLD<5.40E-02	1001.03
PB-210	LLD<6.01E-03	LLD<6.01E-03	465.03
PB-212	LLD<4.55E-04	LLD<4.55E-04	239.00
PB-214	LLD<6.66E-04	LLD<6.66E-04	351.92
PO-210	LLD<2.27E+01	LLD<2.27E+01	804.00
PO-214	LLD<2.22E+00	LLD<2.22E+00	799.70
PO-216	LLD<1.39E+01	LLD<1.39E+01	804.90
PU-239	LLD<2.35E+00	LLD<2.35E+00	129.30
PU-241	LLD<8.31E+01	LLD<8.31E+01	148.57
RA-224	LLD<5.60E-03	LLD<5.60E-03	240.99
RA-226	LLD<4.92E-03	LLD<4.92E-03	186.10
RB-88	LLD<1.98E-03	LLD<1.98E-03	1836.00
RB-89	LLD<1.01E-03	LLD<1.01E-03	1031.88
RN-220	LLD<2.10E-01	LLD<2.10E-01	549.73
RU-103	LLD<2.45E-04	LLD<2.45E-04	497.08
RURH106	LLD<5.76E-03	LLD<5.76E-03	621.80
SB-124	LLD<2.54E-04	LLD<2.54E-04	602.72
SB-125	LLD<2.64E-03	LLD<2.64E-03	176.33
SC-46	LLD<3.04E-04	LLD<3.04E-04	1120.45
SE-75	LLD<3.31E-04	LLD<3.31E-04	264.66
SN-113	LLD<3.25E-04	LLD<3.25E-04	391.67
SR-85	LLD<3.42E-04	LLD<3.42E-04	513.99
SR-91	LLD<4.47E-04	LLD<4.47E-04	555.60
SR-92	LLD<5.12E-04	LLD<5.12E-04	1383.94
TA-182	LLD<9.06E-04	LLD<9.06E-04	1121.30
TC-99M	LLD<1.87E-04	LLD<1.87E-04	140.51
TE-123M	LLD<2.02E-04	LLD<2.02E-04	159.00
TE-125M	LLD<4.76E-02	LLD<4.76E-02	109.27
TE-132	LLD<2.38E-04	LLD<2.38E-04	228.16
TH-228	LLD<1.86E-02	LLD<1.86E-02	84.37
TL-208	LLD<2.78E-04	LLD<2.78E-04	583.14
U-235	LLD<3.30E-04	LLD<3.30E-04	185.71
U-237	LLD<9.03E-04	LLD<9.03E-04	208.00
W-187	LLD<9.68E-04	LLD<9.68E-04	685.74
XE-131M	LLD<9.89E-03	LLD<9.89E-03	163.98
XE-133	LLD<7.16E-04	LLD<7.16E-04	81.00
XE-133M	LLD<2.05E-03	LLD<2.05E-03	233.21
XE-135	LLD<2.36E-04	LLD<2.36E-04	249.79
XE-138	LLD<1.79E-03	LLD<1.79E-03	258.41
Y-88	LLD<1.88E-04	LLD<1.88E-04	1836.06
Y-91	LLD<1.39E-01	LLD<1.39E-01	1204.90
Y-91M	LLD<3.38E-04	LLD<3.38E-04	555.60
ZN-65	LLD<7.69E-04	LLD<7.69E-04	1115.55
ZR-95	LLD<4.59E-04	LLD<4.59E-04	756.73
ZR-97	LLD<3.07E-04	LLD<3.07E-04	743.33
	---	---	
TOTAL	0.00E-01 +-0.00E-01	0.00E-01 +-0.00E-01	

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

ALL DETECTED PEAKS WERE USED IN THE ANALYSIS

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1324.38	661.63	52.	45.6	2.55E+00
2922.13	1460.87	194.	14.8	1.84E+01

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*                                                                     *
*          G A M M A   S P E C T R U M   A N A L Y S I S              *
*                                                                     *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

CANBERRA SPECTRAN-F V2.06  SOFTWARE

222-S COUNTING ROOM                                  27-AUG-90  12:22:07

                A N A L Y S I S   P A R A M E T E R S

MCA UNIT NUMBER:   2     /     ADC UNIT NUMBER: 1.0
DETECTOR NUMBER:    1    /     GEOMETRY NUMBER:  42
SPECTRUM SIZE:  4096 CHANNELS
ORDER OF SMOOTHING FUNCTION:     5
NUMBER OF BACKGROUND CHANNELS:  4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD1073
ANALYZED BY:        JLA

SAMPLE DESCRIPTION: F-422 SEGEMT-G
GEOMETRY DESCRIPTION:
SAMPLE SIZE:   1.0000E-03 LI       / CONVERSION FACTOR: 5.0000E-02
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 14-MAR-90 AT 13:51:40

COLLECT LIVE TIME:    3000. SECONDS
        REAL TIME:    3001. SECONDS
        DEAD TIME:     0.03 %

 DECAYED TO      0. DAYS,  0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 23-NOV-89
EFFICIENCY CALIBRATION PERFORMED  2-MAR-89
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222-S COUNTING ROOM 27-AUG-90 12:22:07

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1	1324.31	661.59	1.47	65.	2816.	3.8	CS-137
1B		661.82			35.	46.4	
2	2922.15	1460.88	2.36	2.	175.	15.0	K-40
2B		1461.77			182.	11.2	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0011
BACKGROUND DESCRIPTION: BK0011
BACKGROUND COLLECT STARTED ON 10-JAN-85 AT 12:00:00
BACKGROUND LIVE TIME: 6000. SECONDS

222-S COUNTING ROOM 27-AUG-90 12:22:07

SAMPLE: F-422 SEGEMT-G
DATA COLLECTED ON 14-MAR-90 AT 13:51:40
DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI				ENERGY COMPARISON (KEV)	
	MEASURED	ERROR	DECAY CORRECTED	ERROR	EXPECT	DIFF
AC-228	LLD<2.44E+00		LLD<2.44E+00		911.07	
AG-108M	LLD<8.49E-01		LLD<8.49E-01		433.94	
AG-110M	LLD<4.87E+00		LLD<4.87E+00		657.76	
AM-241	LLD<5.03E+00		LLD<5.03E+00		59.54	
AM-243	LLD<1.39E+00		LLD<1.39E+00		74.67	
AR-41	LLD<7.35E-01		LLD<7.35E-01		1293.64	
AU-198	LLD<7.42E-01		LLD<7.42E-01		411.80	
BA-133	LLD<1.24E+00		LLD<1.24E+00		356.02	
BA-139	LLD<2.90E+00		LLD<2.90E+00		165.85	
BA-140	LLD<2.71E+00		LLD<2.71E+00		537.27	
BA-141	LLD<2.66E+00		LLD<2.66E+00		190.23	
BE-7	LLD<7.84E+00		LLD<7.84E+00		477.59	
BI-207	LLD<6.70E-01		LLD<6.70E-01		569.70	
BI-212	LLD<8.79E+00		LLD<8.79E+00		727.27	
BI-214	LLD<1.86E+00		LLD<1.86E+00		609.32	
CD-109	LLD<2.02E+01		LLD<2.02E+01		88.03	
CE-139	LLD<6.57E-01		LLD<6.57E-01		165.85	
CE-141	LLD<1.03E+00		LLD<1.03E+00		145.44	
CEPR144	LLD<8.27E+00		LLD<8.27E+00		133.51	
CO-56	LLD<6.34E-01		LLD<6.34E-01		846.76	
CO-57	LLD<6.23E-01		LLD<6.23E-01		122.06	
CO-58	LLD<6.27E-01		LLD<6.27E-01		810.75	
CO-60	LLD<6.43E-01		LLD<6.43E-01		1332.50	
CR-51	LLD<6.12E+00		LLD<6.12E+00		320.09	
CS-134	LLD<6.69E-01		LLD<6.69E-01		795.84	
CS-136	LLD<5.65E-01		LLD<5.65E-01		818.51	
CS-137	8.64E+01	+-3.52E+00	8.64E+01	+-3.52E+00	661.65	-0.06
CS-138	LLD<1.18E+00		LLD<1.18E+00		1435.86	
EU-152	LLD<3.23E+00		LLD<3.23E+00		1408.01	
EU-154	LLD<7.11E-01		LLD<7.11E-01		1274.45	
EU-155	LLD<2.37E+00		LLD<2.37E+00		105.31	
FE-59	LLD<1.26E+00		LLD<1.26E+00		1099.25	
HF-181	LLD<9.41E-01		LLD<9.41E-01		482.20	
HG-203	LLD<7.86E-01		LLD<7.86E-01		279.20	
I-131	LLD<9.09E-01		LLD<9.09E-01		364.48	
I-132	LLD<1.19E+00		LLD<1.19E+00		667.69	
I-133	LLD<6.69E-01		LLD<6.69E-01		529.69	
I-134	LLD<8.69E-01		LLD<8.69E-01		847.03	
I-135	LLD<2.34E+00		LLD<2.34E+00		1260.41	
K-40	LLD<1.81E+01		LLD<1.81E+01		1460.75	
KR-85	LLD<1.94E+02		LLD<1.94E+02		513.99	
KR-85M	LLD<6.38E-01		LLD<6.38E-01		151.17	
KR-87	LLD<1.94E+00		LLD<1.94E+00		402.58	
KR-89	LLD<2.98E+01		LLD<2.98E+01		220.90	
LA-140	LLD<5.72E-01		LLD<5.72E-01		1596.20	
LA-142	LLD<1.60E+00		LLD<1.60E+00		641.83	
MN-54	LLD<6.65E-01		LLD<6.65E-01		834.83	

MN-56	LLD<7.15E-01	LLD<7.15E-01	846.76
NA-22	LLD<3.78E-01	LLD<3.78E-01	1274.55
NA-24	LLD<7.08E-01	LLD<7.08E-01	1368.60
NB-94	LLD<5.75E-01	LLD<5.75E-01	702.63
NB-95	LLD<4.98E-01	LLD<4.98E-01	765.78
NB-97	LLD<5.90E+00	LLD<5.90E+00	657.92
NP-238	LLD<2.46E+00	LLD<2.46E+00	984.45
NP-239	LLD<3.99E+00	LLD<3.99E+00	277.60
PA-233	LLD<1.80E+00	LLD<1.80E+00	311.98
PA-234M	LLD<1.11E+02	LLD<1.11E+02	1001.03
PB-210	LLD<2.14E+01	LLD<2.14E+01	465.03
PB-212	LLD<1.48E+00	LLD<1.48E+00	239.00
PB-214	LLD<1.99E+00	LLD<1.99E+00	351.92
PO-210	LLD<4.19E+04	LLD<4.19E+04	804.00
PO-214	LLD<6.04E+03	LLD<6.04E+03	799.70
PO-216	LLD<2.36E+04	LLD<2.36E+04	804.90
PU-239	LLD<7.48E+03	LLD<7.48E+03	129.30
PU-241	LLD<2.58E+05	LLD<2.58E+05	148.57
RA-224	LLD<1.57E+01	LLD<1.57E+01	240.99
RA-226	LLD<1.42E+01	LLD<1.42E+01	186.10
RB-88	LLD<5.29E+00	LLD<5.29E+00	1836.00
RB-89	LLD<2.49E+00	LLD<2.49E+00	1031.88
RN-220	LLD<5.27E+02	LLD<5.27E+02	549.73
RU-103	LLD<7.92E-01	LLD<7.92E-01	497.08
RURH106	LLD<1.27E+01	LLD<1.27E+01	621.80
SB-124	LLD<6.19E-01	LLD<6.19E-01	602.72
SB-125	LLD<7.86E+00	LLD<7.86E+00	176.33
SC-46	LLD<7.43E-01	LLD<7.43E-01	1120.45
SE-75	LLD<9.99E-01	LLD<9.99E-01	264.66
SN-113	LLD<1.05E+00	LLD<1.05E+00	391.67
SR-85	LLD<8.52E-01	LLD<8.52E-01	513.99
SR-91	LLD<1.09E+00	LLD<1.09E+00	555.60
SR-92	LLD<6.62E-01	LLD<6.62E-01	1383.94
TA-182	LLD<1.88E+00	LLD<1.88E+00	1121.30
TC-99M	LLD<5.40E-01	LLD<5.40E-01	140.51
TE-123M	LLD<6.12E-01	LLD<6.12E-01	159.00
TE-125M	LLD<1.94E+02	LLD<1.94E+02	109.27
TE-132	LLD<6.58E-01	LLD<6.58E-01	228.16
TH-228	LLD<6.43E+01	LLD<6.43E+01	84.37
TL-208	LLD<7.22E-01	LLD<7.22E-01	583.14
U-235	LLD<9.66E-01	LLD<9.66E-01	185.71
U-237	LLD<2.80E+00	LLD<2.80E+00	208.00
W-187	LLD<1.97E+00	LLD<1.97E+00	685.74
XE-131M	LLD<2.78E+01	LLD<2.78E+01	163.98
XE-133	LLD<2.19E+00	LLD<2.19E+00	81.00
XE-133M	LLD<5.68E+00	LLD<5.68E+00	233.21
XE-135	LLD<7.14E-01	LLD<7.14E-01	249.79
XE-138	LLD<4.92E+00	LLD<4.92E+00	258.41
Y-88	LLD<5.03E-01	LLD<5.03E-01	1836.06
Y-91	LLD<2.32E+02	LLD<2.32E+02	1204.90
Y-91M	LLD<8.21E-01	LLD<8.21E-01	555.60
ZN-65	LLD<1.85E+00	LLD<1.85E+00	1115.55
ZR-95	LLD<1.01E+00	LLD<1.01E+00	756.73
ZR-97	LLD<5.69E-01	LLD<5.69E-01	743.33
TOTAL	8.64E+01 +-3.52E+00	8.64E+01 +-3.52E+00	

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.16E-08 UC/LI
TOTAL MEASURED ACTIVITY = 8.64E+01 (+-3.52E+00) UC/LI

% TECH. SPEC. = ****** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

ALL DETECTED PEAKS WERE USED IN THE ANALYSIS

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2922.15	1460.88	175.	15.0	1.66E+01

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*                                                                     *
*          G A M M A   S P E C T R U M   A N A L Y S I S              *
*                                                                     *
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CANBERRA SPECTRAN-F V2.06 SOFTWARE

222-S COUNTING ROOM 27-AUG-90 13:04:03

A N A L Y S I S P A R A M E T E R S

MCA UNIT NUMBER: 2 / ADC UNIT NUMBER: 1.0
DETECTOR NUMBER: 1 / GEOMETRY NUMBER: 42
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD1074
ANALYZED BY: JLA

SAMPLE DESCRIPTION: F-423 SEGMENT-H
GEOMETRY DESCRIPTION:
SAMPLE SIZE: 1.0000E-03 LI / CONVERSION FACTOR: 5.0000E-02
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 14-MAR-90 AT 15:14:24

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3002. SECONDS
DEAD TIME: 0.07 %

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 23-NOV-89
EFFICIENCY CALIBRATION PERFORMED 2-MAR-89

222-S COUNTING ROOM 27-AUG-90 13:04:03

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1	1324.23	661.56	1.50	44.	2520.	4.0	CS-137
1B		661.82			35.	46.4	
2	2922.03	1460.83	1.39	9.	169.	16.1	K-40
2B		1461.77			182.	11.2	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0011
BACKGROUND DESCRIPTION: BK0011
BACKGROUND COLLECT STARTED ON 10-JAN-85 AT 12:00:00
BACKGROUND LIVE TIME: 6000. SECONDS

222-S COUNTING ROOM 27-AUG-90 13:04:03

SAMPLE: F-423 SEGMENT-H
DATA COLLECTED ON 14-MAR-90 AT 15:14:24
DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI MEASURED	ERROR	DECAY CORRECTED	ERROR	ENERGY COMPARISON (KEV) EXPECT	DIFF
AC-228	LLD<2.11E+00		LLD<2.11E+00		911.07	
AG-108M	LLD<8.95E-01		LLD<8.95E-01		433.94	
AG-110M	LLD<4.59E+00		LLD<4.59E+00		657.76	
AM-241	LLD<4.99E+00		LLD<4.99E+00		59.54	
AM-243	LLD<1.37E+00		LLD<1.37E+00		74.67	
AR-41	LLD<5.63E-01		LLD<5.63E-01		1293.64	
AU-198	LLD<7.06E-01		LLD<7.06E-01		411.80	
BA-133	LLD<1.21E+00		LLD<1.21E+00		356.02	
BA-139	LLD<2.80E+00		LLD<2.80E+00		165.85	
BA-140	LLD<2.69E+00		LLD<2.69E+00		537.27	
BA-141	LLD<2.84E+00		LLD<2.84E+00		190.23	
BE-7	LLD<7.17E+00		LLD<7.17E+00		477.59	
BI-207	LLD<6.41E-01		LLD<6.41E-01		569.70	
BI-212	LLD<1.05E+01		LLD<1.05E+01		727.27	
BI-214	LLD<1.82E+00		LLD<1.82E+00		609.32	
CD-109	LLD<1.86E+01		LLD<1.86E+01		88.03	
CE-139	LLD<6.35E-01		LLD<6.35E-01		165.85	
CE-141	LLD<1.01E+00		LLD<1.01E+00		145.44	
CEPR144	LLD<8.80E+00		LLD<8.80E+00		133.51	
CO-56	LLD<5.80E-01		LLD<5.80E-01		846.76	
CO-57	LLD<5.77E-01		LLD<5.77E-01		122.06	
CO-58	LLD<6.02E-01		LLD<6.02E-01		810.75	
CO-60	LLD<5.64E-01		LLD<5.64E-01		1332.50	
CR-51	LLD<5.81E+00		LLD<5.81E+00		320.09	
CS-134	LLD<5.54E-01		LLD<5.54E-01		795.84	
CS-136	LLD<5.36E-01		LLD<5.36E-01		818.51	
CS-137	7.72E+01	+-3.29E+00	7.72E+01	+-3.29E+00	661.65	-0.09
CS-138	LLD<1.38E+00		LLD<1.38E+00		1435.86	
EU-152	LLD<2.36E+00		LLD<2.36E+00		1408.01	
EU-154	LLD<1.93E+00		LLD<1.93E+00		1274.45	
EU-155	LLD<2.15E+00		LLD<2.15E+00		105.31	
FE-59	LLD<1.26E+00		LLD<1.26E+00		1099.25	
HF-181	LLD<8.58E-01		LLD<8.58E-01		482.20	
HG-203	LLD<7.38E-01		LLD<7.38E-01		279.20	
I-131	LLD<8.51E-01		LLD<8.51E-01		364.48	
I-132	LLD<1.21E+00		LLD<1.21E+00		667.69	
I-133	LLD<7.61E-01		LLD<7.61E-01		529.69	
I-134	LLD<8.09E-01		LLD<8.09E-01		847.03	
I-135	LLD<1.79E+00		LLD<1.79E+00		1260.41	
K-40	LLD<1.85E+01		LLD<1.85E+01		1460.75	
KR-85	LLD<2.03E+02		LLD<2.03E+02		513.99	
KR-85M	LLD<6.44E-01		LLD<6.44E-01		151.17	
KR-87	LLD<1.69E+00		LLD<1.69E+00		402.58	
KR-89	LLD<3.20E+01		LLD<3.20E+01		220.90	
LA-140	LLD<5.04E-01		LLD<5.04E-01		1596.20	
LA-142	LLD<1.58E+00		LLD<1.58E+00		641.83	
MN-54	LLD<4.45E-01		LLD<4.45E-01		834.83	

MN-56	LLD<6.54E-01	LLD<6.54E-01	846.76
NA-22	LLD<6.48E-01	LLD<6.48E-01	1274.55
NA-24	LLD<8.09E-01	LLD<8.09E-01	1368.60
NB-94	LLD<5.42E-01	LLD<5.42E-01	702.63
NB-95	LLD<5.66E-01	LLD<5.66E-01	765.78
NB-97	LLD<5.56E+00	LLD<5.56E+00	657.92
NP-238	LLD<2.19E+00	LLD<2.19E+00	984.45
NP-239	LLD<3.89E+00	LLD<3.89E+00	277.60
PA-233	LLD<1.72E+00	LLD<1.72E+00	311.98
PA-234M	LLD<1.01E+02	LLD<1.01E+02	1001.03
PB-210	LLD<2.06E+01	LLD<2.06E+01	465.03
PB-212	LLD<1.36E+00	LLD<1.36E+00	239.00
PB-214	LLD<1.88E+00	LLD<1.88E+00	351.92
PO-210	LLD<5.36E+04	LLD<5.36E+04	804.00
PO-214	LLD<6.04E+03	LLD<6.04E+03	799.70
PO-216	LLD<3.51E+04	LLD<3.51E+04	804.90
PU-239	LLD<7.37E+03	LLD<7.37E+03	129.30
PU-241	LLD<2.47E+05	LLD<2.47E+05	148.57
RA-224	LLD<1.55E+01	LLD<1.55E+01	240.99
RA-226	LLD<1.50E+01	LLD<1.50E+01	186.10
RB-88	LLD<7.18E+00	LLD<7.18E+00	1836.00
RB-89	LLD<2.15E+00	LLD<2.15E+00	1031.88
RN-220	LLD<5.38E+02	LLD<5.38E+02	549.73
RU-103	LLD<7.65E-01	LLD<7.65E-01	497.08
RURH106	LLD<1.25E+01	LLD<1.25E+01	621.80
SB-124	LLD<5.55E-01	LLD<5.55E-01	602.72
SB-125	LLD<7.65E+00	LLD<7.65E+00	176.33
SC-46	LLD<6.07E-01	LLD<6.07E-01	1120.45
SE-75	LLD<1.02E+00	LLD<1.02E+00	264.66
SN-113	LLD<1.04E+00	LLD<1.04E+00	391.67
SR-85	LLD<8.92E-01	LLD<8.92E-01	513.99
SR-91	LLD<1.16E+00	LLD<1.16E+00	555.60
SR-92	LLD<7.18E-01	LLD<7.18E-01	1383.94
TA-182	LLD<1.67E+00	LLD<1.67E+00	1121.30
TC-99M	LLD<5.69E-01	LLD<5.69E-01	140.51
TE-123M	LLD<6.03E-01	LLD<6.03E-01	159.00
TE-125M	LLD<1.85E+02	LLD<1.85E+02	109.27
TE-132	LLD<6.52E-01	LLD<6.52E-01	228.16
TH-228	LLD<6.06E+01	LLD<6.06E+01	84.37
TL-208	LLD<7.39E-01	LLD<7.39E-01	583.14
U-235	LLD<9.86E-01	LLD<9.86E-01	185.71
U-237	LLD<2.52E+00	LLD<2.52E+00	208.00
W-187	LLD<1.78E+00	LLD<1.78E+00	685.74
XE-131M	LLD<2.56E+01	LLD<2.56E+01	163.98
XE-133	LLD<2.16E+00	LLD<2.16E+00	81.00
XE-133M	LLD<5.65E+00	LLD<5.65E+00	233.21
XE-135	LLD<6.81E-01	LLD<6.81E-01	249.79
XE-138	LLD<5.02E+00	LLD<5.02E+00	258.41
Y-88	LLD<6.82E-01	LLD<6.82E-01	1836.06
Y-91	LLD<1.86E+02	LLD<1.86E+02	1204.90
Y-91M	LLD<8.76E-01	LLD<8.76E-01	555.60
ZN-65	LLD<1.72E+00	LLD<1.72E+00	1115.55
ZR-95	LLD<1.01E+00	LLD<1.01E+00	756.73
ZR-97	LLD<4.94E-01	LLD<4.94E-01	743.33
TOTAL	7.72E+01 +-3.29E+00	7.72E+01 +-3.29E+00	

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.16E-08 UC/LI
TOTAL MEASURED ACTIVITY = 7.72E+01 (+-3.29E+00) UC/LI

% TECH. SPEC. = ****** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

ALL DETECTED PEAKS WERE USED IN THE ANALYSIS

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2922.03	1460.83	169.	16.1	1.61E+01

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*                                                                   *
*          G A M M A   S P E C T R U M   A N A L Y S I S            *
*                                                                   *
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CANBERRA SPECTRAN-F V2.06 SOFTWARE

222-S COUNTING ROOM 06-AUG-90 10:12:22

A N A L Y S I S P A R A M E T E R S

MCA UNIT NUMBER: 2 / ADC UNIT NUMBER: 1.0
DETECTOR NUMBER: 1 / GEOMETRY NUMBER: 42
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD1084
ANALYZED BY: MAX

SAMPLE DESCRIPTION: F568
GEOMETRY DESCRIPTION:
SAMPLE SIZE: 1.0000E-03 LI / CONVERSION FACTOR: 5.0000E-02
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 15-MAR-90 AT 04:41:44

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3006. SECONDS
DEAD TIME: 0.20 %

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 23-NOV-89
EFFICIENCY CALIBRATION PERFORMED 2-MAR-89

222-S COUNTING ROOM 06-AUG-90 10:12:22

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1C	1127.31	563.13	1.39	475.	428.	17.4	CS-134, EU-152
2C	1139.70	569.32	1.39	485.	740.	14.4	CS-134, BI-207
3	1210.36	604.64	1.47	520.	4961.	3.1	CS-134
4	1324.22	661.55	1.53	326.	13178.	1.8	CS-137
4B		661.82			35.	46.4	
5C	1592.50	795.68	1.50	258.	3527.	4.2	CS-134
6C	1604.72	801.79	1.50	246.	368.	13.7	CS-134
7	2347.08	1173.09	1.79	210.	4735.	3.0	CO-60
8	2665.49	1332.42	1.86	39.	4119.	3.1	CO-60
9	2730.86	1365.14	1.58	7.	99.	21.4	CS-134
10	2922.13	1460.87	2.48	10.	172.	16.0	K-40
10B		1461.77			182.	11.2	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY
B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0011
BACKGROUND DESCRIPTION: BK0011
BACKGROUND COLLECT STARTED ON 10-JAN-85 AT 12:00:00
BACKGROUND LIVE TIME: 6000. SECONDS

222-S COUNTING ROOM 06-AUG-90 10:12:22

SAMPLE: F568
DATA COLLECTED ON 15-MAR-90 AT 04:41:44
DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI MEASURED	ERROR	DECAY CORRECTED	ERROR	ENERGY COMPARISON (KEV) EXPECT	DIFF
AC-228	LLD<7.40E+00		LLD<7.40E+00		911.07	
AG-108M	LLD<2.06E+00		LLD<2.06E+00		433.94	
AG-110M	LLD<1.06E+01		LLD<1.06E+01		657.76	
AM-241	LLD<8.73E+00		LLD<8.73E+00		59.54	
AM-243	LLD<2.29E+00		LLD<2.29E+00		74.67	
AR-41	LLD<1.23E+00		LLD<1.23E+00		1293.64	
AU-198	LLD<1.86E+00		LLD<1.86E+00		411.80	
BA-133	LLD<2.82E+00		LLD<2.82E+00		356.02	
BA-139	LLD<5.43E+00		LLD<5.43E+00		165.85	
BA-140	LLD<6.94E+00		LLD<6.94E+00		537.27	
BA-141	LLD<5.59E+00		LLD<5.59E+00		190.23	
BE-7	LLD<1.93E+01		LLD<1.93E+01		477.59	
BI-207	LLD<1.78E+00		LLD<1.78E+00		569.70	
BI-212	LLD<2.31E+01		LLD<2.31E+01		727.27	
BI-214	LLD<1.01E+01		LLD<1.01E+01		609.32	
CD-109	LLD<3.37E+01		LLD<3.37E+01		88.03	
CE-139	LLD<1.23E+00		LLD<1.23E+00		165.85	
CE-141	LLD<1.90E+00		LLD<1.90E+00		145.44	
CEPR144	LLD<1.58E+01		LLD<1.58E+01		133.51	
CO-56	LLD<1.78E+00		LLD<1.78E+00		846.76	
CO-57	LLD<1.03E+00		LLD<1.03E+00		122.06	
CO-58	LLD<1.76E+00		LLD<1.76E+00		810.75	
CO-60	1.96E+02	+-6.41E+00	1.96E+02	+-6.41E+00	1332.50	-0.08
					1173.24	-0.15
CR-51	LLD<1.43E+01		LLD<1.43E+01		320.09	
CS-134	1.27E+02	+-5.53E+00	1.27E+02	+-5.53E+00	795.84	-0.17
					604.70	-0.06
CS-136	LLD<1.79E+00		LLD<1.79E+00		818.51	
CS-137	4.08E+02	+-8.75E+00	4.08E+02	+-8.75E+00	661.65	-0.10
CS-138	LLD<1.38E+00		LLD<1.38E+00		1435.86	
EU-152	LLD<3.04E+00		LLD<3.04E+00		1408.01	
EU-154	LLD<3.24E+00		LLD<3.24E+00		1274.45	
EU-155	LLD<4.02E+00		LLD<4.02E+00		105.31	
FE-59	LLD<4.53E+00		LLD<4.53E+00		1099.25	
HF-181	LLD<2.13E+00		LLD<2.13E+00		482.20	
HG-203	LLD<1.65E+00		LLD<1.65E+00		279.20	
I-131	LLD<2.07E+00		LLD<2.07E+00		364.48	
I-132	LLD<2.80E+00		LLD<2.80E+00		667.69	
I-133	LLD<1.94E+00		LLD<1.94E+00		529.69	
I-134	LLD<2.53E+00		LLD<2.53E+00		847.03	
I-135	LLD<4.50E+00		LLD<4.50E+00		1260.41	
K-40	LLD<1.85E+01		LLD<1.85E+01		1460.75	
KR-85	LLD<4.26E+02		LLD<4.26E+02		513.99	
KR-85M	LLD<1.22E+00		LLD<1.22E+00		151.17	
KR-87	LLD<4.55E+00		LLD<4.55E+00		402.58	
KR-89	LLD<6.73E+01		LLD<6.73E+01		220.90	
LA-140	LLD<6.86E-01		LLD<6.86E-01		1596.20	

LA-142	LLD<3.84E+00	LLD<3.84E+00	641.83
MN-54	LLD<1.73E+00	LLD<1.73E+00	834.83
MN-56	LLD<2.01E+00	LLD<2.01E+00	846.76
NA-22	LLD<1.07E+00	LLD<1.07E+00	1274.55
NA-24	LLD<1.50E+00	LLD<1.50E+00	1368.60
NB-94	LLD<1.58E+00	LLD<1.58E+00	702.63
NB-95	LLD<1.63E+00	LLD<1.63E+00	765.78
NB-97	LLD<1.28E+01	LLD<1.28E+01	657.92
NP-238	LLD<7.72E+00	LLD<7.72E+00	984.45
NP-239	LLD<9.48E+00	LLD<9.48E+00	277.60
PA-233	LLD<4.17E+00	LLD<4.17E+00	311.98
PA-234M	LLD<3.77E+02	LLD<3.77E+02	1001.03
PB-210	LLD<4.92E+01	LLD<4.92E+01	465.03
PB-212	LLD<3.06E+00	LLD<3.06E+00	239.00
PB-214	LLD<4.56E+00	LLD<4.56E+00	351.92
PO-210	LLD<1.62E+05	LLD<1.62E+05	804.00
PO-214	LLD<6.74E+04	LLD<6.74E+04	799.70
PO-216	LLD<1.36E+05	LLD<1.36E+05	804.90
PU-239	LLD<1.38E+04	LLD<1.38E+04	129.30
PU-241	LLD<4.87E+05	LLD<4.87E+05	148.57
RA-224	LLD<3.34E+01	LLD<3.34E+01	240.99
RA-226	LLD<2.90E+01	LLD<2.90E+01	186.10
RB-88	LLD<9.27E+00	LLD<9.27E+00	1836.00
RB-89	LLD<9.20E+00	LLD<9.20E+00	1031.88
RN-220	LLD<1.53E+03	LLD<1.53E+03	549.73
RU-103	LLD<1.87E+00	LLD<1.87E+00	497.08
RURH106	LLD<3.23E+01	LLD<3.23E+01	621.80
SB-124	LLD<3.09E+00	LLD<3.09E+00	602.72
SB-125	LLD<1.54E+01	LLD<1.54E+01	176.33
SC-46	LLD<2.20E+00	LLD<2.20E+00	1120.45
SE-75	LLD<2.27E+00	LLD<2.27E+00	264.66
SN-113	LLD<2.55E+00	LLD<2.55E+00	391.67
SR-85	LLD<1.87E+00	LLD<1.87E+00	513.99
SR-91	LLD<3.06E+00	LLD<3.06E+00	555.60
SR-92	LLD<1.10E+00	LLD<1.10E+00	1383.94
TA-182	LLD<6.32E+00	LLD<6.32E+00	1121.30
TC-99M	LLD<1.06E+00	LLD<1.06E+00	140.51
TE-123M	LLD<1.14E+00	LLD<1.14E+00	159.00
TE-125M	LLD<3.04E+02	LLD<3.04E+02	109.27
TE-132	LLD<1.44E+00	LLD<1.44E+00	228.16
TH-228	LLD<9.91E+01	LLD<9.91E+01	84.37
TL-208	LLD<2.21E+00	LLD<2.21E+00	583.14
U-235	LLD<1.94E+00	LLD<1.94E+00	185.71
U-237	LLD<5.64E+00	LLD<5.64E+00	208.00
W-187	LLD<5.34E+00	LLD<5.34E+00	685.74
XE-131M	LLD<5.26E+01	LLD<5.26E+01	163.98
XE-133	LLD<3.69E+00	LLD<3.69E+00	81.00
XE-133M	LLD<1.26E+01	LLD<1.26E+01	233.21
XE-135	LLD<1.48E+00	LLD<1.48E+00	249.79
XE-138	LLD<1.12E+01	LLD<1.12E+01	258.41
Y-88	LLD<8.79E-01	LLD<8.79E-01	1836.06
Y-91	LLD<4.23E+02	LLD<4.23E+02	1204.90
Y-91M	LLD<2.32E+00	LLD<2.32E+00	555.60
ZN-65	LLD<4.60E+00	LLD<4.60E+00	1115.55
ZR-95	LLD<3.07E+00	LLD<3.07E+00	756.73
ZR-97	LLD<1.49E+00	LLD<1.49E+00	743.33
TOTAL	7.31E+02 +-1.22E+01	7.31E+02 +-1.22E+01	

STANDARD DEVIATION = 0.05

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.73E-09 UC/LI
TOTAL MEASURED ACTIVITY = 7.31E+02 (+-1.22E+01) UC/LI
% TECH. SPEC. = ****** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1127.31	563.13	428.	17.4	1.83E+01
1139.70	569.32	740.	14.4	3.20E+01
1604.72	801.79	368.	13.7	2.11E+01
2730.86	1365.14	99.	21.4	8.84E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2922.13	1460.87	172.	16.0	1.63E+01

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* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                                   *
*          G A M M A   S P E C T R U M   A N A L Y S I S            *
*                                                                   *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

CANBERRA SPECTRAN-F V2.06  SOFTWARE

222-S COUNTING ROOM                                 06-AUG-90  10:21:44

                A N A L Y S I S   P A R A M E T E R S

MCA UNIT NUMBER:   2     /     ADC UNIT NUMBER: 1.0
DETECTOR NUMBER:    1    /     GEOMETRY NUMBER:  42
SPECTRUM SIZE:  4096 CHANNELS
ORDER OF SMOOTHING FUNCTION:     5
NUMBER OF BACKGROUND CHANNELS:  4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD1087
ANALYZED BY:        MAX

SAMPLE DESCRIPTION: F569
GEOMETRY DESCRIPTION:
SAMPLE SIZE:   1.0000E-03 LI       / CONVERSION FACTOR: 5.0000E-01
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 15-MAR-90 AT 07:10:10

COLLECT LIVE TIME:    3254. SECONDS
        REAL TIME:     199. SECONDS
        DEAD TIME: -1535.18 %

 DECAYED TO      0. DAYS,  0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 23-NOV-89
EFFICIENCY CALIBRATION PERFORMED  2-MAR-89
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222-S COUNTING ROOM 06-AUG-90 10:21:44

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1C	1127.55	563.25	1.38	459.	523.	12.7	CS-134, EU-152
2C	1139.64	569.29	1.38	494.	890.	11.4	CS-134, BI-207
3	1210.42	604.67	1.52	526.	5470.	2.9	CS-134
4	1324.31	661.60	1.59	393.	9861.	2.1	CS-137
4B		661.82			38.	46.4	
5C	1592.64	795.75	1.54	258.	3854.	4.0	CS-134
6C	1604.90	801.88	1.54	258.	405.	14.2	CS-134
7	2347.09	1173.10	1.83	230.	5233.	2.9	CO-60
8	2665.64	1332.50	1.90	72.	4671.	2.9	CO-60
9	2730.89	1365.15	1.76	20.	92.	25.4	CS-134
10	2922.37	1460.99	2.02	11.	178.	15.9	K-40
10B		1461.77			197.	11.2	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY
B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0011
BACKGROUND DESCRIPTION: BK0011
BACKGROUND COLLECT STARTED ON 10-JAN-85 AT 12:00:00
BACKGROUND LIVE TIME: 6000. SECONDS

222-S COUNTING ROOM 06-AUG-90 10:21:44

SAMPLE: F569
DATA COLLECTED ON 15-MAR-90 AT 07:10:10
DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI MEASURED	ERROR	DECAY CORRECTED	ERROR	ENERGY COMPARISON (KEV) EXPECT	DIFF
AC-228	LLD<7.24E-01		LLD<7.24E-01		911.07	
AG-108M	LLD<1.84E-01		LLD<1.84E-01		433.94	
AG-110M	LLD<8.41E-01		LLD<8.41E-01		657.76	
AM-241	LLD<7.59E-01		LLD<7.59E-01		59.54	
AM-243	LLD<2.01E-01		LLD<2.01E-01		74.67	
AR-41	LLD<1.15E-01		LLD<1.15E-01		1293.64	
AU-198	LLD<1.64E-01		LLD<1.64E-01		411.80	
BA-133	LLD<2.45E-01		LLD<2.45E-01		356.02	
BA-139	LLD<4.12E-01		LLD<4.12E-01		165.85	
BA-140	LLD<6.21E-01		LLD<6.21E-01		537.27	
BA-141	LLD<2.36E-01		LLD<2.36E-01		190.23	
BE-7	LLD<1.72E+00		LLD<1.72E+00		477.59	
BI-207	LLD<1.70E-01		LLD<1.70E-01		569.70	
BI-212	LLD<2.23E+00		LLD<2.23E+00		727.27	
BI-214	LLD<1.00E+00		LLD<1.00E+00		609.32	
CD-109	LLD<2.87E+00		LLD<2.87E+00		88.03	
CE-139	LLD<1.12E-01		LLD<1.12E-01		165.85	
CE-141	LLD<1.72E-01		LLD<1.72E-01		145.44	
CEPR144	LLD<1.43E+00		LLD<1.43E+00		133.51	
CO-56	LLD<1.73E-01		LLD<1.73E-01		846.76	
CO-57	LLD<9.28E-02		LLD<9.28E-02		122.06	
CO-58	LLD<1.69E-01		LLD<1.69E-01		810.75	
CO-60	2.05E+01	+-6.38E-01	2.05E+01	+-6.38E-01	1332.50	-0.00
					1173.24	-0.14
CR-51	LLD<1.27E+00		LLD<1.27E+00		320.09	
CS-134	1.28E+01	+-5.38E-01	1.28E+01	+-5.38E-01	795.84	-0.10
					604.70	-0.03
CS-136	LLD<1.71E-01		LLD<1.71E-01		818.51	
CS-137	2.81E+01	+-6.78E-01	2.81E+01	+-6.78E-01	661.65	-0.05
CS-138	LLD<9.04E-02		LLD<9.04E-02		1435.86	
EU-152	LLD<3.59E-01		LLD<3.59E-01		1408.01	
EU-154	LLD<2.89E-01		LLD<2.89E-01		1274.45	
EU-155	LLD<3.56E-01		LLD<3.56E-01		105.31	
FE-59	LLD<3.89E-01		LLD<3.89E-01		1099.25	
HF-181	LLD<1.81E-01		LLD<1.81E-01		482.20	
HG-203	LLD<1.50E-01		LLD<1.50E-01		279.20	
I-131	LLD<1.91E-01		LLD<1.91E-01		364.48	
I-132	LLD<2.26E-01		LLD<2.26E-01		667.69	
I-133	LLD<1.76E-01		LLD<1.76E-01		529.69	
I-134	LLD<1.83E-01		LLD<1.83E-01		847.03	
I-135	LLD<3.87E-01		LLD<3.87E-01		1260.41	
K-40	LLD<1.82E+00		LLD<1.82E+00		1460.75	
KR-85	LLD<3.74E+01		LLD<3.74E+01		513.99	
KR-85M	LLD<1.02E-01		LLD<1.02E-01		151.17	
KR-87	LLD<3.42E-01		LLD<3.42E-01		402.58	
KR-89	LLD<7.88E-01		LLD<7.88E-01		220.90	
LA-140	LLD<6.32E-02		LLD<6.32E-02		1596.20	

