START

1 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:	6
Customer Id. Number:	Core 6 Composite
Report Revision:	1
Date Printed:	October 2, 1990

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Hanford Operations and Engineering Contractor for the US Department of Energy

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Analytical Cards

This report consists of pages 1-496, plus pages 1.1, 1.2, 100.1, 272.1, and 300.1.

The appendix consists of pages 1-124.

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 Environmental 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.

Shirley A. Cervantes — Date September 26, 1990
Shirley A. Cervantes
Data Coordinator

Cary M. Seidel — Date September 26, 1990
Cary M. Seidel
Unit Manager

L. H. Taylor — Date October 2, 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 (Reduction-Oxidation) 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 scientist. 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 (IC), Inductive Coupled Plasma (ICP), Mercury Hydride, Total Organic Carbon (TOC), 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 radioisotopic 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 gamma energy analysis (GEA) analysis reports has no relationship to the sampling activities or the sample identification. All results in this data package relate only to the composite of Sample 89-043, Sample 89-044, and Sample 89-045 (segment 2, segment 3, and segment 4 from core 6) taken from riser 17 of tank 241-U-110. The Core 6 Composite Sample was prepared by compositing 25 grams of segment 2 (89-043), 50 grams of segment 3 (89-044), and 35 grams of segment 4 (89-045). Segments 1 (89-042) was not recovered from the tank by the sampling efforts.

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.

Carbon-14 analysis on the undigested sample was not performed as the 222-S laboratory does not have analytical procedures that will analyze low levels of carbon 14 in solids. The chrome-VI analysis on the water digestion was not performed because sufficient sample to complete this analysis was not available. Sample for additional digestions was not available as this sample was completely consumed performing other analyses.

All sample results reported here by weight are reported as the "wet weight" of the sample. Some samples noticeably lost moisture during the process of aliquoting and weighing for digestion. In order to minimize errors due to loss of moisture, the percent moisture was determined at the earliest opportunity. Attempts to dry the sample before analysis resulted in approximately a tenfold 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 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 DATA

Single Shell Tank Waste Characterization
Summary of Core Sample

Tank ID:	241-U-110
Riser ID:	17
Core ID:	Core 6 Composite

Date Sampling Initiated:	11-10-89
Date Sampling Completed:	11-14-89

Segment		
1	Lab Serial No.	F0049
	Customer ID No.	89-042
	Last Segment?	No
2	Lab Serial No.	F0053
	Customer ID No.	89-043
	Last Segment?	No
3	Lab Serial No.	F0077
	Customer ID No.	89-044
	Last Segment?	No
4	Lab Serial No.	F0101
	Customer ID No.	89-045
	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?	

Remarks: Segment one empty.

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SS

SAMPLE DATA SUMMARY

Analytical Laboratory Data Summary

SINGLE SHELL TANK PROJECT

The next four pages of this report (including this page) summarizes the results for the analysis of the

Core 6 Composite Sample
Tank 241-U-110

UNTREATED SAMPLE RESULTS

	Sample		Duplicate Sample	
Laboratory ID:	F0917		F0918	
pH	12.91		12.97	
Laboratory ID:	F0917		F0918	
% Water	35.40%		38.60%	
Laboratory ID:	F0917		F0918	
Mercury	2.55	ug/g	4.89	ug/g
Laboratory ID:	F0917		F0918	
Cyanide	<0.12	ug/g	<0.13	ug/g

Core 6 Composite
Fusion Dissolution

Data Summary

Results are wet weight

Radiological Analysis

Fusion Dissolution

	Sample	Duplicate Sample
Fusion	2.86 g/L	2.38 g/L
Total Alpha	<0.44 uci/g	<0.48 uci/g
Total Beta	811 uci/g	1180 uci/g
GEA Cs-137	20.60 uci/g	25.40 uci/g
Uranium	4580 ug/g	6600 ug/g
Americium 241	0.09 uci/g	0.15 uci/g
Iodine 129	<0.0064 uci/g	<0.0082 uci/g
Neptunium 237	<0.38 uci/g	<0.45 uci/g
Plutonium	0.21 uci/g	0.32 uci/g
Strontium 90	270 uci/g	372 uci/g
Technetium 99	<0.017 uci/g	<0.021 uci/g

ICP Results

Fusion Dissolution

	Wet Weight Sample		Wet Weight Sample Duplicate	
Aluminum	80713	ug/g	111659	ug/g
Antimony	LT		LT	
Barium	LT		43	ug/g
Beryllium	LT		LT	
Bismuth	14919	ug/g	12799	ug/g
Boron	291	ug/g	643	ug/g
Cadmium	LT		LT	
Calcium	1206	ug/g	1669	ug/g
Cerium	LT		LT	
Cobalt	LT		LT	
Copper	LT		LT	
Europium	LT		LT	
Iron	11319	ug/g	14160	ug/g
Lanthanum	LT		LT	
Lead	LT		LT	
Lithium	LT		LT	
Magnesium	2310	ug/g	1910	ug/g
Manganese	2766	ug/g	4086	ug/g
Mercury	LT		LT	
Molybdenum	LT		LT	
Nickel	5634	ug/g	6348	ug/g
Samarium	LT		LT	
Selenium	LT		LT	
Silver	LT		LT	
Sodium	131801	ug/g	127425	ug/g
Strontium	323	ug/g	487	ug/g
Sulfur	LT		407	ug/g
Tantalum	LT		LT	
Thallium	LT		LT	
Thorium	LT		LT	
Tin	LT		LT	
Titanium	LT		LT	
Uranium	LT		LT	
Vanadium	LT		LT	
Zinc	98	ug/g	126	ug/g
Zirconium	LT		LT	

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

Core 6 Composite

Water Digestion

Data Summary

Results are Wet Weight

	Sample	Duplicate
pH of Digested Solution		
pH	10.34	10.98

Anion Analysis

Water Digestion

Fluoride	6.04+03	ug/g	5.40E+03	ug/g
Chloride	<1.47E+03	ug/g	<1.41E+03	ug/g
Nitrate	3.87E+04	ug/g	5.26E+04	ug/g
Phosphate	3.18E+04	ug/g	3.84E+04	ug/g
Sulfate	<1.47E+04	ug/g	<1.41E+04	ug/g
Total Organic Carbon	9.45E+02	ug/g	6.28E+02	ug/g
Total Organic Carbon *	<5.49E+02	ug/g	5.47E+02	ug/g
Ammonia	<1.67E+04	ug/g	<1.60+04	ug/g
Carbonate	3.27E+03	ug/g	3.00E+03	ug/g
Chrome VI	Analysis not performed			
Nitrite	8.43E+03	ug/g	1.17E+04	ug/g