LA-142	LLD<3.12E-01	LLD<3.12E-01	641.83
MN-54	LLD<1.66E-01	LLD<1.66E-01	834.83
MN-56	LLD<1.74E-01	LLD<1.74E-01	846.76
NA-22	LLD<9.83E-02	LLD<9.83E-02	1274.55
NA-24	LLD<1.44E-01	LLD<1.44E-01	1368.60
NB-94	LLD<1.53E-01	LLD<1.53E-01	702.63
NB-95	LLD<1.62E-01	LLD<1.62E-01	765.78
NB-97	LLD<8.22E-01	LLD<8.22E-01	657.92
NP-238	LLD<7.78E-01	LLD<7.78E-01	984.45
NP-239	LLD<8.62E-01	LLD<8.62E-01	277.60
PA-233	LLD<3.87E-01	LLD<3.87E-01	311.98
PA-234M	LLD<3.57E+01	LLD<3.57E+01	1001.03
PB-210	LLD<4.39E+00	LLD<4.39E+00	465.03
PB-212	LLD<2.70E-01	LLD<2.70E-01	239.00
PB-214	LLD<4.18E-01	LLD<4.18E-01	351.92
PO-210	LLD<1.54E+04	LLD<1.54E+04	804.00
PO-214	LLD<6.40E+03	LLD<6.40E+03	799.70
PO-216	LLD<1.30E+04	LLD<1.30E+04	804.90
PU-239	LLD<1.24E+03	LLD<1.24E+03	129.30
PU-241	LLD<4.57E+04	LLD<4.57E+04	148.57
RA-224	LLD<2.96E+00	LLD<2.96E+00	240.99
RA-226	LLD<2.64E+00	LLD<2.64E+00	186.10
RB-88	LLD<3.44E-01	LLD<3.44E-01	1836.00
RB-89	LLD<3.82E-01	LLD<3.82E-01	1031.88
RN-220	LLD<1.44E+02	LLD<1.44E+02	549.73
RU-103	LLD<1.71E-01	LLD<1.71E-01	497.08
RURH106	LLD<3.00E+00	LLD<3.00E+00	621.80
SB-124	LLD<3.09E-01	LLD<3.09E-01	602.72
SB-125	LLD<1.38E+00	LLD<1.38E+00	176.33
SC-46	LLD<2.04E-01	LLD<2.04E-01	1120.45
SE-75	LLD<2.02E-01	LLD<2.02E-01	264.66
SN-113	LLD<2.33E-01	LLD<2.33E-01	391.67
SR-85	LLD<1.64E-01	LLD<1.64E-01	513.99
SR-91	LLD<2.80E-01	LLD<2.80E-01	555.60
SR-92	LLD<7.87E-02	LLD<7.87E-02	1383.94
TA-182	LLD<5.90E-01	LLD<5.90E-01	1121.30
TC-99M	LLD<9.22E-02	LLD<9.22E-02	140.51
TE-123M	LLD<1.03E-01	LLD<1.03E-01	159.00
TE-125M	LLD<2.66E+01	LLD<2.66E+01	109.27
TE-132	LLD<1.28E-01	LLD<1.28E-01	228.16
TH-228	LLD<9.26E+00	LLD<9.26E+00	84.37
TL-208	LLD<1.96E-01	LLD<1.96E-01	583.14
U-235	LLD<1.76E-01	LLD<1.76E-01	185.71
U-237	LLD<5.18E-01	LLD<5.18E-01	208.00
W-187	LLD<5.18E-01	LLD<5.18E-01	685.74
XE-131M	LLD<4.68E+00	LLD<4.68E+00	163.98
XE-133	LLD<3.20E-01	LLD<3.20E-01	81.00
XE-133M	LLD<1.15E+00	LLD<1.15E+00	233.21
XE-135	LLD<1.35E-01	LLD<1.35E-01	249.79
XE-138	LLD<3.99E-01	LLD<3.99E-01	258.41
Y-88	LLD<6.95E-02	LLD<6.95E-02	1836.06
Y-91	LLD<4.43E+01	LLD<4.43E+01	1204.90
Y-91M	LLD<1.61E-01	LLD<1.61E-01	555.60
ZN-65	LLD<4.48E-01	LLD<4.48E-01	1115.55
ZR-95	LLD<2.81E-01	LLD<2.81E-01	756.73
ZR-97	LLD<1.49E-01	LLD<1.49E-01	743.33
TOTAL	6.14E+01 +-1.07E+00	6.14E+01 +-1.07E+00	

STANDARD DEVIATION = 0.05

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.46E-09 UC/LI
TOTAL MEASURED ACTIVITY = 6.14E+01 (+-1.07E+00) UC/LI
% TECH. SPEC. = ****** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1127.55	563.25	523.	12.7	2.06E+01
1139.64	569.29	890.	11.4	3.54E+01
1604.90	801.88	405.	14.2	2.14E+01
2730.89	1365.15	92.	25.4	7.57E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2922.37	1460.99	178.	15.9	1.55E+01

Analytical Batch

LAB SEGMENT SERIAL #:F0417

CUSTOMER ID:89-070

INSTRUMENT	WA77344
PROCEDURE/REV	LA-925-106/A-2
TECHNOLOGIST	Sue Lai
DATE	6-18-90
TEMPERATURE	N/A
STARTING TIME	1250
ENDING TIME	1520
CHEMIST	S. A. Catlow

Uranium Analysis

Fusion Digestion

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std.	F0421
2	Reagent Blank	F0436
3	Sample 89-070	F0422
4	Duplicate Sample 89-070	F0423
5	Spike of Sample 89-070	F0424
6	Final LMCS Check Std.	F0425
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	58B38/1.0 uL			5.7 mL
Spike	58B38/1.0 uL	F0422/1.0 uL		5.8 mL

SST-102 Rev. F 9/7/90 Interim

WATER DIGESTION TEST ANALYSIS

Single Shell Tank Project

Water Digestion
Laboratory Results of Solids
Units are Sample Wet Weight

Tank 241-U-110
Core 12
Segment 2
Customer ID: 89-070

Laboratory Segment Serial No.: F0417

		Check Standard	Blank		Sample		Sample Duplicate		Spike of Sample		Check Standard
Laboratory ID:		N/A	F0438		F0427		F0428		F0429		N/A
Water Digestion		N/A	N/A		10.39	g/L	10.59	g/L	9.75	g/L	N/A
Laboratory ID:		F0426	F0438		F0427		F0428		F0429		F0574
Ion Chromatograph											
Fluoride	2nd Run	90.80%	<0.10	ppm	1.66E+03	ug/g	1.47E+03	ug/g	85.60%		91.80%
Chloride	1st Run	99.70%	0.2	ppm	1.64E+03	ug/g	1.65E+03	ug/g	102.40%		97.50%
Nitrate	1st Run	101.90%	<1.00	ppm	2.92E+04	ug/g	3.32E+04	ug/g	108.40%		102.70%
Phosphate	1st Run	100.80%	<1.00	ppm	<9.72E+03	ug/g	<9.54E+03	ug/g	105.60%		101.50%
Sulfate	1st Run	100.80%	<1.00	ppm	2.90E+03	ug/g	2.98E+03	ug/g	110.30%		100.50%
Laboratory ID:		F0426	F0438		F0427		F0428		F0429		F0430
Total Organic Carbon		96.60%	3	ug	7.94E+02	ug/g	7.79E+02	ug/g	95.60%		95.70%

Single Shell Tank Proj

Water Digestion

Sample Results on Laboratory Digestion

Tank 241-U-110
Core 12
Segment 2
Customer ID: 89-070

Laboratory Segment Serial No: F0417

		Check Standard	Blank		Sample		Sample Duplicate		Spike of Sample		Check Standard
Laboratory ID:		N/A	F0438		F0427		F0428		F0429		N/A
Water Digestion		N/A	N/A		10.39	g/L	10.59	g/L	9.75	g/L	N/A
Laboratory ID:		F0426	F0438		F0427		F0428		F0429		F0574
Ion Chromatograph											
Fluoride	2nd Run	90.80%	<0.1	ppm	1.72E+01	ppm	1.56E+01	ppm	85.60%		91.80%
Chloride	1st Run	99.70%	0.20	ppm	1.70E+01	ppm	1.75E+01	ppm	102.40%		97.50%
Nitrate	1st Run	101.90%	<1.0	ppm	3.03E+02	ppm	3.52E+02	ppm	108.40%		102.70%
Phosphate	1st Run	100.80%	<1.0	ppm	<1.01E+02	ppm	<1.01E+02	ppm	105.60%		101.50%
Sulfate	1st Run	100.80%	<1.0	ppm	3.01E+01	ppm	3.16E+01	ppm	110.30%		100.50%
Laboratory ID:		F0426	F0438		F0427		F0428		F0429		F0430
Total Organic Carbon/ Carbonate		96.60%	3	ug	8.25E-03	g/L	8.25E-03	g/L	95.60%		95.70%

Analytical Batch

LAB SEGMENT SERIAL #:F0417

CUSTOMER ID:89-070

INSTRUMENT	N/A
PROCEDURE/REV	LA-504-101/A-2
TECHNOLOGIST	S. Cervantes
DATE	March 06, 1990
TEMPERATURE	25 C
STARTING TIME	0800 03-05-90
ENDING TIME	1000 03-06-90
CHEMIST	H. S. Rich

Water Digestion
Note: sample is not spiked prior to digestion. This procedure provides a sample to be spiked later with the appropriate elements.

	DESCRIPTION	LAB ID
1	Reagent Blank	F0438
2	Sample 89-070	F0427
3	Duplicate Sample 89-070	F0428
4	Spike 89-070	F0429
5		
6		
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT.VOL.	FINAL VOL. OF STD.
N/A				
Spike (See Note)				

SST-102 Rev. F 9/7/90 Interim

Analytical Batch

LAB SEGMENT SERIAL #:F0417

CUSTOMER ID:89-070

INSTRUMENT	WB24721
PROCEDURE/REV	LA-533-105/A-3
TECHNOLOGIST	N. E. Wright
DATE	April 06, 1990
TEMPERATURE	22 C
STARTING TIME	1100 04-05-90
ENDING TIME	1515 04-05-90
CHEMIST	H. S. Rich

Ion Chromatograph Analysis
Water Digestion

	DESCRIPTION		LAB ID
1	Initial LMCS Check Std.		F0426
2	Reagent Blank		F0438
3	Sample	89-070	F0427
4	Duplicate Sample	89-070	F0428
5	Spike of Sample	89-070	F0429
6	Sample	89-071	F0451
7	Duplicate Sample	89-071	F0452
8	Sample	89-072	F0475
9	Duplicate Sample	89-072	F0476
10	Sample	89-075	F0547
11	Duplicate Sample	89-075	F0548

	DESCRIPTION		LAB ID
12	Sample	89-076	F0571
13	Duplicate Sample	89-076	F0572
14	Sample	Core-007	F0983
15	Duplicate Sample	Core-007	F0984
16	Duplicate Sample	Core-006	F0064
17	Final LMCS Check Std		F0574
18			
19			
20			
21			
22			

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT. VOL.	FINAL VOL. OF STD.
LMCS Check Std.	6C11HO/100 uL			10.1 mL
Spike	35C9-77/300 uL	F0427/100 uL		5.3 mL

SST-102 Rev. F 9/7/90 Interim

Single Shell Tank
Calibration Record

ANALYTE:	Ion Chromatograph		
PROCEDURE:	LA-533-105	REVISION:	A-3
INSTRUMENT:	DIONEX 4000	PROPERTY NUMBER:	WB24721
TECHNOLOGIST:	Nora Wright	PAYROLL NUMBER:	6B107
DATE:	April 03, 1990		

CALIBRATION STANDARD ID: 35C9-77 issued April 02, 1990

ANALYTE CONCENTRATION: F 60.0 Cl 76.0 NO_3 611.0 PO_4 606.0 SO_4 589.0

TYPE OF CALIBRATION: Linear

COMMENTS:

SST-103 Rev. (Draft) 9/4/90 Interim

DIONEX METHOD PARAMETERS - SST.MET

Detector Parameters

Number of Detectors	1
Detector 1 Type	CDM

Report Options

Run Time (minutes)	11.50
Detector 1 real time plot scale	20.00
Print Report	Yes
Print Replot	Yes
AutoScale Replot to Highest Peak	Yes
Print Retention Times on Chromatogram	Yes
List Peaks Not Found in this run	No
Report Unknowns found in run	Yes
Record Raw Data	Yes
Raw Data File Name: C:\WINDOWS\A1400\DATA\90040979.D08	
Record Result Data	No

Integration Parameters

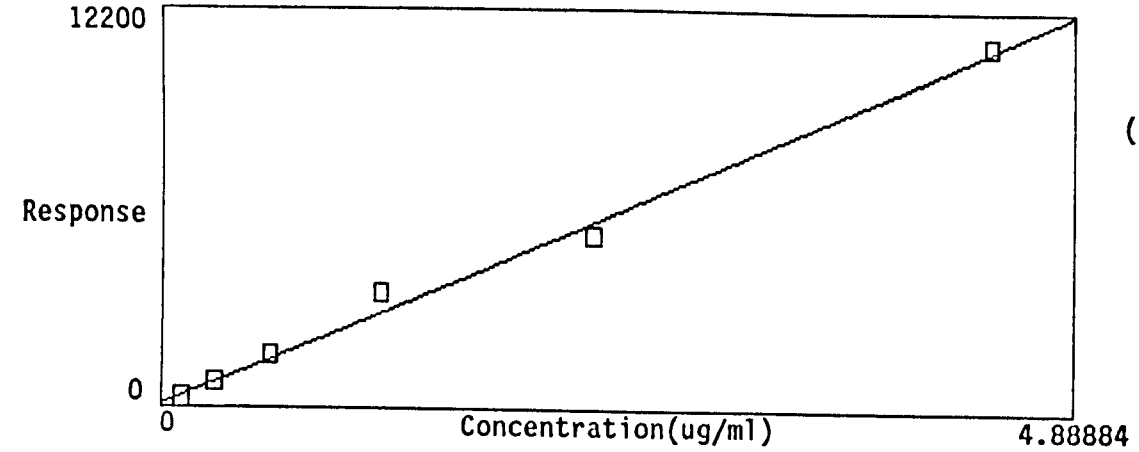
Sampling Rate (seconds)	0.20
Peak Threshold (mV or uS/data pt interval)	0.400
Starting Peak Width (seconds)	10.0
Peak Area Reject	1000

Integration Timed Events

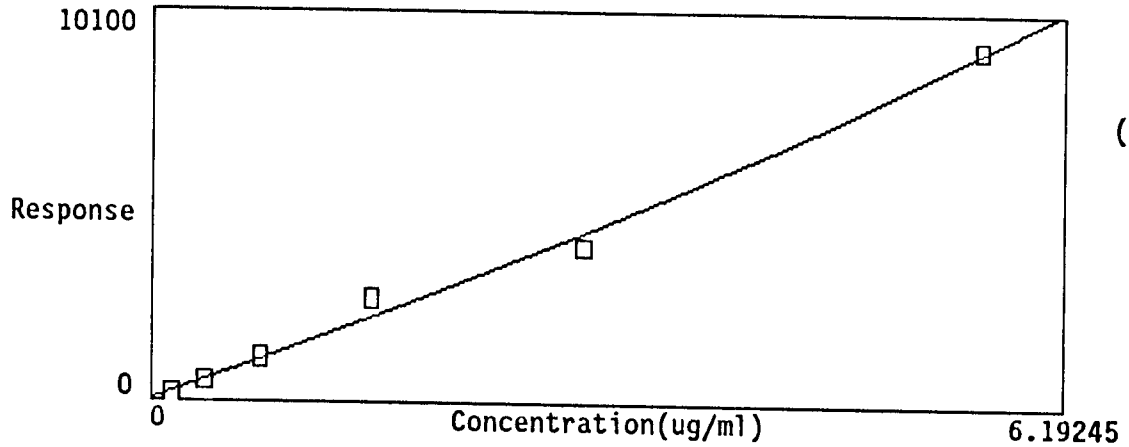
Time	Description

Calibration Parameters

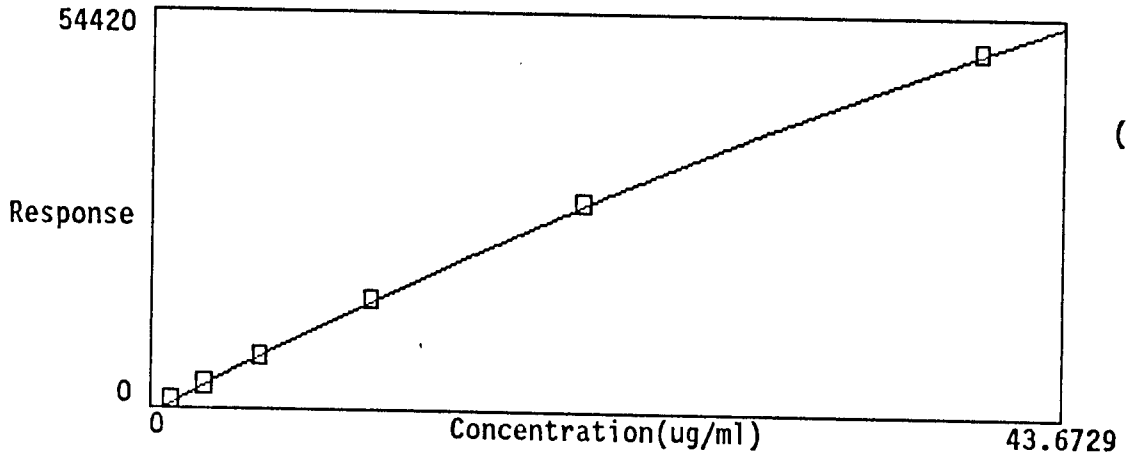
External or Internal Calibration	External
Calibrate by Area or Height	Height
Replace Or Average Calibrations	Replace
Number Of Levels for Calibration	6
Calibration fit type	Quadratic
Response Factor for unknown peaks	0.0
Default Injection Volume	1.0
Default Dilution Factor	1.0
Area Reject for Reference Peaks	1000
Percent Retention Time Window for Reference Peaks	5.0



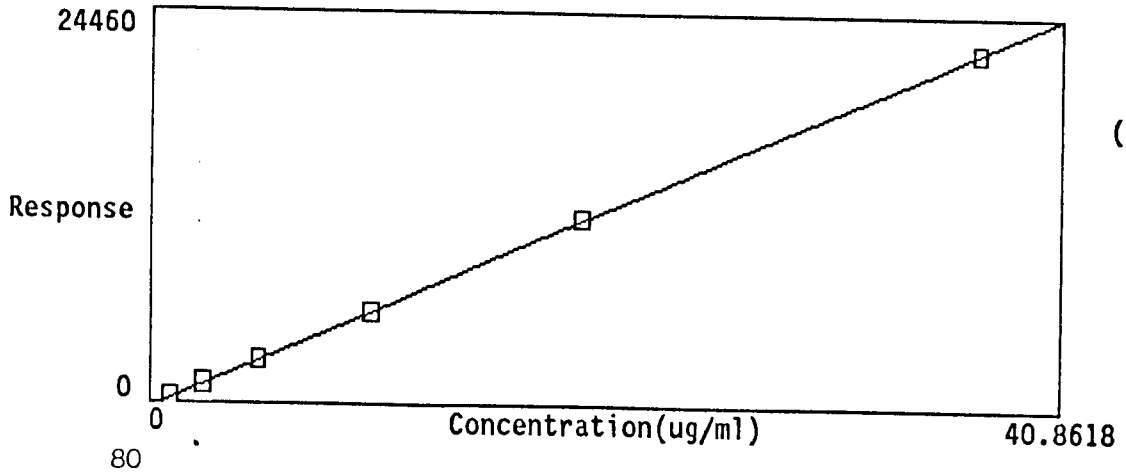
Component: FLUORIDE
Fit Type: Quadratic
Conc = (-3.369224e-010
(4.118173e-004 * Resp)+



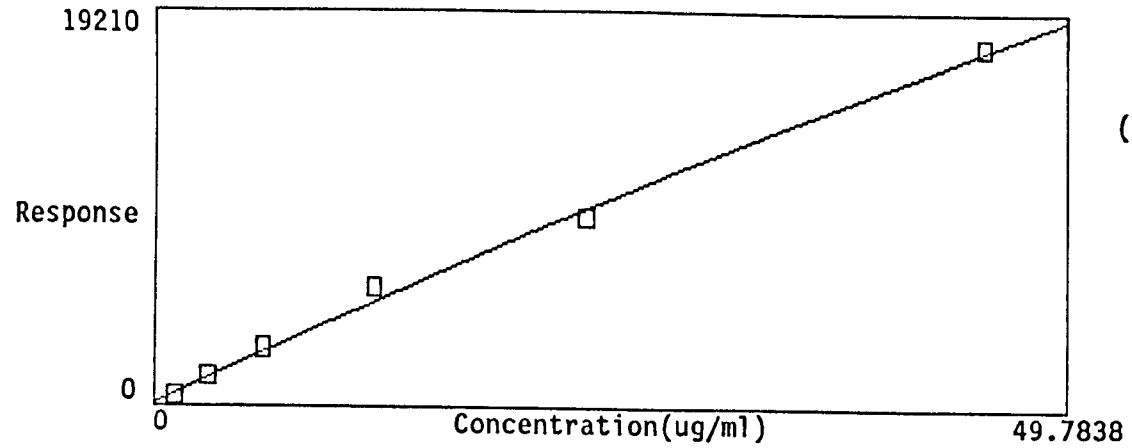
Component: CHLORIDE
Fit Type: Quadratic
Conc = (-1.054134e-008
(7.208249e-004 * Resp)+



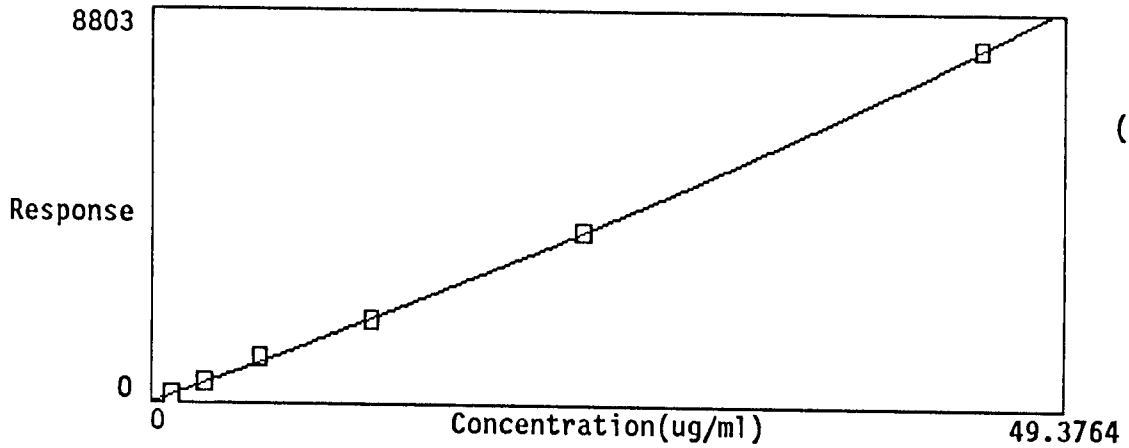
Component: NITRITE
Fit Type: Quadratic
Conc = (3.824921e-009 *
(6.037006e-004 * Resp)+



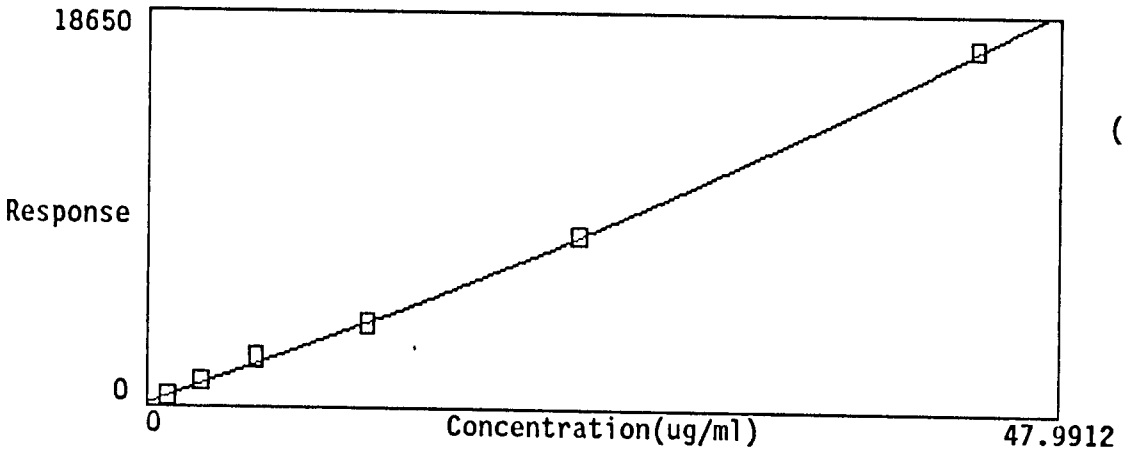
Component: BROMIDE
Fit Type: Quadratic
Conc = (-5.766983e-010
(1.669477e-003 * Resp)+



Component: NITRATE
Fit Type: Quadratic
Conc = (2.113242e-008 *
(2.265060e-003 * Resp)+



Component: PHOSPHATE
Fit Type: Quadratic
Conc = (-1.078779e-007
(6.510264e-003 * Resp)+



Component: SULFATE
Fit Type: Quadratic
Conc = (-2.821818e-008
(3.096352e-003 * Resp)+

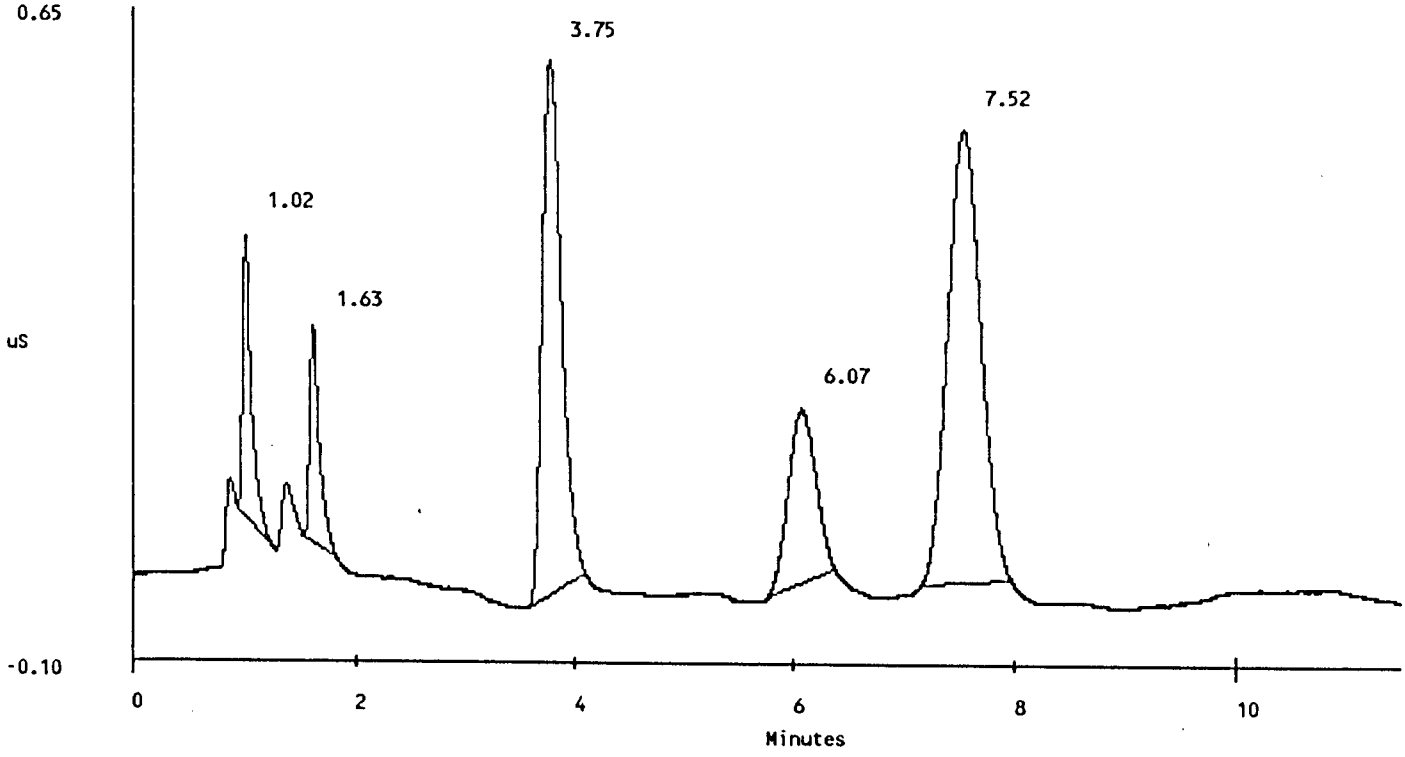
DATA REPROCESSED ON Mon Jul 02 13:05:05 1990

```
==================================================================================
| Sample Name: AUTOCAL1R                          Date: Tue Apr 03 10:17:01 1990 |
| Data File  : A:\90040300.D03                                                   |
| Method     : C:\WINDOWS\AI400\METHOD\SST.MET                                   |
| CIM Address: 1        System : 1        Cycle#:   3        Detector: CDM       |
==================================================================================
```

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3451
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	1.198e-001	1.733e+003	320	1	0	0.00%
2	1.63	CHLORIDE	1.517e-001	1.456e+003	241	1	0	0.00%
3	3.75	NITRATE	1.220e+000	7.363e+003	607	1	0	0.00%
4	6.07	PHOSPHATE	1.210e+000	3.420e+003	198	1	0	0.00%
5	7.52	SULFATE	1.176e+000	1.075e+004	515	1	0	0.00%



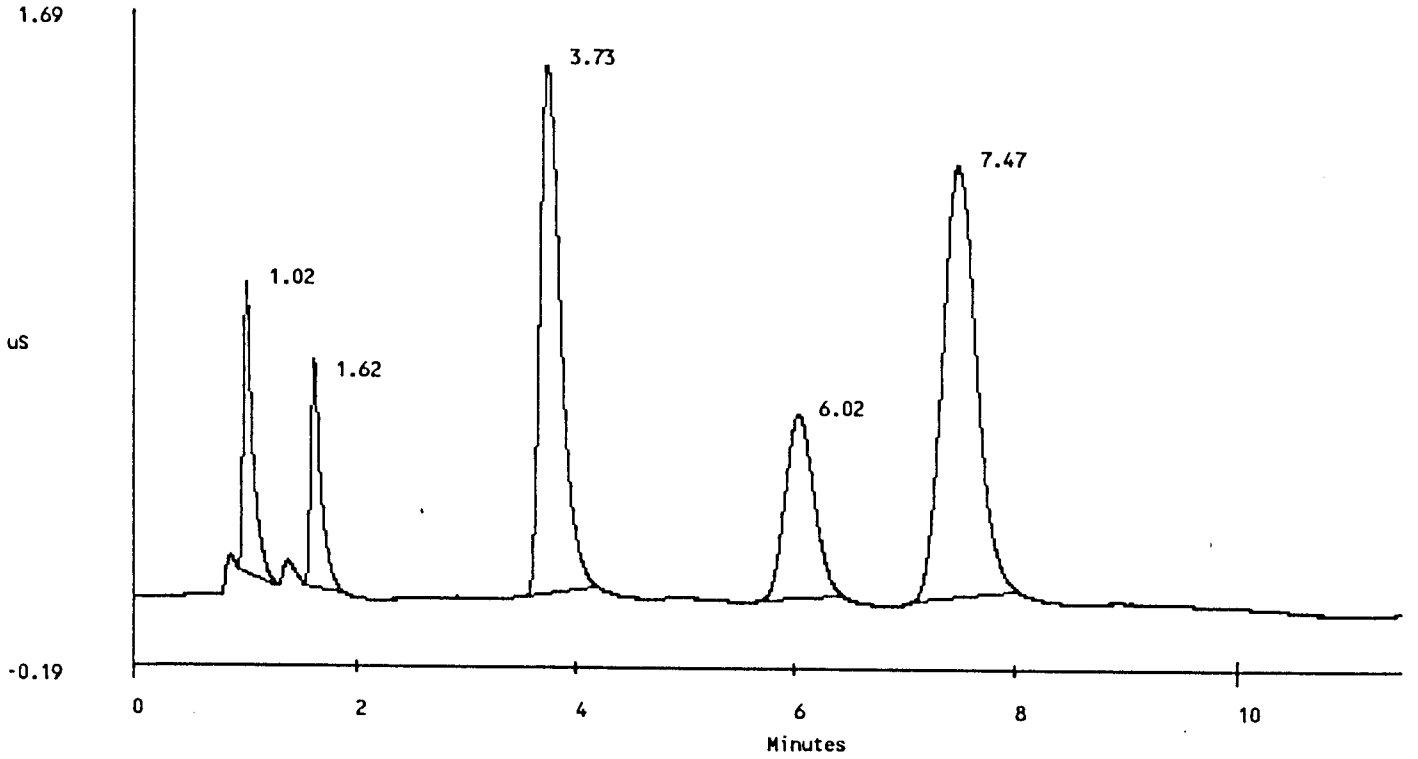
DATA REPROCESSED ON Mon Jul 02 14:37:19 1990

Sample Name: AUTOCAL2R Date: Tue Apr 03 10:29:21 1990
Data File : A:\90040300.D04
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 4 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3451
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	2.984e-001	4.705e+003	821	1	0	0.00%
2	1.62	CHLORIDE	3.783e-001	4.024e+003	594	1	0	-1.02%
3	3.73	NITRATE	3.039e+000	1.956e+004	1518	1	0	-0.44%
4	6.02	PHOSPHATE	5.755e+000	9.585e+003	519	1	0	-0.82%
5	7.47	SULFATE	6.145e+000	2.633e+004	1236	1	0	-0.67%



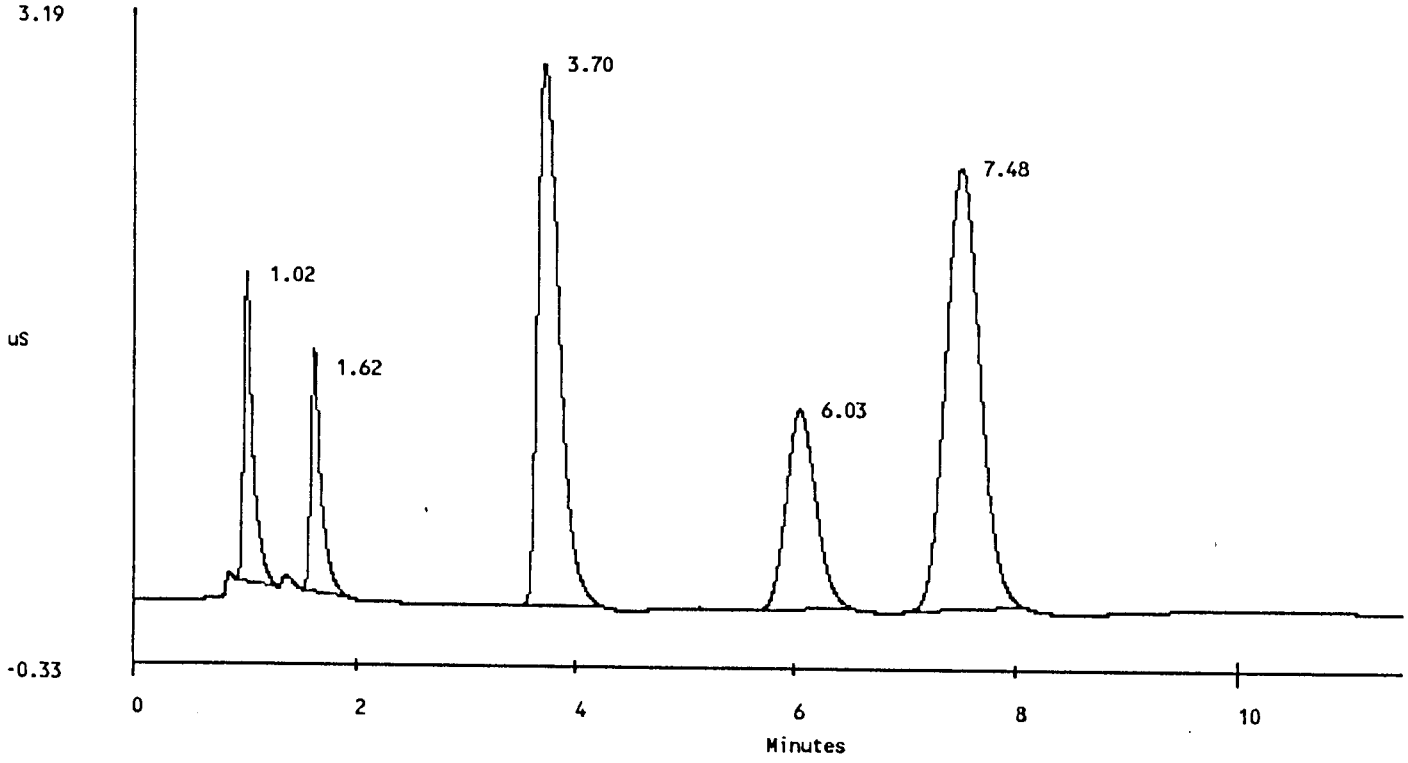
DATA REPROCESSED ON Mon Jul 02 14:37:59 1990

```
==============================================================================
| Sample Name: AUTOCAL3R                          Date: Tue Apr 03 10:41:41 1990|
| Data File  : A:\90040300.D05                                                  |
| Method     : C:\WINDOWS\AI400\METHOD\SST.MET                                  |
| CIM Address: 1        System : 1        Cycle#:   5       Detector: CDM      |
==============================================================================
```

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3451
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	5.941e-001	9.348e+003	1644	1	0	0.00%
2	1.62	CHLORIDE	7.523e-001	8.080e+003	1191	1	0	-1.02%
3	3.70	NITRATE	6.051e+000	3.911e+004	2906	1	0	-1.33%
4	6.03	PHOSPHATE	8.564e+000	1.976e+004	1057	1	0	-0.55%
5	7.48	SULFATE	8.817e+000	5.059e+004	2357	1	0	-0.44%



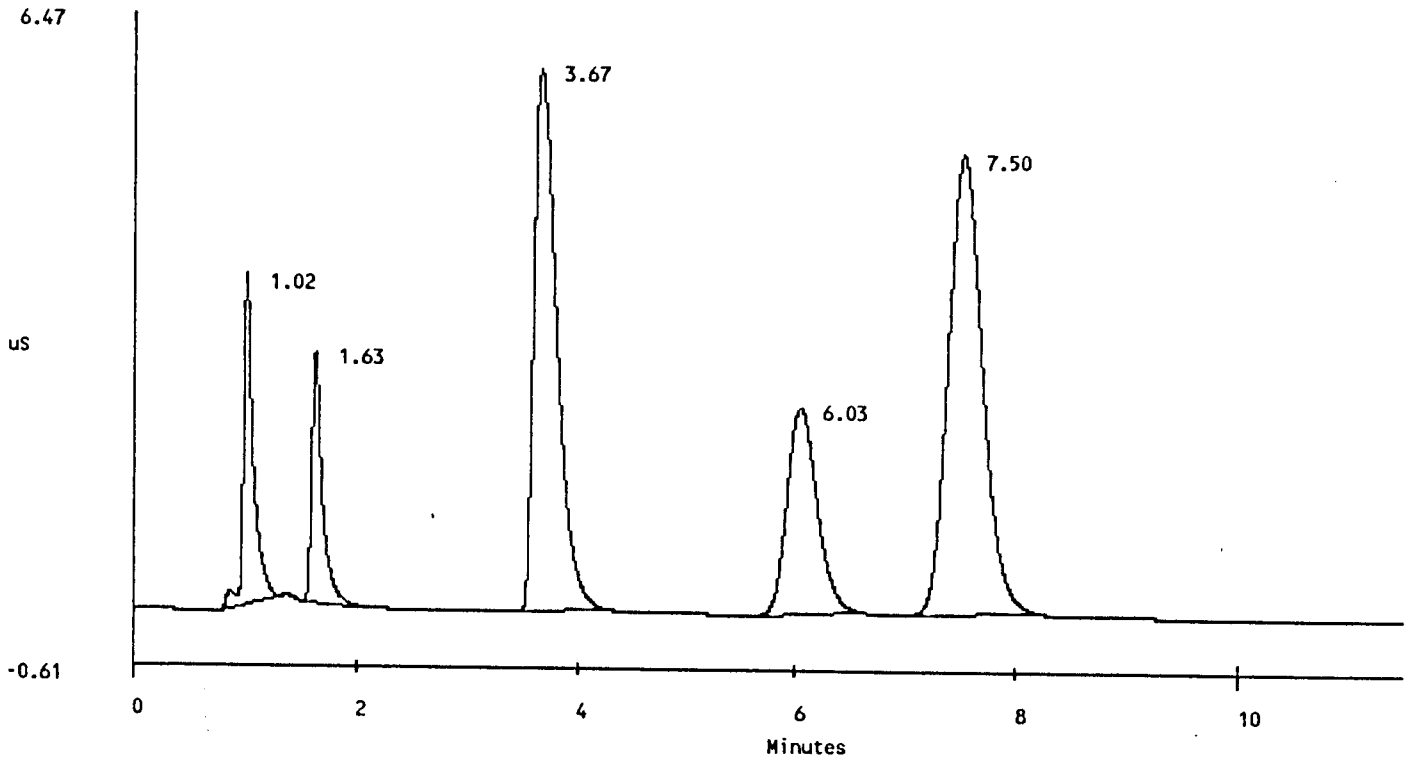
DATA REPROCESSED ON Mon Jul 02 14:38:33 1990