Radiological Analysis

Water Digestion

Total Alpha 02-06-90	<6.57E-03	uci/g	<3.67E-03	uci/g
Total Beta 02-06-90	5.28	uci/g	1.45E+01	uci/g
GEA Cs-137	4.55	uci/g	6.93	uci/g
Americium 241	<2.66E-03	uci/g	<2.48E-03	uci/g
Carbon 14	2.65E-04	uci/g	1.71E-04	uci/g
Iodine 129	<9.00E-03	uci/g	<1.40E-02	uci/g
Neptunium	<1.57E-01	uci/g	<1.51E-01	uci/g
Plutonium 239	<1.51E-03	uci/g	<9.46E-04	uci/g
Strontium	6.77E-02	uci/g	5.94E-02	uci/g
Technetium 99	5.02E-03	uci/g	3.97E-02	uci/g
Tritium	2.73E-03	uci/g	2.34E-03	uci/g

Atomic Absorption Spectroscopy

Hydride Analysis

Water Digestion

Arsenic	<7.27E-1	ug/g	<6.97E-01	ug/g
Mercury	1.32E-01	ug/g	1.00E-01	ug/g
Selenium	2.11E--01	ug/g	2.02E-01	ug/g

ICP Results

Water Digestion

	Sample	Duplicate
Aluminum	3823.95 ug/g	2694.93 ug/g
Antimony	LT	LT
Barium	LT	LT
Beryllium	LT	LT
Boron	289.22 ug/g	389.25 ug/g
Cadmium	LT	LT
Calcium	300.40 ug/g	83.68 ug/g
Cerium	LT	LT
Chromium	379.24 ug/g	297.81 ug/g
Cobalt	LT	LT
Copper	LT	LT
Europium	LT	LT
Iron	47.01 ug/g	103.28 ug/g
Lanthanum	LT	LT
Lithium	LT	LT
Magnesium	622.75 ug/g	2121.69 ug/g
Manganese	LT	LT
Mercury	41.42 ug/g	38.21 ug/g
Molybdenum	LT	LT
Neodymium	LT	LT
Nickel	LT	LT
Potassium	LT	LT
Selenium	LT	LT
Silver	LT	LT
Sodium	102854.29 ug/g	78376.12 ug/g
Strontium	LT	LT
Sulfur	411.28 ug/g	421.39 ug/g
Tantalum	LT	LT
Thallium	LT	684.28 ug/g
Tin	LT	LT
Titanium	LT	LT
Vanadium	LT	LT
Zinc	26.15 ug/g	48.96 ug/g
Zirconium	LT	LT

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

Core 6 Composite
Acid Digestion

DATA SUMMARY

Results are wet weight

ICP Results

Acid Digestion

	Wet Weight Sample	Wet Weight Duplicate
Aluminum	107879 ug/g	94696 ug/g
Arsenic	262 ug/g	106 ug/g
Barium	299 ug/g	32 ug/g
Beryllium	7 ug/g	2 ug/g
Bismuth	27539 ug/g	12586 ug/g
Boron	119 ug/g	47 ug/g
Cadmium	34 ug/g	LT
Calcium	748 ug/g	419 ug/g
Cerium	1715 ug/g	LT
Chromium	868 ug/g	377 ug/g
Copper	140 ug/g	47 ug/g
Europium	27 ug/g	LT
Iron	16785 ug/g	9013 ug/g
Lanthanum	147 ug/g	LT
Lead	1252 ug/g	466 ug/g
Lithium	51 ug/g	LT
Magnesium	2630 ug/g	735 ug/g
Manganese	4849 ug/g	2811 ug/g
Mercury	428 ug/g	959 ug/g
Molybdenum	95 ug/g	36 ug/g
Neodymium	896 ug/g	LT
Nickel	222 ug/g	96 ug/g
Phosphorous	35475 ug/g	12888 ug/g
Potassium	1934 ug/g	LT
Samarium	1578 ug/g	LT
Selenium	1428 ug/g	673 ug/g
Silver	126 ug/g	LT
Sodium	146087 ug/g	69937 ug/g
Strontium	639 ug/g	356 ug/g
Sulfur	639 ug/g	290 ug/g
Tantalum	350 ug/g	LT
Thallium	8236 ug/g	850 ug/g
Thorium	4171 ug/g	1486 ug/g
Tin	213 ug/g	93 ug/g
Titanium	132 ug/g	50 ug/g
Uranium	17899 ug/g	6825 ug/g
Vanadium	122 ug/g	45 ug/g
Zinc	215 ug/g	84 ug/g
Zirconium	278 ug/g	63 ug/g

Atomic Absorption Spectroscopy

Hydride Analysis
Acid Digestion

	Sample	Duplicate
Acid Digestion	9.51 g/L	11.6 g/L
Arsenic	0.66 ug/g	0.19 ug/g
Mercury	1.67 ug/g	1.34 ug/g
Selenium	0.90 ug/g	<4.31 ug/g

PHYSICAL TEST RESULTS

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	WA63090/WA58053
Procedure/Rev	L1-000-200
Technologist	D. B. Bechtold
Date	3-12-90
Temperature	N/A
Starting Time	11:15
Ending Time	13:40
Chemist	D. B. Bechtold

Thermographic/Differential Scanning

Calorimeter Analysis

(*) Reagent Grade Dry Fine; Reference Scan

	Description	Lab ID
1	Thermographic Analysis	F0917
2	Diff. Scanning Calormeter	F0917
3		
4		
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				