Sample Name: AUTOCAL4R Date: Tue Apr 03 10:54:02 1990
Data File : A:\90040300.D06
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 6 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3450
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	1.177e+000	2.200e+004	3547	1	0	0.00%
2	1.63	CHLORIDE	1.490e+000	1.722e+004	2702	1	0	0.00%
3	3.67	NITRATE	1.198e+001	8.379e+004	5858	1	0	-2.22%
4	6.03	PHOSPHATE	1.460e+001	4.206e+004	2212	1	0	-0.55%
5	7.50	SULFATE	1.496e+001	1.068e+005	4931	1	0	-0.22%



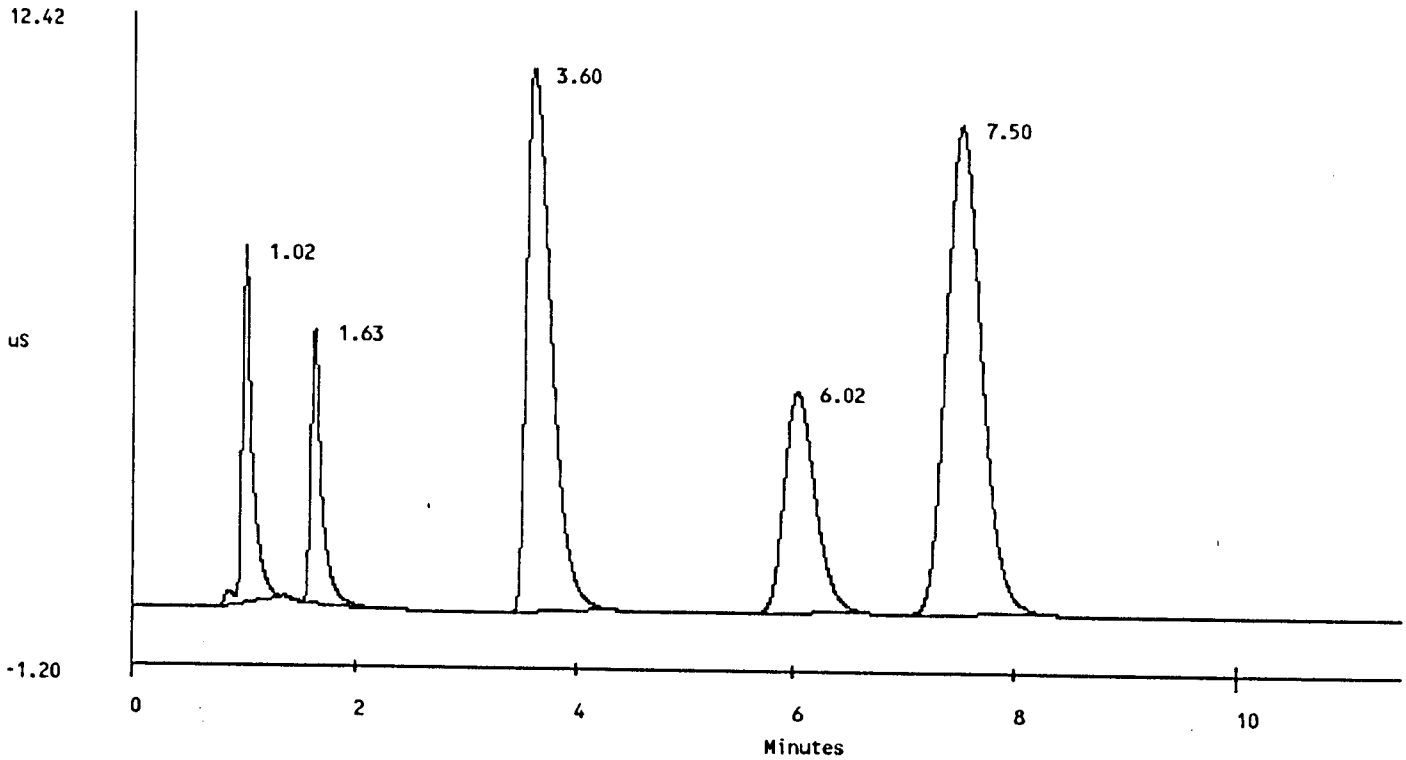
DATA REPROCESSED ON Mon Jul 02 14:39:07 1990

Sample Name: AUTOCAL5R Date: Tue Apr 03 11:06:22 1990
Data File : A:\90040300.D07
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 7 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3450
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	3.050e+000	4.520e+004	7323	1	0	0.00%
2	1.63	CHLORIDE	3.751e+000	3.558e+004	5631	1	0	0.00%
3	3.60	NITRATE	2.869e+001	1.757e+005	11209	1	0	-4.00%
4	6.02	PHOSPHATE	2.675e+001	8.811e+004	4535	1	0	-0.82%
5	7.50	SULFATE	2.728e+001	2.192e+005	10100	1	0	-0.22%



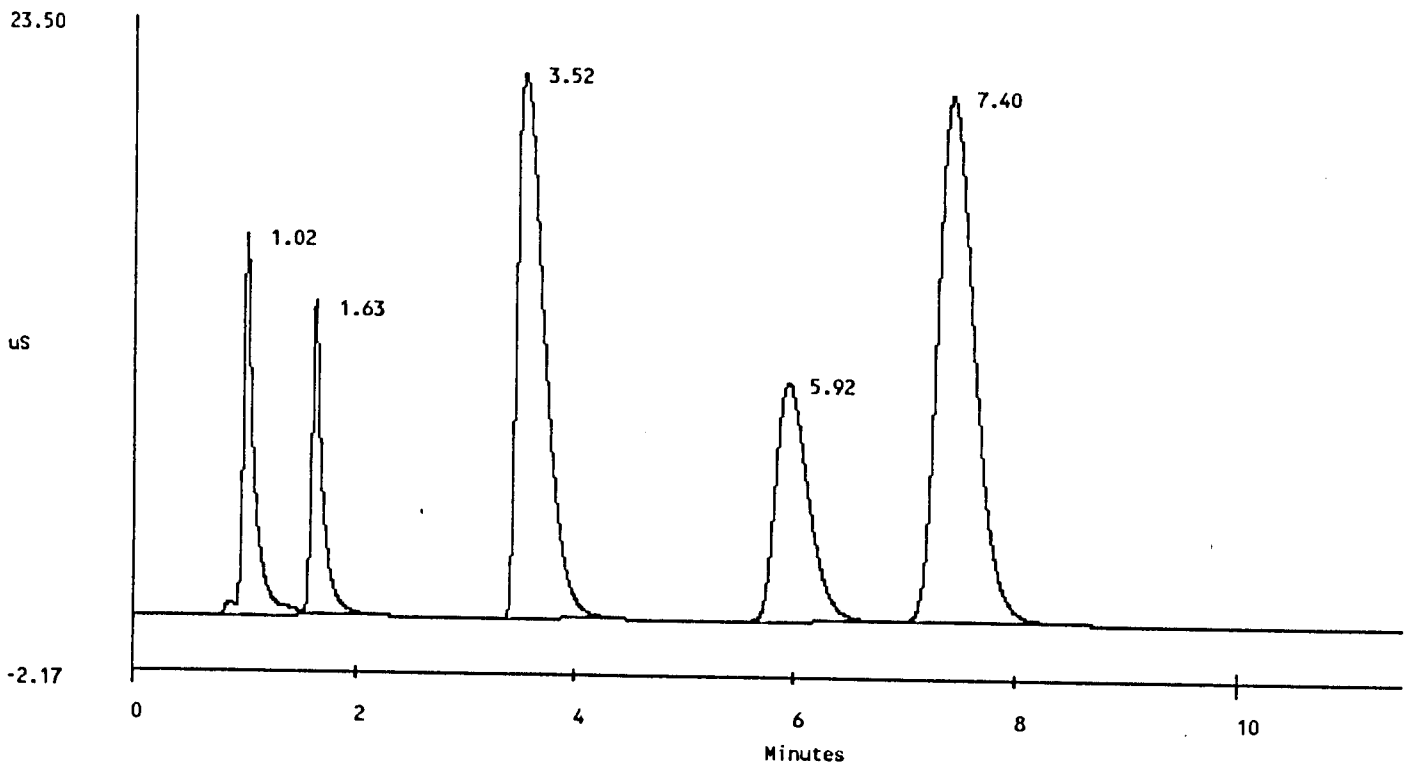
DATA REPROCESSED ON Mon Jul 02 14:39:42 1990

Sample Name: AUTOCAL6R Date: Tue Apr 03 11:18:42 1990
Data File : A:\90040300.D08
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 8 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3451
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	5.778e+000	9.886e+004	14697	2	0	0.00%
2	1.63	CHLORIDE	7.060e+000	7.699e+004	11887	2	0	0.00%
3	3.52	NITRATE	5.544e+001	3.641e+005	21314	1	0	-6.22%
4	5.92	PHOSPHATE	5.042e+001	1.851e+005	9060	1	0	-2.47%
5	7.40	SULFATE	5.218e+001	4.591e+005	20537	1	0	-1.55%



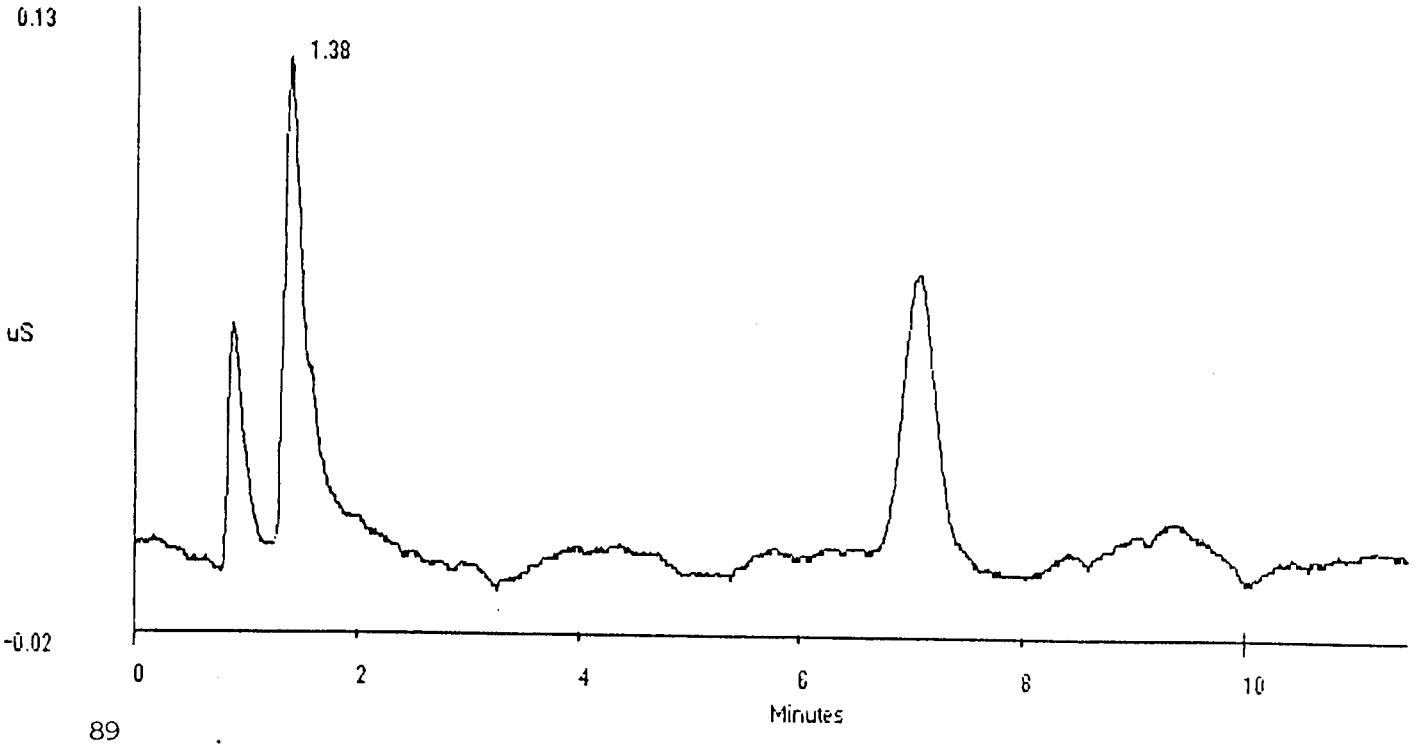
DIONEX SCHEDULE - A:\90040500.SCH

Inject	Sample Name	Method Name	Data File	Volume	Dilution	Int Std
1	SETUP	c:\windows\ai	c:\windows\ai	1	1	0
2	BLANK	c:\windows\ai	c:\windows\ai	1	1	0
3	LMCS/6C11-HO	c:\windows\ai	c:\windows\ai	1	101	0
4	438B	c:\windows\ai	c:\windows\ai	1	1	0
5	427	c:\windows\ai	c:\windows\ai	1	101	0
6	428D	c:\windows\ai	c:\windows\ai	1	101	0
7	429S	c:\windows\ai	c:\windows\ai	1	101	0
8	451	c:\windows\ai	c:\windows\ai	1	101	0
9	452D	c:\windows\ai	c:\windows\ai	1	101	0
10	475	c:\windows\ai	c:\windows\ai	1	101	0
11	476D	c:\windows\ai	c:\windows\ai	1	101	0
12	547	c:\windows\ai	c:\windows\ai	1	101	0
13	548D	c:\windows\ai	c:\windows\ai	1	101	0
14	571	c:\windows\ai	c:\windows\ai	1	101	0
15	572D	c:\windows\ai	c:\windows\ai	1	101	0
16	983	c:\windows\ai	c:\windows\ai	1	51	0
17	984D	c:\windows\ai	c:\windows\ai	1	51	0
18	64D	c:\windows\ai	c:\windows\ai	1	101	0
19	LMCS/6C11-HO	c:\windows\ai	c:\windows\ai	1	101	0

```
==========================================================================
: Sample Name: BLANK                          Date: Thu Apr 05 11:57:04 1990:
: Data File   : c:\windows\ai400\data\900-5963.d02                        :
: Method      : c:\windows\ai400\method\sst.met                           :
: CIM Address: 1        System : 1        Cycle#:   2       Detector: CDM   :
==========================================================================
*********************** EXTERNAL STANDARD REPORT ***************************

Start Time =  0.00 minutes              Stop time = 11.50 Minutes
Number of Data Points  =  3450           One Data Point per 0.2 seconds
Areareject = 1000
Amount Injected = 1        Dilution factor = 1
```

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.38		0.000e+000	1.021e+003	106	1		

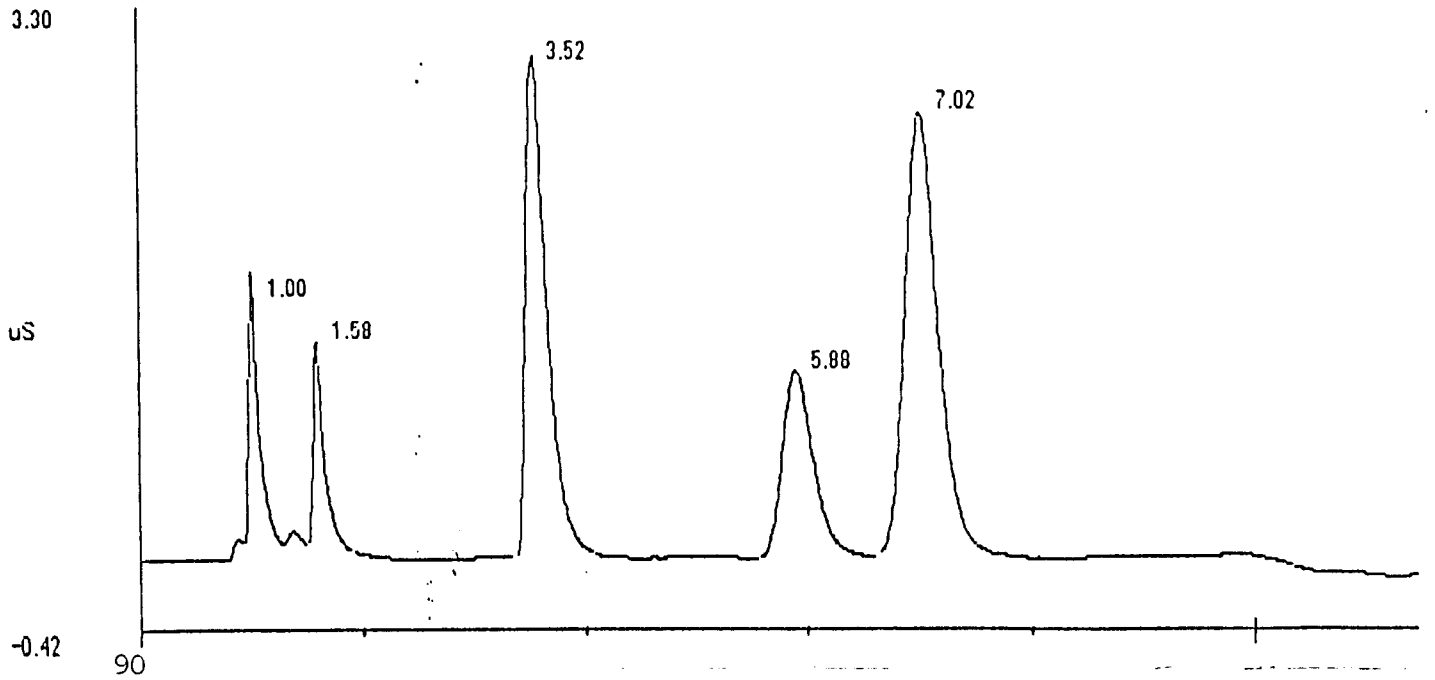


Sample Name: LMCS/6C11-HO		Date: Thu Apr 05 12:09:18 1990	
Data File : c:\windows\ai400\data\900-5963.d03			
Method : c:\windows\ai400\method\sst.met			
CIM Address: 1	System : 1	Cycle#: 3	Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3450 One Data Point per 0.2 seconds
Areareject = 1000
Amount Injected = 1 Dilution factor = 101

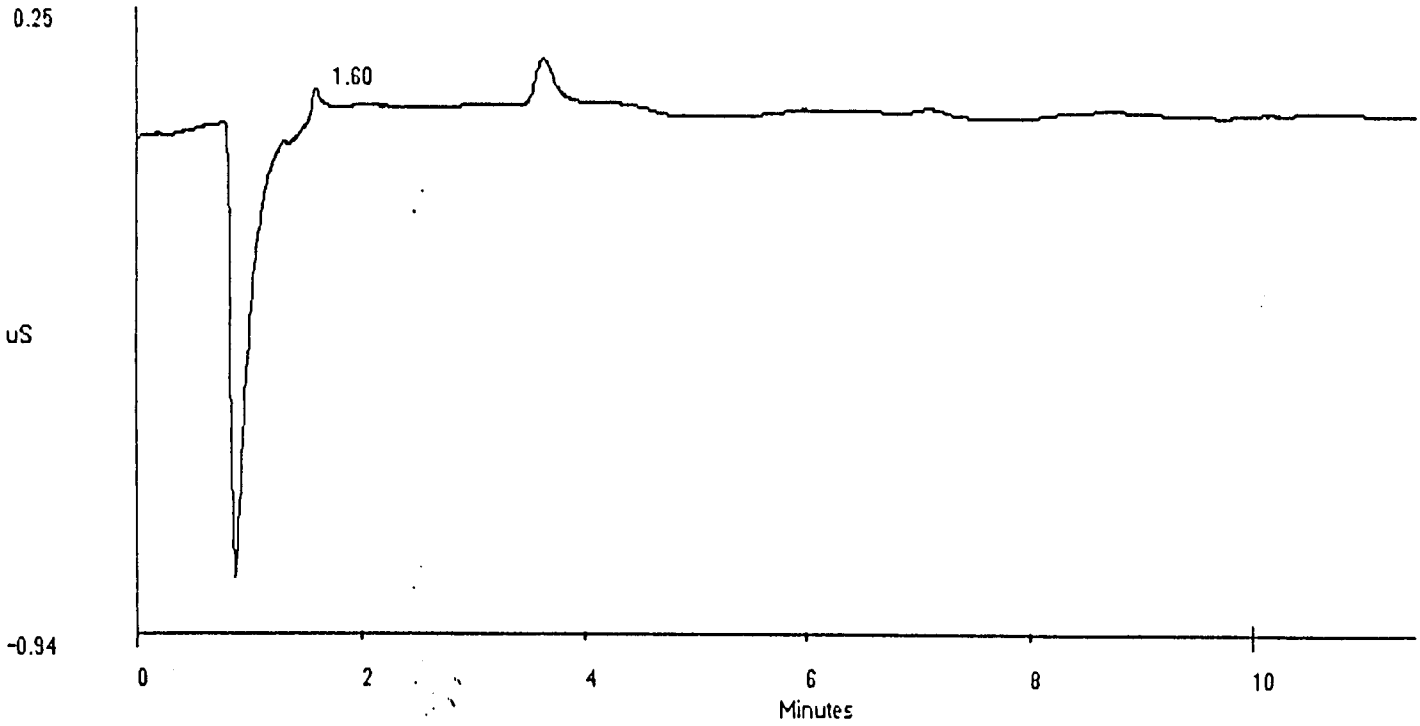
PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	5.097e+001	9.542e+003	1452	1	0	-1.64%
2	1.58	CHLORIDE	7.181e+001	7.920e+003	1209	1	0	-3.06%
3	3.52	NITRATE	6.106e+002	3.939e+004	2949	1	0	0.00%
4	5.88	PHOSPHATE	6.038e+002	2.002e+004	1084	1	0	-0.56%
5	7.02	SULFATE	6.268e+002	5.312e+004	2626	1	0	-5.18%



```
==========================================================================
| Sample Name: 438B                          Date: Thu Apr 05 12:21:34 1990|
| Data File  : c:\windows\ai400\data\900-5963.d04                          |
| Method     : c:\windows\ai400\method\sst.met                             |
| CIM Address: 1        System : 1        Cycle#:   4      Detector: CDM   |
==========================================================================
*********************  EXTERNAL STANDARD REPORT  *************************

Start Time =  0.00 minutes              Stop time = 11.50 Minutes
Number of Data Points  =  3450           One Data Point per 0.2 seconds
Areareject = 1000
Amount Injected = 1        Dilution factor = 1
```

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.60	CHLORIDE	2.017e-001	1.746e+004	266	1	0	-2.04%



DATA REPROCESSED ON Thu Aug 23 13:14:37 1990

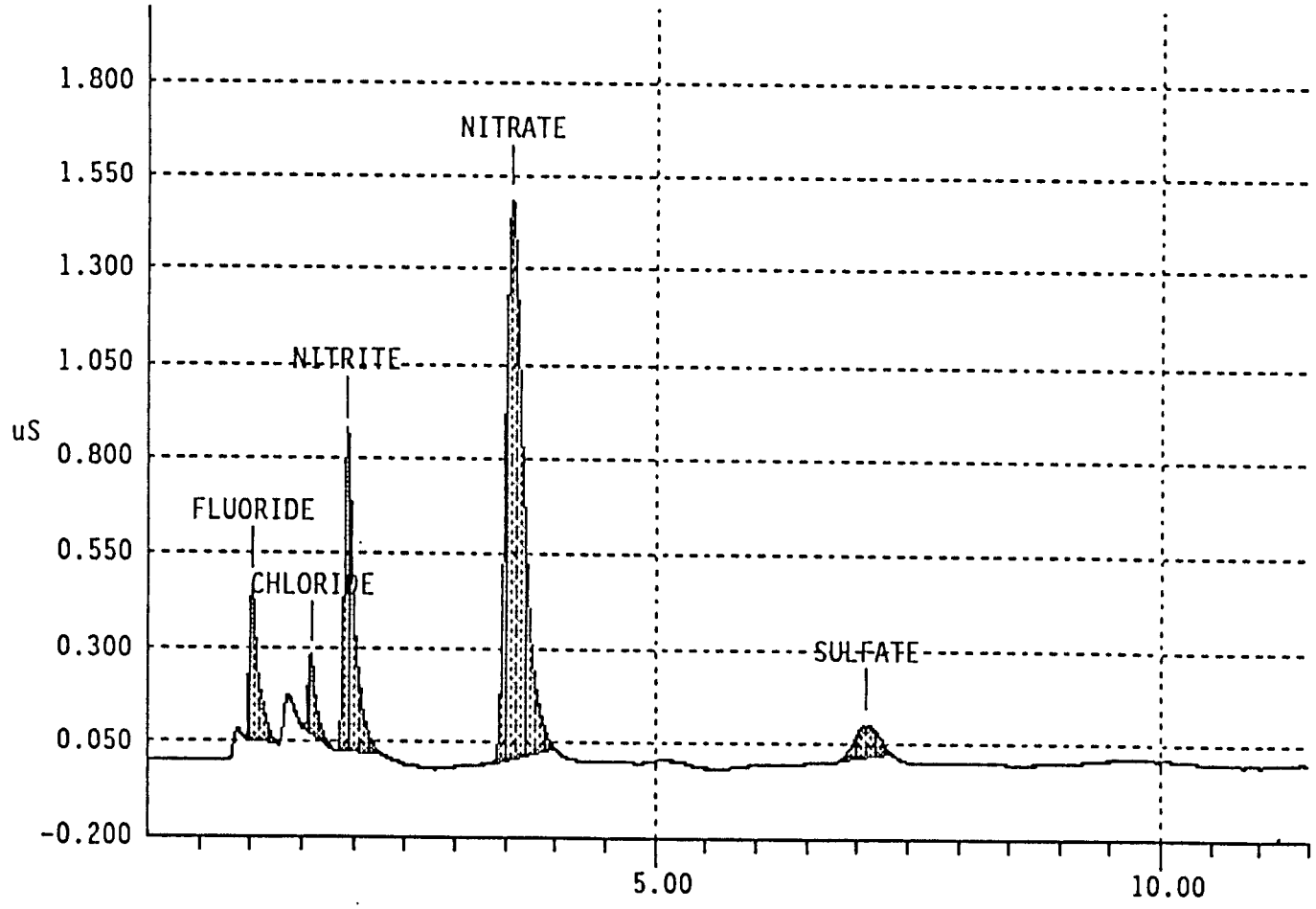
Sample Name: 427 Date: Thu Apr 05 13:33:48 1990
Data File : A:\90040500.D05
Method : c:\windows\ai400\method\sst.met
ACI Address: 1 System : 1 Inject#: 5 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3450
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	1.709e+001	2.596e+003	408	1	0	0.00%
2	1.60	CHLORIDE	1.702e+001	1.225e+003	206	1	0	0.00%
3	1.93	NITRITE	1.095e+002	6.171e+003	842	1	0	0.00%
4	3.57	NITRATE	3.027e+002	1.873e+004	1478	1	0	0.00%
5	7.10	SULFATE	3.006e+001	1.435e+003	87	1	0	0.00%

File: A:\90040500.D05 Sample: 427



DATA REPROCESSED ON Thu Aug 23 13:48:12 1990

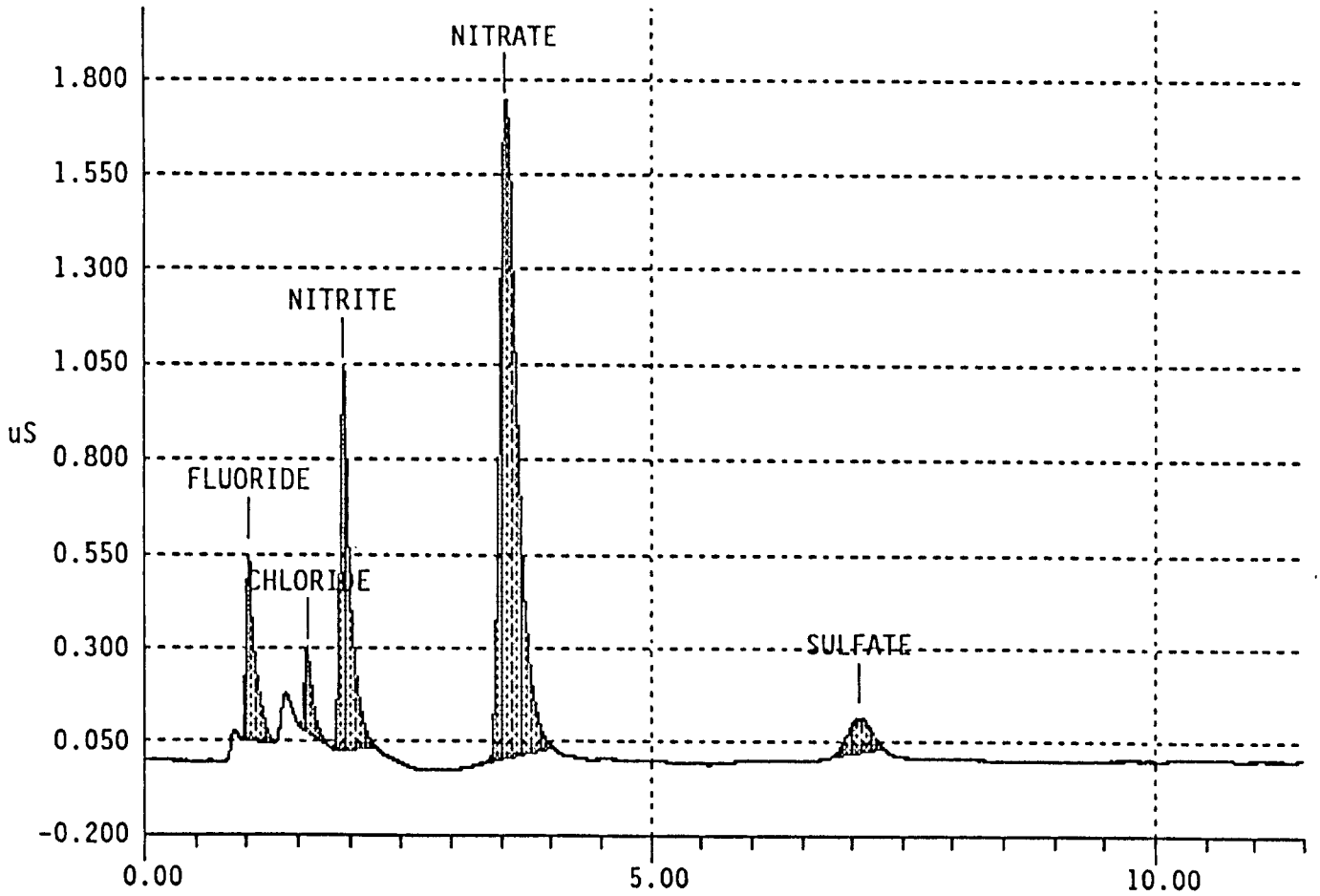
Sample Name: 428D Date: Thu Apr 05 13:46:02 1990
Data File : A:\90040500.D06
Method : c:\windows\ai400\method\sst.met
ACI Address: 1 System : 1 Inject#: 6 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3451
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	2.003e+001	3.202e+003	499	1	0	0.00%
2	1.60	CHLORIDE	1.750e+001	1.320e+003	214	1	0	0.00%
3	1.93	NITRITE	1.236e+002	7.386e+003	993	1	0	0.00%
4	3.53	NITRATE	3.521e+002	2.212e+004	1715	1	0	0.00%
5	7.07	SULFATE	3.161e+001	1.508e+003	94	1	0	0.00%

File: A:\90040500.D06 Sample: 428D



DATA REPROCESSED ON Thu Aug 23 13:17:53 1990

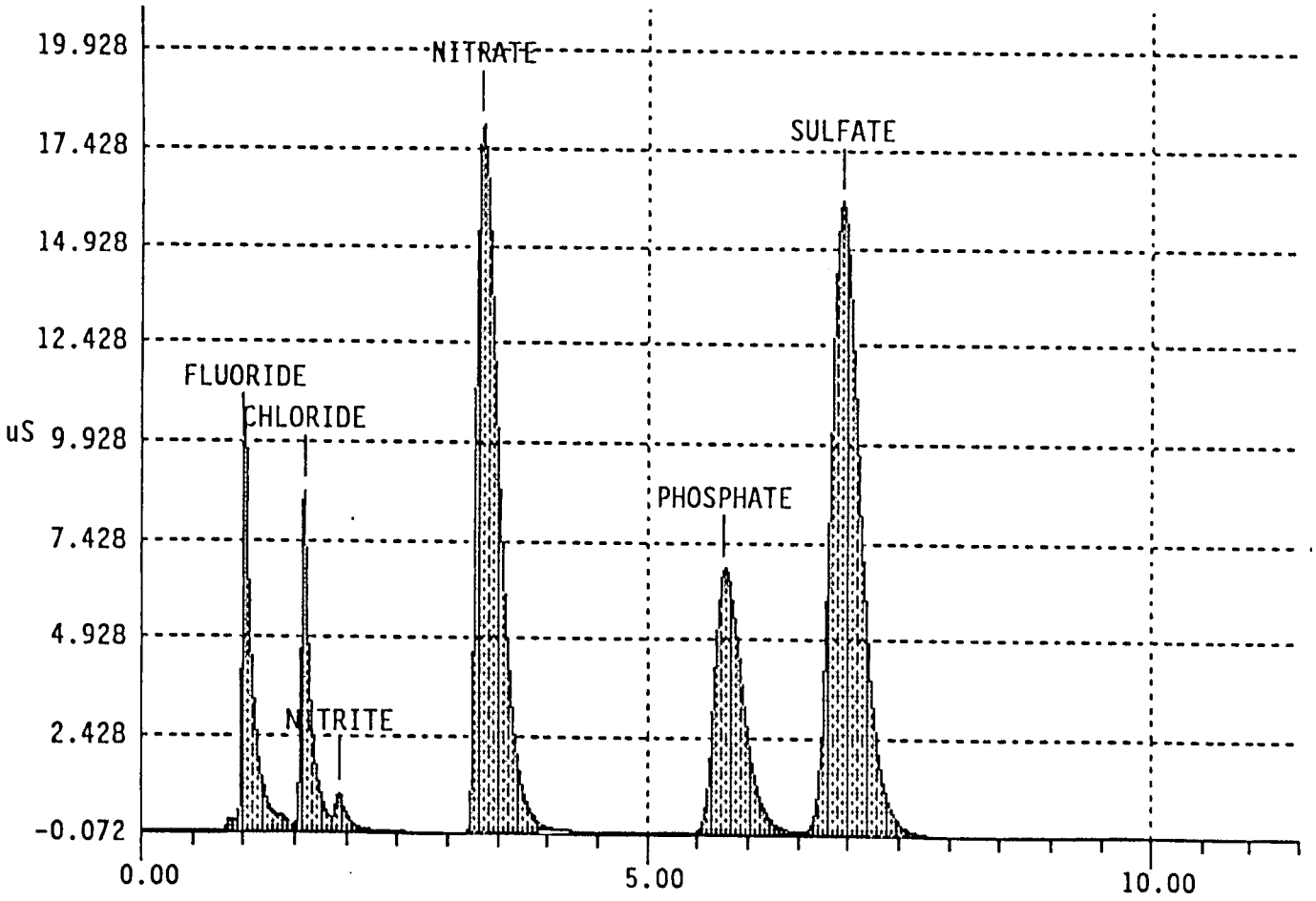
Sample Name: 429S Date: Thu Apr 05 13:58:17 1990
Data File : A:\90040500.D07
Method : c:\windows\ai400\method\sst.met
ACI Address: 1 System : 1 Inject#: 7 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3450
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	3.052e+002	7.634e+004	9685	2	0	0.00%
2	1.58	CHLORIDE	4.348e+002	5.743e+004	8656	3	0	0.00%
3	1.93	NITRITE	1.089e+002	6.323e+003	836	4	0	0.00%
4	3.35	NITRATE	3.839e+003	2.908e+005	17987	1	0	0.00%
5	5.77	PHOSPHATE	3.452e+003	1.356e+005	6762	2	0	0.00%
6	6.93	SULFATE	3.527e+003	3.404e+005	16085	2	0	-6.31%

File: A:\90040500.D07 Sample: 429S



DATA REPROCESSED ON Thu Aug 23 13:37:04 1990

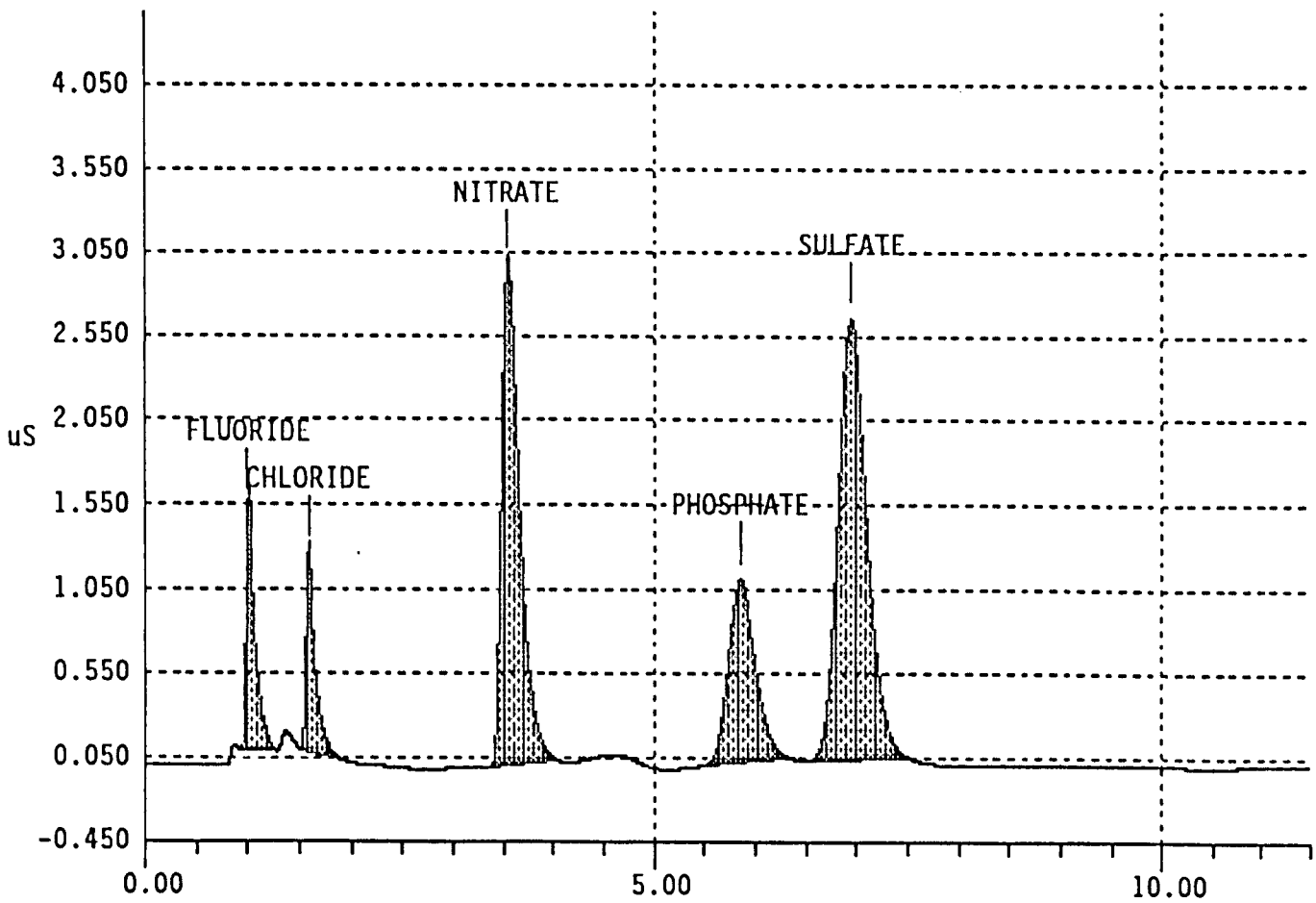
Sample Name: LMCS/6C11-HO	Date: Thu Apr 05 16:25:34 1990
Data File : A:\90040500.D19	
Method : c:\windows\ai400\method\sst.met	
ACI Address: 1 System : 1 Inject#: 19	Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3450
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	5.094e+001	9.493e+003	1451	1	0	0.00%
2	1.58	CHLORIDE	7.021e+001	7.816e+003	1180	1	0	0.00%
3	3.53	NITRATE	6.154e+002	3.890e+004	2971	1	0	0.00%
4	5.85	PHOSPHATE	6.079e+002	2.009e+004	1091	1	0	0.00%
5	6.95	SULFATE	6.252e+002	5.262e+004	2619	1	0	-6.08%

File: A:\90040500.D19 Sample: LMCS/6C11-HO



Analytical Batch

Lab Segment Serial #:F0417

Customer ID:89-070

Instrument	WB24721
Procedure/Rev	LA-533-105/A-3
Technologist	N. E. Wright
Date	April 12, 1990
Temperature	22.5 C
Starting Time	1100
Ending Time	1420
Chemist	H. S. Rich

Ion Chromatograph Analysis
Water Digestion

* Run for Flouride only

	Description	Lab ID
1	Initial LMCS Check Std.	F0426
2	Reagent Blank	F0438
3	Sample 89-070	F0427
4	Duplicate Sample 89-070	F0428
5	Spike of sample 89-070	F0429
6	Sample 89-071	F0451
7	Duplicate Sample 89-071	F0452
8	Sample 89-072	F0475
9	Duplicate Sample 89-072	F0476
10	Sample 89-075	F0547
11	Duplicate Sample 89-075	F0548

	Description	Lab ID
12	Sample 89-076	F0571
13	Final LMCS Check Std.	F0574
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Bk# & Alqt. Vol.	Final Vol. of Std.
LMCS Check Std.	6C11HO/100 uL			10.1 mL
Spike	35C9-77/300 uL	F0427/300 uL		5.3 mL

SST-102 Rev. F 9/7/90 Interim

Single Shell Tank
Calibration Record

ANALYTE:	Ion Chromatograph		
PROCEDURE:	LA-533-105	REVISION:	A-3
INSTRUMENT:	DIONEX 4000	PROPERTY NUMBER:	WB24721
TECHNOLOGIST:	Nora Wright	PAYROLL NUMBER:	6B107
DATE:	April 11, 1990		

CALIBRATION STANDARD ID: 35C9-77 issued April 02, 1990

ANALYTE CONCENTRATION: F 60.0 Cl 76.0 NO_3 611.0 PO_4 606.0 SO_4 589.0

TYPE OF CALIBRATION: Linear

COMMENTS:

SST-103 Rev. (Draft) 9/4/90 Interim

DIONEX METHOD PARAMETERS - SST.MET

Detector Parameters

Number of Detectors	1
Detector 1 Type	CDM

Report Options

Run Time (minutes)	11.50
Detector 1 real time plot scale	20.00
Print Report	Yes
Print Replot	Yes
AutoScale Replot to Highest Peak	Yes
Print Retention Times on Chromatogram	Yes
List Peaks Not Found in this run	No
Report Unknowns found in run	Yes
Record Raw Data	Yes
Raw Data File Name: A:\90040979.D08	
Record Result Data	No

Integration Parameters

Sampling Rate (seconds)	0.20
Peak Threshold (mV or uS/data pt interval)	0.400
Starting Peak Width (seconds)	10.0
Peak Area Reject	1000

Integration Timed Events

Time	Description

Calibration Parameters

External or Internal Calibration	External
Calibrate by Area or Height	Height
Replace Or Average Calibrations	Replace
Number Of Levels for Calibration	6
Calibration fit type	Quadratic
Response Factor for unknown peaks	0.0
Default Injection Volume	1.0
Default Dilution Factor	1.0
Area Reject for Reference Peaks	1000
Percent Retention Time Window for Reference Peaks	5.0

IC Control File: C:\WINDOWS\AI400\METHOD\GROUT01.TE

Step	Time	Description
Init		CDM AutoOffset Off
Init		CDM Recorder Mark OFF
Init		CDM Temp. Comp. = 1.7 / Deg C
Init		CDM Recorder Range = 1.000 uS
Init		CDM Cell ON
Init		CMA Heater = 25 Deg. C
Init		Valve A ON
Init		Valve B ON
Init		Inject Valve OFF
Init		CIM Relay 1 OFF
Init		CIM Relay 2 OFF
Init		CIM AC 1 OFF
Init		CIM AC 2 OFF
Init		GPM Start
Init		GPM Hold Gradient Clock
Init		GPM Reset ON
1	0.0	CDM AutoOffset ON
1	0.0	GPM Reset OFF
2	0.1	Inject Valve ON
2	0.1	GPM Run Gradient Clock
3	3.0	Inject Valve OFF
4	3.5	CIM Relay 1 ON
5	4.0	CIM Relay 1 OFF

Component # 1 FLUORIDE Retention Time 1.00
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 3.68480E-004
Least Squares Intercept = -1.99974E-004
Ka = -4.02362E-009

Level	Amount	Area	Height
1	9.78000E-002	1668	300
2	2.43800E-001	3642	607
3	4.85200E-001	9315	1320
4	9.60800E-001	18456	2776
5	1.88460E+000	35592	5385
6	3.62900E+000	83552	11233

Component # 2 CHLORIDE Retention Time 1.60
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 6.15991E-004
Least Squares Intercept = -3.39552E-002
Ka = -1.21610E-008

Level	Amount	Area	Height
1	1.31700E-001	2313	358
2	3.28400E-001	3676	587
3	6.53500E-001	6685	1135
4	1.29410E+000	14160	2092
5	2.53800E+000	28199	4705
6	4.88900E+000	62634	9921

Component # 3 NITRITE Retention Time 1.95
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 7.28693E-004
Least Squares Intercept = 2.72186E-001
Ka = 3.36454E-009

Level	Amount	Area	Height
1	1.18960E+000	9937	1360
2	2.99000E+000	25698	3515
3	5.95050E+000	53506	7323
4	1.17843E+001	114215	15244
5	2.39442E+001	218918	28443
6	4.45185E+001	440177	49476

Component # 4 NITRATE Retention Time 3.38
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 2.06336E-003
Least Squares Intercept = -2.78230E-001
Ka = 2.72813E-010

Level	Amount	Area	Height
1	1.21960E+000	7900	677
2	3.03980E+000	19225	1565
3	6.04950E+000	40617	3098
4	1.19800E+001	84027	6111
5	2.35000E+001	171346	11368
6	4.52600E+001	368906	22029

Component # 5 PHOSPHATE Retention Time 5.80
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 5.30474E-003
Least Squares Intercept = 1.89883E-001
Ka = -4.78291E-008

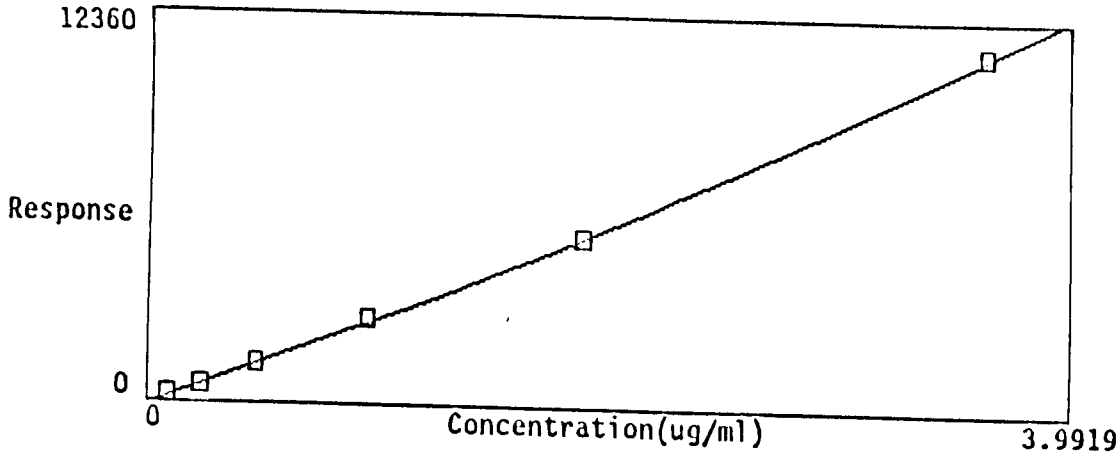
Level	Amount	Area	Height
1	1.21550E+000	3360	198
2	3.02990E+000	9889	536
3	6.02970E+000	20802	1103
4	1.19412E+001	43160	2270
5	2.34230E+001	88767	4565
6	4.51110E+001	186751	9238

Component # 6 SULFATE Retention Time 6.85
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 2.26381E-003
Least Squares Intercept = 6.72726E-003
Ka = -1.34143E-008

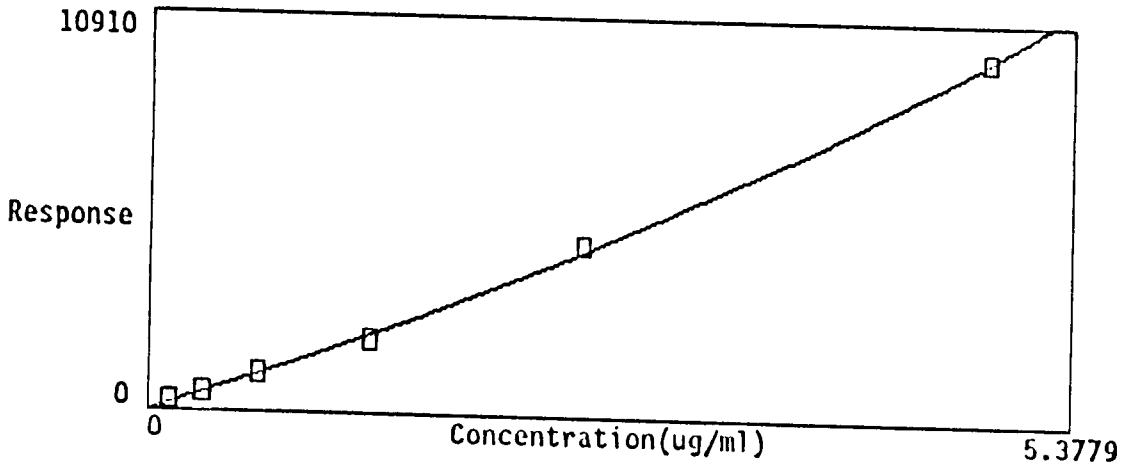
Level	Amount	Area	Height
1	1.18960E+000	10771	557
2	2.96520E+000	25693	1297
3	5.90100E+000	51993	2607
4	1.16860E+001	108657	5358
5	2.29231E+001	220178	10811
6	4.41480E+001	472662	22498

Component # 7 Oxalate Retention Time 9.77
Reference Peak FLUORIDE Window Size 10.00%
Least Squares Slope = 0.00000E+000
Least Squares Intercept = 0.00000E+000
Ka = 0.00000E+000

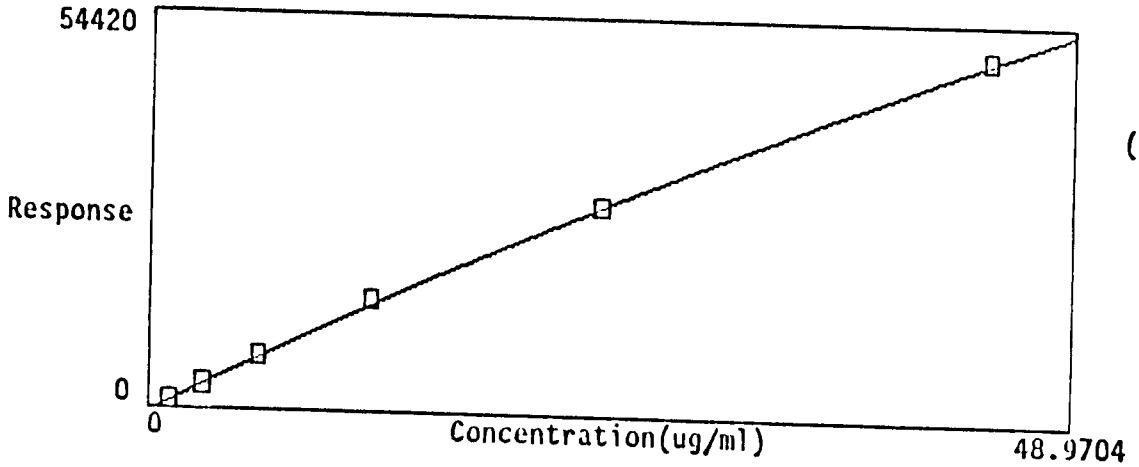
Level	Amount	Area	Height
1	0.00000E+000	0	0
2	0.00000E+000	0	0
3	0.00000E+000	0	0
4	0.00000E+000	0	0
5	0.00000E+000	0	0
6	0.00000E+000	98993	5848



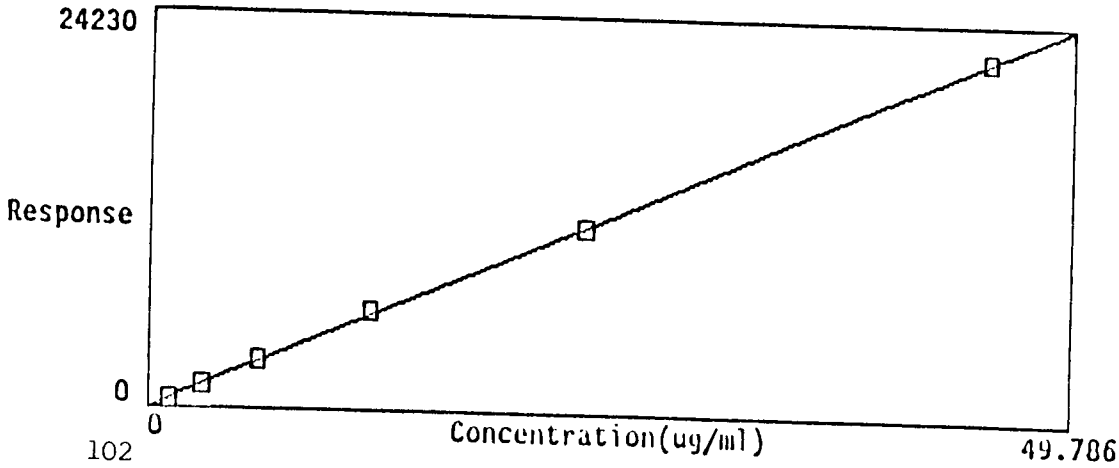
Component: FLUORIDE
Fit Type: Quadratic
Conc = (-4.023616e-009
(3.684797e-004 * Resp)+



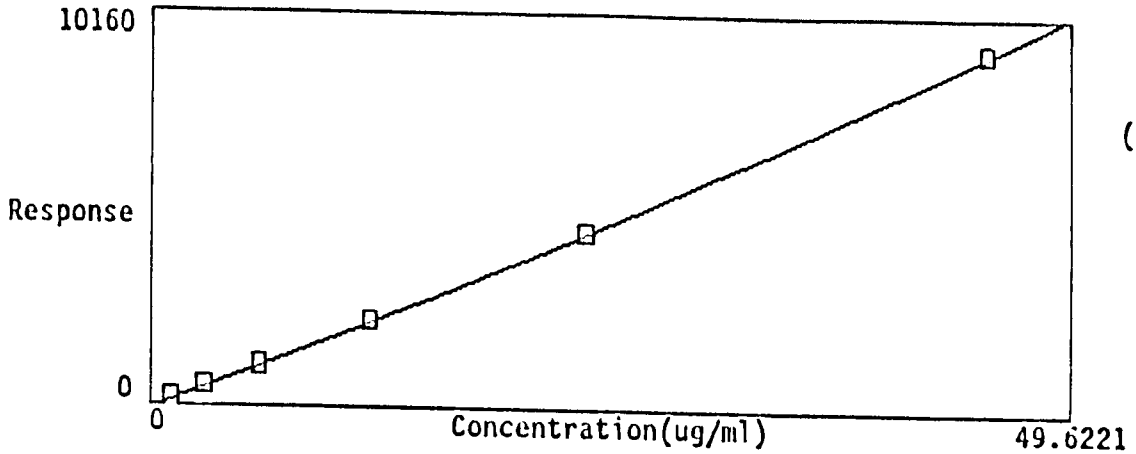
Component: CHLORIDE
Fit Type: Quadratic
Conc = (-1.216103e-008
(6.159914e-004 * Resp)+



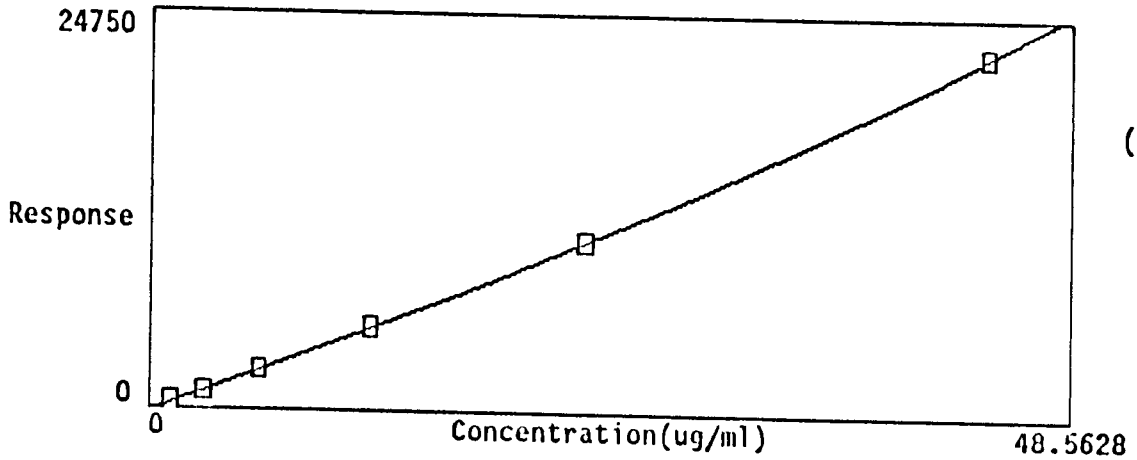
Component: NITRITE
Fit Type: Quadratic
Conc = (3.364537e-009 *
(7.286927e-004 * Resp)+



Component: NITRATE
Fit Type: Quadratic
Conc = (2.728131e-010 *
(2.063355e-003 * Resp)+



Component: PHOSPHATE
Fit Type: Quadratic
Conc = (-4.782909e-008
(5.304744e-003 * Resp)+



Component: SULFATE
Fit Type: Quadratic
Conc = (-1.341431e-008
(2.263806e-003 * Resp)+

********** AUTOMATIC CALIBRATION UPDATE **********

Method File: C:\WINDOWS\AI400\METHOD\SST.MET
Result File: CALDATA.R10
Sample Name: AUTOCAL1R
Calibration Level : 1
Interface #: 1 Cycle #: 3 Result File Date: Wed Apr 11 10:22:06 1990
Start time = 0 Stop time = 11.50
Area reject = 1000 One DataPoint per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

********** PEAKS NOT FOUND IN THIS RUN **********

Name	Adjusted Ret Time	Reference Peak
FLUORIDE	1.00	0
Oxalate	9.77	1

********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD HEIGHT	MEASURED HEIGHT	NEW HEIGHT
2	CHLORIDE	1.60	1.60	1.60	3.580e+002	3.583e+002	3.583e+002
3	NITRITE	1.95	1.95	1.95	1.360e+003	1.360e+003	1.360e+003
4	NITRATE	3.38	3.67	3.67	4.680e+002	6.767e+002	6.767e+002
5	PHOSPHATE	5.80	6.00	6.00	1.800e+002	1.983e+002	1.983e+002
6	SULFATE	6.85	6.98	6.98	1.980e+002	5.565e+002	5.565e+002

DATA REPROCESSED ON Mon Jul 16 10:15:06 1990

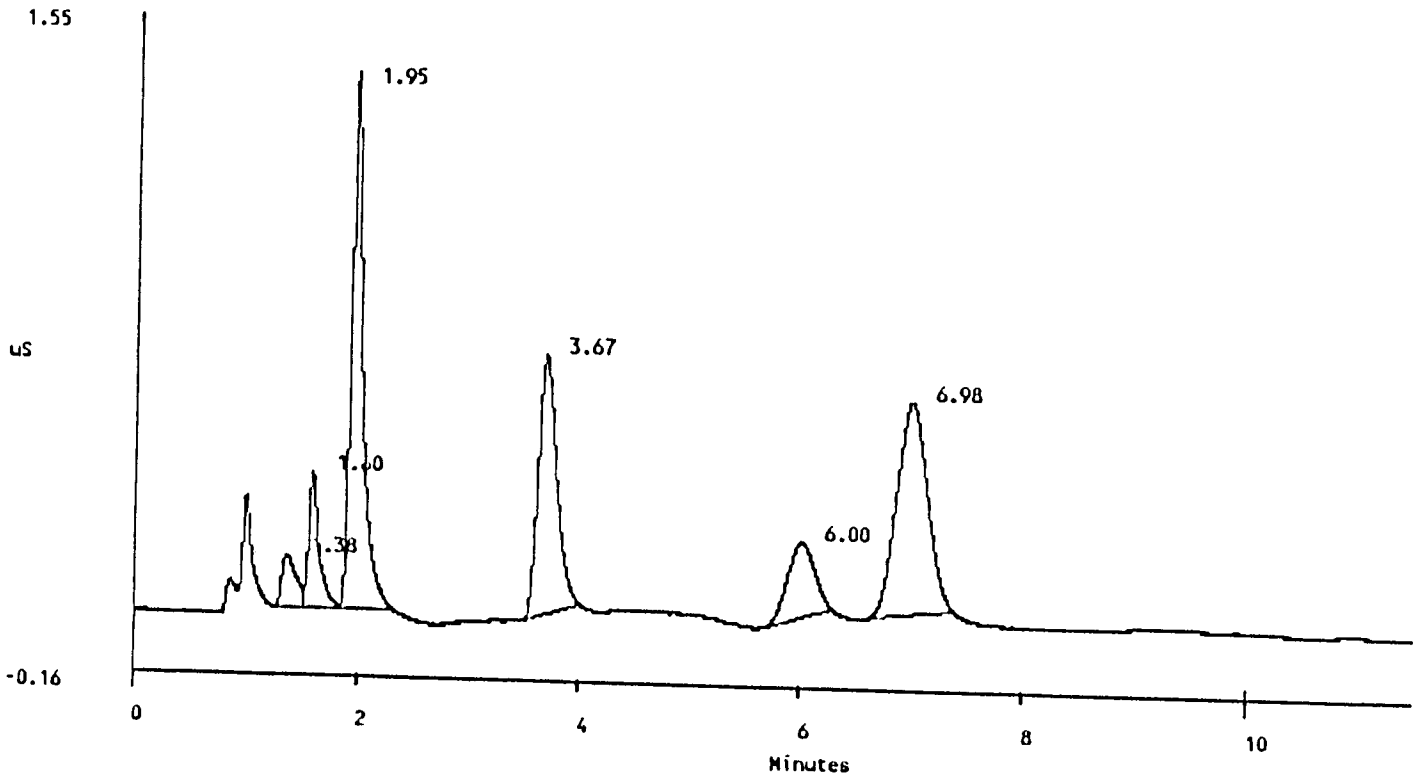
Sample Name: AUTOCAL1R
Data File : A:\90040979.D03 Date: Wed Apr 11 10:22:06 1990
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 3 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes
Area reject = 1000
Amount Injected = 1

Number of Data Points = 3451
One Data Point per 0.2 seconds
Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.38		0.000e+000	1.225e+003	140	2		
2	1.60	CHLORIDE	1.317e-001	2.313e+003	358	2	0	0.00%
3	1.95	NITRITE	1.190e+000	9.937e+003	1360	2	0	0.00%
4	3.67	NITRATE	1.220e+000	7.900e+003	677	1	0	0.00%
5	6.00	PHOSPHATE	1.216e+000	3.360e+003	198	1	0	0.00%
6	6.98	SULFATE	1.190e+000	1.077e+004	557	1	0	0.00%



********** AUTOMATIC CALIBRATION UPDATE **********

Method File: C:\WINDOWS\AI400\METHOD\SST.MET
Result File: CALDATA.R10
Sample Name: AUTOCAL2R
Calibration Level : 2
Interface #: 1 Cycle #: 4 Result File Date: Wed Apr 11 10:34:25 1990
Start time = 0 Stop time = 11.50
Area reject = 1000 One DataPoint per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

********** PEAKS NOT FOUND IN THIS RUN **********

Name	Adjusted Ret Time	Reference Peak
Oxalate	9.77	1

********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD HEIGHT	MEASURED HEIGHT	NEW HEIGHT
1	FLUORIDE	1.00	1.00	1.00	6.160e+002	6.067e+002	6.067e+002
2	CHLORIDE	1.60	1.60	1.60	4.890e+002	5.866e+002	5.866e+002
3	NITRITE	1.95	1.95	1.95	3.515e+003	3.515e+003	3.515e+003
4	NITRATE	3.67	3.63	3.63	1.234e+003	1.565e+003	1.565e+003
5	PHOSPHATE	6.00	5.98	5.98	4.370e+002	5.364e+002	5.364e+002
6	SULFATE	6.98	6.97	6.97	9.220e+002	1.297e+003	1.297e+003

DATA REPROCESSED ON Mon Jul 16 10:16:39 1990

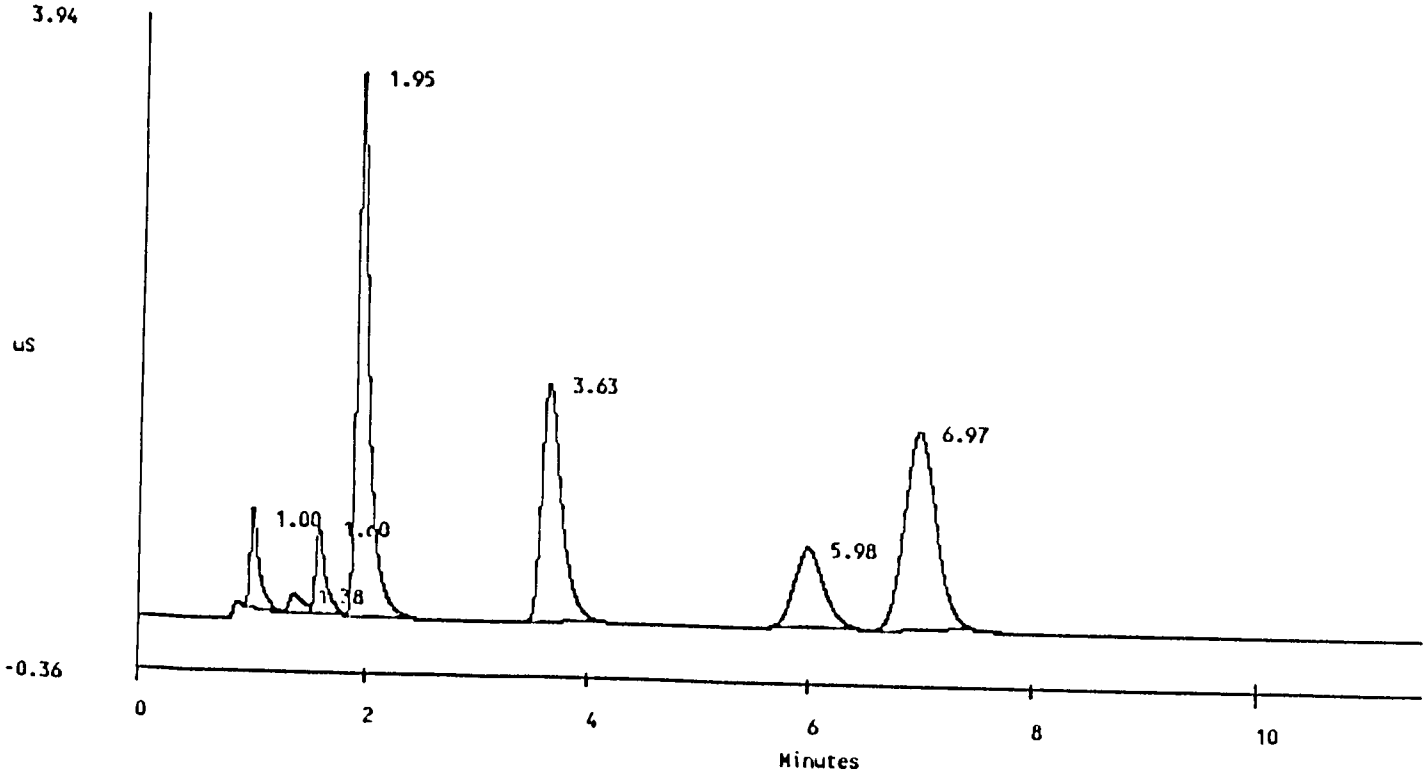
Sample Name: AUTOCAL2R
Date: Wed Apr 11 10:34:25 1990
Data File : A:\90040979.D04
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 4 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes
Area reject = 1000
Amount Injected = 1

Number of Data Points = 3451
One Data Point per 0.2 seconds
Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	2.438e-001	3.642e+003	607	1	0	0.00%
2	1.38		0.000e+000	1.159e+003	132	2		
3	1.60	CHLORIDE	3.284e-001	3.676e+003	587	2	0	0.00%
4	1.95	NITRITE	2.990e+000	2.570e+004	3515	2	0	0.00%
5	3.63	NITRATE	3.040e+000	1.923e+004	1565	1	0	0.00%
6	5.98	PHOSPHATE	3.030e+000	9.889e+003	536	1	0	0.00%
7	6.97	SULFATE	2.965e+000	2.569e+004	1297	1	0	0.00%



********** AUTOMATIC CALIBRATION UPDATE **********

Method File: C:\WINDOWS\AI400\METHOD\SST.MET
Result File: CALDATA.R10
Sample Name: AUTOCAL3R
Calibration Level : 3
Interface #: 1 Cycle #: 5 Result File Date: Wed Apr 11 10:46:43 1990
Start time = 0 Stop time = 11.50
Area reject = 1000 One DataPoint per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

********** PEAKS NOT FOUND IN THIS RUN **********

Name	Adjusted Ret Time	Reference Peak
Oxalate	9.77	1

********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD HEIGHT	MEASURED HEIGHT	NEW HEIGHT
1	FLUORIDE	1.00	1.00	1.00	1.226e+003	1.320e+003	1.320e+003
2	CHLORIDE	1.60	1.60	1.60	1.017e+003	1.135e+003	1.135e+003
3	NITRITE	1.95	1.95	1.95	7.323e+003	7.323e+003	7.323e+003
4	NITRATE	3.63	3.58	3.58	2.460e+003	3.098e+003	3.098e+003
5	PHOSPHATE	5.98	5.97	5.97	9.480e+002	1.103e+003	1.103e+003
6	SULFATE	6.97	6.97	6.97	1.890e+003	2.607e+003	2.607e+003

DATA REPROCESSED ON Mon Jul 16 10:17:20 1990

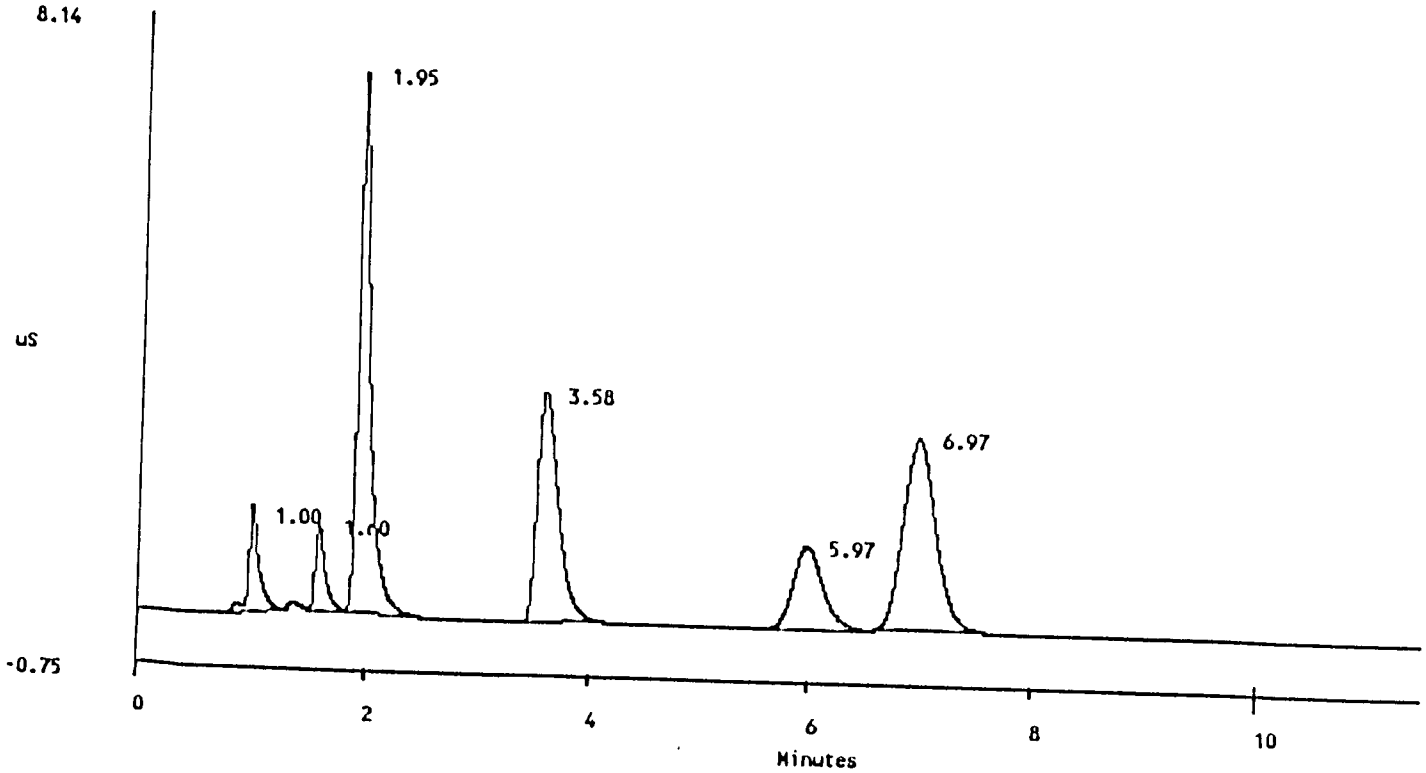
Sample Name: AUTOCAL3R
Data File : A:\90040979.D05 Date: Wed Apr 11 10:46:43 1990
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 5 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes
Area reject = 1000
Amount Injected = 1

Number of Data Points = 3450
One Data Point per 0.2 seconds
Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	4.852e-001	9.315e+003	1320	1	0	0.00%
2	1.60	CHLORIDE	6.535e-001	6.685e+003	1135	1	0	0.00%
3	1.95	NITRITE	5.951e+000	5.351e+004	7323	1	0	0.00%
4	3.58	NITRATE	6.050e+000	4.062e+004	3098	1	0	0.00%
5	5.97	PHOSPHATE	6.030e+000	2.080e+004	1103	2	0	0.00%
6	6.97	SULFATE	5.901e+000	5.199e+004	2607	2	0	0.00%



********** AUTOMATIC CALIBRATION UPDATE **********

Method File: C:\WINDOWS\AI400\METHOD\SST.MET
Result File: CALDATA.R10
Sample Name: AUTOCAL4R
Calibration Level : 4
Interface #: 1 Cycle #: 6 Result File Date: Wed Apr 11 10:59:03 1990
Start time = 0 Stop time = 11.50
Area reject = 1000 One DataPoint per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

********** PEAKS NOT FOUND IN THIS RUN **********

Name	Adjusted Ret Time	Reference Peak
Oxalate	9.77	1

********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD HEIGHT	MEASURED HEIGHT	NEW HEIGHT
1	FLUORIDE	1.00	1.00	1.00	2.625e+003	2.776e+003	2.776e+003
2	CHLORIDE	1.60	1.58	1.58	2.088e+003	2.092e+003	2.092e+003
3	NITRITE	1.95	1.95	1.95	1.524e+004	1.524e+004	1.524e+004
4	NITRATE	3.58	3.53	3.53	4.753e+003	6.111e+003	6.111e+003
5	PHOSPHATE	5.97	5.93	5.93	1.886e+003	2.270e+003	2.270e+003
6	SULFATE	6.97	6.93	6.93	4.005e+003	5.358e+003	5.358e+003

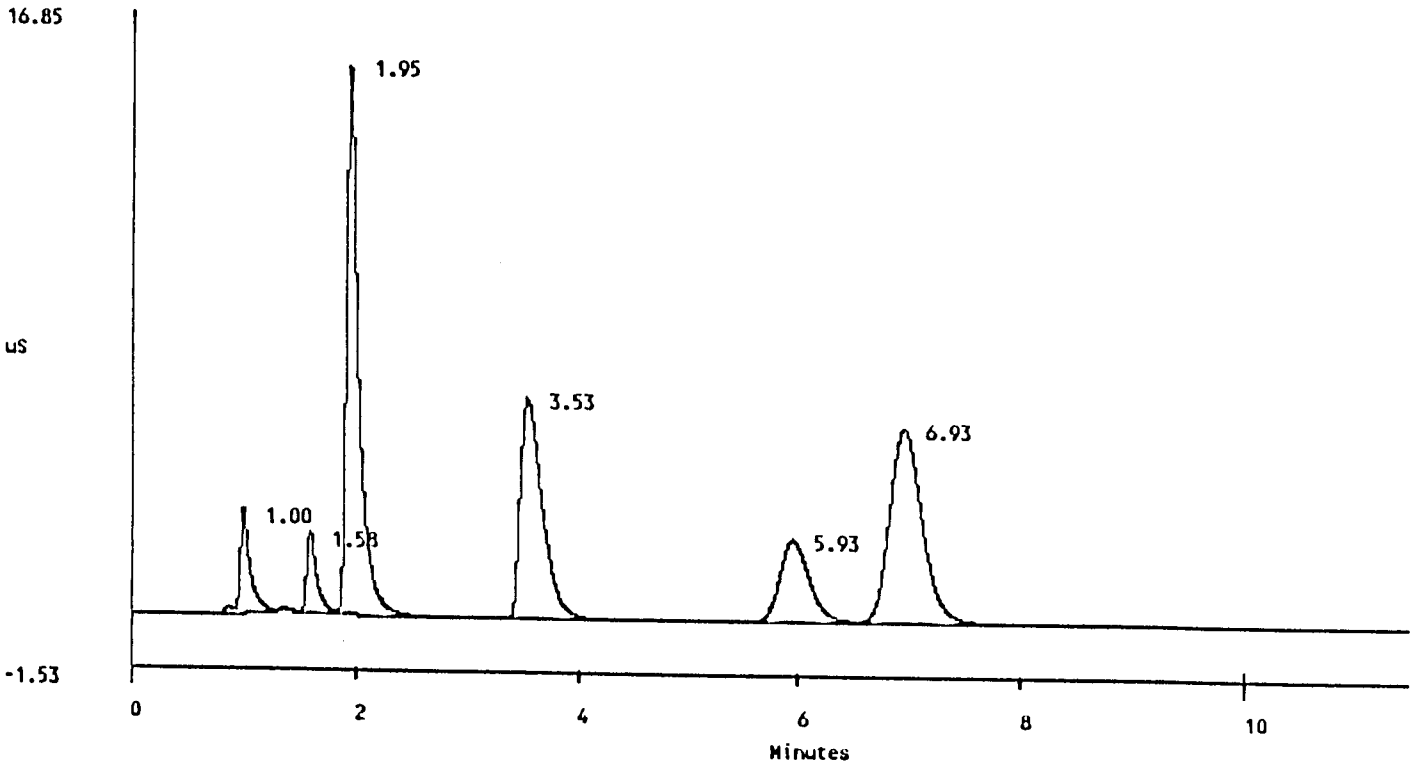
DATA REPROCESSED ON Mon Jul 16 10:17:59 1990

Sample Name: AUTOCAL4R Date: Wed Apr 11 10:59:03 1990
Data File : A:\90040979.D06
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 6 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3450
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	9.608e-001	1.846e+004	2776	1	0	0.00%
2	1.58	CHLORIDE	1.294e+000	1.416e+004	2092	2	0	0.00%
3	1.95	NITRITE	1.178e+001	1.142e+005	15244	2	0	0.00%
4	3.53	NITRATE	1.198e+001	8.403e+004	6111	1	0	0.00%
5	5.93	PHOSPHATE	1.194e+001	4.316e+004	2270	2	0	0.00%
6	6.93	SULFATE	1.169e+000	1.087e+005	5358	2	0	0.00%



********** AUTOMATIC CALIBRATION UPDATE **********

Method File: C:\WINDOWS\AI400\METHOD\SST.MET
Result File: CALDATA.R10
Sample Name: AUTOCAL5R
Calibration Level : 5
Interface #: 1 Cycle #: 7 Result File Date: Wed Apr 11 11:11:21 1990
Start time = 0 Stop time = 11.50
Area reject = 1000 One DataPoint per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

********** PEAKS NOT FOUND IN THIS RUN **********

Name	Adjusted Ret Time	Reference Peak
Oxalate	9.77	1

********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD HEIGHT	MEASURED HEIGHT	NEW HEIGHT
1	FLUORIDE	1.00	1.00	1.00	5.315e+003	5.385e+003	5.385e+003
2	CHLORIDE	1.58	1.60	1.60	4.066e+003	4.705e+003	4.705e+003
3	NITRITE	1.95	1.95	1.95	2.844e+004	2.844e+004	2.844e+004
4	NITRATE	3.53	3.47	3.47	9.250e+003	1.137e+004	1.137e+004
5	PHOSPHATE	5.93	5.88	5.88	3.876e+003	4.565e+003	4.565e+003
6	SULFATE	6.93	6.90	6.90	8.158e+003	1.081e+004	1.081e+004