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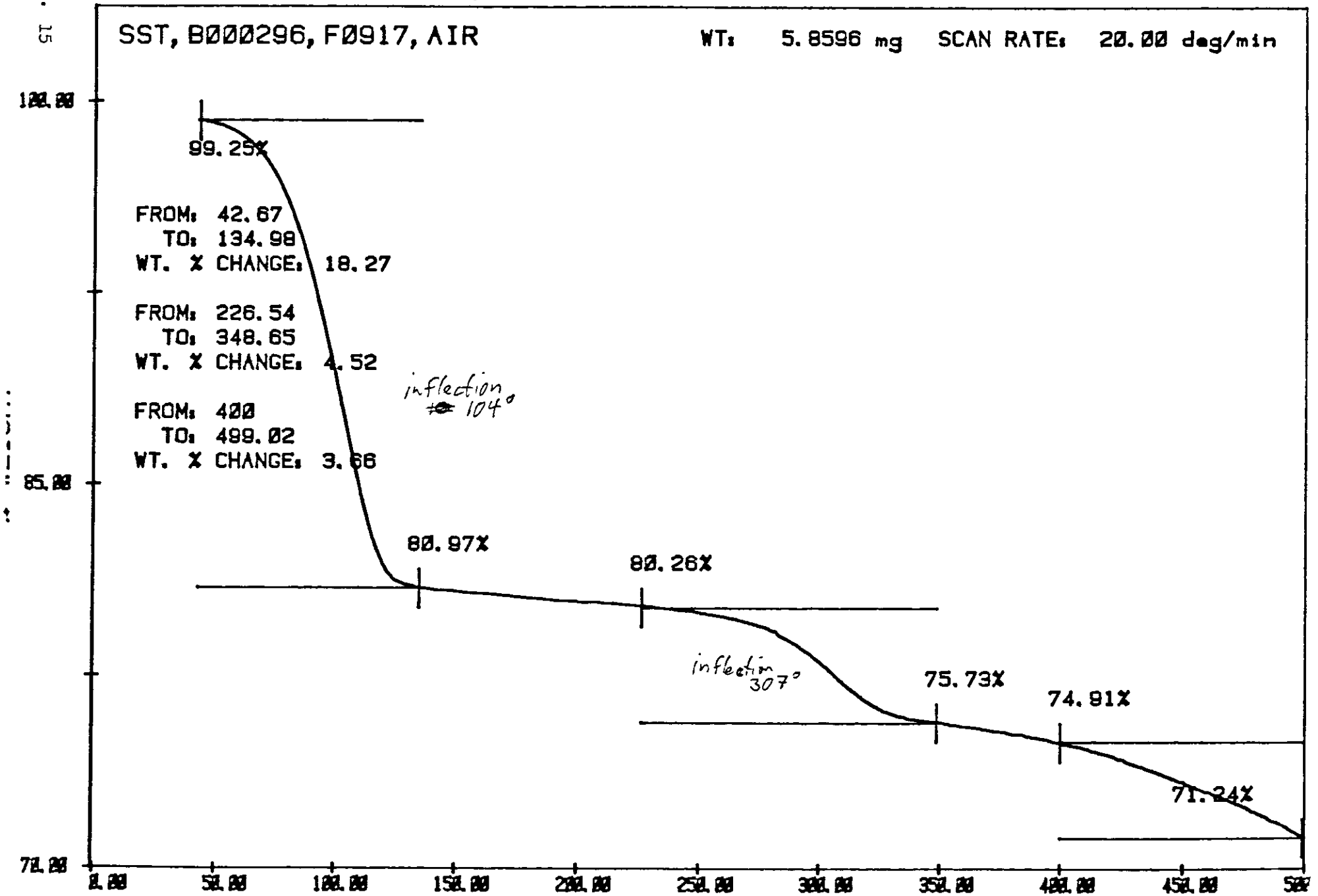
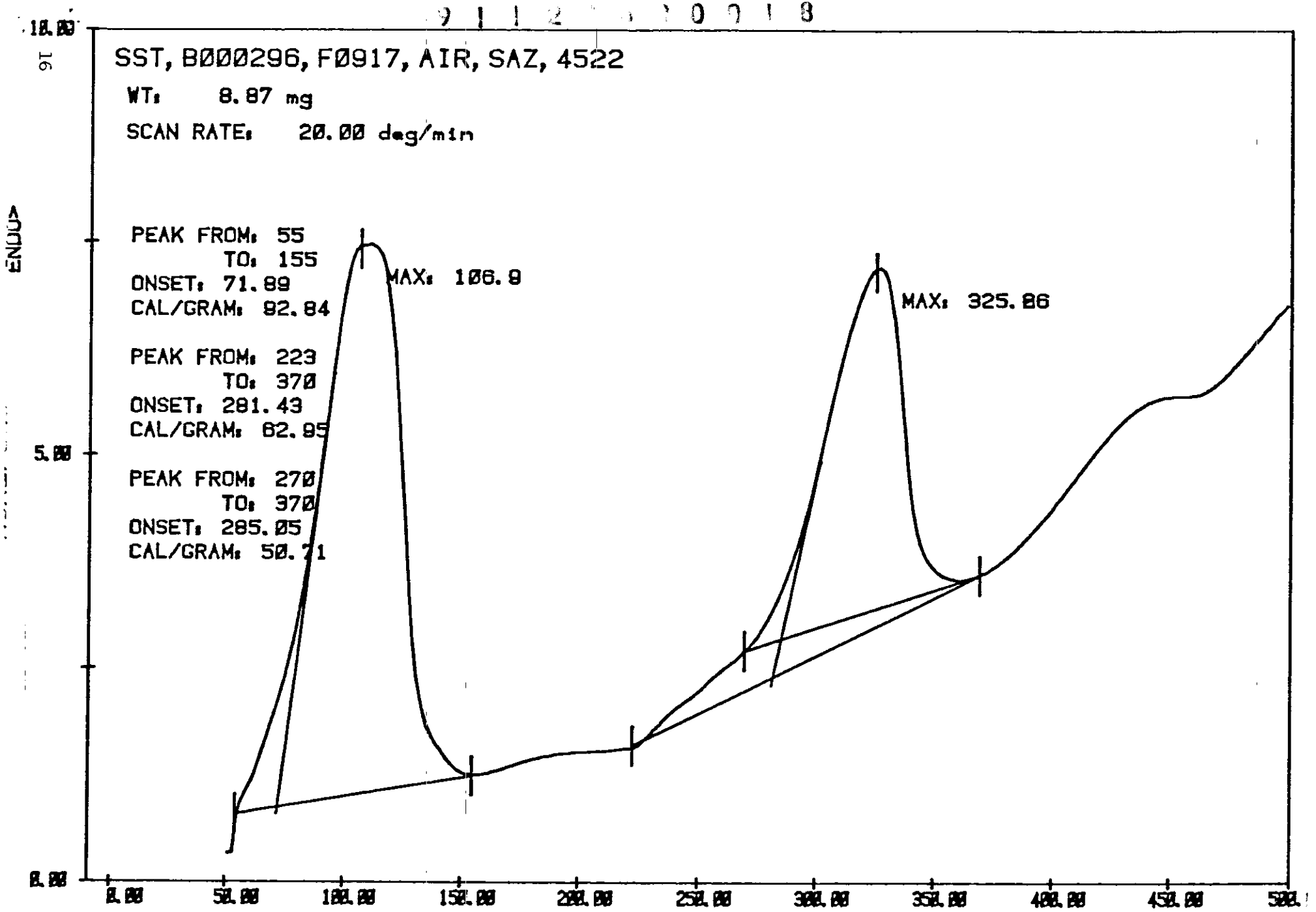