DATA REPROCESSED ON Mon Jul 16 10:18:38 1990

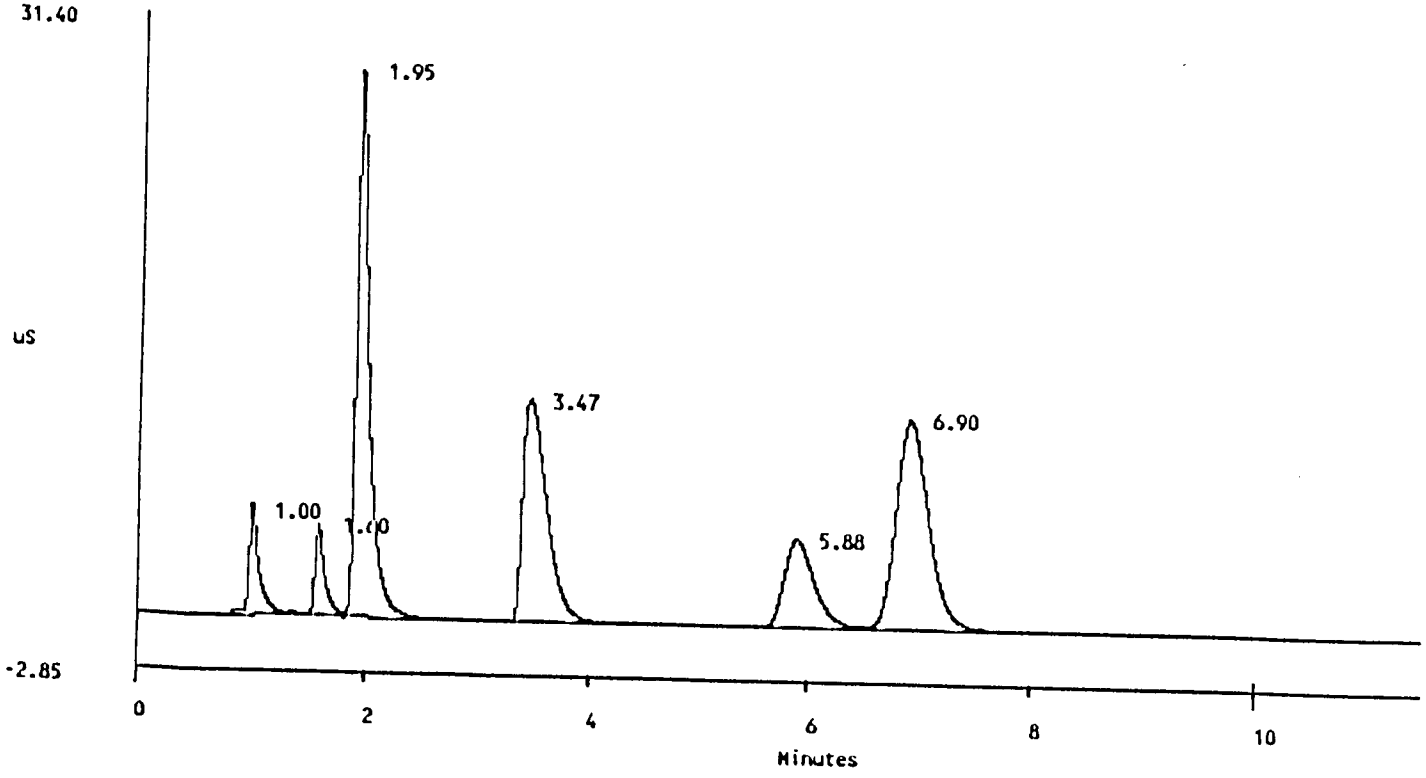
Sample Name: AUTOCAL5R
Data File : A:\90040979.D07 Date: Wed Apr 11 11:11:21 1990
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 7 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes
Area reject = 1000
Amount Injected = 1

Number of Data Points = 3450
One Data Point per 0.2 seconds
Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	1.885e+000	3.559e+004	5385	1	0	0.00%
2	1.60	CHLORIDE	2.538e+000	2.820e+004	4705	2	0	0.00%
3	1.95	NITRITE	2.394e+001	2.189e+005	28443	2	0	0.00%
4	3.47	NITRATE	2.350e+004	1.713e+005	11368	1	0	0.00%
5	5.88	PHOSPHATE	2.342e+001	8.877e+004	4565	2	0	0.00%
6	6.90	SULFATE	2.292e+001	2.202e+005	10811	2	0	0.00%



********** AUTOMATIC CALIBRATION UPDATE **********

Method File: C:\WINDOWS\AI400\METHOD\SST.MET
Result File: CALDATA.R10
Sample Name: AUTOCAL6R
Calibration Level : 6
Interface #: 1 Cycle #: 8 Result File Date: Wed Apr 11 11:23:42 1990
Start time = 0 Stop time = 11.50
Area reject = 1000 One DataPoint per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

********** PEAKS NOT FOUND IN THIS RUN **********

Name	Adjusted Ret Time	Reference Peak
Oxalate	9.77	1

********** COMPONENTS FOUND IN THIS RUN **********

COMP NUM	COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD HEIGHT	MEASURED HEIGHT	NEW HEIGHT
1	FLUORIDE	1.00	1.00	1.00	1.109e+004	1.123e+004	1.123e+004
2	CHLORIDE	1.60	1.60	1.60	9.183e+003	9.921e+003	9.921e+003
3	NITRITE	1.95	1.95	1.95	4.948e+004	4.948e+004	4.948e+004
4	NITRATE	3.47	3.38	3.38	1.747e+004	2.203e+004	2.203e+004
5	PHOSPHATE	5.88	5.80	5.80	8.003e+003	9.238e+003	9.238e+003
6	SULFATE	6.90	6.85	6.85	1.695e+004	2.250e+004	2.250e+004

DATA REPROCESSED ON Mon Jul 16 10:19:17 1990

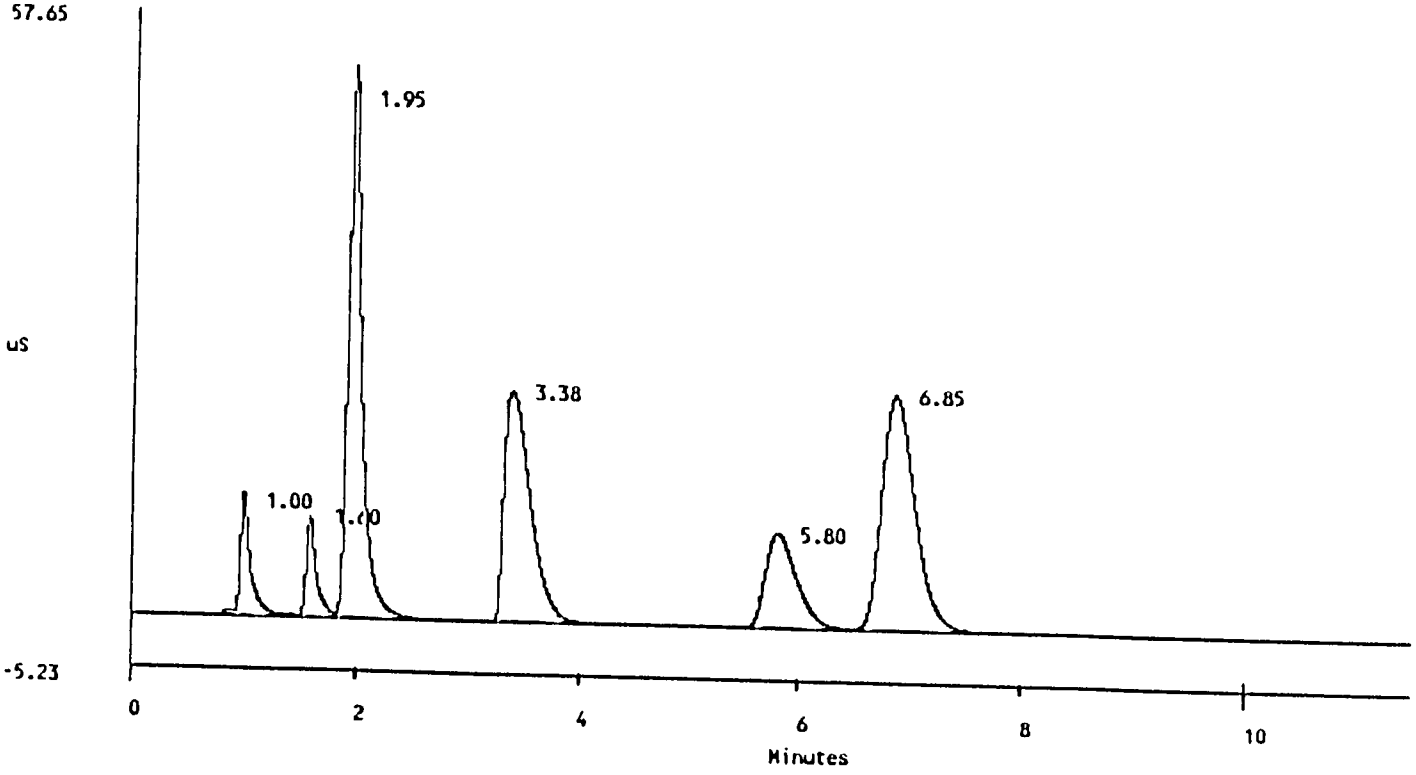
Sample Name: AUTOCAL6R
Date: Wed Apr 11 11:23:42 1990
Data File : A:\90040979.D08
Method : C:\WINDOWS\AI400\METHOD\SST.MET
CIM Address: 1 System : 1 Cycle#: 8 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes
Area reject = 1000
Amount Injected = 1

Number of Data Points = 3450
One Data Point per 0.2 seconds
Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	3.629e+000	8.355e+004	11233	2	0	0.00%
2	1.60	CHLORIDE	4.889e+000	6.263e+004	9921	2	0	0.00%
3	1.95	NITRITE	4.452e+001	4.402e+005	49476	2	0	0.00%
4	3.38	NITRATE	4.526e+001	3.689e+005	22029	1	0	0.00%
5	5.80	PHOSPHATE	4.511e+001	1.868e+005	9238	2	0	0.00%
6	6.85	SULFATE	4.415e+001	4.727e+005	22498	2	0	0.00%



DIONEX SCHEDULE - C:\WINDOWS\AI400\SCHEDULE\90041200.SCH

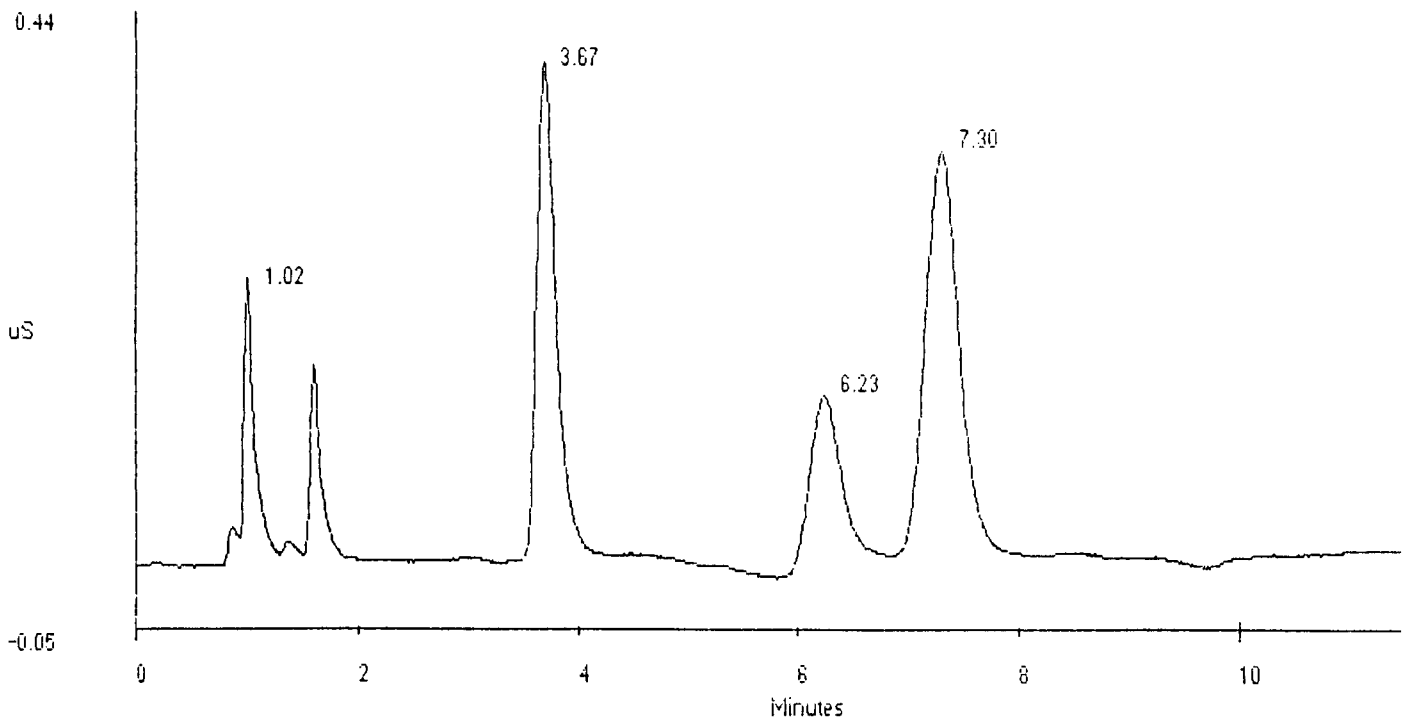
Inject	Sample Name	Method Name	Data File	Volume	Dilution	Int Std
1	SETUP	c:\windows\ai	c:\windows\ai	1	1	0
2	BLANK	c:\windows\ai	c:\windows\ai	1	1	0
3	LMCS/6C11-HO	c:\windows\ai	c:\windows\ai	1	101	0
4	438B	c:\windows\ai	c:\windows\ai	1	1	0
5	427	c:\windows\ai	c:\windows\ai	1	101	0
6	428D	c:\windows\ai	c:\windows\ai	1	101	0
7	429S	c:\windows\ai	c:\windows\ai	1	101	0
8	451	c:\windows\ai	c:\windows\ai	1	101	0
9	452D	c:\windows\ai	c:\windows\ai	1	101	0
10	475	c:\windows\ai	c:\windows\ai	1	101	0
11	476D	c:\windows\ai	c:\windows\ai	1	101	0
12	547	c:\windows\ai	c:\windows\ai	1	101	0
13	548D	c:\windows\ai	c:\windows\ai	1	101	0
14	571	c:\windows\ai	c:\windows\ai	1	101	0
15	~~572D~~	c:\windows\ai	c:\windows\ai	1	101	0
16	~~765~~	c:\windows\ai	c:\windows\ai	1	21	0
17	~~766D~~	c:\windows\ai	c:\windows\ai	1	21	0
18	LMCS/6C11-HO	c:\windows\ai	c:\windows\ai	1	101	0

```
: Sample Name: SETUP                                  Date: Thu Apr 12 11:09:04 1990:
: Data File  : c:\windows\ai400\data\90041200.d01                                   :
: Method     : c:\windows\ai400\method\sst.met                                      :
: CIM Address: 1        System : 1        Cycle#:    1        Detector: CDM        :
```

********** EXTERNAL STANDARD REPORT **********

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3450 One Data Point per 0.2 seconds
Areareject = 1000
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	7.169e-002	1.081e+003	196	1	0	1.67%
2	3.67		0.000e+000	4.412e+003	376	1		
3	6.23		0.000e+000	1.859e+003	115	1		
4	7.30	SULFATE	6.889e-001	5.361e+003	301	1	0	6.57%

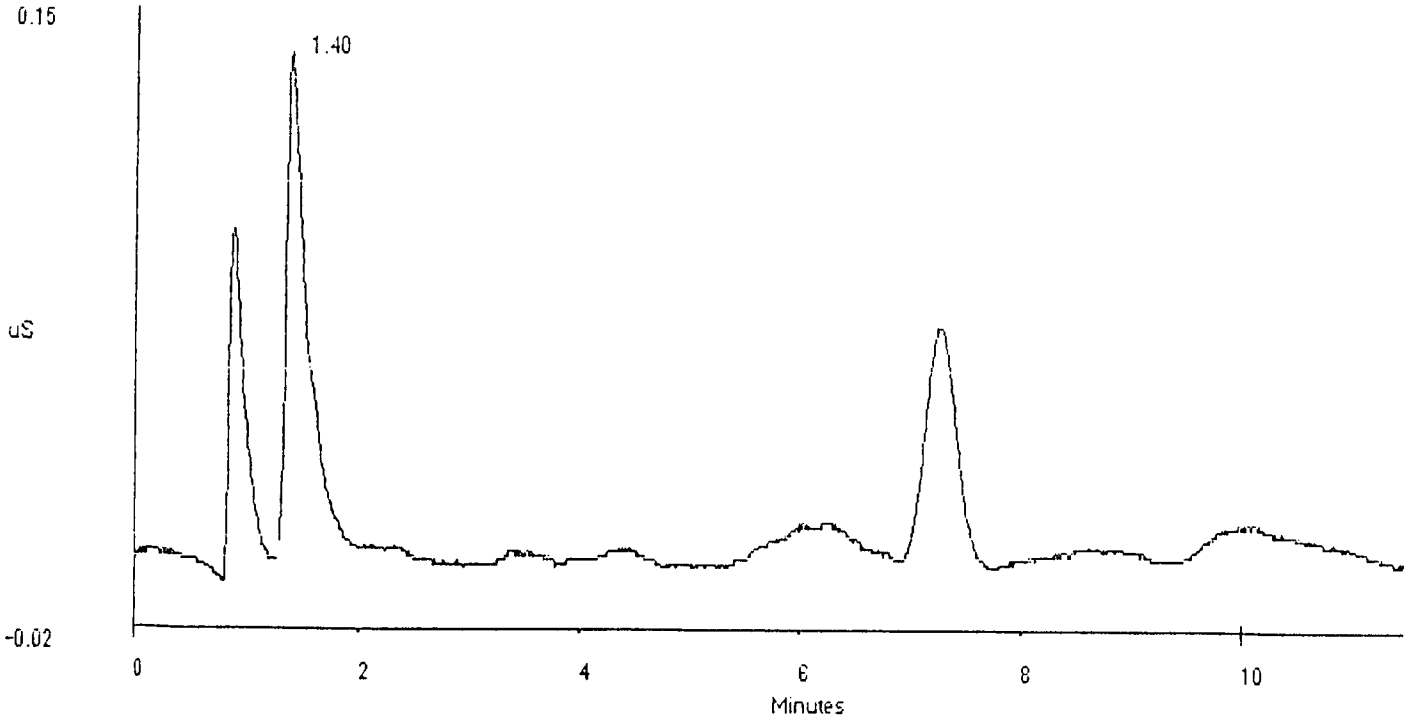


```
: Sample Name: BLANK                                  Date: Thu Apr 12 11:21:20 1990:
: Data File  : c:\windows\ai400\data\90041200.d02                                   :
: Method     : c:\windows\ai400\method\sst.met                                      :
: CIM Address: 1        System : 1        Cycle#:   2       Detector: CDM          :
```

********** EXTERNAL STANDARD REPORT **********

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3450 One Data Point per 0.2 seconds
Areareject = 1000
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME

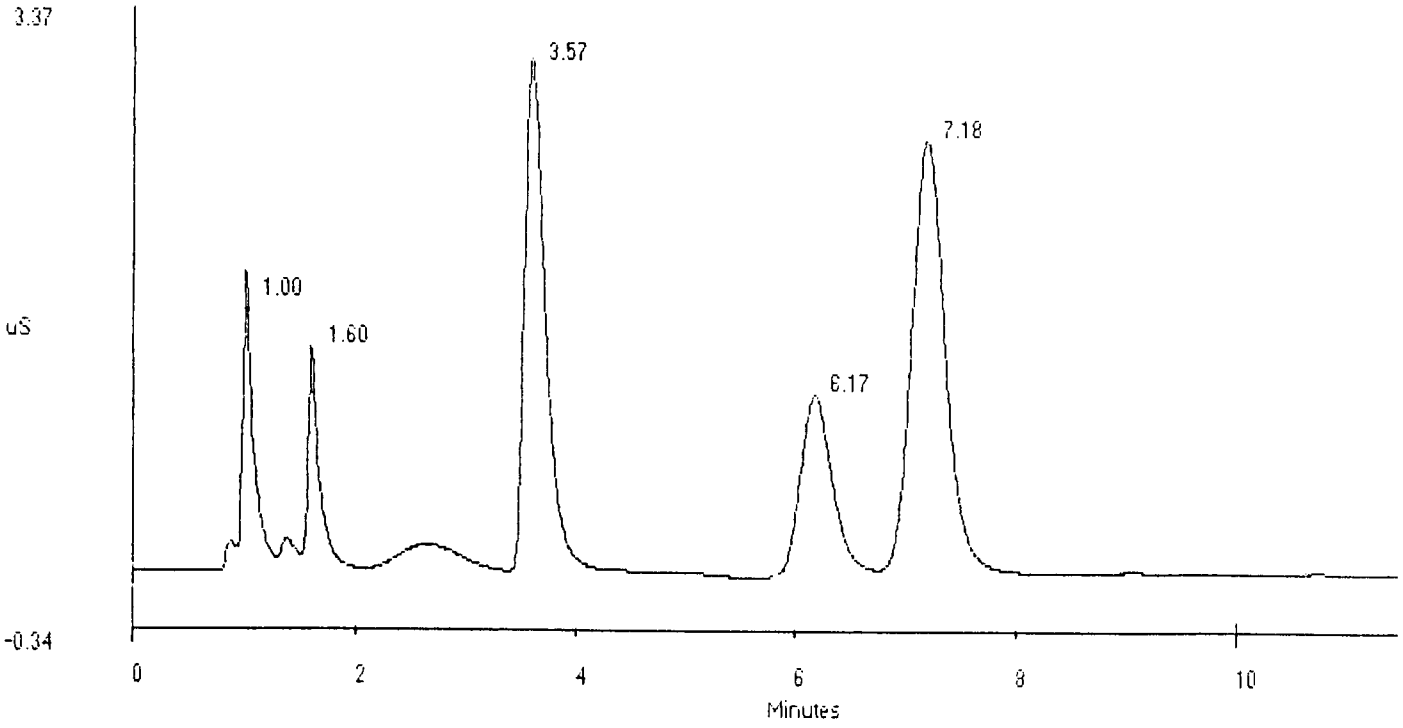


```
Sample Name: LMCS/6C11-HO F426                    Date: Thu Apr 12 11:33:35 1990
Data File   : c:\windows\ai400\data\90041200.d03
Method      : c:\windows\ai400\method\sst.met
CIM Address: 1        System : 1        Cycle#:   3        Detector: CDM
```

********** EXTERNAL STANDARD REPORT **********

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3450 One Data Point per 0.2 seconds
Areareject = 1000
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	5.450e+001	9.780e+003	1489	1	0	0.00%
2	1.60	CHLORIDE	7.288e+001	7.890e+003	1258	1	0	0.00%
3	3.57	NITRATE	5.993e+002	3.943e+004	3009	1	0	5.42%
4	6.17	PHOSPHATE	5.816e+002	2.084e+004	1060	2	0	6.32%
5	7.18	SULFATE	5.781e+002	5.320e+004	2564	2	0	4.87%

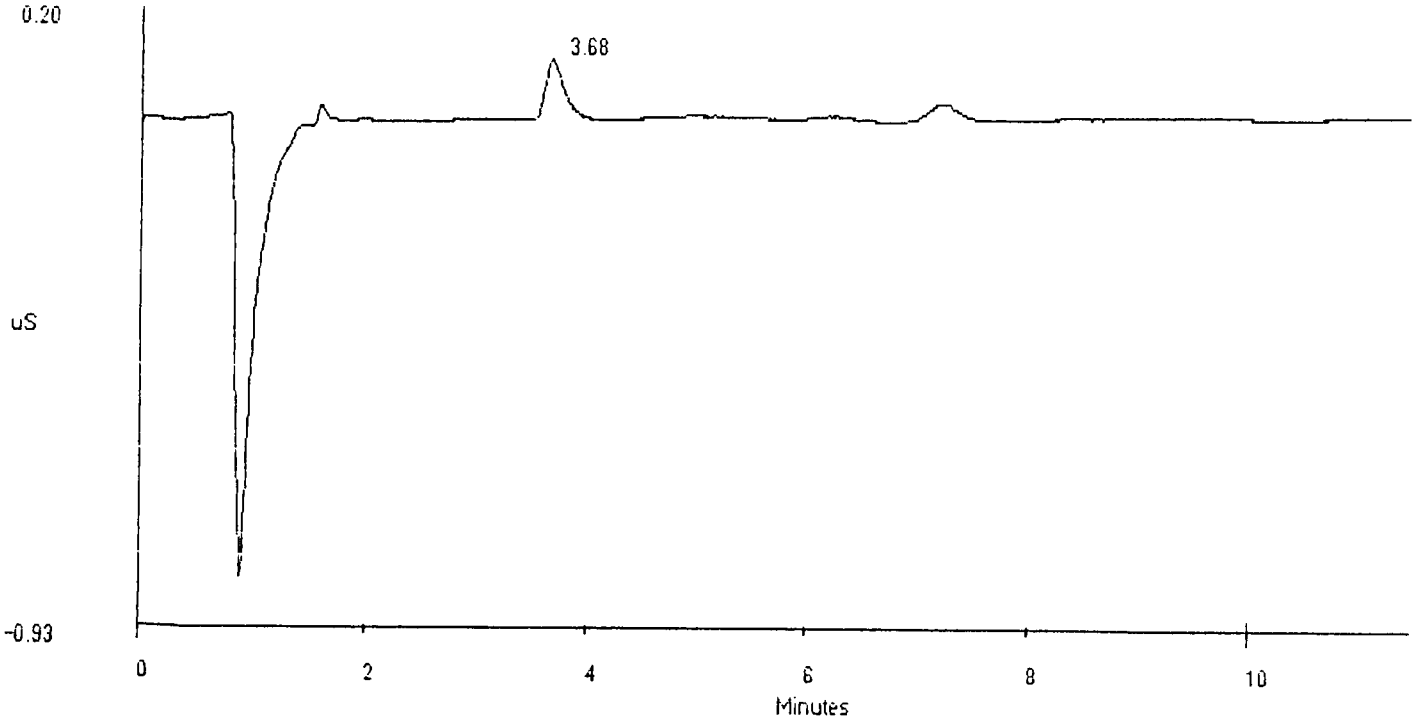


```
: Sample Name: 438B                                  Date: Thu Apr 12 11:45:50 1990:
: Data File  : c:\windows\ai400\data\90041200.d04                                  :
: Method     : c:\windows\ai400\method\sst.met                                     :
: CIM Address: 1        System : 1        Cycle#:   4       Detector: CDM         :
```

********** EXTERNAL STANDARD REPORT **********

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3450 One Data Point per 0.2 seconds
Areareject = 1000
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME

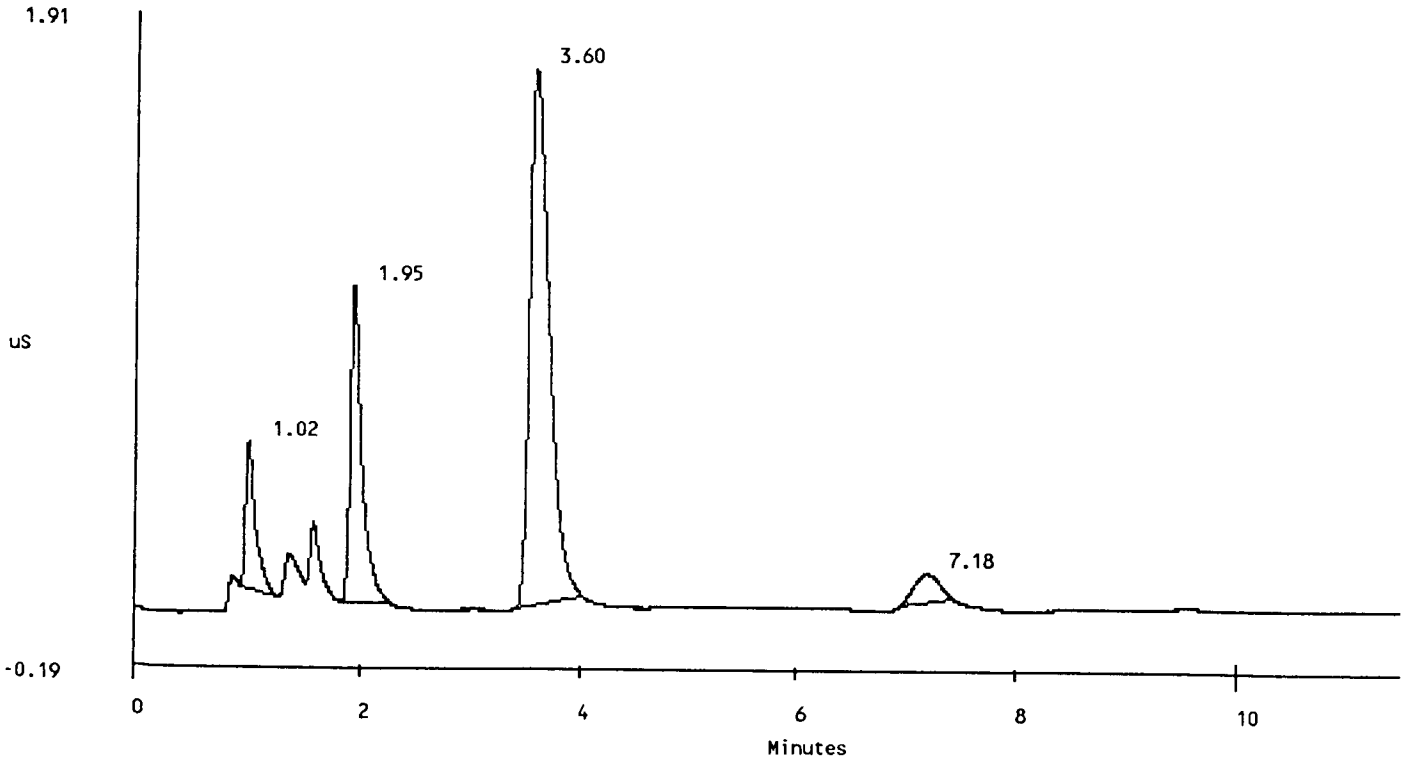


Sample Name: 427 Date: Thu Apr 12 11:58:05 1990
Data File : 90041200.D05
Method : c:\windows\ai400\method\sst.met
CIM Address: 1 System : 1 Cycle#: 5 Detector: CDM

********** EXTERNAL STANDARD REPORT **********

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3450 One Data Point per 0.2 seconds
Areareject = 1000
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.02	FLUORIDE	1.721e+001	2.872e+003	465	1	0	1.67%
2	1.95	NITRITE	1.019e+002	7.122e+003	1007	1	0	0.00%
3	3.60	NITRATE	3.302e+002	2.127e+004	1719	1	0	6.40%
4	7.18	SULFATE	2.159e+001	1.501e+003	91	1	0	4.87%

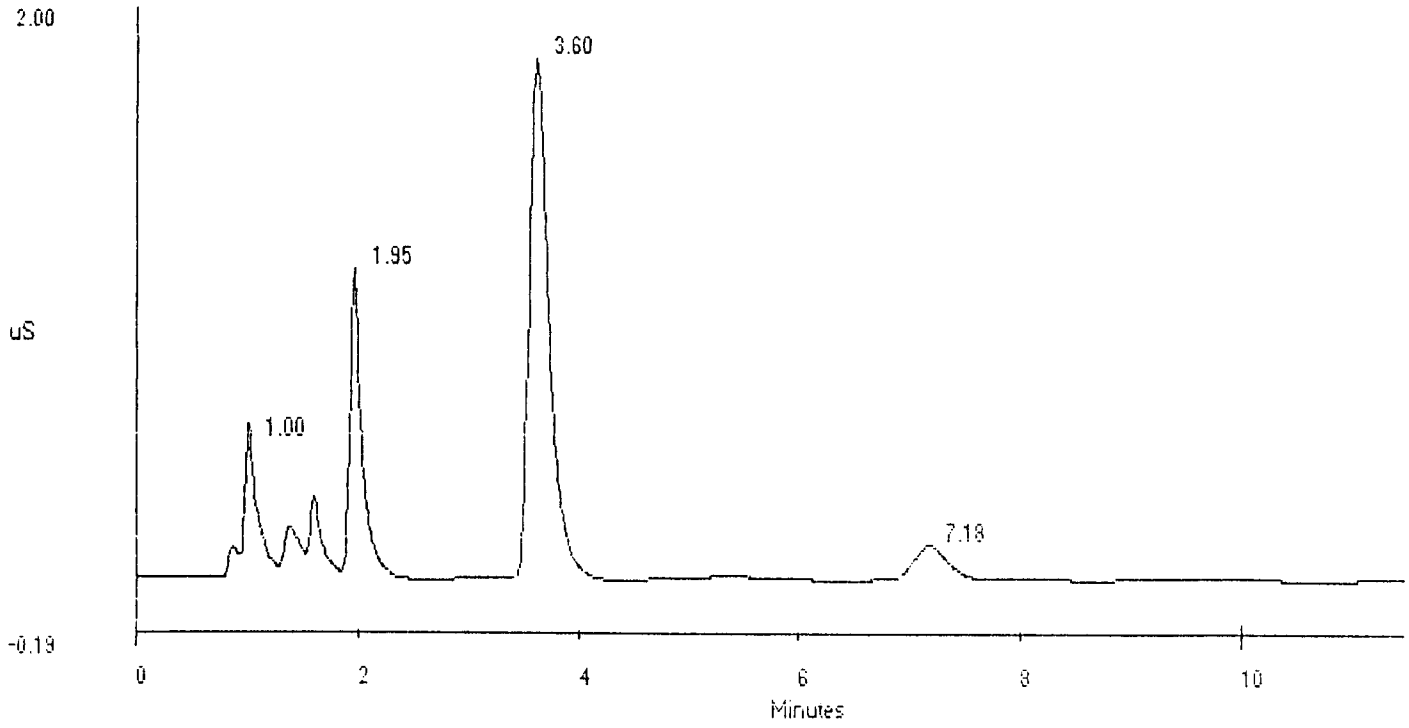


```
: Sample Name: 428D                                Date: Thu Apr 12 12:10:20 1990:
: Data File   : c:\windows\ai400\data\90041200.d06                                :
: Method      : c:\windows\ai400\method\sst.met                                   :
: CIM Address: 1        System : 1        Cycle#:    6       Detector: CDM        :
```

********** EXTERNAL STANDARD REPORT **********

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3450 One Data Point per 0.2 seconds
Areareject = 1000
Amount Injected = 1 Dilution factor = 101

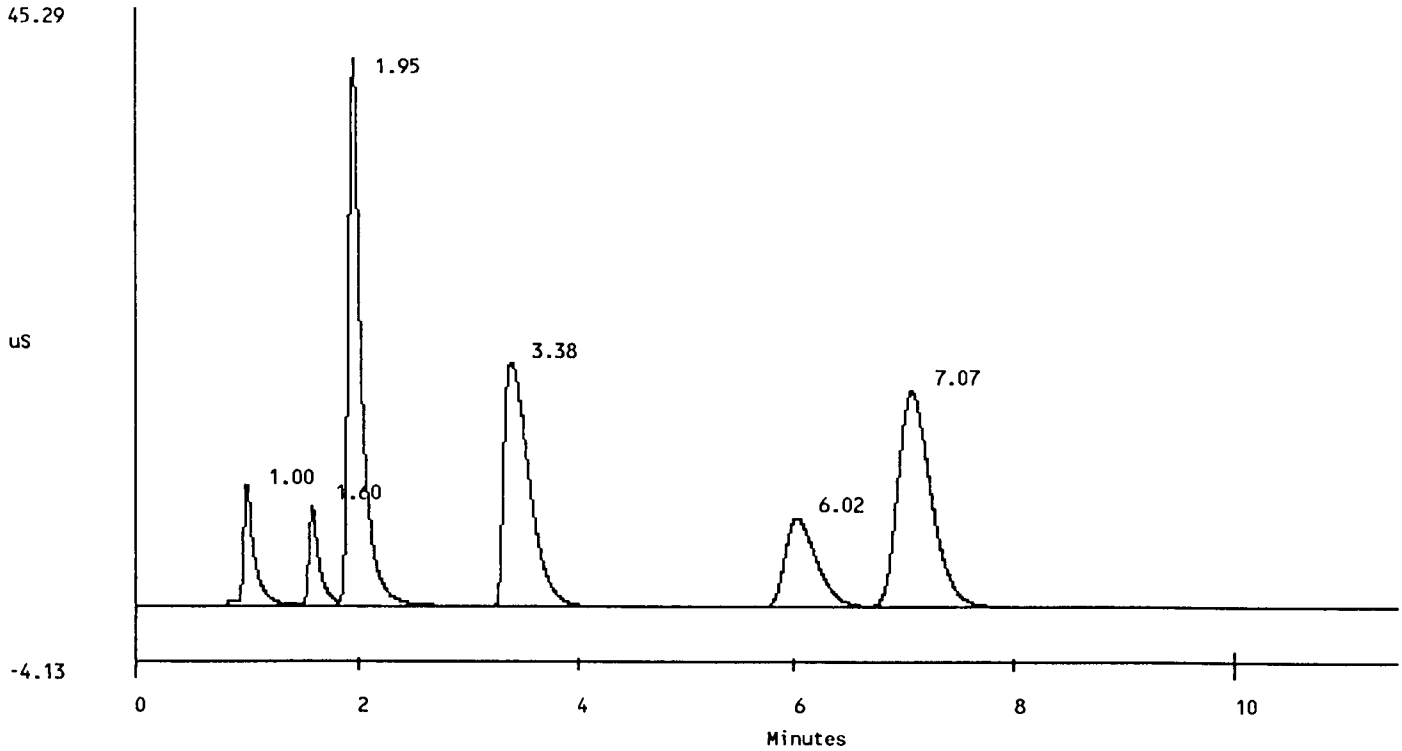
PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	1.559e+001	2.918e+003	421	1	0	0.00%
2	1.95	NITRITE	1.058e+002	7.528e+003	1059	1	0	0.00%
3	3.60	NITRATE	3.487e+002	2.236e+004	1808	1	0	6.40%
4	7.18	SULFATE	2.330e+001	1.690e+003	99	1	0	4.87%



```
==============================================================================
| Sample Name: 429S                          Date: Thu Apr 12 12:22:35 1990|
| Data File  : 90041200.D07                                                |
| Method     : c:\windows\ai400\method\sst.met                             |
| CIM Address: 1       System : 1       Cycle#:   7      Detector: CDM     |
==============================================================================
***********************  EXTERNAL STANDARD REPORT  **************************
```

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3450 One Data Point per 0.2 seconds
Arearject = 1000
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	2.921e+002	6.771e+004	8669	2	0	0.00%
2	1.60	CHLORIDE	3.943e+002	4.826e+004	7505	2	0	0.00%
3	1.95	NITRITE	3.480e+003	3.366e+005	39647	2	0	0.00%
4	3.38	NITRATE	3.747e+003	2.932e+005	18071	1	0	0.00%
5	6.02	PHOSPHATE	3.360e+003	1.356e+005	6632	2	0	3.74%
6	7.07	SULFATE	3.335e+003	3.435e+005	16122	2	0	3.16%



DATA REPROCESSED ON Thu Apr 12 14:27:42 1990

Sample Name: 6C11HO		Date: Thu Apr 12 14:21:13 1990	
Data File : C:\WINDOWS\AI400\DATA\900-5485.D01			
Method : C:\WINDOWS\AI400\METHOD\SST.MET			
CIM Address: 1	System : 1	Cycle#: 1	Detector: CDM

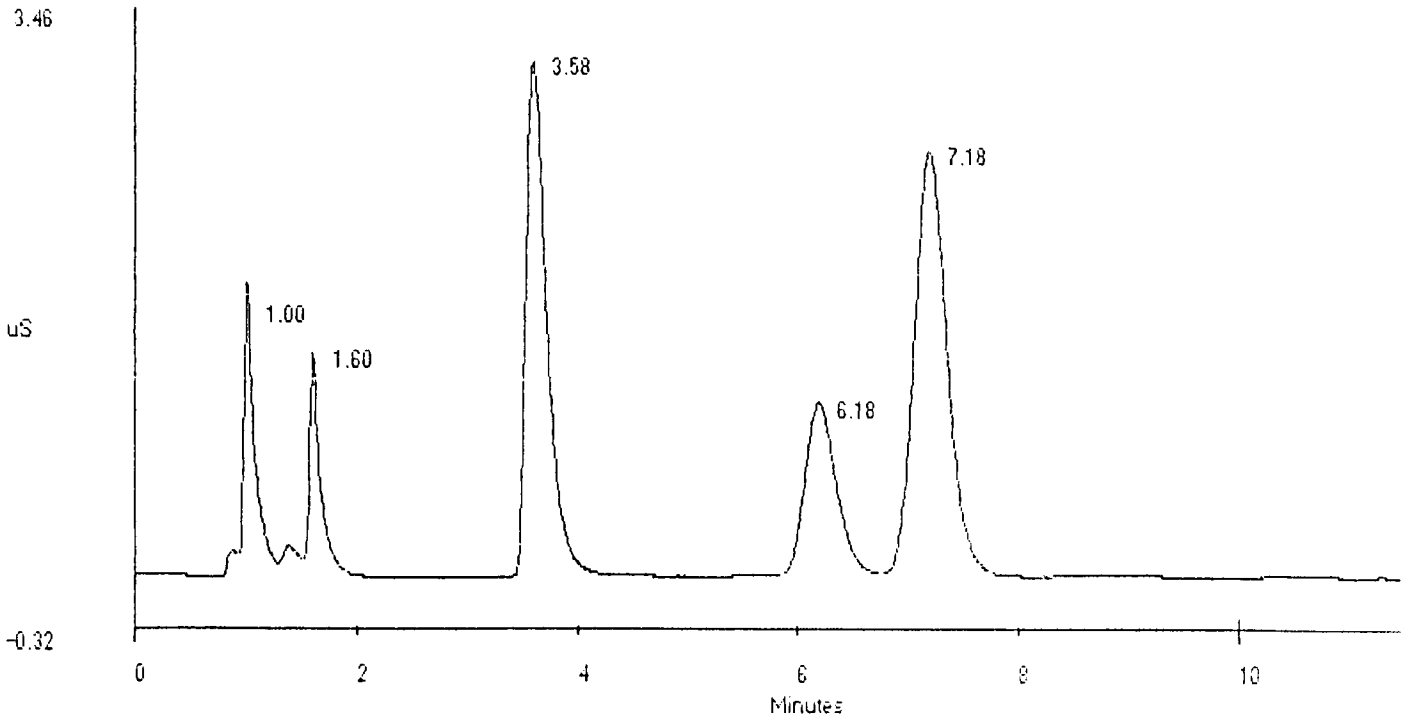
********** EXTERNAL STANDARD REPORT **********