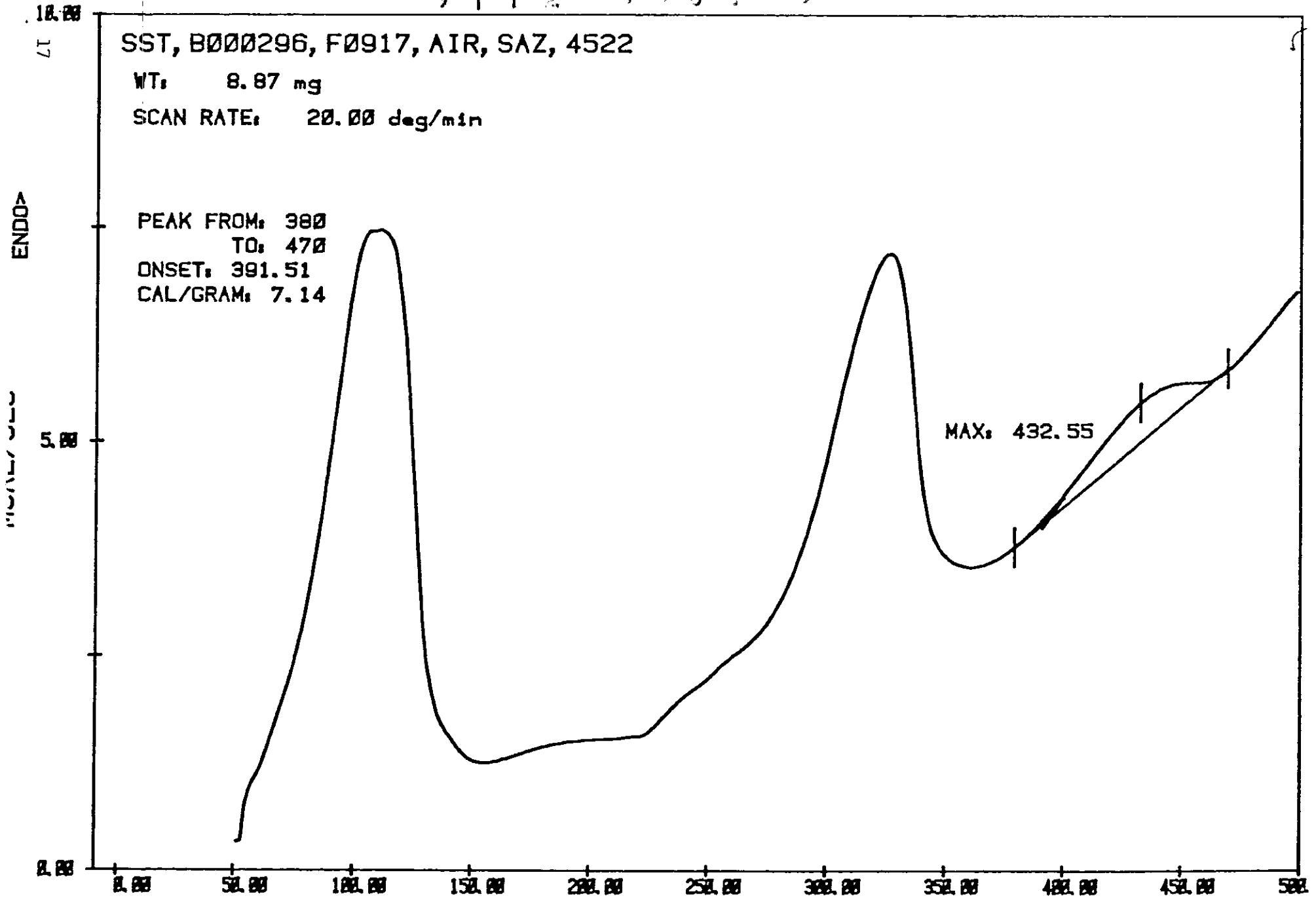
DBB, SBK FILE: F0917. TG

DATE: 90/03/12 TIME: 11:17



DBB, SBK FILE: F0917.D4

DATE: 90/03/07 TIME: 13:34



DBB, SBK FILE: F0917.D4

DATE: 90/03/07 TIME: 13:34

UNDIGESTED SAMPLE ANALYSIS RESULTS

SINGLE SHELL TANK PROJECT

UNTREATED SAMPLE RESULTS

Tank: 241-U-110
Core: 6
Segment: F0917
Customer ID: Core 6 Composite

	Check Standard	Blank	Sample	Duplicate Sample	Spike of Sample	Check Standard
Laboratory ID:	F0891	F0892	F0917	F0918	N/A	F0896
pH	100.90%	5.59	12.91	12.97	N/A	100.40%
Laboratory ID:	F0891	F0916	F0917	F0918	N/A	F0920
% Water	95.70%	N/A	35.40%	38.60%	N/A	96.20%
Laboratory ID:	F0915	F0916	F0917	F0918	F0919	F0920
Mercury	115.20%	<1.07E-02 ppm	2.55 ug/g	4.89 ug/g	94.40%	108.00%
Laboratory ID:	F0915	F0916	F0917	F0918	F0919	F0920
Cyanide	95.80%	<5.00E-04 g/L	<1.21E-01 ug/g	<1.31E-01 ug/g	89.90%	98.80%

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:CORE 6 COMPOSITE

INSTRUMENT	AL 10653
PROCEDURE/REV	LA-212-103/A-3
TECHNOLOGIST	M. Franz
DATE	01-26-90
TEMPERATURE	25 C
STARTING TIME	07:30
ENDING TIME	11:00
CHEMIST	R. E. Brandt

pH Analysis of Undigested Sample

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0891
2	Reagent Blank	F0892
3	Sample Comp 5	F0893
4	Duplicate Comp 5	F0894
5	Sample Comp 6	F0917
6	Duplicate Comp 6	F0918
7	Final LMCS Check Std	F0896
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.
Final LMCS Check Std	72C11/5.0 mL			5.0 mL

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Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:CORE 6 COMPOSITE

INSTRUMENT	N/A
PROCEDURE/REV	LA-564-101/D-1
TECHNOLOGIST	R. D. Hale
DATE	01-26-90
TEMPERATURE	20 C
STARTING TIME	13:00; 01-25-90
ENDING TIME	11:00; 01-26-90
CHEMIST	R. K. Fuller

Percent Water Analysis
Undigested Sample

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0891
2	Reagent Blank	F0916
3	Sample Comp 5	F0893
4	Duplicate Comp 5	F0894
5	Sample Comp 6	F0917
6	Duplicate Comp 6	F0918
7	Final LMCS Check Std	F0920
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	11C11AH/1.0g			1 gram

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Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:CORE 6 COMPOSITE

INSTRUMENT	WA66684
PROCEDURE/REV	LA-695-101/A-1
TECHNOLOGIST	E. Colvin
DATE	2-09-90
TEMPERATURE	N/A
STARTING TIME	12:30; 02-07-90
ENDING TIME	15:00; 02-09-90
CHEMIST	S. A. Catlow

Cyanide Analysis

Undigested Sample

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0915
2	Reagent Blank	F0916
3	Sample Comp 6	F0917
4	Duplicate Comp 6	F0918
5	Spike Comp 6	F0919
6	Final LMCS Check Std	F0920
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	75C11B/ 10 uL			50 mL
Spike	75C11B/10 uL	F0917/4.0419 g		50 mL

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Single Shell Tank
Calibration Record

ANALYTE:	CN-		
PROCEDURE:	LA-695-101	REVISION:	A-1
INSTRUMENT:	Baush & Lomb Spectronic 21	PROPERTY NUMBER:	WA66684
TECHNOLOGIST:	R.Brandt	PAYROLL NUMBER:	69090
DATE:	July 20, 1989		

CALIBRATION STANDARD ID: 88C15C

ANALYTE CONCENTRATION: 817 ug CN/ml

TYPE OF CALIBRATION: Least Square Linear Regression

Dilution	Concentration	Instrument Reading Units=
Blank	0	0.016
100 ul	0.82	0.091
200 ul	1.63	0.150
500 ul	4.08	0.354
1000 ul	8.17	0.663
2000 ul	16.34	1.275
3000 ul	24.51	1.720

COMMENTS: Y - intercept - 0.01682

Slope - 0.076317

Correlation Coefficient - 0.999874

SST-103 Rev. A 9/25/90 Interim

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	Perkin-Elmer AA
Procedure/Rev	LA-325-102/A-2
Technologist	M. Myers
Date	7-16-90
Temperature	21 C
Starting Time	10:00
Ending Time	11:30
Chemist	R. K. Fuller

Mercury Analysis by Atomic Absorption.

Manual Cold Vapor Technique

Undigested Sample

	Description	Lab ID
1	Initial LMCS Check Std	F0915
2	Reagent Blank	F0916
3	Sample Comp 6	F0917
4	Duplicate Comp 6	F0918
5	Spike Comp 6	F0919
6	Final LMCS Check Std	F0920
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	58C11CD/25 uL			25 mL
Spike	58C11CD/15 uL	F0918/0.0455 g		2 mL

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

Single Shell Tank
Calibration Record

Analyte:	Hg		
Procedure:	LA-325-102	Revision:	A-2
Instrument:	Perkin-Elmer	Property Number:	WA77479
Technologist:	M. Myer	Payroll Number:	6C823
Date:	July 16, 1990		