Stop time = 11.50 Minutes Number of Data Points = 3451
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.00	FLUORIDE	5.455e-001	9.806e+003	1506	1	0	0.00%
2	1.60	CHLORIDE	7.267e-001	7.884e+003	1267	1	0	0.00%
3	3.58	NITRATE	6.182e+000	4.031e+004	3130	1	0	5.91%
4	6.18	PHOSPHATE	5.669e+000	2.050e+004	1043	2	0	6.61%
5	7.18	SULFATE	5.724e+000	5.282e+004	2564	2	0	4.87%

x101



Analytical Batch

LAB SEGMENT SERIAL #:F0417

CUSTOMER ID:89-070

INSTRUMENT	WB39937
PROCEDURE/REV	LA-344-105/A-3
TECHNOLOGIST	E. Colvin
DATE	March 27, 1990
TEMPERATURE	N/A
STARTING TIME	0830
ENDING TIME	1130
CHEMIST	R. E. Brandt

Total Organic Carbon from water digestion.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std.	F0426
2	Reagent Blank	F0438
3	Sample 89-070	F0427
4	Duplicate Sample 89-070	F0428
5	Spike of Sample 89-070	F0429
6	Final LMCS Check Std.	F0430
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT.VOL.	FINAL VOL. OF STD.
LMCS Check Std.	70C11C/200ul			2.2 ml
Spike	80C11/200ul	F0427/200ul		0.5 ml

SST-102 Rev. F 9/7/90 Interim

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-426 Date: 03-27-1990 Time: 10:01:29

Blank = .428213 Sample Size = 200 Dilution Factor = 11
% Difference = 10 Min Readings = 7 Max Readings = 7

== Reading =====	Analysis Time ====	Coulometer ====	% Difference ==
1	1.01	0.00	0.00
2	2.01	35.60	100.00
3	3.01	47.80	25.52
4	4.01	52.20	8.43
5	5.01	54.10	3.51
6	6.01	55.00	1.64
7	7.01	55.70	1.26

(55.7 - 3.000314)(11)/(200) = 2.898483 g/L Carbon

(55.7 - 3.000314)(11)/(200)(12) = .2415402 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-438 Date: 03-27-1990 Time: 09:44:38

Blank = N/A Sample Size = 200 Dilution Factor = 1
% Difference = 10 Min Readings = 7 Max Readings = 7

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	1.01	0.00	0.00
2	2.01	1.00	100.00
3	3.01	1.50	33.33
4	4.01	2.00	25.00
5	5.01	2.30	13.04
6	6.01	2.70	14.81
7	7.01	3.00	10.00

BLANK VALUE = 3 / 7.00586 = .428213 ug/minute

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-427 Date: 03-27-1990 Time: 10:10:23

Blank = .428213 Sample Size = 200 Dilution Factor = 1.1
% Difference = 10 Min Readings = 7 Max Readings = 7

== Reading =====	Analysis Time =====	Coulometer =====	% Difference ==
1	1.01	0.00	0.00
2	2.01	1.90	100.00
3	3.01	2.70	29.63
4	4.01	3.30	18.18
5	5.01	3.70	10.81
6	6.01	4.20	11.90
7	7.01	4.50	6.67

(4.5 - 3.00034)(1.1)/(200) = 8.248132E-03 g/L Carbon

(4.5 - 3.00034)(1.1)/(200)(12) = 6.873443E-04 Molar Carbon

Sample Run By: 00028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-428 Date: 03-27-1990 Time: 10:18:27

Blank = .428213 Sample Size = 200 Dilution Factor = 1.1
% Difference = 10 Min Readings = 7 Max Readings = 7

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	1.01	0.00	0.00
2	2.01	1.90	100.00
3	3.01	2.70	29.63
4	4.01	3.20	15.63
5	5.01	3.70	13.51
6	6.01	4.10	9.76
7	7.01	4.50	8.89

(4.5 - 3.00034)(1.1)/(200) = 8.248132E-03 g/L Carbon

(4.5 - 3.00034)(1.1)/(200)(12) = 6.873443E-04 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-429 Date: 03-27-1990 Time: 10:30:40

Blank = .428213 Sample Size = 200 Dilution Factor = 1.1
% Difference = 10 Min Readings = 7 Max Readings = 7

== Reading ====	Analysis Time ====	Coulometer ====	% Difference ==
1	1.01	0.00	0.00
2	2.01	76.70	100.00
3	3.01	101.10	24.13
4	4.01	111.30	9.16
5	5.01	115.80	3.89
6	6.01	117.90	1.78
7	7.01	119.10	1.01

(119.1 - 2.999922)(1.1)/(200) = .6385504 g/L Carbon

(119.1 - 2.999922)(1.1)/(200)(12) = 5.321254E-02 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-430 Date: 03-27-1990 Time: 10:42:45

Blank = .428213 Sample Size = 200 Dilution Factor = 11
% Difference = 10 Min Readings = 7 Max Readings = 7

== Reading ====	Analysis Time ====	Coulometer ====	% Difference ==
1	1.01	0.00	0.00
2	2.01	36.30	100.00
3	3.01	46.50	21.94
4	4.01	51.00	8.82
5	5.01	53.10	3.95
6	6.01	54.30	2.21
7	7.01	55.20	1.63

(55.2 - 2.999896)(11)/(200) = 2.871006 g/L Carbon

(55.2 - 2.999896)(11)/(200)(12) = .2392505 Molar Carbon

Sample Run By: 80028_____

ACID DIGESTION TEST RESULTS

Analytical Batch

Lab Segment Serial #: F0417

Customer ID: 89-070

Instrument	WB39939
Procedure/Rev	LA-505-151/A-0
Technologist	J. A. White
Date	August 21, 1990
Temperature	N/A
Starting Time	0740
Ending Time	1315
Chemist	S. A. Jones

ICP

Acid Digestion

No inter-element corrections were performed on this data.

Spike was prepared incorrectly and will not be reported.

	Description		Lab ID
1	Initial LMCS Check Std		N/A
2	Reagent Blank		F1228
3	Sample	9000B2	F1205
4	Duplicate Sample	9000B2	F1206
5	Spike Sample	9000B2	F1231
6	LMCS Check Std		N/A
7	Reagent Blank		F0583
8	Sample	89-075	F0552
9	Duplicate Sample	89-075	F0553
10	Sample	89-070	F0432
11	Duplicate Sample	89-070	F0433

	Description	Lab ID
12	Final LMCS Check Std	N/A
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Book # & Aliquot Vol.	Final Vol. of Std.
LMCS Check Std	78C11Z/3.0 mL	87B38D/3.0 mL	77C11Y/3.0 mL	3.0 mL
Spike	78C11Z/5.0 mL	87B38D/5.0 mL	77C11Y/5.0 mL	
spike cont.	9000B2/0.5912 g			50.0 mL

SST-102 Rev. I 10/2/90 Interim

ICP Results DATA SUMMARY

		Acid Digested Standard		NONE
Date Analyzed:	AUGUST 21,1990	Reagent Blank		F583
Procedure:	LA-505-151/A-0	Sample 089070		F432
Analyst:	J.A.WHITE	Duplicate 089070		F433
Digestion	Acid Digestion	Spike of 900082	***	NONE
Procedure:	LA-505-159/A-0	Acid Digested Standard		NONE

	Standard Recovery %	Reagent Blank ppm	Sample ug/g	Sample Duplicate ug/g	Standard Recovery %
Aluminum	101.91%	1.01	134047	138868	102.53%
Antimony	101.00%	0.05 LT	1065 LT	1492	101.89%
Arsenic	107.25%	0.00 LT	215 LT	244 LT	107.84%
Barium	105.05%	0.03	169	166	105.50%
Beryllium	101.53%	0.00 LT	4 LT	5 LT	102.13%
Bismuth	105.54%	0.08 LT	7660	7283	108.40%
Boron	105.11%	0.06	94 LT	106 LT	105.80%
Cadmium	100.18%	0.00 LT	29 LT	38 LT	103.71%
Calcium	100.79%	1.05	942	956	101.57%
Cerium	98.21%	0.22	2352	2473	100.70%
Chromium	101.50%	0.03	1306	1245	104.15%
Cobalt	101.16%	0.00 LT	62 LT	44 LT	103.80%
Copper	100.86%	0.06	204 LT	214 LT	101.22%
Europium	100.12%	0.00	54	56	100.38%
Iron	103.34%	0.77	21473	34058	105.69%
Lanthanum	97.12%	0.02 LT	307	300	97.16%
Lead	107.16%	0.09	2501	2942	108.02%
Lithium	99.67%	0.01	85	97	97.75%
Magnesium	103.59%	0.23	3262	3077	105.28%
Manganese	100.43%	0.03	9208	8516	102.71%
Mercury	103.11%	-0.03 LT	-346 LT	-339 LT	105.84%
Molybdenum	99.39%	0.00 LT	96	106	99.48%
Neodymium	99.23%	0.15 LT	1534 LT	1302 LT	101.54%
Nickel	99.26%	0.01 LT	371	324	102.41%
Potassium	100.99%	0.52	3060 LT	3027 LT	103.98%
Samarium	105.74%	0.27	2962	3127	109.96%
Selenium	97.62%	0.06 LT	1703	1507	97.96%
Silver	95.18%	0.01 LT	166 LT	177 LT	94.40%
Sodium	101.01%	0.70	81120	79479	101.33%
Strontium	101.15%	0.01	1257	1219	101.70%
Tantalum	98.04%	0.03 LT	359 LT	347 LT	98.57%
Thallium	97.89%	0.17	4339	4313	98.94%
Thorium	101.66%	0.14	1805	1949	102.39%
Tin	99.54%	0.02	176 LT	183 LT	101.84%
Titanium	104.05%	0.14	226	240	103.61%
Uranium	103.40%	1.08 LT	38459	37872	107.99%
Vanadium	96.93%	0.01 LT	231	242	96.75%
Zinc	101.14%	0.09	274	462	102.74%
Zirconium	99.10%	0.03	460	445	98.99%
Dilution Factor		1.00	101	101	

*** There was an error in the preparation of the spike.

LT: Less Than
NC: Not Calibrated
NOT CALC: Not Calculated
Instrument Standards Outside Control Limits

Analytical Batch

LAB SEGMENT SERIAL #:F0417

CUSTOMER ID:89-070

INSTRUMENT	N/A
PROCEDURE/REV	LA-505-159/A-0
TECHNOLOGIST	Janice A. White
DATE	April 26, 1990
TEMPERATURE	N/A
STARTING TIME	0800
ENDING TIME	1530
CHEMIST	S. A. Jones

Acid Digestion
Sample# 89-070

	DESCRIPTION		LAB ID
1	Reagent Blank		F0583
2	Sample	89-076	F0576
3	Duplicate Sample	89-076	F0577
4	Spike of Sample	89-076	F0578
5	Reagent Blank		F0439
6	Sample	89-070	F0432
7	Duplicate Sample	89-070	F0433
8	Spike of Sample	89-070	F0434
9	Reagent Blank		F0559
10	Sample	89-075	F0552
11	Dupilcate Sample	89-075	F0553

	DESCRIPTION		LAB ID
12	Spike of Sample	89-075	F0554
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT. VOL.	FINAL VOL. OF STD.
Spike	78C11K/5 mL	82B38G/5 mL	77C11J/5 mL	50.0 mL
LMCS Std.	N/A			

SST-102 Rev. F 9/7/90 Interim

ICP Results RAW DATA SUMMARY

		Acid Digested Standard		NONE
Date Analyzed:	AUGUST 21,1990	Reagent Blank		F583
Procedure:	LA-505-151/A-0	Sample 089070		F432
Analyst:	J.A.WHITE	Duplicate 089070		F433
Digestion	Acid Digestion	Spike of 900082	***	NONE
Procedure:	LA-505-159/A-0	Acid Digested Standard		NONE

	Standard Recovery %	Reagent Blank ppm	Sample ug/g	Sample Duplicate ug/g	Standard Recovery %
Aluminum	101.91%	1.01	134047	138868	102.53%
Antimony	101.00%	0.05 LT	1065 LT	1492	101.89%
Arsenic	107.25%	0.00 LT	215 LT	244 LT	107.84%
Barium	105.05%	0.03	169	166	105.50%
Beryllium	101.53%	0.00 LT	4 LT	5 LT	102.13%
Bismuth	105.54%	0.08 LT	7660	7283	108.40%
Boron	105.11%	0.06	94 LT	106 LT	105.80%
Cadmium	100.18%	0.00 LT	29 LT	38 LT	103.71%
Calcium	100.79%	1.05	942	956	101.57%
Cerium	98.21%	0.22	2352	2473	100.70%
Chromium	101.50%	0.03	1306	1245	104.15%
Cobalt	101.16%	0.00 LT	62 LT	44 LT	103.80%
Copper	100.86%	0.06	204 LT	214 LT	101.22%
Europium	100.12%	0.00	54	56	100.38%
Iron	103.34%	0.77	21473	34058	105.69%
Lanthanum	97.12%	0.02 LT	307	300	97.16%
Lead	107.16%	0.09	2501	2942	108.02%
Lithium	99.67%	0.01	85	97	97.75%
Magnesium	103.59%	0.23	3262	3077	105.28%
Manganese	100.43%	0.03	9208	8516	102.71%
Mercury	103.11%	-0.03 LT	-346 LT	-339 LT	105.84%
Molybdenum	99.39%	0.00 LT	96	106	99.48%
Neodymium	99.23%	0.15 LT	1534 LT	1302 LT	101.54%
Nickel	99.26%	0.01 LT	371	324	102.41%
Phosphorous	65.78% #	0.15	1498	1541	103.15%
Potassium	100.99%	0.52	3060 LT	3027 LT	103.98%
Samarium	105.74%	0.27	2962	3127	109.96%
Selenium	97.62%	0.06 LT	1703	1507	97.96%
Silicon	89.68% #	2.41	3748	4053	89.92% #
Silver	95.18%	0.01 LT	166 LT	177 LT	94.40%
Sodium	101.01%	0.70	81120	79479	101.33%
Strontium	101.15%	0.01	1257	1219	101.70%
Sulfur	85.84% #	0.16	1055	1188	99.66%
Tantalum	98.04%	0.03 LT	359 LT	347 LT	98.57%
Thallium	97.89%	0.17	4339	4313	98.94%
Thorium	101.66%	0.14	1805	1949	102.39%
Tin	99.54%	0.02	176 LT	183 LT	101.84%
Titanium	104.05%	0.14	226	240	103.61%
Tungsten	68.46% #	0.01 LT	361 LT	287 LT	68.83% #
Uranium	103.40%	1.08 LT	38459	37872	107.99%
Vanadium	96.93%	0.01 LT	231	242	96.75%
Zinc	101.14%	0.09	274	462	102.74%
Zirconium	99.10%	0.03	460	445	98.99%
Dilution Factor		1.00	101	101	

*** There was an error in the preparation of the spike.

LT: Less Than
NC: Not Calibrated
NOT CALC: Not Calculated
Instrument Standards Outside Control Limits

ICP Results RAW DATA

Date Analyzed:	AUGUST 21,1990	Acid Digested Standard	NONE
Procedure:	LA-505-151/A-0	Reagent Blank	F583
Analyst:	J.A.WHITE	Sample 089070	F432
Digestion	Acid Digestion	Duplicate 089070	F433
Procedure:	LA-505-159/A-0	Spike of 900082 ***	NONE
		Acid Digested Standard	NONE

Digestion	0.0095 g/mL
Weight	0.48 g
Volume	50.00 mL

	Starting LMCS Instrument Standard ppm	Standard Recovery %	Reagent Blank ppm	Sample Dilution Three ppm	Sample Dilution Two ppm	Sample Dilution One ppm
	SST-1 SST-2 SST-3	101.91%	1.01			1278.00
Aluminum		101.00%	0.05 LT			10.15 LT
Antimony	10.19	107.25%	0.00 LT			2.05 LT
Arsenic	10.10	105.05%	0.03			1.61
Barium	21.45	101.53%	0.00 LT			0.04 LT
Beryllium	10.51	105.54%	0.08 LT			73.03
Bismuth	4.06	105.11%	0.06			0.90 LT
Boron	5.28	100.18%	0.00 LT			0.28 LT
Cadmium	10.51	100.79%	1.05			8.98
Calcium	10.02	98.21%	0.22			22.43
Cerium	10.08	101.50%	0.03			12.46
Chromium	9.82	101.16%	0.00 LT			0.59 LT
Cobalt	10.15	100.86%	0.06			1.94 LT
Copper	10.12	100.12%	0.00			0.52
Europium	10.09	103.34%	0.77			204.72
Iron	5.01	97.12%	0.02 LT			2.93
Lanthanum	10.33	107.16%	0.09			23.84
Lead	4.86	99.67%	0.01			0.81
Lithium	5.36	103.59%	0.23			31.10
Magnesium	9.97	100.43%	0.03			87.79
Manganese	10.36	103.11%	-0.03 LT			-3.30 LT
Mercury	10.04	99.39%	0.00 LT			0.92
Molybdenum	10.31	99.23%	0.15 LT			14.63 LT
Neodymium	9.94	99.26%	0.01 LT			3.54
Nickel	9.92	65.78% #	0.15			14.28
Phosphorous	9.93	100.99%	0.52			29.18 LT
Potassium	6.58	105.74%	0.27			28.24
Samarium	10.10	97.62%	0.06 LT			16.24
Selenium	5.29	89.68% #	2.41			35.73
Silicon	19.52	95.18%	0.01 LT			1.58 LT
Silver	8.97	101.01%	0.70			773.40
Sodium	4.76	101.15%	0.01			11.98
Strontium	10.10	85.84% #	0.16			10.06
Sulfur	10.12	98.04%	0.03 LT			3.43 LT
Tantalum	17.17	97.89%	0.17			41.37
Thallium	9.80	101.66%	0.14			17.21
Thorium	19.58	99.54%	0.02			1.67 LT
Tin	25.42	104.05%	0.14			2.16
Titanium	4.98	68.46% #	0.01 LT			3.44 LT
Tungsten	10.41	103.40%	1.08 LT			366.67
Uranium	6.85	96.93%	0.01 LT			2.20
Vanadium	25.85	101.14%	0.09			2.61
Zinc	3.88	99.10%	0.03			4.38
Zirconium	10.11					
	9.91		1.00			101.00
Dilution Factor	1.00 1.00 1.00					

	Sample Duplicate Dilution Three ppm	Sample Duplicate Dilution Two ppm	Sample Duplicate Dilution One ppm	Spike of Sample Dilution Two ppm	Spike Recovery %	Acid Digestion Standard Recovery %	SST-1	SST-2	Ending LMCS Standard ppm
Digestion Weight		0.0101 g/mL 0.50 g		0.0118 g/mL 0.59 g					
Volume		50.00 mL		50.00 mL					
			1398.40		***	NA			SST-3
			15.02		Spike	NA	10.19		
Aluminum			2.45 LT		was not	NA			10.25
Antimony			1.67		prepared	NA	10.55		
Arsenic			0.05 LT		correctly	NA			21.57
Barium			73.34			NA		5.42	
Beryllium			1.06 LT			NA	10.58		4.09
Bismuth			0.38 LT			NA	10.37		
Boron			9.63			NA	10.16		
Cadmium			24.91			NA	10.07		
Calcium			12.54			NA	10.42		
Cerium			0.44 LT			NA	10.38		
Chromium			2.16 LT			NA	10.12		
Cobalt			0.56			NA		5.02	
Copper			342.96			NA	10.57		
Europium			3.02			NA		4.86	
Iron			29.62			NA		5.40	
Lanthanum			0.98			NA	9.78		
Lead			30.99			NA	10.53		
Lithium			85.75			NA	10.27		
Magnesium			-3.41 LT			NA			
Manganese			1.07			NA			
Mercury			13.11 LT			NA	10.15		10.58
Molybdenum			3.26			NA	10.24		9.95
Neodymium			15.51			NA			
Nickel			30.48 LT			NA	10.40		
Phosphorous			31.49			NA		5.50	10.32
Potassium			15.18			NA			
Samarium			40.81			NA			
Selenium			1.79 LT			NA		4.72	19.59
Silicon			800.35			NA	10.13		8.99
Silver			12.27			NA	10.17		
Sodium			11.97			NA			
Strontium			3.50 LT			NA			
Sulfur			43.43			NA			19.93
Tantalum			19.63			NA		25.60	9.86
Thallium			1.84 LT			NA	5.09		19.79
Thorium			2.42			NA			
Tin			2.89 LT			NA			
Titanium			381.37			NA		27.00	10.36
Tungsten			2.43			NA			6.88
Uranium			4.65			NA	10.27		
Vanadium			4.48			NA			3.87
Zinc									
Zirconium			101.00				1.00	1.00	9.90
Dilution Factor									1.00

ICP Results RAW DATA

	Standard Recovery %		Spike Standard LMCS ppm added	Spike Standard ID Book #	SST-1	SST-2	LMCS Standards Values ppm SST-3	LMCS Standard IDs Book # 78C11-Z 87B38-D 77C11-Y
Aluminum	102.53%		50.00				10.00	
Antimony	101.89%		10.00		10.00			
Arsenic	107.84%		50.00				20.00	
Barium	105.50%		10.00		10.00			
Beryllium	102.13%		10.00				4.00	
Bismuth	108.40%		50.10			5.00		
Boron	105.80%		10.00		10.00			
Cadmium	103.71%		10.00		10.00			
Calcium	101.57%		10.00		10.00			
Cerium	100.70%		10.00		10.00			
Chromium	104.15%		10.00		10.00			
Cobalt	103.80%		10.00		10.00			
Copper	101.22%		10.00		10.00			
Europium	100.38%		10.00			5.00		
Iron	105.69%		10.00		10.00			
Lanthanum	97.16%		50.10			5.00		
Lead	108.02%		50.10			5.00		
Lithium	97.75%		10.00		10.00			
Magnesium	105.28%		10.00		10.00			
Manganese	102.71%		10.00		10.00			
Mercury	105.84%		25.00				10.00	
Molybdenum	99.48%		50.00				10.00	
Neodymium	101.54%		10.00		10.00			
Nickel	102.41%		10.00		10.00			
Phosphorous	103.15%		50.00				10.00	
Potassium	103.98%		25.00		10.00			
Samarium	109.96%		10.00			5.00		
Selenium	97.96%		50.00				20.00	
Silicon	89.92%	#	50.00				10.00	
Silver	94.40%		10.00			5.00		
Sodium	101.33%		25.00		10.00			
Strontium	101.70%		10.00		10.00			
Sulfur	99.66%		50.00				20.00	
Tantalum	98.57%		50.00				10.00	
Thallium	98.94%		50.00				20.00	
Thorium	102.39%		50.10			25.00		
Tin	101.84%		50.00		5.00			
Titanium	103.61%		50.00				10.00	
Tungsten	68.83%	#	25.00				10.00	
Uranium	107.99%		50.10			25.00		
Vanadium	96.75%		10.00				4.00	
Zinc	102.74%		10.00		10.00			
Zirconium	98.99%		50.00				10.00	

Dilution Factor

ICP Calibration Report

Procedure: LA-505-151 Revision: A-0
Instrument: WB39939
Technologist: J. A. White
Date: August 21, 1990

Calibration Standards for ICP Program "SST"

Element	Standard	Element	Standard
Aluminum	SST-3	Antimony	SST-4
Arsenic	SST-4	Barium	SST-2
Beryllium	SST-2	Bismuth	SST-4
Boron	SST-3	Cadmium	SST-2
Calcium	SST-2	Cerium	SST-5
Chromium	SST-2	Cobalt	SST-2
Copper	SST-2	Europium	SST-5
Iron	SST-2	Lanthanum	SST-5
Lead	SST-4	Lithium	SST-1
Magnesium	SST-2	Manganese	SST-2
Mercury	SST-3	Molybdenum	SST-3
Neodymium	SST-5	Nickel	SST-2
Phosphorous	SST-3	Potassium	SST-1
Samarium	SST-5	Selenium	SST-4
Silicon	SST-3	Silver	SST-2
Sodium	SST-1	Strontium	SST-2
Sulfur	SST-3	Tantalum	SST-3
Thallium	SST-4	Thorium	SST-4
Tin	SST-4	Titanium	SST-3
Tungsten	SST-3	Uranium	SST-4
Vanadium	SST-2	Zinc	SST-2
Zirconium	SST-3		

ICP Standard Formulations

SST-0:
Calibration blank, 1 M ultrex HNO3.

SST-1:
Stock solutions from AESAR/John Mathey Inc., Seabrook, NH 03874.
Individual element solutions as follows:

Li $LiCO_3$ 10,000 ppm in 5% HNO_3 Lot# 14394A
K KNO_3 10,000 ppm in 5% HNO_3 Lot# 14379A
Na $NaCO_3$ 10,000 ppm in 5% HNO_3 Lot# 14400A

200 mL of standard made by combining 25 mL HCl/HNO_3 mixed acid, 1 mL each single element standards, and water.

SST-2:
Stock solutions from VHG labs, Inc., 180 Zachary Rd. #5, Manchester, NH 03103. Mixed element standards as follows:

SM-10	Li, Na, K, Rb, Cs, Be, Mg, Ca, Sr, & Ba 100 ppm Lot# 0-119A
SM-20	V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ag, & Cd 100 ppm Lot# 0-119B

50 mL of each mixed standard are added to a 250 mL volumetric flask and diluted to volume with 1 M HNO3.

SST-3:
Stock solutions from AESAR/John Mathey Inc., Seabrook, NH 03874. Individual element solutions as follows:

Al	Al 10,000 ppm in 10% HCl Lot# 9-053A
B	H_3BO_3 10,000 ppm in 1% NH_4OH Lot# 9-335A
Hg	Hg 10,000 ppm in 5% HNO_3 Lot# 8-656S
Mo	Mo 10,000 ppm in 5% HCl Lot# 9-159T
P	P 10,000 ppm in 5% HNO3 Lot# 9-160A
Si	Si 1000 ppm in KOH Lot# 086DM Spex Industries, Edison, NJ
S	$(NH_4)_2SO_4$ in H_2O Lot# 9-231M
Ta	TaCl5 10,000 ppm in 5% HCl/tr HF Lot# 9-335M
Ti	Ti 10,000 ppm in 5% HF Lot# 9-079EE
W	W 10,000 ppm in 5% HF/tr HNO_3 Lot# 8-685L
Zr	$ZrCl_2O$ 10,100 ppm in 5% HCl Lot# 9-078G

50 mL of each mixed standard are added to a 250 mL volumetric flask and diluted to volume with 1 M HNO33.

SST-4:
Stock solution from VHG labs, Inc., 180 Zachary Rd. #5, Manchester, NH 03103. Mixed element standard as follows:

SM-50 Ga, In, Tl, Ge, Sn, Pb, As, Sb, Bi, Se, Te, Th, & U 100 ppm Lot# 0-119D

Solution is used directly for calibration.

SST-5:
Stock solution from VHG labs, Inc., 180 Zachary Rd. #5, Manchester, NH 03103. Mixed element standard as follows:

SM-60 Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, & Lu 100 ppm Lot# 7-165F

50 mL of SM-60 is added to a 250 mL volumetric flask and diluted to volume with 1 M HNO_3.

ICP Calibration August 21, 1990

Sample name : SST0
Programme : SST 21-Aug-90 11:09:51

NAME	MV INT	RSD
AL	1.71	0.06
SB	0.32	0.64
AS	1.03	0.48
BA	4.57	0.08
BE	0.57	0.71
BI	3.46	0.38
B	4.37	0.97
CD	2.33	1.07
CA	0.49	0.35
CE	5.73	0.14
CR	1.59	0.37
CO	0.87	0.53
CU	2.99	0.24
EU	4.38	0.17
FE	1.30	1.15
LA	0.43	0.27
PB	0.25	0.23
LI	4.35	0.16
MG	0.43	0.13
MN	0.76	0.73
HG	2.76	0.81
MO	1.53	0.92
ND	9.13	0.20
NI	3.11	0.57
P	1.17	0.26
K	3.68	0.07
SM	5.52	0.13
SE	1.63	0.87
SI	3.27	0.46
AG	4.50	0.23
NA	7.00	0.08
SR	3.96	0.16
S	0.69	1.30
TA	3.66	0.22
TL	3.59	0.33
TH	1.66	0.21
SN	1.31	0.86
TI	3.58	0.28
W	2.67	0.69
U	5.87	0.16
V1	3.44	0.12
ZN	2.25	0.17
ZR	4.83	0.20

Sample name : SST1
Programme : SST 21-Aug-90 11:13:56

NAME	MV INT	RSD
CR	191.06	0.29
LI	543.23	0.15
K	15.28	0.22
NA	89.56	0.18

ICP Calibration August 21, 1990

Sample name : SST2
Programme : SST 21-Aug-90 11:15:52

NAME	MV INT	RSD
BA	350.32	0.85
BE	509.74	0.86
CD	357.80	0.70
CA	473.63	0.86
CO	55.55	0.76
CU	111.89	0.81
FE	90.27	0.84
MG	509.28	0.77
MN	292.95	0.81
NI	166.43	0.58
AG	151.54	0.74
SR	637.97	0.82
V1	135.15	0.28
ZN	756.95	0.63

Sample name : SST3
Programme : SST 21-Aug-90 11:18:31

NAME	MV INT	RSD
AL	21.91	1.02
B	697.12	1.13
HG	496.04	0.68
MO	326.54	1.00
P	44.79	1.02
SI	95.09	0.11
S	41.35	1.21
TA	150.55	0.86
TI	490.09	1.15
W	158.14	0.74
ZR	184.90	1.09

Sample name : SST4
Programme : SST 21-Aug-90 11:20:46

NAME	MV INT	RSD
SB	2.40	0.69
AS	34.64	0.43
BI	36.56	0.45
PB	1.42	0.39
SE	15.94	0.60
TL	12.61	0.26
TH	7.58	0.42
SN	81.26	0.58
U	8.39	0.06

Sample name : SST5
Programme : SST 21-Aug-90 11:23:09

NAME	MV INT	RSD
CE	19.03	0.37
EU	446.02	0.69
LA	8.24	0.65

ICP Calibration August 21, 1990

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Sample name     : SST5
Programme       : SST              21-Aug-90  11:23:09

NAME       MV INT      RSD

CE          19.03     0.37
EU         446.02     0.69
LA           8.24     0.65
ND          46.56     0.30
SM          15.47     0.40



Programme name : SST     Channel name : AL      Polynomial type : CC

Curve    Min Int Max Int                    Curve Coefficients
                                C0            C1            C2            C3

CRV1     1.6264  23.003  -0.423853E+01  0.247578E+01


Programme name : SST     Channel name : SB1     Polynomial type : CC

Curve    Min Int Max Int                    Curve Coefficients
                                C0            C1            C2            C3

CRV1     0.3081  2.5175  -0.391077E+01  0.120579E+02


Programme name : SST     Channel name : AS      Polynomial type : CC

Curve    Min Int Max Int                    Curve Coefficients
                                C0            C1            C2            C3

CRV1     0.9801  36.371  -0.767442E+00  0.743885E+00


Programme name : SST     Channel name : BA      Polynomial type : CC

Curve    Min Int Max Int                    Curve Coefficients
                                C0            C1            C2            C3

CRV1     4.3453  367.83  -0.264589E+00  0.578463E-01


Programme name : SST     Channel name : BE1     Polynomial type : CC

Curve    Min Int Max Int                    Curve Coefficients
                                C0            C1            C2            C3

CRV1     0.5428  535.22  -0.224419E-01  0.392799E-01
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ICP Calibration August 21, 1990

Programme name : SST Channel name : BI Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.2914	38.393	-0.261684E+01	0.755295E+00		

Programme name : SST Channel name : B Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.1559	731.98	-0.315747E+00	0.721763E-01		

Programme name : SST Channel name : CD Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.2106	375.69	-0.130925E+00	0.562636E-01		

Programme name : SST Channel name : CA Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4645	497.31	-0.206704E-01	0.422709E-01		

Programme name : SST Channel name : CE Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.4438	19.982	-0.861705E+01	0.150376E+01		

Programme name : SST Channel name : CR Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.5092	200.62	-0.419229E+00	0.263887E+00		

ICP Calibration August 21, 1990

Programme name : SST Channel name : CO Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8221	58.330	-0.316468E+00	0.365718E+00		

Programme name : SST Channel name : CU Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.8430	117.49	-0.549622E+00	0.183656E+00		

Programme name : SST Channel name : EU Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.1616	468.32	-0.198382E+00	0.452858E-01		

Programme name : SST Channel name : FE Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.2372	94.786	-0.292758E+00	0.224795E+00		

Programme name : SST Channel name : LA Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4098	8.6566	-0.110414E+01	0.255984E+01		

Programme name : SST Channel name : PB Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.2416	1.4903	-0.545780E+01	0.214592E+02		

ICP Calibration August 21, 1990

Programme name : SST Channel name : LI Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.1297	570.40	-0.403332E+00	0.927839E-01		

Programme name : SST Channel name : MG Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4126	534.75	-0.170712E-01	0.393043E-01		

Programme name : SST Channel name : MN Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.7188	307.60	-0.517917E-01	0.684472E-01		

Programme name : SST Channel name : HG Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.6173	520.84	-0.279250E+00	0.101361E+00		

Programme name : SST Channel name : MO Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.4570	342.87	-0.235944E+00	0.153843E+00		

Programme name : SST Channel name : ND Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	8.6713	48.886	-0.487719E+01	0.534331E+00		

ICP Calibration August 21, 1990

Programme name : SSI Channel name : NI Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.9498	174.75	-0.380234E+00	0.122458E+00		

Programme name : SSI Channel name : P Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.1159	47.034	-0.134649E+01	0.114627E+01		

Programme name : SSI Channel name : K Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.4979	16.042	-0.158757E+02	0.431171E+01		

Programme name : SSI Channel name : SM Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.2472	16.240	-0.111096E+02	0.201140E+01		

Programme name : SSI Channel name : SE Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.5485	16.733	-0.284846E+01	0.174752E+01		

Programme name : SSI Channel name : SI Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.1046	99.843	-0.177956E+01	0.544542E+00		

ICP Calibration August 21, 1990

Programme name : SST Channel name : AG Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.2722	159.12	-0.611662E+00	0.136016E+00		

Programme name : SST Channel name : NA Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	6.6525	94.039	-0.424104E+01	0.605632E+00		

Programme name : SST Channel name : SR Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.7585	669.87	-0.124803E+00	0.315451E-01		

Programme name : SST Channel name : S Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.6571	43.419	-0.850563E+00	0.122973E+01		

Programme name : SST Channel name : TA Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.4738	158.08	-0.124467E+01	0.340383E+00		

Programme name : SST Channel name : TL2 Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.4134	13.236	-0.996689E+01	0.277398E+01		

ICP Calibration August 21, 1990

Programme name : SST Channel name : TH Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.5798	7.9600	-0.702518E+01	0.422440E+01		

Programme name : SST Channel name : SN Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.2407	85.326	-0.408345E+00	0.312668E+00		

Programme name : SST Channel name : TI Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.3978	514.60	-0.367581E+00	0.102772E+00		

Programme name : SST Channel name : W Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.5375	166.04	-0.859030E+00	0.321614E+00		

Programme name : SST Channel name : U Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.5790	8.8127	-0.582532E+02	0.991937E+01		

Programme name : SST Channel name : V1 Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.2705	141.90	-0.522786E+00	0.151855E+00		

ICP Calibration August 21, 1990

Programme name : SST Channel name : ZN Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.1340	794.80	-0.595286E-01	0.265004E-01		

Programme name : SST Channel name : ZR Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.5882	194.14	-0.134106E+01	0.277671E+00		

ICP Analysis August 21, 1990 Acid Blank

Sample name : HNO3
Programme : SST 21-Aug-90 12:46:16

NAME	MV INT	CONCEN	RSD
Al	1.69	-0.053	-16.46
Sb	0.32	-0.004	-793.77
As	1.00	-0.020	-12.99
Ba	4.51	-0.004	-34.33
Be	0.56	-0.001	-27.91
Bi	3.41	-0.043	-36.95
B	4.24	-0.009	-48.40
Cd	2.27	-0.003	-20.78
Ca	0.49	0.000	86.60
Ce	5.65	-0.116	-46.49
Cr	1.63	0.012	187.21
Co	0.86	-0.003	-102.21
Cu	2.99	-0.001	-155.36
Eu	4.32	-0.003	-42.74
Fe	1.29	-0.004	-79.81
La	0.43	0.002	519.56
Pb	0.26	0.043	57.73
Li	4.28	-0.006	-32.56
Mg	0.43	-0.000	-85.71
Mn	0.75	-0.001	-64.24
Hg	3.05	0.030	100.85
Mo	1.51	-0.004	-49.58
Nd	9.15	0.014	420.64
Ni	3.06	-0.005	-1.35
P	1.19	0.012	107.76
K	3.65	-0.141	-85.51
Sm	5.45	-0.150	-35.59
Se	1.63	-0.005	-241.08
Si	3.21	-0.031	-8.73
Ag	4.42	-0.010	-37.41
Na	6.90	-0.061	-40.56
Sr	3.91	-0.002	-40.91
S	0.69	0.003	296.92
Ta	3.60	-0.018	-4.75
Tl	3.52	-0.203	-37.40
Th	1.64	-0.086	-38.20
Sn	1.29	-0.005	-46.67
Ti	3.53	-0.004	-31.66
W	2.61	-0.018	-60.34
U	5.78	-0.886	-31.27
V	3.39	-0.008	-2.83
Zn	2.20	-0.001	-31.78
Zr	4.78	-0.015	-28.16

ICP Analysis August 21, 1990 LMCS Check Standard

Sample name : 78C11Z
Sample code 1 : SST1
Programme : SST 21-Aug-90 12:51:13

NAME	MV INT	CONCEN	RSD
Al	1.78	0.158	3.27
Sb	1.15	10.000	0.18
As	1.10	0.053	14.52
Ba	184.55	10.411	0.30
Be	0.60	0.001	11.69
Bi	3.64	0.132	15.91
B	148.70	10.417	0.74
Cd	178.29	9.900	0.24
Ca	237.38	10.014	0.31
Ce	12.17	9.685	0.21
Cr	39.67	10.050	0.35
Co	28.21	10.000	0.26
Cu	57.43	9.999	0.37
Eu	4.94	0.025	1.13
Fe	46.70	10.205	0.42
La	0.47	0.107	0.00
Pb	0.26	0.207	0.00
Li	110.86	9.883	0.40
Mg	260.36	10.216	0.31
Mn	146.04	9.944	0.31
Hg	2.76	0.001	307.29
Mo	1.66	0.019	7.86
Nd	27.59	9.865	0.76
Ni	83.27	9.817	0.39
P	1.30	0.143	10.59
K	6.04	10.147	0.88
Sm	5.58	0.115	13.99
Se	3.29	2.904	1.44
Si	3.37	0.056	4.35
Ag	4.56	0.008	11.27
Na	23.53	10.012	0.22
Sr	321.20	10.008	0.33
S	0.90	0.258	1.99
Ta	3.77	0.039	8.15
Tl	3.76	0.475	6.96
Th	1.74	0.335	3.85
Sn	16.95	4.891	0.29
Ti	3.63	0.006	8.90
W	3.47	0.256	1.59
U	6.31	4.345	2.51
V	3.51	0.010	13.37
Zn	378.92	9.982	0.36
Zr	4.92	0.024	3.10

ICP Analysis August 21, 1990 LMCS Check Standard

Sample name : 87838D
Sample code 1 : SST2
Sample code 2 : DIRECT
Programme : SST 21-Aug-90 12:55:35