Calibration Standard ID: 102C3-AE

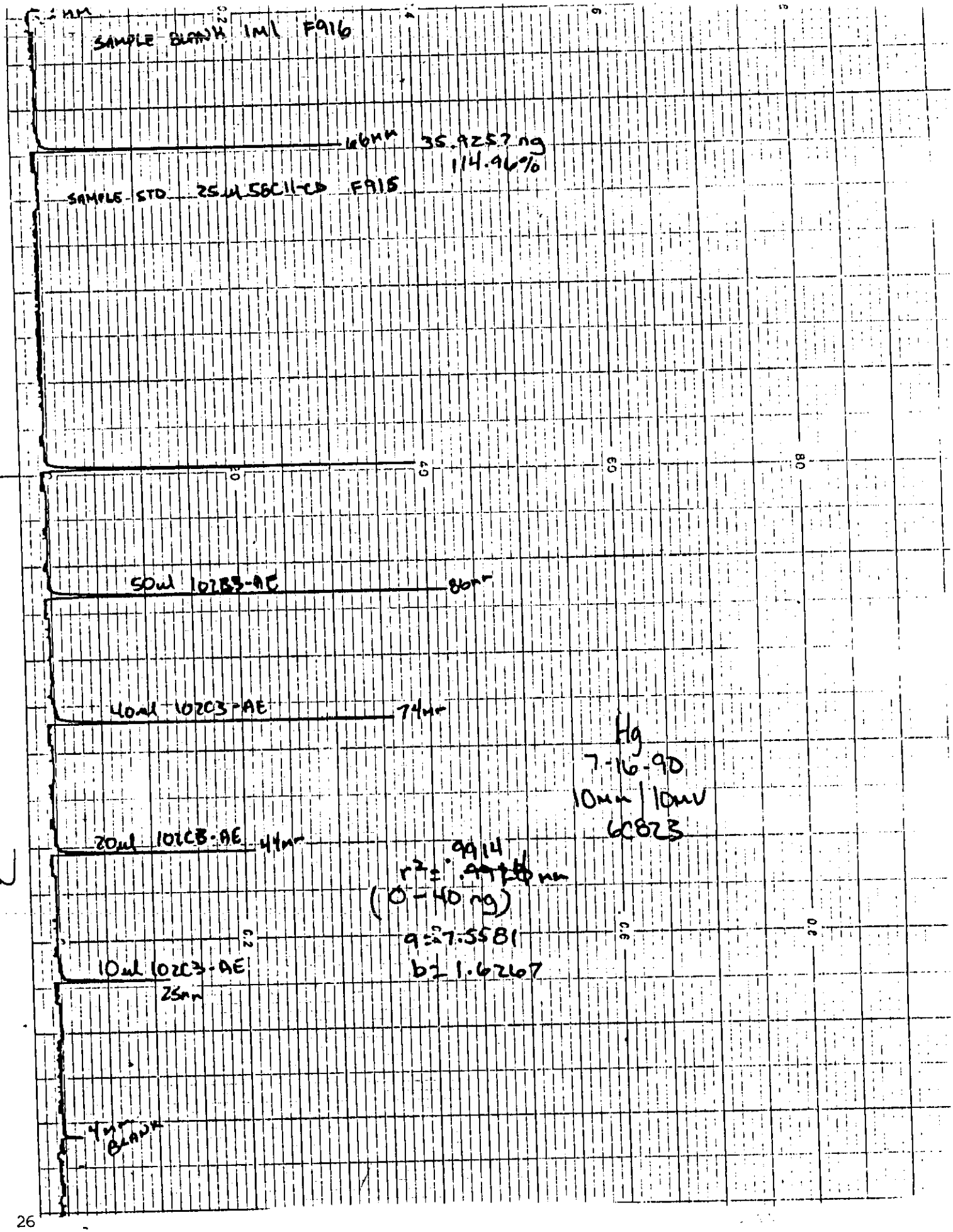
Analyte Concentration: 100 ppm

Type of Calibration: Linear Regression

Dilution	Concentration	Instrument Reading Units = mm
0 uL	0 ng	4
10 uL	10 ng	25
20 uL	20 ng	44
40 uL	40 ng	74
50 uL	50 ng	86

Comments:

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


SAMPLE BLANK 1ml F916
66nm 35.9257 ng
114.96%
SAMPLE STD 25µl 56C11-CD F915
50µl 102B3-AE 86nm
40µl 102C3-AE 74nm
20µl 102C3-AE 44nm
10µl 102C3-AE 25nm
4nm BLANK
Hg
7-16-90
10mm | 10mV
6C823
r² = .9914
(0-40 ng)
a = 7.5581
b = 1.62607
0.0
0.2
0.4
0.6
0.8

F920 SAMPLE STD 25ml 62.5mm 108%
33.7741 ng

25ml 58C11-CD 69mm 120.86%

25ml 58C11-CD 71mm 124% ↑

Hg
7-16-90
10mm/10mV
6C823

0 0.2 0.4 0.8

61.5mm
(.0455g) 2-10mm + 15ml 58C11-CD F919
.0455g in 25ml used 2ml

36.5mm
F918
(.0455g) 2-10mm SAMPLE DUPLICATE
.0455g SAMPLE in 25ml USED 2ml

F918 157mm
.0455g SAMPLE F918 DUPLICATE 88.1773 ng
.0455g Sample in 25ml used 20ml 1937.9620 ppb.

19mm
2-10mm (.0524g) F917
.0524g Sample in 25ml used 2ml

Hg
7-16-90
10mm/10mV
6C823

95mm
.0524g SAMPLE F917
in 25ml used 20ml

```
[illegible] WEIGHT:

---> [illegible]

[illegible] @ [illegible]
**********************

- - - - - - - - - - - -

**********************
** JET_WT  **  REV 0 **
**********************

SEQUENCE #  : 209
WT 1:    27.2[illegible]4
WT 2:    27.3158
```

~~918~~ 917

```
NET WEIGHT:

--->     0.0[illegible]4 GRAMS

07/11/90  @  10:07:09
**********************

- - - - - - - - - - - -

**********************
** JET_WT  **  REV 0 **
**********************

SEQUENCE #  : 210
WT 1:    26.9716
WT 2:    27.0171
```

918

```
NET WEIGHT:

--->     0.0455 GRAMS

07/11/90  @  10:09:42
**********************
```


0 2 0 0 [illegible] 7 1 1 6

KOH FUSION RESULTS

SINGLE SHELL TANK PROJECT

FUSION ANALYSIS
LABORATORY RESULTS OF SOLIDS
UNITS ARE SAMPLE WET WEIGHT

Tank: 241-U-110
Core: 6
Segment: F0917
Customer ID: Core 6 Composite

	Check Standard	Blank		Sample		Duplicate Sample		Spike of Sample	Check Standard
Laboratory ID:	N/A	F0898		F0923		F0924		N/A	N/A
Fusion	N/A	N/A		2.86	g/L	2.38	g/L	N/A	N/A
Laboratory ID:	F0897	F0922		F0923		F0924		F0925	F0926
Total Alpha	89.60%	<8.52E-01	uci/L	<4.44E-01	uci/g	<4.75E-01	uci/g	*	89.10%
Total Beta	98.20%	<3.25	uci/L	8.11E+02	uci/g	1.18E+03	uci/g	*	93.30%
Laboratory ID:	F0897	F0922		F0923		F0924		F0925	F0926
GEA Cs-137	98.30%	<5.22E-02	uci/L	2.06E+01	uci/g	2.54E+01	uci/g	97.56%	103.70%
Laboratory ID:	F0897	F0922		F0923		F0924		F0925	F0926
Uranium	90.80%	<8.32E-05	g/L	4.58E+03	ug/g	6.60E+03	ug/g	113.30%	90.10%
Laboratory ID:	F0903	F0946		F0923		F0924		F0949	F0950
Plutonium	109.50%	<7.29E-03	uci/L	2.07E-01	uci/g	3.21E-01	uci/g	*	105.90%
Laboratory ID:	F0897	F0946		F0923		F0924		F0949	F0950
Americium 241	101.30%	<1.50E-02	uci/L	8.95E-02	uci/g	1.49E-01	uci/g	*	105.80%
Laboratory ID:	F0897	F0898		F0923		F0924		F0979	F0980
Neptunium 237	80.50%	<1.08	uci/L	<3.78E-01	uci/g	<4.54E-01	uci/g	71.20%	63.30%
Laboratory ID:	F0921	F0922		F0923		F0924		F0925	F0926
Technetium 99	99.90%	<2.44E-02	uci/L	<1.67E-02	uci/g	<2.13E-02	uci/g	104.00%	96.30%
Laboratory ID:	F0921	F0922		F0923		F0924		F1075	F1076
Iodine 129	98.00%	<1.50E-02	uci/L	<6.43E-03	uci/g	<8.15E-03	uci/g	89.80%	95.70%
Laboratory ID:	F0921	F0922		F0923		F0924		F0925	F0926
Strontium 90	101.20%	<6.29E-03	uci/L	2.70E+02	uci/g	3.72E+02	uci/g	65.50%	102.10%

* Ratio Of Spike To Sample Insufficient To Calculate Spike Recovery.

ICP Results

DATA SUMMARY

Date Analyzed:	April 30,1990	Acid Digested LMCS Standard	F0575
Procedure:	LA-505-151/A-0	Reagent Blank	F0583
Analyst:	J. A. White	Core 6 Composite	F0923
Digestion	Acid Digestion	Duplicate of Core 6 Composite	F0924
Procedure:	LA-505-159/A-0	Spike of 89-076	F0578
		Acid Digested LMCS Standard	F0579

	Instrument Starting LMCS Standard %	Acid Digest. LMCS Standard %	Reagent BLANK ppm	Wet Weight Sample ug/g	Wet Weight Sample Duplicate ug/g	Spike Recovery %	LMCS ACID Digestion %	Closing LMCS Standard %
Aluminum	100.70%	92.02%	0.33	80713	111659	NOT CALC.	96.56%	99.27%
Antimony	103.07%	87.00%	0.02 LT	-2012 LT	-1450 LT		67.00%	99.07%
Barium	99.30%	93.10%	0.01	-37 LT	43	9.00%	92.70%	97.17%
Beryllium	95.99%	87.90%	0.00 LT	-13 LT	-13 LT		90.60%	94.22%
Bismuth	106.23%	94.31%	0.03 LT	14919	12799	NOT CALC.	101.54%	107.22%
Boron	100.71%	93.20%	0.06	291	643	9.34%	92.60%	98.05%
Cadmium	98.69%	93.70%	0.00 LT	-55 LT	-53 LT	8.31%	91.10%	96.89%
Calcium	102.21%	143.70%	0.78	1206	1669	17.05%	144.90%	99.95%
Cerium	92.37%	50.50%	-0.08 LT	-2932 LT	-2515 LT	-133.80%	0.80%	90.43%
Cobalt	94.24%	95.40%	0.00 LT	-179 LT	-82 LT	0.73%	86.60%	99.92%
Copper	100.63%	92.60%	0.01 LT	-156 LT	-128 LT	7.33%	90.60%	98.31%
Europium	98.16%	92.70%	0.00 LT	-53 LT	-45 LT		94.90%	96.39%
Iron	103.46%	128.30%	0.58	11319	14160	NOT CALC.	126.30%	100.84%
Lanthanum	94.17%	89.66%	-0.01 LT	-267 LT	-160 LT	39.26%	91.90%	93.39%
Lead	105.09%	96.71%	0.03 LT	-699 LT	-381 LT	56.37%	103.09%	108.06%
Lithium	98.13%	88.00%	-0.01 LT	-147 LT	-128 LT	1.97%	86.20%	95.95%
Magnesium	102.45%	108.40%	0.17	2310	1910	42.12%	107.20%	99.84%
Manganese	100.16%	97.50%	0.03	2766	4086	21.19%	97.00%	98.30%
Mercury	105.34%	89.88%	0.01	-60 LT	-61 LT		94.80%	104.63%
Molybdenum	96.36%	87.60%	0.00 LT	-163 LT	-147 LT	43.03%	91.18%	94.24%
Nickel	97.87%	94.20%	0.00 LT	5634	6348	11.29%	90.70%	96.04%
Potassium	98.37%	74.68%	-0.09 LT	0	0	-183.40%	44.60%	98.37%
Samarium	95.61%	3.00%	-0.12 LT	-3352 LT	-2914 LT		43.80%	99.90%
Selenium	105.26%	88.26%	-0.02 LT	-1372 LT	-980 LT		95.04%	103.89%
Silver	102.71%	91.20%	-0.01 LT	-249 LT	-215 LT	-8.76%	96.10%	102.54%
Sodium	98.55%	97.68%	0.35	131801	127425	NOT CALC.	85.92%	96.79%
Strontium	100.99%	96.30%	0.00	323	487	14.69%	96.00%	98.64%
Sulfur	106.15%	95.42%	0.14	83 LT	407		101.22%	105.85%
Tantalum	96.79%	76.60%	-0.01 LT	-513 LT	-500 LT	-18.40%	80.42%	95.64%
Thallium	101.95%	83.48%	-0.11 LT	-2385 LT	-3475 LT		91.10%	101.34%
Thorium	102.75%	87.41%	-0.08 LT	-2258 LT	-1993 LT		94.77%	102.26%
Tin	100.68%	98.20%	0.02 LT	-200 LT	-186 LT	45.14%	94.72%	98.67%
Titanium	99.79%	91.90%	0.09	-74 LT	-39 LT	49.15%	94.68%	96.79%
Uranium	102.10%		-0.89 LT	-16815 LT	-12003 LT		35.91%	107.36%
Vanadium	95.92%	86.90%	-0.01 LT	-108 LT	-173 LT		90.90%	94.94%
Zinc	100.16%	95.20%	0.08	98	126	13.42%	93.90%	98.31%
Zirconium	98.91%	88.94%	-0.01 LT	-233 LT	-185 LT	42.85%	92.02%	96.18%