NAME	MV INT	CONCEN	RSD
Al	2.55	2.073	0.30
Sb	0.34	0.241	7.64
As	1.28	0.186	4.09
Ba	4.79	0.012	2.63
Be	0.57	0.000	83.89
Bi	10.46	5.282	0.44
B	5.04	0.048	31.45
Cd	2.41	0.004	15.23
Ca	1.05	0.024	1.66
Ce	5.90	0.256	1.22
Cr	1.84	0.066	7.21
Co	0.89	0.011	16.30
Cu	3.59	0.110	1.11
Eu	115.42	5.029	0.40
Fe	1.45	0.033	3.37
La	2.33	4.853	0.45
Pb	0.50	5.286	0.62
Li	4.38	0.003	30.70
Mg	0.61	0.007	4.38
Mn	0.84	0.005	5.85
Hg	2.68	-0.008	-52.40
Mo	1.58	0.007	3.50
Nd	9.77	0.344	3.93
Ni	3.22	0.014	27.53
P	1.38	0.239	6.52
K	3.69	0.029	97.60
Sm	8.13	5.244	0.36
Se	1.69	0.104	16.37
Si	3.74	0.258	1.16
Ag	40.13	4.847	0.42
Na	7.06	0.032	26.58
Sr	4.10	0.005	6.46
S	0.76	0.090	18.60
Ta	3.85	0.067	4.82
Tl	4.56	2.669	3.19
Th	7.70	25.489	0.60
Sn	1.43	0.039	10.95
Ti	3.87	0.030	2.11
W	2.68	0.002	69.29
U	8.46	25.694	0.57
V	4.12	0.104	1.99
Zn	2.83	0.015	5.47
Zr	5.08	0.069	0.61

ICP Analysis August 21, 1990 LMCS Check Standard

Sample name : 77C11Y
Sample code 1 : SSI3
Sample code 2 : DIRECT
Programme : SST 21-Aug-90 13:24:32

NAME	MV INT	CONCEN	RSD
Al	5.87	10.290	0.01
Sb	0.35	0.354	19.38
As	29.92	21.488	0.26
Ba	4.76	0.010	7.18
Be	105.34	4.115	0.21
Bi	3.71	0.188	7.95
B	4.71	0.024	8.15
Cd	2.40	0.004	22.79
Ca	0.72	0.010	0.25
Ce	5.80	0.108	22.46
Cr	1.70	0.029	47.46
Co	0.93	0.024	1.50
Cu	3.05	0.010	10.64
Eu	4.42	0.002	43.74
Fe	1.40	0.023	19.06
La	0.44	0.020	26.02
Pb	0.26	0.179	6.93
Li	4.49	0.013	7.67
Mg	0.52	0.003	0.68
Mn	0.82	0.004	8.06
Hg	106.05	10.470	0.48
Mo	66.30	9.964	0.10
Nd	9.32	0.102	37.30
Ni	3.93	0.101	2.66
P	10.40	10.572	2.02
K	3.74	0.264	38.25
Sm	5.60	0.148	24.75
Se	12.77	19.469	0.39
Si	19.85	9.029	0.74
Ag	4.93	0.059	4.54
Na	7.18	0.108	4.58
Sr	4.02	0.002	13.69
S	17.22	20.327	0.78
Ta	32.44	9.798	0.10
Tl	10.64	19.551	0.33
Th	1.71	0.206	11.32
Sn	1.62	0.099	6.64
Ti	105.33	10.458	0.10
W	23.84	6.808	0.90
U	6.05	1.785	11.23
V	29.00	3.882	0.54
Zn	2.75	0.013	3.76
Zr	40.67	9.952	0.10

ICP Analysis August 21, 1990 Acid Blank

Sample name : HNO3
Programme : SST 21-Aug-90 13:32:40

NAME	MV INT	CONCEN	RSD
Al	1.72	0.031	48.24
Sb	0.33	0.076	71.20
As	1.03	-0.002	-236.04
Ba	4.61	0.002	8.81
Be	0.57	0.000	135.21
Bi	3.49	0.016	108.62
B	4.36	-0.001	-635.73
Cd	2.34	0.001	81.46
Ca	0.50	0.000	6.19
Ce	5.78	0.079	10.57
Cr	1.65	0.017	48.18
Co	0.87	0.003	64.15
Cu	3.02	0.004	22.88
Eu	4.41	0.001	16.08
Fe	1.32	0.004	86.65
La	0.44	0.019	15.75
Pb	0.26	0.143	15.00
Li	4.38	0.003	36.45
Mg	0.44	0.000	28.64
Mn	0.76	0.000	75.00
Hg	2.49	(-0.026	-1.01
Mo	1.55	0.002	18.41
Nd	9.31	0.100	33.21
Ni	3.10	-0.000	-606.39
P	1.16	-0.020	-208.68
K	3.71	0.131	47.12
Sm	5.57	0.103	19.04
Se	1.65	0.035	17.32
Si	3.29	0.009	26.01
Ag	4.53	0.004	30.84
Na	7.06	0.036	22.57
Sr	3.98	0.001	21.69
S	0.68	-0.019	-84.44
Ta	3.68	0.009	58.88
Tl	3.61	0.055	66.36
Th	1.68	0.058	18.41
Sn	1.31	0.002	442.20
Ti	3.62	0.004	25.77
W	2.67	-0.001	-666.51
U	5.91	0.393	19.58
V	3.48	0.006	47.71
Zn	2.25	0.000	737.29
Zr	4.86	0.009	9.96

ICP Analysis August 21, 1990 Acid Digested Standard

Sample name : ICP1
Sample code 1 : DIGEST
Sample code 2 : LMCS
Sample code 3 : DIRECT
Programme : SST 21-Aug-90 13:36:43

NAME	MV INT	CONCEN	RSD
Al	1.88	0.427	6.20
Sb	0.33	0.096	7.22
As	1.47	0.328	3.50
Ba	4.74	0.010	24.67
Be	0.57	0.000	303.12
Bi	16.35	9.734	0.26
B	139.53	9.755	0.49
Cd	169.79	9.422	0.09
Ca	231.92	9.783	0.14
Ce	5.81	0.120	66.58
Cr	1.78	0.050	14.89
Co	0.88	0.005	23.41
Cu	55.81	9.700	0.19
Eu	4.43	0.002	58.20
Fe	1.65	0.079	1.86
La	3.95	9.006	0.11
Pb	0.71	9.742	0.46
Li	4.46	0.010	32.90
Mg	248.25	9.740	0.13
Mn	1.02	0.018	1.93
Hg	2.45	(-0.031	-2.30
Mo	65.61	9.858	0.08
Nd	9.53	0.214	33.15
Ni	3.17	0.008	51.00
P	6.14	5.692	12.63
K	5.91	9.596	1.73
Sm	5.54	0.036	280.67
Se	1.67	0.075	57.30
Si	14.33	6.024	0.69
Ag	38.61	4.639	0.55
Na	23.25	9.843	0.24
Sr	310.10	9.657	0.14
S	0.90	0.261	1.80
Ta	3.66	0.003	224.53
Tl	3.62	0.067	32.54
Th	1.68	0.059	82.38
Sn	1.64	0.104	6.74
Ti	4.82	0.128	2.48
W	3.28	0.197	5.49
U	5.94	0.684	70.32
V	3.49	0.007	0.00
Zn	365.99	9.639	0.37
Zr	4.83	-0.000	-2495.8

ICP Analysis August 21, 1990 Reagent Blank

Sample name : F1228
Sample code 1 : BLANK
Sample code 2 : BATCH
Sample code 3 : DIRECT
Programme : SST 21-Aug-90 13:42:09

NAME	MV INT	CONCEN	RSD
Al	1.76	0.107	5.81
Sb	0.33	0.060	113.73
As	1.01	-0.014	-48.89
Ba	4.65	0.004	11.70
Be	0.57	0.000	251.66
Bi	3.48	0.011	122.98
B	5.63	0.091	3.61
Cd	2.40	0.004	36.17
Ca	14.45	0.590	0.17
Ce	5.77	0.054	16.97
Cr	3.92	0.615	1.40
Co	0.88	0.005	26.38
Cu	3.23	0.043	6.84
Eu	4.40	0.001	34.21
Fe	14.97	3.072	0.59
La	0.43	0.008	19.25
Pb	0.26	0.093	13.32
Li	4.48	0.012	2.69
Mg	2.96	0.099	0.46
Mn	1.61	0.059	1.43
Hg	2.50	(-0.025	-11.70
Mo	1.59	0.008	23.74
Nd	9.27	0.076	18.31
Ni	6.28	0.389	0.93
P	1.26	0.092	11.18
K	3.74	0.234	14.06
Sm	5.56	0.068	42.86
Se	1.73	0.169	12.64
Si	4.80	0.835	0.98
Ag	4.51	0.002	51.51
Na	7.50	0.302	3.03
Sr	4.06	0.003	3.82
S	0.80	~~0.1320~~	1.42
Ta	3.68	0.007	19.67
Tl	3.60	0.029	116.27
Th	1.67	0.028	70.89
Sn	1.37	0.021	17.50
Ti	4.04	0.048	1.07
W	2.67	-0.000	*******
U	5.88	0.033	275.34
V	3.46	0.003	30.98
Zn	3.27	0.027	0.93
Zr	4.84	0.004	45.19

ICP Analysis August 21, 1990 Sample S000B1

Sample name : F1205
Sample code 1 : SAMPLE
Sample code 2 : 1-10
Sample code 3 : RERUN
Programme : SST 21-Aug-90 13:47:14

NAME	MV INT	CONCEN	DILCOR	RSD
Al	2.15	1.078	11.856	0.87
Sb	0.33	0.024	0.265	275.38
As	1.03	-0.005	-0.052	-86.96
Ba	4.93	0.021	0.229	2.16
Be	0.58	0.000	0.004	14.78
Bi	3.46	-0.001	-0.008	-1155.4
B	4.51	0.010	0.106	31.92
Cd	2.31	-0.001	-0.011	-50.41
Ca	66.27	2.781	30.587	0.29
Ce	5.73	0.005	0.055	306.43
Cr	1.65	0.015	0.169	23.57
Co	0.87	0.000	0.000	5799200
Cu	3.00	0.001	0.009	81.13
Eu	4.37	-0.000	-0.004	-111.07
Fe	14.55	2.979	32.768	0.25
La	0.44	0.012	0.131	21.43
Pb	0.26	0.086	0.944	14.43
Li	4.36	0.001	0.013	30.70
Mg	20.46	0.787	8.657	0.24
Mn	2.88	0.145	1.595	0.21
Hg	2.44	(-0.032	(-0.350	-3.55
Mo	1.53	-0.001	-0.007	-292.97
Nd	9.24	0.062	0.678	64.72
Ni	3.10	-0.000	-0.000	-3148.1
P	1.26	0.092	1.013	16.28
K	3.73	0.194	2.134	19.75
Sm	5.52	-0.009	-0.103	-142.66
Se	1.62	-0.014	-0.154	-86.60
Si	4.40	0.617	6.783	0.36
Ag	4.48	-0.002	-0.027	-66.66
Na	10.61	2.182	24.001	0.07
Sr	5.60	0.052	0.570	0.00
S	0.98	0.357	3.932	3.61
Ta	3.65	-0.001	-0.007	-510.68
Tl	3.58	-0.024	-0.264	-156.66
Th	1.66	0.004	0.046	346.49
Sn	1.33	0.008	0.087	95.26
Ti	3.75	0.018	0.195	2.34
W	2.64	-0.009	-0.100	-65.30
U	5.85	-0.225	-2.474	-26.83
V	3.45	0.001	0.016	203.57
Zn	3.60	0.036	0.396	1.89
Zr	4.84	0.002	0.020	165.91

Dilution factor : 11.0000

ICP Analysis August 21, 1990 Duplicate of S000B1

Sample name : F1206
Sample code 1 : DUPSAM
Sample code 2 : 1-10
Sample code 3 : RERUN
Programme : SST 21-Aug-90 13:52:09

NAME	MV INT	CONCEN	DILCOR	RSD
Al	2.30	1.452	15.977	0.43
Sb	0.33	0.044	0.486	54.55
As	1.03	-0.002	-0.019	-247.44
Ba	4.97	0.033	0.252	3.18
Be	0.58	0.000	0.005	26.79
Bi	3.48	0.010	0.114	266.87
B	4.51	0.010	0.111	19.81
Cd	2.33	0.000	0.001	396.78
Ca	74.33	3.121	34.335	0.70
Ce	5.74	0.020	0.221	159.16
Cr	1.63	0.011	0.118	60.35
Co	0.87	-0.000	-0.001	-519.66
Cu	3.00	0.002	0.018	124.45
Eu	4.39	0.000	0.003	284.61
Fe	15.42	3.174	34.913	0.41
La	0.44	0.019	0.206	7.87
Pb	0.26	0.086	0.944	14.43
Li	4.35	0.001	0.007	342.17
Mg	22.55	0.869	9.561	0.63
Mn	2.96	0.151	1.661	0.52
Hg	2.41	(-0.035	(-0.381	-4.42
Mo	1.54	0.001	0.014	85.09
Nd	9.27	0.075	0.827	42.72
Ni	3.12	0.001	0.015	367.26
P	1.25	0.083	0.912	8.63
K	3.73	0.210	2.308	20.68
Sm	5.53	0.007	0.081	639.05
Se	1.64	0.019	0.211	55.30
Si	4.36	0.594	6.533	1.31
Ag	4.49	-0.001	-0.016	-113.54
Na	10.74	2.263	24.896	0.71
Sr	5.71	0.055	0.609	0.25
S	1.03	0.416	4.577	1.35
Ta	3.66	0.003	0.029	143.68
Tl	3.59	0.004	0.041	1219.13
Th	1.66	0.007	0.077	399.56
Sn	1.35	0.013	0.148	29.14
Ti	3.70	0.013	0.143	10.00
W	2.66	-0.002	-0.022	-79.47
U	5.86	-0.116	-1.273	-185.55
V	3.45	0.001	0.016	103.62
Zn	4.08	0.049	0.535	1.73
Zr	4.85	0.005	0.051	61.58

Dilution factor : 11.0000

ICP Analysis August 21, 1990 Spike of S000B1

Sample name : F1231
Sample code 1 : SPIKE
Sample code 2 : BATCH
Sample code 3 : 1-10
Programme : SST 21-Aug-90 13:57:02

NAME	MV INT	CONCEN	DILCOR	RSD
Al	6.34	11.451	125.96	0.26
Sb	0.34	0.149	1.636	12.39
As	1.70	0.494	5.431	2.20
Ba	6.91	0.135	1.486	0.11
Be	2.94	0.093	1.024	0.63
Bi	4.10	0.481	5.292	3.41
B	5.65	0.092	1.014	2.73
Cd	3.93	0.090	0.989	1.03
Ca	102.46	4.310	47.415	0.19
Ce	5.83	0.154	1.693	11.33
Cr	2.08	0.130	1.434	0.71
Co	1.12	0.092	1.007	3.62
Cu	3.53	0.099	1.084	1.14
Eu	6.40	0.091	1.006	0.41
Fe	33.73	7.290	80.185	0.32
La	0.61	0.446	4.909	1.32
Pb	0.28	0.572	6.295	0.00
Li	5.37	0.095	1.047	0.39
Mg	68.75	2.685	29.535	0.15
Mn	5.72	0.340	3.738	0.31
Hg	4.55	0.182	2.004	2.22
Mo	4.46	0.450	4.948	0.61
Nd	9.51	0.206	2.263	5.84
Ni	4.01	0.111	1.221	1.62
P	1.68	0.574	6.313	5.08
K	3.83	0.658	7.241	4.00
Sm	5.60	0.150	1.645	8.96
Se	1.93	0.528	5.812	5.38
Si	8.13	2.649	29.143	0.13
Ag	5.19	0.094	1.033	0.55
Na	13.56	3.974	43.711	0.20
Sr	9.75	0.183	2.010	0.16
S	1.91	1.492	16.413	1.00
Ta	3.72	0.023	0.251	23.94
Tl	3.79	0.535	5.889	4.94
Th	1.78	0.497	5.468	1.77
Sn	2.80	0.467	5.142	0.76
Ti	6.75	0.326	3.582	0.08
W	3.11	0.142	1.564	5.35
U	5.94	0.645	7.092	11.34
V	4.05	0.093	1.022	0.50
Zn	17.72	0.410	4.510	0.07
Zr	6.46	0.452	4.972	0.09

Dilution factor : 11.0000

ICP Analysis August 21, 1990 Acid Blank

Sample name : HNO3
Programme : SST 21-Aug-90 14:01:18

NAME	MV INT	CONCEN	RSD
Al	1.71	0.002	567.96
Sb	0.33	0.040	34.64
As	1.03	-0.004	-46.69
Ba	4.59	0.001	60.17
Be	0.57	-0.000	-56.25
Bi	3.47	0.005	286.28
B	4.32	-0.004	-27.83
Cd	2.32	-0.000	-394.73
Ca	0.51	0.001	7.16
Ce	5.75	0.034	28.93
Cr	1.62	0.007	130.44
Co	0.86	-0.000	-305.52
Cu	2.99	-0.001	-209.41
Eu	4.39	0.001	90.72
Fe	1.32	0.003	126.20
La	0.44	0.012	37.11
Pb	0.26	0.143	0.00
Li	4.35	0.000	452.08
Mg	0.44	0.000	19.99
Mn	0.75	-0.001	-57.60
Hg	2.38	(-0.038	-4.31
Mo	1.53	-0.001	-333.48
Nd	9.24	0.062	93.55
Ni	3.10	-0.001	-307.08
P	1.23	0.065	23.08
K	3.69	0.052	66.14
Sm	5.55	0.046	11.67
Se	1.65	0.029	46.60
Si	3.27	-0.001	-184.98
Ag	4.49	-0.001	-44.61
Na	7.03	0.017	70.14
Sr	3.97	0.000	20.15
S	0.70	0.008	31.22
Ta	3.66	0.001	637.00
Tl	3.58	-0.031	-85.70
Th	1.67	0.018	26.65
Sn	1.30	-0.001	-396.85
Ti	3.59	0.001	40.51
W	2.65	-0.008	-98.06
U	5.88	0.069	57.78
V	3.45	0.001	288.23
Zn	2.26	0.000	124.43
Zr	4.84	0.002	85.30

ICP Analysis August 21, 1990 LMCS Check Standard

Sample name : 78C11Z
Sample code 1 : SSI1
Sample code 2 : DIRECT
Programme : SST 21-Aug-90 14:05:27

NAME	MV INT	CONCEN	RSD
Al	1.78	0.158	5.05
Sb	1.16	10.100	0.43
As	1.10	0.054	4.42
Ba	186.18	10.505	0.74
Be	0.60	0.001	26.25
Bi	3.67	0.158	10.51
B	150.00	10.511	0.32
Cd	180.38	10.018	0.66
Ca	238.92	10.079	0.71
Ce	12.26	9.821	0.58
Cr	40.05	10.150	0.51
Co	28.53	10.116	0.59
Cu	57.91	10.086	0.60
Eu	4.94	0.025	0.47
Fe	47.27	10.334	0.77
La	0.47	0.108	2.73
Pb	0.27	0.243	5.09
Li	111.77	9.967	0.73
Mg	264.00	10.359	0.67
Mn	147.48	10.043	0.61
Hg	2.46	(-0.029	-6.77
Mo	1.66	0.019	5.71
Nd	27.70	9.923	0.60
Ni	84.16	9.926	0.29
P	1.32	0.166	4.16
K	6.02	10.099	0.62
Sm	5.59	0.136	20.69
Se	3.28	2.879	0.88
Si	3.37	0.058	3.80
Ag	4.56	0.009	22.22
Na	23.68	10.101	0.58
Sr	324.60	10.115	0.72
S	0.89	0.240	3.41
Ta	3.77	0.038	4.09
Tl	3.76	0.468	16.07
Th	1.75	0.368	3.98
Sn	17.22	4.977	0.83
Ti	3.63	0.006	16.56
W	3.49	0.265	1.06
U	6.32	4.457	2.12
V	3.51	0.010	9.65
Zn	383.91	10.114	0.61
Zr	4.92	0.026	4.67

ICP Analysis August 21, 1990 LMCS Check Standard

Sample name : 78C11D
Sample code 1 : SST2
Sample code 2 : DIRECT
Programme : SST 21-Aug-90 14:09:36

NAME	MV INT	CONCEN	RSD
Al	2.57	2.113	0.18
Sb	0.34	0.237	5.08
As	1.29	0.191	2.73
Ba	4.81	0.014	4.69
Be	0.58	0.000	13.48
Bi	10.45	5.277	0.57
B	5.08	0.051	24.21
Cd	2.44	0.006	14.80
Ca	1.05	0.024	1.15
Ce	5.93	0.306	4.46
Cr	1.82	0.060	2.06
Co	0.91	0.015	11.81
Cu	3.60	0.112	0.62
Eu	114.93	5.006	0.68
Fe	1.45	0.033	15.51
La	2.33	4.856	0.53
Pb	0.50	5.358	0.69
Li	4.41	0.006	12.90
Mg	0.61	0.007	2.80
Mn	0.85	0.006	5.92
Hg	2.52	(-0.023	-11.82
Mo	1.59	0.009	17.70
Nd	9.77	0.345	7.36
Ni	3.26	0.019	19.94
P	1.30	0.143	20.52
K	3.70	0.070	28.93
Sm	8.15	5.287	0.19
Se	1.71	0.145	9.10
Si	3.77	0.274	2.18
Ag	39.49	4.759	0.63
Na	7.10	0.057	11.93
Sr	4.13	0.005	2.68
S	0.73	0.042	13.35
Ta	3.88	0.075	7.10
Tl	4.62	2.853	1.49
Th	7.68	25.415	0.56
Sn	1.44	0.041	2.69
Ti	3.91	0.034	1.67
W	2.74	0.023	20.43
U	8.48	25.850	0.39
V	4.17	0.111	1.03
Zn	2.87	0.017	5.61
Zr	5.10	0.076	1.93

ICP Analysis August 21, 1990 LMCS Check Standard

Sample name : 77C11Y
Sample code 1 : SSI3
Sample code 2 : DIRECT
Programme : SSI 21-Aug-90 14:13:52

NAME	MV INT	CONCEN	RSD
Al	5.83	10.191	0.47
Sb	0.35	0.350	7.96
As	29.87	21.449	0.32
Ba	4.79	0.012	8.85
Be	103.95	4.061	1.03
Bi	3.76	0.221	1.38
B	4.85	0.035	1.99
Cd	2.45	0.007	19.54
Ca	0.73	0.010	0.42
Ce	5.84	0.160	22.58
Cr	1.67	0.022	16.47
Co	0.94	0.027	4.64
Cu	3.08	0.015	13.22
Eu	4.46	0.004	20.65
Fe	1.43	0.028	4.62
La	0.44	0.013	30.55
Pb	0.26	0.193	6.41
Li	4.49	0.013	12.37
Mg	0.53	0.004	1.07
Mn	0.83	0.005	9.42
Hg	104.48	10.311	0.50
Mo	66.14	9.939	0.52
Nd	9.28	0.079	61.99
Ni	3.96	0.105	3.54
P	6.91	6.578	9.28
K	3.74	0.234	34.15
Sm	5.63	0.209	23.83
Se	12.80	19.523	0.33
Si	19.74	8.968	0.38
Ag	4.99	0.066	1.67
Na	7.22	0.129	14.13
Sr	4.05	0.003	13.85
S	14.65	17.168	3.09
Ta	32.46	9.004	0.35
Tl	10.65	19.578	0.84
Th	1.71	0.218	12.59
Sn	1.63	0.101	4.97
Ti	104.82	10.405	0.42
W	23.96	6.846	0.25
U	6.09	2.166	12.32
V	28.98	3.877	0.85
Zn	2.79	0.014	7.25
Zr	40.52	9.910	0.33

ICP Analysis August 21, 1990 Reagent Blank

Sample name : F583
Sample code 1 : BLANK
Sample code 2 : BATCH
Sample code 3 : DIRECT
Programme : SST 21-Aug-90 14:23:18

NAME	MV INT	CONCEN	RSD
Al	2.12	1.008	2.09
Sb	0.33	0.048	72.17
As	1.03	0.000	1814.36
Ba	5.01	0.025	7.09
Be	0.58	0.000	99.55
Bi	3.57	0.080	17.74
B	5.23	0.062	4.95
Cd	2.40	0.004	19.21
Ca	25.28	1.048	0.12
Ce	5.87	0.217	25.20
Cr	1.69	0.027	6.17
Co	0.88	0.004	20.99
Cu	3.34	0.064	4.00
Eu	4.47	0.004	29.45
Fe	4.73	0.770	1.14
La	0.44	0.019	20.83
Pb	0.26	0.093	48.04
Li	4.47	0.012	24.98
Mg	6.28	0.230	0.17
Mn	1.20	0.031	0.81
Hg	2.51	(-0.025	-22.64
Mo	1.56	0.004	34.90
Nd	9.41	0.148	21.79
Ni	3.21	0.013	10.51
P	1.31	0.152	7.44
K	3.80	0.517	14.24
Sm	5.66	0.266	27.97
Se	1.66	0.058	13.21
Si	7.69	2.407	0.28
Ag	4.58	0.012	26.64
Na	8.16	0.700	3.43
Sr	4.30	0.011	6.64
S	0.82	0.156	9.12
Ta	3.73	0.025	19.53
Tl	3.65	0.171	17.19
Th	1.70	0.137	31.74
Sn	1.38	0.024	12.36
Ti	4.93	0.139	4.92
W	2.69	0.007	19.92
U	5.98	1.075	33.39
V	3.52	0.012	15.09
Zn	5.50	0.086	0.29
Zr	4.92	0.025	22.97

ICP Analysis August 21, 1990 Sample of 89-075

Sample name : F552
Sample code 1 : SAMPLE
Sample code 2 : 100-10
Sample code 3 : RERUN
Programme : SST 21-Aug-90 14:27:34

NAME	MV INT	CONCEN	DILCOR	RSD
Al	6.30	11.354	1146.7	0.41
Sb	0.33	0.084	8.525	29.74
As	1.08	0.033	3.356	21.51
Ba	4.85	0.016	1.628	1.36
Be	0.58	0.000	0.044	46.65
Bi	5.41	1.470	148.42	1.72
B	4.52	0.011	1.072	5.15
Cd	2.39	0.004	0.358	17.17
Ca	2.26	0.075	7.500	0.38
Ce	5.93	0.293	29.566	0.00
Cr	2.18	0.156	15.707	2.79
Co	0.89	0.007	0.739	18.93
Cu	3.11	0.021	2.096	4.37
Eu	4.52	0.006	0.637	3.80
Fe	7.91	1.486	150.08	0.49
La	0.44	0.032	3.189	12.39
Pb	0.26	0.186	18.784	11.54
Li	4.47	0.011	1.153	1.41
Mg	1.77	0.052	5.293	0.35
Mn	15.80	1.029	103.96	0.40
Hg	2.45	(-0.031	(-3.136	-15.10
Mo	1.60	0.010	1.046	22.43
Nd	9.42	0.158	15.920	30.04
Ni	3.39	0.035	3.554	8.54
P	1.44	0.307	30.989	3.13
K	3.77	0.366	37.016	11.59
Sm	5.70	0.359	36.296	1.48
Se	1.72	0.158	15.944	12.44
Si	4.10	0.451	45.557	0.37
Ag	4.64	0.019	1.942	3.56
Na	20.34	8.076	815.65	0.37
Sr	6.98	0.095	9.620	0.36
S	0.79	0.116	11.675	5.86
Ta	3.77	0.040	4.045	17.47
Tl	3.74	0.406	40.999	8.65
Th	1.71	0.213	21.475	3.03
Sn	1.37	0.020	2.042	25.94
Ti	3.71	0.014	1.384	3.75
W	2.77	0.032	3.216	10.55
U	6.16	2.810	283.85	2.55
V	3.57	0.020	1.989	4.25
Zn	2.93	0.018	1.822	2.72
Zr	4.95	0.032	3.244	2.00

Dilution factor : 101.000

ICP Analysis August 21, 1990 Duplicate of 89-075

Sample name : F553
Sample code 1 : DUPSAM
Sample code 2 : 100-10
Sample code 3 : RERUN
Programme : SST 21-Aug-90 14:31:48

NAME	MV INT	CONCEN	DILCOR	RSD
Al	6.21	11.142	1125.3	0.28
Sb	0.33	0.121	12.178	11.55
As	1.06	0.021	2.104	10.91
Ba	4.83	0.015	1.472	1.37
Be	0.58	0.000	0.029	41.66
Bi	5.23	1.334	134.69	0.81
B	4.49	0.008	0.858	4.98
Cd	2.39	0.003	0.350	25.86
Ca	5.82	0.225	22.768	0.12
Ce	5.90	0.256	25.820	3.83
Cr	2.17	0.152	15.396	0.56
Co	0.88	0.005	0.529	88.34
Cu	3.10	0.019	1.923	2.23
Eu	4.50	0.005	0.529	2.64
Fe	6.83	1.242	125.41	0.44
La	0.44	0.027	2.758	9.38
Pb	0.26	0.200	20.229	6.19
Li	4.45	0.009	0.959	10.17
Mg	3.09	0.105	10.557	0.15
Mn	15.09	0.981	99.091	0.23
Hg	2.46	(-0.030	(-3.071	-1.15
Mo	1.60	0.010	1.010	13.44
Nd	9.38	0.137	13.852	23.80
Ni	3.39	0.035	3.541	8.45
P	1.47	0.342	34.500	6.04
K	3.76	0.335	33.822	7.87
Sm	5.68	0.310	31.285	3.58
Se	1.73	0.171	17.238	9.73
Si	4.11	0.456	46.089	0.72
Ag	4.62	0.016	1.626	5.16
Na	19.86	7.789	786.73	0.15
Sr	6.90	0.093	9.366	0.14
S	0.82	0.154	15.525	6.80
Ta	3.77	0.040	3.999	4.55
Tl	3.72	0.359	36.236	5.91
Th	1.70	0.176	17.778	6.04
Sn	1.35	0.013	1.316	43.55
Ti	3.70	0.013	1.280	1.62
W	2.76	0.029	2.934	19.38
U	6.12	2.427	245.12	2.39
V	3.56	0.018	1.789	7.39
Zn	3.50	0.033	3.363	0.76
Zr	4.93	0.027	2.739	6.00

Dilution factor : 101.000

ICP Analysis August 21, 1990 Sample of 89-070

Sample name : F432
Sample code 1 : SAMPLE
Sample code 2 : 100-10
Sample code 3 : RERUN
Programme : SST 21-Aug-90 14:35:51

NAME	MV INT	CONCEN	DILCOR	RSD
Al	6.82	12.654	1278.0	0.50
Sb	0.33	0.100	10.149	6.93
As	1.06	0.020	2.054	0.00
Ba	4.85	0.016	1.607	3.11
Be	0.58	0.000	0.036	55.93
Bi	4.42	0.723	73.030	0.21
B	4.50	0.009	0.899	2.15
Cd	2.38	0.003	0.277	33.41
Ca	2.59	0.089	8.978	0.55
Ce	5.88	0.222	22.428	7.04
Cr	2.06	0.123	12.456	2.23
Co	0.88	0.006	0.591	7.22
Cu	3.10	0.019	1.941	5.26
Eu	4.49	0.005	0.515	1.85
Fe	10.32	2.027	204.72	0.39
La	0.44	0.029	2.930	5.09
Pb	0.27	0.236	23.841	10.50
Li	4.43	0.008	0.809	7.08
Mg	8.27	0.308	31.100	0.56
Mn	13.46	0.869	87.786	0.54
Hg	2.43	(-0.033	(-3.303	-2.41
Mo	1.59	0.009	0.917	19.64
Nd	9.40	0.145	14.625	19.14
Ni	3.39	0.035	3.537	12.03
P	1.30	0.141	14.279	15.97
K	3.75	0.289	29.177	2.98
Sm	5.66	0.280	28.238	5.99
Se	1.72	0.161	16.238	13.62
Si	3.92	0.354	35.731	0.32
Ag	4.61	0.016	1.584	4.28
Na	19.65	7.657	773.40	0.35
Sr	7.72	0.119	11.984	0.38
S	0.77	0.100	10.060	7.02
Ta	3.76	0.034	3.426	24.09
Tl	3.74	0.410	41.372	3.97
Th	1.70	0.170	17.209	10.02
Sn	1.36	0.017	1.674	24.67
Ti	3.78	0.021	2.156	0.74
W	2.78	0.034	3.443	34.94
U	6.24	3.630	366.67	1.38
V	3.59	0.022	2.198	3.69
Zn	3.22	0.026	2.613	1.05
Zr	4.99	0.043	4.384	1.11

Dilution factor : 101.000

ICP Analysis August 21, 1990 Duplicate of 89-070

Sample name : E433
Sample code 1 : DUPSAM
Sample code 2 : 100-10
Sample code 3 : RERRUN
Programme : SST 21-Aug-90 14:39:56

NAME	MV INT	CONCEN	DILCOR	RSD
Al	7.30	13.845	1398.4	0.51
Sb	0.34	0.149	15.020	18.72
As	1.06	0.024	2.454	35.48
Ba	4.86	0.017	1.667	5.37
Be	0.58	0.000	0.049	4.68
Bi	4.43	0.726	73.335	0.38
B	4.52	0.011	1.064	20.60
Cd	2.39	0.004	0.379	18.99
Ca	2.74	0.095	9.626	0.68
Ce	5.89	0.247	24.908	13.03
Cr	2.06	0.124	12.536	1.49
Co	0.88	0.004	0.443	34.70
Cu	3.11	0.021	2.158	10.46
Eu	4.50	0.006	0.563	10.61
Fe	16.41	3.396	342.96	0.41
La	0.44	0.030	3.016	14.85
Pb	0.27	0.293	29.621	14.63
Li	4.45	0.010	0.981	19.73
Mg	8.24	0.307	30.988	0.59
Mn	13.16	0.849	85.753	0.86
Hg	2.42	(-0.034	(-3.412	-10.63
Mo	1.60	0.011	1.072	9.65
Nd	9.37	0.130	13.114	14.62
Ni	3.37	0.032	3.261	5.15
P	1.31	0.154	15.514	17.81
K	3.75	0.302	30.484	21.04
Sm	5.68	0.312	31.488	9.71
Se	1.72	0.150	15.179	15.38
Si	4.01	0.404	40.809	1.07
Ag	4.63	0.018	1.786	12.21
Na	20.09	7.924	800.35	0.67
Sr	7.81	0.121	12.271	0.40
S	0.79	0.118	11.965	8.24
Ta	3.76	0.035	3.495	27.34
Tl	3.75	0.430	43.427	7.61
Th	1.71	0.194	19.626	15.22
Sn	1.36	0.018	1.842	23.77
Ti	3.81	0.024	2.415	4.41
W	2.76	0.029	2.891	29.47
U	6.25	3.776	381.37	4.59
V	3.60	0.024	2.423	4.12
Zn	3.98	0.046	4.651	1.10
Zr	4.99	0.044	4.478	7.12

Dilution factor : 101.000

ICP Analysis August 21, 1990 Acid Blank

Sample name : HNO3
Programme : SST 21-Aug-90 14:44:16

NAME	MV INT	CONCEN	RSD
Al	1.75	0.084	19.29
Sb	0.33	0.096	61.66
As	1.06	0.019	18.48
Ba	4.68	0.006	18.05
Be	0.58	0.000	59.77
Bi	3.56	0.071	33.20
B	4.43	0.004	42.37
Cd	2.38	0.003	17.53
Ca	0.52	0.001	3.36
Ce	5.88	0.225	12.19
Cr	1.63	0.012	15.91
Co	0.89	0.008	21.48
Cu	3.06	0.012	19.71
Eu	4.49	0.005	18.09
Fe	1.35	0.011	40.61
La	0.44	0.032	24.77
Pb	0.26	0.193	16.97
Li	4.44	0.009	11.90
Mg	0.45	0.001	11.75
Mn	0.77	0.001	31.75
Hg	2.39	(-0.037	-11.57
Mo	1.58	0.007	24.36
Nd	9.40	0.144	7.78
Ni	3.20	0.012	9.63
P	1.16	-0.020	-125.17
K	3.73	0.220	7.07
Sm	5.67	0.286	16.32
Se	1.68	0.083	17.08
Si	3.34	0.041	15.14
Ag	4.60	0.013	17.70
Na	7.16	0.098	17.07
Sr	4.04	0.003	14.03
S	0.68	-0.015	-86.74
Ta	3.76	0.035	18.62
Tl	3.69	0.280	3.57
Th	1.70	0.142	12.00
Sn	1.34	0.011	16.43
Ti	3.68	0.010	16.17
W	2.72	0.014	5.68
U	6.01	1.319	16.17
V	3.55	0.017	23.68
Zn	2.31	0.002	5.62
Zr	4.92	0.025	16.42

ICP Analysis August 21, 1990 LMCS Check Standard

Sample name : 78C11Z
Sample code 1 : SST1
Sample code 2 : DIRECT
Programme : SST 21-Aug-90 14:48:29

NAME	MV INT	CONCEN	RSD
Al	1.82	0.261	1.45
Sb	1.17	10.189	0.42
As	1.14	0.084	8.62
Ba	186.95	10.550	0.41
Be	0.61	0.002	4.37
Bi	3.79	0.242	6.19
B	150.97	10.580	0.19
Cd	186.66	10.371	0.31
Ca	240.78	10.157	0.43
Ce	12.43	10.070	0.12
Cr	41.06	10.415	0.41
Co	29.25	10.380	0.30
Cu	58.10	10.122	0.26
Eu	5.06	0.031	0.89
Fe	48.32	10.569	0.67
La	0.48	0.118	3.32
Pb	0.27	0.250	17.14
Li	109.70	9.775	0.31
Mg	268.29	10.528	0.34
Mn	150.81	10.271	0.49
Hg	2.50	(-0.026	-6.03
Mo	1.70	0.026	6.54
Nd	28.13	10.154	0.94
Ni	86.74	10.241	0.51
P	1.23	0.066	47.19
K	6.09	10.398	0.27
Sm	5.71	0.385	3.99
Se	3.38	3.057	0.75
Si	3.47	0.108	0.29
Ag	4.68	0.025	1.89
Na	23.73	10.133	0.21
Sr	326.35	10.170	0.37
S	0.85	0.200	15.13
Ta	3.91	0.086	2.70
Tl	3.88	0.793	3.85
Th	1.78	0.503	2.22
Sn	17.59	5.092	0.18
Ti	3.72	0.015	4.38
W	3.61	0.302	1.82
U	6.47	5.932	0.97
V	3.63	0.028	2.27
Zn	389.93	10.274	0.30
Zr	5.02	0.054	4.66

ICP Analysis August 21, 1990 LMCS Check Standard

Sample name : 87B38D
Sample code 1 : SST2
Sample code 2 : DIRECT
Programme : SST 21-Aug-90 14:52:47

NAME	MV INT	CONCEN	RSD
Al	2.60	3.189	0.24
Sb	0.34	0.225	10.71
As	1.32	0.212	2.30
Ba	4.91	0.019	1.66
Be	0.60	0.001	21.53
Bi	10.64	5.420	0.22
B	5.20	0.059	23.52
Cd	2.48	0.008	5.60
Ca	1.07	0.025	1.11
Ce	6.07	0.505	0.60
Cr	1.86	0.071	4.50
Co	0.92	0.021	6.23
Cu	3.67	0.125	1.19
Eu	115.21	5.019	0.36
Fe	1.48	0.040	2.55
La	2.33	4.858	0.38
Pb	0.51	5.401	0.69
Li	4.50	0.014	4.37
Mg	0.62	0.007	3.22
Mn	0.86	0.007	4.16
Hg	2.53	(-0.023	-11.95
Mo	1.63	0.015	16.68
Nd	9.97	0.452	5.79
Ni	3.33	0.027	10.21
P	1.38	0.235	9.06
K	3.75	0.310	11.02
Sm	8.26	5.498	0.29
Se	1.75	0.211	2.09
Si	3.84	0.314	0.90
Ag	39.20	4.720	0.40
Na	7.24	0.145	7.01
Sr	4.20	0.008	2.99
S	0.75	0.075	9.46
Ta	3.98	0.109	2.04
Tl	4.72	3.126	0.41
Th	7.72	25.598	0.52
Sn	1.47	0.050	18.40
Ti	3.98	0.042	1.77
W	2.81	0.044	4.65
U	8.59	26.997	0.39
V	4.25	0.123	1.15
Zn	2.93	0.018	5.14
Zr	5.20	0.103	1.02

ICP Analysis August 21, 1990 LMCS Check Standard

Sample name : 77C11Y
Sample code 1 : SST3
Sample code 2 : DIRECT
Programme : SST 21-Aug-90 14:57:09

NAME	MV INT	CONCEN	RSD
Al	5.85	10.253	0.37
Sb	0.36	0.386	1.80
As	30.03	21.568	0.38
Ba	4.90	0.019	6.23
Be	104.57	4.085	0.59
Bi	3.87	0.308	10.05
B	4.91	0.039	10.21
Cd	2.50	0.010	9.58
Ca	0.86	0.016	0.16
Ce	5.99	0.384	9.22
Cr	1.71	0.032	8.71
Co	0.96	0.033	5.01
Cu	3.14	0.028	7.92
Eu	4.57	0.008	10.91
Fe	1.46	0.036	17.55
La	0.44	0.031	12.73
Pb	0.26	0.172	7.22
Li	4.62	0.026	4.99
Mg	0.55	0.005	1.75
Mn	0.84	0.006	7.65
Hg	107.17	10.584	0.26
Mo	66.20	9.948	0.48
Nd	9.56	0.234	17.90
Ni	4.07	0.118	2.03
P	10.17	10.315	1.79
K	3.81	0.561	7.42
Sm	5.77	0.501	8.84
Se	12.84	19.591	0.26
Si	19.78	8.992	0.13
Ag	5.10	0.082	1.87
Na	7.40	0.239	8.27
Sr	4.14	0.006	7.98
S	16.90	19.932	0.81
Ta	32.61	9.857	0.35
Tl	10.73	19.787	0.22
Th	1.76	0.424	10.18
Sn	1.68	0.117	2.31
Ti	104.40	10.361	0.57
W	24.07	6.883	0.18
U	6.24	3.630	6.59
V	28.93	3.870	0.55
Zn	2.89	0.017	3.75
Zr	40.48	9.899	0.49

APPENDIX A
ANALYTICAL ANALYSIS CARDS

Serial No	Sample Point	Date	Time Issued	Priority
F 417.-5001	SEGMENT-B	11-30-89	8: 5	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
VOA SAMP	LI-000-200	NONE	WB75L	0

Sample Size: ?

Customer ID: 89-070

Remarks, Calculations, Results:
DUPLICATE SAMPLE Bottle ~~#285~~ 281 RLW

Gross wt 26.26
21.43

Tare wt ~~21.75 21~~

Sample wt 4.83

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
RLW KJP JRS	6A297 61300 65286			
Hrs 1-29-90	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 417.-5000	SEGMENT-B	11-30-89	8: 5	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
APPR/OTR	LI-000-200	NONE	WB75L	0

Sample Size: ? WHCN3133

Customer ID: 89-070

Remarks, Calculations, Results:
A. JAR ID# 259
B. JAR TARE WT. 221.5
C. JAR TOTAL WT. 306.05
D. C-B= 84.56
E. EST. VOL./LENGTH ~4"
F. VISUAL REMARKS

Insufficient material for Penetrometer

Very dark brown, firm, crumbls solids At least 1 1/4" chunk-hard

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
RLW KJP JRS	6A297 61300 65286			
Hrs 1-29-90	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 417.-5003	SEGMENT-B	11-30-89	8: 5	16

Determination	Method/Standard	Result Units	Charge Code	Reruns
HOMOGZT	LI-000-200	NONE	WB75L	0

Sample Size: ?

Customer ID: 89-070

Remarks, Calculations, Results:
Homogenization complete

Jar # 258

WHCN 3134 pg 26

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A297 61300 65890				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/14/90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 417.-5002	SEGMENT-B	11-30-89	8: 5	24

Determination	Method/Standard	Result Units	Charge Code	Reruns
PRT-SIZE	LI-000-200	NONE	WB75L	0

Sample Size: ?

Customer ID: 89-070

Remarks, Calculations, Results:
PARTICLE SIZE DISTRIBUTION Bottle #280

Results: see attached (6)

Gross wt 23.56

tare wt ~~21.43~~ 21.75 RLW

Sample wt 1.81

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
RLW KJP JRS	BB 2/26/90			
Hrs 1-29-90	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
		[signature]	NMS

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 418.-5102	SEGMENT-C	11-30-89	8: 5	24

Determination	Method/Standard	Result Units	Charge Code	Rerune
PRT-SIZE	LI-000-200	NONE	WB75L	0

Sample Size	Customer ID
?	89-070

Remarks, Calculations, Results:
DUPLICATE SAMPLE

no duplicate

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 418.-5101	SEGMENT-C	11-30-89	8: 5	18

Determination	Method/Standard	Result Units	Charge Code	Rerune
VOA-SAMP	LI-000-200	NONE	WB75L	0

Sample Size	Customer ID
?	89-070

Remarks, Calculations, Results:
DUPLICATE SAMPLE

No duplicate

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 419.-5201	SEGMENT-D	11-30-89	8: 5	18

Determination	Method/Standard	Result Units	Charge Code	Rerune
VOA-SAMP	LI-000-200	NONE	WB75L	0

Sample Size	Customer ID
?	89-070

Remarks, Calculations, Results:
THIRD SAMPLE

no duplicate

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr

54-6800-061 (R-10-83)

pH Analysis of Solid Sample

Serial No	Sample Point	Date	Time Issued	Priority
F 437.-5315	SEGMENT-V	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-103	NONE	WB75L	0

Sample Size: ? 1ml

Customer ID: 089070

Remarks, Calculations, Results:
~~LMCS CHECK SAMPLE~~
pH FOUND ~~5.84~~
~~STD ID~~
SAMPLE TEMP ~~23.8~~
~~Reg~~ Reagent Blank
H_2O

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 3-2-90	Time Completed	Lab Unit Mgr		

54-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 416.-5515	SEGMENT-A	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-103	% RECOVERY	WB75L	0

Sample Size: ? 1ml

Customer ID: 089070

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
pH FOUND 10.08
STD ID ~~RCM-13~~
SAMPLE TEMP ~~23.8~~

100.8%

10.08/10.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 3-2-90	Time Completed	Lab Unit Mgr		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 418.-5115	SEGMENT-C	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-103	NONE	WB75L	0

Sample Size: ? 2.156g / 2.156 ml

Customer ID:

Remarks, Calculations, Results:
pH 12.84
SAMPLE TEMP 24.7

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 3-2-90	Time Completed	Lab Unit Mgr		

54-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 417.-5015	SEGMENT-B	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-103	NONE	WB75L	0

Sample Size: ? 2.475g / 2.475 ml

Customer ID: 89070

Remarks, Calculations, Results:
pH 12.99
SAMPLE TEMP 24.6

#322 11.23g

WHC N 3134

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 3-2-90	Time Completed	Lab Unit Mgr		

54-6800-081 (R-10-83)

ph Analysis of Solid Sample

Serial No.	Sample Point	Date	Time Issued	Priority
F 420.-5515	SEGMENT-E	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
pH	LA-212-103	% RECOVERY	WB75L	0

Sample Size	Customer ID
?	089070

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
pH FOUND 9.99
STD ID 72C11-B
SAMPLE TEMP 24.8

99.9%

9.99/10.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R B [illegible]
[illegible]	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-2-90		[illegible]

84-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 437.-5310	SEGMENT-V	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H20	LA-564-101	~~%~~ g	WB75L	0

Sample Size: ?

Customer ID: 689070

Remarks, Calculations, Results:

REAGENT BLANK

① .0065 ② .0059

21.5642G 21.6807 .0062 g

21.5642T 21,6807

21.5578 W1 21.6748

21.5576 W2 21.6746

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				R Bennett
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 2-2-90 | Time Completed: | Lab Unit Mgr:

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 416.-5510	SEGMENT-A	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H20	LA-564-101	% RECOVERY	WB75L	0

Sample Size: ?

Customer ID: 89-070

Remarks, Calculations, Results:

LMCS CHECK SAMPLE

LMCS ID 11C11AH

① 22.8786 ② 22.8859 57.76 98.3%

58.16 21.4798 T 21.5004 57.96/58.98

22.0651 W1 22.0857

22.0632 W2 22.0811

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				R Bennett
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 3-2-90 | Time Completed: | Lab Unit Mgr:

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 418.-5110	SEGMENT-C	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H20	LA-564-101	%	WB75L	0

Sample Size: ?

Customer ID:

Remarks, Calculations, Results:

DUPLICATE SAMPLE

G. 22.4067

T. 21.7838 43.60%

W1 22.1351

W2 22.1341

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				R Bennett
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 3-2-90 | Time Completed: | Lab Unit Mgr:

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 417.-5010	SEGMENT-B	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H20	LA-564-101	%	WB75L	0

Sample Size: ?

Customer ID: 89070

Remarks, Calculations, Results:

#325 3.48g

G. 22.2221

T. 21.4580 38.19%

W1 21.9303

W2 21.9292 WHC ID 3134

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				R Bennett
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 3-2-90 | Time Completed: | Lab Unit Mgr:

54-6800-061 (R-10-83)

Percent Water Analysis

Serial No	Sample Point	Date	Time Issued	Priority
F 564.-5510	SEGMENT-E	12- 1-89	11:34	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H20	LA-564-101	% RECOVERY	WB75L	0

Sample Size	Customer ID
?	089076

Remarks, Calculations, Results

LMCS CHECK SAMPLE
LMCS ID 11C11AA

	③	④
	57.77	56.58
G,	22.9823	22.9189
T,	21.59560	21.5377
W1	22.1812	22.1374
W2	22.1780	22.1310

57.18% / 58.98

96.95%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBSH				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-2-90		[signature]

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 422.-6000	SEGMENT-G	11-30-89	8: 6	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
FUSION	LA-549-141	G/L	WB75L	0

Sample Size: ?

Customer ID: 89070

Remarks, Calculations, Results:

GRAMS SAMPLE .5430
VOLUME ON
COMPLETION 200 mL

2.72^{-3} g/ml

WHC N 3134

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				Gu
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-10-90		QP	SH

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 436.-6300	SEGMENT-U	11-30-89	8: 8	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
FUSION	LA-549-141	G/L	WB75L	0

Sample Size: ? 200 mL

Customer ID: G89070

Remarks, Calculations, Results:

REAGENT BLANK

complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				Gu
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-10-90		QP	SH

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 423.-6100	SEGMENT-H	11-30-89	8: 6	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
FUSION	LA-549-141	G/L	WB75L	0

Sample Size: ?

Customer ID:

Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE .4645
VOLUME ON
COMPLETION 200 mL

2.32^{-3} g/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				Gu
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-10-90		QP	SH

54-6800-061 (R-10-83)

Total Alpha Analysis of the Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 436.-6320	SEGMENT-U	11-30-89	8: 8	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-548-101	uCI/L	WB75L	0

Sample Size: ? 10 ml

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

H_2O

$< 9.94^{-5}$ uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Fraser	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: [illegible] Kathy Kondike

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 421.-6520	SEGMENT-F	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-548-101	% RECOVERY	WB75L	0

Sample Size: ? 10 ml

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID: 132B44

104.6%
gm 8

1.01^{-2} uci/l / 9.65^{-3}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Fraser	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: [illegible] Kathy Kondike

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 423.-6120	SEGMENT-H	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-548-101	uCI/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID:

Remarks, Calculations, Results:

DUPLICATE SAMPLE

1.93 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Fraser	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: [illegible] Kathy Kondike

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 422.-6020	SEGMENT-G	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-548-101	uCI/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID:

Remarks, Calculations, Results:

2.80 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Fraser	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: [illegible] Kathy Kondike

54-6800-061 (R-10-83)

Total Alpha Analysis of the Fusion Dissolution

4 2" 3-22-90 VR

$\frac{18}{10}$ - .4

$\frac{16}{10}$ -

Alpha Calculation by VR on 03-22-1990 at 23:06:00
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 1 mL Dilution : 1010

Mount # 1

$\frac{18}{10}$ - 0.4 = 3.0172E+00 uCi/L alpha

Mount # 2

$\frac{16}{10}$ - 0.4 = 2.5862E+00 uCi/L alpha

14 2" 3-22-90 VR

$\frac{14}{10}$ - ~~.21~~ VR

$\frac{12}{10}$ - .4

Alpha Calculation by VR on 03-22-1990 at 23:05:12
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 1 mL Dilution : 1010

Mount # 1

$\frac{14}{10}$ - 0.4 = 2.1552E+00 uCi/L alpha

Mount # 2

$\frac{12}{10}$ - 0.4 = 1.7241E+00 uCi/L alpha

14/2

$\frac{490}{10}$

Alpha Calculation by EMB on 03-23-1990 at 01:05:15
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{460}{10}$ $\frac{490}{10}$ - 0.4 = 1.0370E-02 uCi/L alpha

Mount # 2

$\frac{460}{10}$ - 0.4 = 9.7302E-03 uCi/L alpha

14 2" 3-22-90 VR

$\frac{3}{10}$ - .4

$\frac{2}{10}$ -

Alpha Calculation by EMB on 03-23-1990 at 00:56:58
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{3}{10}$ - 0.4 < 9.9436E-05 uCi/L alpha

Mount # 2

$\frac{2}{10}$ - 0.4 < 9.9436E-05 uCi/L alpha

Total Alpha Analysis of the Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 425.-6520	SEGMENT-J	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-548-101	% RECOVERY	WB75L	0

Sample Size: ? 10 ml

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 132B44

103.6%
Dm 8

1.00^{-2} mi/l / 9.65^{-3}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
[illegible]	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: [illegible] [illegible]

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 424.-6220	SEGMENT-I	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-548-101	% RECOVERY	WB75L	0

Sample Size: ? 100-10-100

Customer ID:

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 132B44
SPIKE VOLUME 10 ml

121.6% 21.3%

$\frac{1.15\times10^{-2}\ \text{mCi/L}}{9.65\times10^{-3}\ \text{mCi/L}} = 119.0\%$ 1.9^{2} mi/l $-2.80 = 1.16^{2}/1010\times10 = 1.15\times10^{-2}$

$1.173^{-2}/9.65^{-3} = 120.4\%$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
[illegible]	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: [illegible] [illegible]

54-6800-061 (R-10-83)

14 2" 3-22-90 VR

588/10 - .4

524/10 -

Alpha Calculation by VR on 03-22-1990 at 21:40:07
Bet #14 2 -inch mount Alpha eff. : .2111
Sample size : 1 mL Dilution : 1010

Mount # 1

588/10 - 0.4 = 1.2586E+02 uCi/L alpha

Mount # 2

524/10 - 0.4 = 1.1207E+02 uCi/L alpha

14 2" 3-22-90 VR

464/10 - .4

482/10 -

Alpha Calculation by VR on 03-22-1990 at 21:41:15
Bet #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

464/10 - 0.4 = 9.8156E-03 uCi/L alpha

Mount # 2

482/10 - 0.4 = 1.0200E-02 uCi/L alpha

Total Beta Analysis of the Fusion Dissolution

9-10

Serial No.	Sample Point	Date	Time Issued	Priority
F 436.-6325	SEGMENT-U	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-548-101	uCI/L	WB75L	0

Sample Size: ? 10 ml

Customer ID: 89070

Remarks, Calculations, Results:

REAGENT BLANK H_2O

Count on Det 13, 14 or 15

6.59^{-4} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: Kathy Chandlee

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 421.-6525	SEGMENT-F	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-548-101	% RECOVERY	WB75L	0

Sample Size: ? 10 ml

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 132844

Count on Det 13, 14 or 15

1.37^{-1} uci/l / 1.306^{-1}

104.9% DN 8

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: Paul N. Pool | Kathy Chandlee

54-8800-081 (R-10-83)

5-6

Serial No.	Sample Point	Date	Time Issued	Priority
F 423.-6125	SEGMENT-H	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-548-101	uCI/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID: 89070

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Count on Det 13, 14 or 15

3.39^{3} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: Paul N. Pool | Kathy Chandlee

54-8800-081 (R-10-83)

7-8

Serial No.	Sample Point	Date	Time Issued	Priority
F 422.-6025	SEGMENT-G	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-548-101	uCI/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID: 89-070

Remarks, Calculations, Results:

Count on Det 13, 14 or 15

~~3.48^{3} uci/l~~ KNP

3.35×10^{3} uCi/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date: 3-21-90 | Time Completed: | Lab Unit Mgr: Paul N. Pool | Kathy Chandlee

54-8800-081 (R-10-83)

2" 3-22-90 VR DF 1,01E3

20420/10 - 21

20273/10 -

Beta Calculation by VR on 03-22-1990 at 23:05:58
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 1 mL Dilution : 1010

Mount # 1

20420 / 10 - 21.0 = 3.3631E+03 uCi/L beta

Mount # 2

20273 / 10 - 21.0 = 3.3386E+03 uCi/L beta

14 2" 3-22-90 VR DF 1,01E3

20970/10 - 21

20187/10 -

Beta Calculation by VR on 03-22-1990 at 23:05:10
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 1 mL Dilution : 1010

Mount # 1

20970 / 10 - 21.0 = 3.4546E+03 uCi/L beta

Mount # 2

20187 / 10 - 21.0 = 3.3243E+03 uCi/L beta

14/2

8548/10 -21

8498/10

Beta Calculation by EMB on 03-23-1990 at 01:05:13
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

8548 / 10 - 21.0 = 1.3738E-01 uCi/L beta

Mount # 2

8498 / 10 - 21.0 = 1.3655E-01 uCi/L beta

14 2" 3-22-90 VR

249/10 - 21

251/10 -

Beta Calculation by EMB on 03-23-1990 at 00:56:56
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

249 / 10 - 21.0 = 6.4256E-04 uCi/L beta

Mount # 2

251 / 10 - 21.0 = 6.7551E-04 uCi/L beta

Total Beta Analysis of the Fusion Dissolution

1-2

Serial No.	Sample Point	Date	Time Issued	Priority
F 425.-6525	SEGMENT-J	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-548-101	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 10 ml	89070

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 132B44

Count on Det 13, 14 or 15

103.4% DMS

1.35 ml/l / 1.306

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
[illegible]	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-21-90		[illegible]	[illegible]

84-6600-061 (R-10-83)

3-4

Serial No.	Sample Point	Date	Time Issued	Priority
F 424.-6225	SEGMENT-I	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-548-101	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100-10-100 (F422)	89-070

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 132B44
SPIKE VOLUME 10 ml

Count on Det 13, 14 or 15

4.95×10^3 uCi/L - 3.35×10^3 uCi/L = 1.60×10^3 uCi/L

$\frac{1.60 \times 10^3 \text{ uCi/L}}{1010 \times 10} = \frac{1.58 \times 10^{-1} \text{ uCi/L}}{1.306 \times 10^{-1} \text{ uCi/L}} = 121.2\%$

1.58 / 1.306 = 121.2% 121.2% 1.47 / 1.47

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
[illegible]	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-21-90		[illegible]	[illegible]

84-6600-061 (R-10-83)

4 2" 3-22-90 VR

1.01 E3

30018 / 10 - 21

29884 / 10 -

Beta Calculation by VR on 03-22-1990 at 21:40:05
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 1 mL Dilution : 1010

Mount # 1

30018 / 10 - 21.0 = 4.9602E+03 uCi/L beta

Mount # 2

29884 / 10 - 21.0 = 4.9379E+03 uCi/L beta

14 2" 3-22-90 VR

8540 / 10 - 21

8315 / 10 -

Beta Calculation by VR on 03-22-1990 at 21:41:13
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

8540 / 10 - 21.0 = 1.3724E-01 uCi/L beta

Mount # 2

8315 / 10 - 21.0 = 1.3354E-01 uCi/L beta

1071

Serial No.	Sample Point	Date	Time Issued	Priority
F 436.-6330	SEGMENT-U	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 1ml

Customer ID: 089070

Remarks, Calculations, Results:
REAGENT BLANK
Co^{60} < 3.73^{-4} uci/l
Cs^{137} < 481^{-4} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				gal
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-14-90		QP	Dm 8

84-6800-061 (R-10-83)

1070

Serial No.	Sample Point	Date	Time Issued	Priority
F 421.-6530	SEGMENT-F	11-30-89	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? 500 Li .001 2

Customer ID: 089070

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 122894
Co^{60} 2.14' / 2.0933' 102.2%
Cs^{137} 2.85' / 2.8979' 98.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				gal
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-14-90		QP	Dm 8

84-6800-061 (R-10-83)

1074

Serial No.	Sample Point	Date	Time Issued	Priority
F 423.-6130	SEGMENT-H	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 50

Customer ID: 089070

Remarks, Calculations, Results
DUPLICATE SAMPLE
Co^{60} < 5.64^{-1} uci/l
Cs^{137} 7.72^{1} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				gal
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-14-90		QP	

84-6800-061 (R-10-83)

1073

Serial No.	Sample Point	Date	Time Issued	Priority
F 422.-6030	SEGMENT-G	11-30-89	8: 6	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 50

Customer ID: 089070

Remarks, Calculations, Results:
Co^{60} < 6.43^{-1} uci/l
Cs^{137} 8.64^{1} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RH				gal
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-14-90		QP	Dm 8

84-6800-061 (R-10-83)

Gamma Energy Analysis of the Fusion Dissolution

1087

Serial No	Sample Point	Date	Time Issued	Priority
F 569.-6530	SEGMENT-J	12- 1-89	11:35	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? 500 λ

Customer ID: 089076

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 122B44

Co^{60} 2.07'/2.0932' 98.9%

Cs^{137} 2.82'/2.8979' 97.3%

KP

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				SNL
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-14-90		AP	DMS

54-6800-061 (R-10-83)

1084

Serial No	Sample Point	Date	Time Issued	Priority
F 568.-6230	SEGMENT-I	12- 1-89	11:35	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? 50 λ

Customer ID: 089076

Remarks, Calculations, Results:

SPIKE SAMPLE F 447
SPIKE ID 122B44
SPIKE VOLUME 500

93.5%

2.04' - 6.85 = 13.55 x 2 = 2.71'/2.8979'

~~4.08² - 1.37² = 2.71²~~ KP

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				SNL
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-14-90		AP	DMS

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 436.-6340	SEGMENT-U	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	G/L	WB75L	0

Sample Size: ? 0.05ml

Customer ID: 089075

Remarks, Calculations, Results:
REAGENT BLANK F748 Spike 54B38 Value $5.62E^{-4}$ g/l Volume .100ml

<.02
.000
.310

$$\frac{(.982)(.02)(5.62E^{-4})(.1)(20)}{.310 - [(.982)(.02)]} = <7.60E^{-5}\ g/l$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Li				
Hrs: 6c916	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
6-18-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 421.-6540	SEGMENT-F	11-30-89	8: 5	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	% RECOVERY	WB75L	0

Sample Size: ? 0.100ml - 10ml - 0.100ml

Customer ID: 089070

Remarks, Calculations, Results:
LMCS CHECK SAMPLE Spike 58B38
LMCS ID 58B38 Spike Value $5.62E^{-4}$ g/l
Spike Volume 0.100ml

0.190
0.545

$$\frac{(.982)(.190)(5.62E^{-4})(.1)(1010)}{.545 - [(.982)(.190)]} = 2.955E^{-2}\ g/l / 2.99E^{-2}\ g/l$$

98.8%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Li				
Hrs: 6c916	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
6-18-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 423.-6140	SEGMENT-H	11-30-89	8: 6	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	G/L	WB75L	0

Sample Size: ? 0.100ml -10ml -0.100ml

Customer ID: 089075

Remarks, Calculations, Results:
DUPLICATE SAMPLE Spike 54B38 Value $5.62E^{-4}$ g/l
Volume .100ml

.190
.530

$$\frac{(.982)(.190)(5.62E^{-4}\ g/l)(.1)(1010)}{.530 - [(.982)(.190)]} = 3.08E^{-2}\ g/l$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Li				
Hrs: 6c916	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
6-18-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 422.-6040	SEGMENT-G	11-30-89	8: 6	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	G/L	WB75L	0

Sample Size: ? 0.100ml - 10ml - 0.100ml

Customer ID: 089070

Remarks, Calculations, Results:
Spike 54B38 Value $5.62E^{-4}$ g/l Volume 0.100ml

0.2200
0.595

$$\frac{(.982)(.220)(5.62E^{-4}\ g/l)(.1)(1010)}{.595 - [(.220)(.982)]} = 3.24E^{-2}\ g/l$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Li				
Hrs: 6c916	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
6-18-90		

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 425.-6540	SEGMENT-J	11-30-89	8: 6	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	% RECOVERY	WB75L	0

Sample Size: ? 0.100 ml - 10 ml - 0.100 ml

Customer ID: 089075

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 58B38

ID 54B88
Spike Value 5.62E-4 g/l
Volume 0.100 ul

$\frac{(.982)(.185)(5.62E^{-4})(.1)(1010)}{.540-[(.982)(.185)]} = 2.88E^{-2}$ g/l / 2.99E-2 g/l

96.2% 0.185 0.540

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai				S. Catto
Hrs	Hrs	Hrs	Hrs	Hrs
6C916				

Date	Time Completed	Lab Unit Mgr	
6-18-90		Ted N. Pool	Dayne Southwick

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 424.-6240	SEGMENT-I	11-30-89	8: 6	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	% RECOVERY	WB75L	0

Sample Size: ? 100-10-100 + 100-10-100 spike

Customer ID: 089070

Remarks, Calculations, Results: F422
SPIKE SAMPLE
SPIKE ID 58B38
SPIKE VOLUME 100 ul

Spike Val 5.62E-4 g/l

106.8% 0.400 0.740

$\frac{(\frac{5.7}{5.8})(.400)(5.62E^{-4})(.1)(101)}{.740-[\frac{5.7}{5.8}(.400)].1} = \frac{.002231292}{0.03469} = 6.42E^{-2}$ - 3.238E-2 g/l - 3.194E-2 / 2.99E-2 =

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai				S. Catto
Hrs	Hrs	Hrs	Hrs	Hrs
6C916				

Date	Time Completed	Lab Unit Mgr	
6-18-90		Ted N. Pool	Dayne Southwick

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 428.-7100	SEGMENT-M	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	WB75L	0

Sample Size: ?

Customer ID:

Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE .5295
VOLUME ON
COMPLETION 50 ml

1.059 -2 g/ml

F 428

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/S.C.	6C269 Mary Fraser	[signature] 9/1/71		
Hrs		Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-6-90		[signature]	DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 427.-7000	SEGMENT-L	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	WB75L	0

Sample Size: ?

Customer ID: 89070

Remarks, Calculations, Results:

GRAMS SAMPLE .5193
VOLUME ON
COMPLETION 50 ml

1.039 -2 g/ml

#342 6.889

F427

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/S.C.	6C269 Mary Fraser	WHC [signature] 9/1/71		
Hrs		Hrs		

Date	Time Completed	Lab Unit Mgr	
3-6-90		[signature]	DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 429.-7200	SEGMENT-N	11-30-89	8: 8	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	% RECOVERY	WB75L	0

Sample Size: ?

Customer ID: 89070

Remarks, Calculations, Results:

SPIKED ANALYSIS
GRAMS SAMPLE .4873
VOLUME ON
COMPLETION 50 ml
VOLUME SPIKE
SPIKE ID

9.746 -3 g/ml

F 429

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/S.C.	6C269 Mary Fraser	[signature] 9/1/71		
Hrs		Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-6-90		[signature]	DMS

54-6800-081 (R-10-83)

Ion Chromatographic Analysis of the Water Digestion - Chloride Analysis

Serial No.	Sample Point	Date	Time Issued	Priority
F 438.-7372	SEGMENT-W	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 689070

Remarks, Calculations, Results:
REAGENT BLANK

.202 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				[signature] 4/1/71
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 4/5/90 | Time Completed: | Lab Unit Mgr: QP | [signature]

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 426.-7572	SEGMENT-K	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	% RECOVERY	WB75L	0

Sample Size: 100-10

Customer ID: 689070

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 6C1140

KT

99.7%

~~61~~ KT 71.81/72.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				[signature] 4/1/71
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 4/5/90 | Time Completed: | Lab Unit Mgr: QP | [signature]

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 428.-7172	SEGMENT-M	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 689070

Remarks, Calculations, Results:
DUPLICATE SAMPLE

1.75' ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				[signature] 4/1/71
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 4/5/90 | Time Completed: | Lab Unit Mgr: QP | [signature]

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 427.-7072	SEGMENT-L	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 689070

Remarks, Calculations, Results:

1.70' ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				[signature] 4/1/71
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 4/5/90 | Time Completed: | Lab Unit Mgr: QP | [signature]

54-6800-061 (R-10-83)

Ion Chromatographic Analysis of the Water Digestion - Chloride Analysis

Serial No.	Sample Point	Date	Time Issued	Priority
F 574.-7572	SEGMENT-O	12- 1-89	11:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
100-10	089076

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID EC11HO

KY

97.5%

70.21/72.0

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB107/new				[signature]
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		[signature] KY

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 429.-7272	SEGMENT-N	11-30-89	8: 8	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100-10	089[illegible]

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 35C9-77
SPIKE VOLUME 300/5ml

See Reverse Side

GP

$\cancel{1.07}\left[\frac{(4.348^2 - 17.0)\,107}{434.5}\right] \times 100 = \cancel{103.9\%}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB107/new				[signature] 99171
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		[signature] KY

54-6800-061 (R-10-83)

Cl

$$\frac{(1.06)(435) - (17.0)\left(\frac{9.74\%}{10.39}\right)}{\frac{(.300)(76)}{5.3}\ (101)} \times 100 =$$

$$= 102.4\%$$

8-23-90

F 429-7272

Serial No.	Sample Point	Date	Time Issued	Priority
F 438.-7373	SEGMENT-W	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 689070

Remarks, Calculations, Results:
REAGENT BLANK

<1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 4/5/90 | Time Completed: | Lab Unit Mgr:

54-8600-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 426.-7573	SEGMENT-K	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Rerun
NO3	LA-533-105	% RECOVERY	WB75L	0

Sample Size: 100-10

Customer ID: 689070

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 6C1170

101.9%

616.6/599

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 4/5/90 | Time Completed: | Lab Unit Mgr:

54-8600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 428.-7173	SEGMENT-M	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 689070

Remarks, Calculations, Results:
DUPLICATE SAMPLE

3.52 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 4/5/90 | Time Completed: | Lab Unit Mgr:

54-8600-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 427.-7073	SEGMENT-L	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 689[illegible]

Remarks, Calculations, Results:

3.03 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 4/5/90 | Time Completed: | Lab Unit Mgr:

54-8600-081 (R-10-83)

Ion Chromatographic Analysis of the Water Digestion - Nitrate Analysis

Serial No.	Sample Point	Date	Time Issued	Priority
F 574.-7573	SEGMENT-O	12- 1-89	11:37	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
100-10	089076

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 6C17AO

615.4/599 102.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 429.-7273	SEGMENT-N	11-30-89	8: 8	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100-10	089070

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 35C9-77
SPIKE VOLUME 300/5ml

See Reverse Side

$$\cancel{1.07}\left[\frac{(3.84^3 - 3.03^2)}{3493.1}\right]100 = \cancel{109.4\%}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6800-061 (R-10-83)

Ion Chromatographic Analysis of the Water Digestion - Nitrate Analysis

NO_3

$$\frac{(1.06)(3840) - (303)\left(\frac{9.746}{10.39}\right)}{\frac{.300(611)}{5.3}(101)} \times 100 =$$

$$= 108.4\%$$

8-23-90

F 429.-7273

Serial No.	Sample Point	Date	Time Issued	Priority
F 438.-7374	SEGMENT-W	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
P04	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 689070

Remarks, Calculations, Results:
REAGENT BLANK

<1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 426.-7574	SEGMENT-K	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
P04	LA-533-105	% RECOVERY	WB75L	0

Sample Size: 100-10

Customer ID: 689070

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 6C1110

100.8% #

603.8/599

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 428.-7174	SEGMENT-M	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
P04	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 689070

Remarks, Calculations, Results:
DUPLICATE SAMPLE

<1.01 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6600-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 427.-7074	SEGMENT-L	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
P04	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 689070

Remarks, Calculations, Results:

<1.01 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 574.-7574	SEGMENT-O	12- 1-89	11:37	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
P04	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
100-10	089076

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 6C11H0

607.9/599 101.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
(BIO7/NEW)				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		QP

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 429.-7274	SEGMENT-N	11-30-89	8: 8	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
P04	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100-10	089070

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 3569-77
SPIKE VOLUME 300/5 ml

See Reverse Side

QP

$\frac{1.07(3.452^3)}{3464.5} \times 100 = 106.6\%$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
(BIO7/NEW)				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		QP

54-6600-061 (R-10-83)

Ion Chromatographic Analysis of the Water Digestion - Phosphate Analysis

PO_4

$$\frac{(1.06)(3450) - 0}{\frac{.3001606}{5.3}(101)} \times 100 = 105.6\%$$

8-23-90

F 429.-7274

Serial No.	Sample Point	Date	Time Issued	Priority
F 438.-7375	SEGMENT-W	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 689070

Remarks, Calculations, Results:
REAGENT BLANK

<1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 426.-7575	SEGMENT-K	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	% RECOVERY	WB75L	0

Sample Size: 100-10

Customer ID: 689070

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 6C17HO

100.8%

6268/622

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 428.-7175	SEGMENT-M	11-30-89	8: 8	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 689070

Remarks, Calculations, Results
DUPLICATE SAMPLE

3.16 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6800-061 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 427.-7075	SEGMENT-L	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 689070

Remarks, Calculations, Results:

3.01 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6800-061 (R-10-83)

Ion Chromatographic Analysis of the Water Digestion - Sulphate Analysis

Serial No.	Sample Point	Date	Time Issued	Priority
F 574.-7575	SEGMENT-O	12- 1-89	11:37	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
100-10	089076

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 6C11AD

625.2/622 1005%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 429.-7275	SEGMENT-N	11-30-89	8: 8	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100-10	089070

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 35C9-77
SPIKE VOLUME 300/5ml

See Reverse Side

$$\frac{1.07(3.527^3 - 3.01^1)}{3355.9} \times 100 = 111.5\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				34171
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/5/90		

54-6800-061 (R-10-83)

Ion Chromatographic Analysis of the Water Digestion - Sulphate Analysis

SO_4

$$\frac{(1.06)(3530) - (30.1)\left(\frac{9.746}{10.39}\right)}{\frac{.300(589)}{5.3}(101)} \times 100 =$$

$$= 110.3\%$$

J. Jeslene Rich
08-23-90

F 429.-7275

Serial No.	Sample Point	Date	Time Issued	Priority
F 427.-7071	SEGMENT-L	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:

RERUN

1.721 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/12/90	4/16	

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 426.-7571	SEGMENT-K	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	% RECOVERY	WB75L	0

Sample Size: 100-10

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 6C11-A0

RERUN

54.5/60.0 90.8%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/12/90	4/16	

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 438.-7371	SEGMENT-W	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

RERUN

<.1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/12/90	4/16	

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 428.-7171	SEGMENT-M	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:
DUPLICATE SAMPLE

RERUN

1.559 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/12/90	4/16	

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 574.-7571	SEGMENT-O	12- 1-89	11:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
100-10	

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 6C11-HO

RERUN

55.1/60.0

91.8%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/new				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/12/90	4/16	

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 429.-7271	SEGMENT-N	11-30-89	8: 8	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100-10	

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 35C9-79
SPIKE VOLUME 300/5ml

See Reverse Side

RERUN

$\frac{1.9(2.921^2 - 1.72^1)}{286.13} \times 100 = 105.0\%$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/new				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
4/12/90	4/16	

54-6800-081 (R-10-83)

F

$$\frac{\frac{5.3\,mL}{5.0\,mL}\left(\cancel{305}\ 292\right) - (17.2)\left(\frac{9.746\ g/L}{10.39\ g/L}\right)}{\frac{(.300\,mL)(600\,ppm)}{5.3\,mL}\ (101)} \times 100 =$$

$$= \cancel{89.6\%}\ 85.6\%$$

8-23-90

Serial No.	Sample Point	Date	Time Issued	Priority
F 438.-7326	SEGMENT-W	11-30-89	8: 9	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	0

Sample Size: ? 200 uL

Customer ID: 689070

Remarks, Calculations, Results:
REAGENT BLANK

3 ug

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RBarnett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				

Date	Time Completed	Lab Unit Mgr	
3-27-90		[illegible]	DMS

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 426.-7526	SEGMENT-K	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	0

Sample Size: ? 200uL-2mL-200uL

Customer ID: 689070

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 70C11C

KT

2.898/300

96.6%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RBarnett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				

Date	Time Completed	Lab Unit Mgr	
3-27-90		[illegible]	DMS

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 428.-7126	SEGMENT-M	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	0

Sample Size: ? 1mL+100uL .5m H_2SO_4 -200uL

Customer ID: 689070

Remarks, Calculations, Results
DUPLICATE SAMPLE

8.25×10^{-3} g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RBarnett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				

Date	Time Completed	Lab Unit Mgr	
3-27-90		[illegible]	DMS

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 427.-7026	SEGMENT-L	11-30-89	8: 7	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	0

Sample Size: ? 1mL+100uL .5M H_2SO_4 - 200uL

Customer ID: 689070

Remarks, Calculations, Results:

8.248×10^{-3} g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				RBarnett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				

Date	Time Completed	Lab Unit Mgr	
3-27-90		[illegible]	DMS

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 429.-7226	SEGMENT-N	11-30-89	8: 8	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	0

Sample Size: ? 200uL + 100uL 5M H_2SO_4 - 200uL

Customer ID: C89070

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 70C11
SPIKE VOLUME 200uL

95.6%

$\frac{116.1 - 1.5}{119.9} \times 100 =$ ~~100.6%~~ KT

(over)

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R Barnett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				

Date	Time Completed	Lab Unit Mgr	
3-27-90		AP	DMS

54-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 430.-7526	SEGMENT-O	11-30-89	8: 8	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	0

Sample Size: ? 200uL - 2mL - 200uL

Customer ID: C89070

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 70C11C

KT

2.871/3.00 95.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R Barnett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				

Date	Time Completed	Lab Unit Mgr	
3-27-90		AP	DMS

54-6800-081 (R-10-8

Serial No.	Sample Point	Date	Time Issued	Priority
F 432.-8000	SEGMENT-Q	11-30-89	8: 8	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-159	G/L	WB75L	0

Sample Size

Customer ID: 89070

#343 5.21g

9.53 g/l

WHC N 313 4

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice A. White			Safonia	

Date	Time Completed	Lab Unit Mgr
4-26-90		Paul M. Pool / Dyane Southard

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 433.-8100	SEGMENT-R	11-30-89	8: 8	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-159	G/L	WB75L	0

Sample Size: ?

Customer ID:

Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE_____
VOLUME ON
COMPLETION_____

~~10.07 g/l~~ XMP

1.01X10' g/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice A. White			Safonia	

Date	Time Completed	Lab Unit Mgr
4-26-90		Paul M. Pool / Dyane Southard

54-6800-061 (R-10-83)

F034

This card is not retrievable.

Serial No.	Sample Point	Date	Time Issued	Priority
F 583.-8300	SEGMENT-X	12- 1-89	11:38	1B

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-159	G/L	WB75L	0

Sample Size: ? 50 mL

Customer ID: 089076

Remarks, Calculations, Results:

REAGENT BLANK
VOLUME ON
COMPLETION 50 uL

Completed

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283			Safonia	
Hrs	Hrs	Hrs	Hrs	Hrs
Janice A. White				

Date	Time Completed	Lab Unit Mgr
4-26-90		Paul M. Pool / Dyane Southard

54-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1231.-8250	SEG.COMP#23	3- 6-90	18:17	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E21D1	1

Sample Size: ? .5ml-10ML

Customer ID:

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID_____
SPIKE VOLUME_____

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice White				
Date ~~4-30-90~~	Time Completed 8/21/90	Lab Unit Mgr		

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 583.-8350	SEGMENT-X	12- 1-89	11:38	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 085076

Remarks, Calculations, Results:
REAGENT BLANK

Complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice White				
Date ~~4-30-90~~	Time Completed 8/21/90	Lab Unit Mgr		

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1206.-8150	SEG.COMP#22	3- 6-90	17:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E21D1	0

Sample Size: ? .1ML-10ML & .5ML-10ML

Customer ID: S00081

Remarks, Calculations, Results:
DUPLICATE SAMPLE

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice White				
Date ~~5-4-90~~	Time Completed 8/21/90	Lab Unit Mgr		

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1231.-8250	SEG.COMP#23	3- 6-90	18:17	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E21D1	0

Sample Size: ? .1ML-10 & .5 ML-10ML

Customer ID: S00082

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID SEE DIGEST CARD
SPIKE VOLUME_____

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice White				
Date ~~5-4-90~~	Time Completed 8/21/90	Lab Unit Mgr		

54-8800-061 (R-10-83)

ICP Analysis

Serial No.	Sample Point	Date	Time Issued	Priority
F 1228.-8350	SEG.COMP#20	3- 6-90	18:17	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E21D1	1

Sample Size	Customer ID
? DIRECT	

Remarks, Calculations, Results:
REAGENT BLANK

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283			[signature]	
Hrs	Hrs	Hrs	Hrs	Hrs
Janice A. White				

Date	Time Completed	Lab Unit Mgr
8-~~10~~ 90	8/21/90	[signature]

84-6800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1205.-8050	SEG.COMP#21	3- 6-90	17:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E21D1	0

Sample Size	Customer ID
? .1mL-10mL & .5mL-10mL	S00081

Remarks, Calculations, Results:

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice A. White			[signature]	

Date	Time Completed	Lab Unit Mgr
5-~~14~~ 90	8/21/90	[signature]

84-6800-081 (R-10-83)

Serial No	Sample Point	Date	Time Issued	Priority
F 432.-8050	SEGMENT-Q	11-30-89	8: 8	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? .1mL-10mL & .5mL-10mL

Customer ID: 089070

Remarks, Calculations, Results:

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice A. White			[signature]	

Date	Time Completed	Lab Unit Mgr
5-14-90	8/21/90	[signature] Kathy Thomas

M-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 433.-8150	SEGMENT-R	11-30-89	8: 8	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? .1mL-10mL & .5mL-10mL

Customer ID: 089070

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice A. White			[signature]	

Date	Time Completed	Lab Unit Mgr
5-14-90	8/21/90	[signature] Kathy Thomas

M-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 552.-8050	SEGMENT-Q	12- 1-89	11:33	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? .1mL-10mL & .5mL-10mL

Customer ID: 089075

Remarks, Calculations, Results:

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice A. White			[signature]	

Date	Time Completed	Lab Unit Mgr
5-14-90	8/21/90	[signature] Kathy Thomas

M-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 553.-8150	SEGMENT-R	12- 1-89	11:33	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? .1mL-10mL & .5mL-10mL

Customer ID: 089075

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Janice A. White			[signature]	

Date	Time Completed	Lab Unit Mgr
5-14-90	8/21/90	[signature] Kathy Thomas

M-6800-061 (R-10-83)