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

Single Shell Tank Project

FUSION ANALYSIS
RESULTS OF THE LABORATORY DIGESTIONS

Tank: 241-U-110
Core: 6
Segment: F0917
Customer ID: Core 6 Composite

	Check Standard	Blank	Sample	Duplicate Sample	Spike of Sample	Check Standard
Laboratory ID:	N/A	F0898	F0923	F0924	N/A	N/A
Fusion	N/A	N/A	2.86 g/L	2.38 g/L	N/A	N/A
Laboratory ID:	F0897	F0922	F0923	F0924	F0925	F0926
Total Alpha	89.60%	<8.52E-01 uci/L	<1.27 uci/L	<1.13 uci/L	*	89.10%
Total Beta	98.20%	<3.25 uci/L	2.32E+03 uci/L	2.80E+03 uci/l	*	93.30%
Laboratory ID:	F0897	F0922	F0923	F0924	F0925	F0926
GEA Cs-137	98.30%	<5.22E-02 uci/L	5.90E+01 uci/L	6.05E+01 uci/L	97.56%	103.70%
Laboratory ID:	F0897	F0922	F0923	F0924	F0925	F0926
Uranium	90.80%	<8.32E-05 g/L	1.31E-02 g/L	1.57E-02 g/L	113.30%	90.10%
Laboratory ID:	F0903	F0946	F0923	F0924	F0949	F0950
Plutonium	109.50%	<7.29E-03 uci/L	5.92E-01 uci/L	7.64E-01 uci/L	*	105.90%
Laboratory ID:	F0897	F0946	F0923	F0924	F0949	F0950
Americium 241	101.30%	<1.50E-02 uci/L	2.56E-01 uci/L	3.54E-01 uci/L	*	105.80%
Laboratory ID:	F0897	F0898	F0923	F0924	F0979	F0980
Neptunium 237	80.50%	<1.08 uci/L	<1.08 uci/L	<1.08 uci/L	71.20%	63.30%
Laboratory ID:	F0921	F0922	F0923	F0924	F0925	F0926
Technetium 99	99.90%	<2.44E-02 uci/L	<4.78E-02 uci/L	<5.07E-02 uci/L	104.00%	96.30%
Laboratory ID:	F0921	F0922	F0923	F0924	F1075	F1076
Iodine 129	98.00%	<1.50E-02 uci/L	<1.84E-02 uci/L	<1.94E-02 uci/L	89.80%	95.70%
Laboratory ID:	F0921	F0922	F0923	F0924	F0925	F0926
Strontium 90	101.20%	<6.29E-03 uci/L	772 uci/L	885 uci/L	65.50%	102.10%

* Ratio Of Spike To Sample Insufficient To Calculate Spike Recovery.

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:CORE 6 COMPOSITE

KOH Fusion Dissolution

INSTRUMENT	N/A
PROCEDURE/REV	LA-549-141/A-1
TECHNOLOGIST	R. D. Hale
DATE	01-25-90
TEMPERATURE	450 C
STARTING TIME	13:45
ENDING TIME	15:00
CHEMIST	S. A. Catlow

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	N/A
2	Reagent Blank	F0898
3	Sample Composite 5	F0899
4	Duplicate Composite 5	F0900
5	Sample Composite 6	F0923
6	Duplicate Composite 6	F0924
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				

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

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:CORE 6 COMPOSITE

INSTRUMENT	HW45676
PROCEDURE/REV	LA-508-101/A-2
TECHNOLOGIST	R. D. Hale
DATE	01-26-90
TEMPERATURE	24 C
STARTING TIME	09:30
ENDING TIME	12:00
CHEMIST	S. A. Catlow

Total Alpha and Total Beta
Fusion Dissolution
Detector 12

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0897
2	Reagent Blank	F0922
3	Sample Composite 5	F0899
4	Duplicate Composite 5	F0900
5	Sample Composite 6	F0923
6	Duplicate Composite 6	F0924
7	Spike Composite 6	F0925
8	Final LMCS Check Std	F0926
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	102B44/ 10 mL			N/A
Spike	102B44/10 mL	F0899/.1 mL		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 #12	PROPERTY NUMBER:	WA45676
TECHNOLOGIST:	R.A. Jones	PAYROLL NUMBER:	65801
DATE:	Feb. 23, 1987		

CALIBRATION STANDARD ID: 42B16B; 42B16C; 42B16E; 42B16H; 42B16I; 42B16L

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. 12

TIME ZERO DATE (HD): 13367

RADIONUCLIDE: Am-241
HALF LIFE: 157784
COUNT TIME: 5
CPM BKG: 0.2

DATE COUNTED (HD): 15491

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.
42B16B	1	02/23/87		86968	86004	85990	86802
42B16C	1	02/23/87		135119	135190	135983	134627
42B16E	1	02/23/87		308917	309658	308906	311795
42B16H	2	02/23/87		60628	60616	60351	61648
42B16I	2	02/23/87		107491	107171	106868	106941
42B16L	2	02/23/87		196800	204719	207336	206678

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
42B16B	1"	58050	17288	1.01	17450	0.3006
42B16C	1"	93640	27046	1.01	27299	0.2915
42B16E	1"	212900	61964	1.01	62544	0.2938

AVERAGE, 1" = 0.2953 +/- @95% 0.0093 3.14 % ON 02/23/87

STANDARD ID		STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
42B16H	2"	58310	12162	1.01	12276	0.2105
42B16I	2"	100300	21423	1.01	21624	0.2156
42B16L	2"	186700	40776	1.01	41159	0.2205

AVERAGE, 2" = 0.2155 +/- @95% 0.0097 4.51 % ON 02/23/87

NEW EFFS FOR DET 12 Am-241 1" = 0.2953 2" = 0.2155

5" = 0.0000

Single Shell Tank

Calibration Record

ANALYTE:	Co^{60}		
PROCEDURE:	LQ-508-002	REVISION:	A-0
INSTRUMENT:	Detector #12	PROPERTY NUMBER:	WA45676
TECHNOLOGIST:	R.A. Jones	PAYROLL NUMBER:	65801
DATE:	April 19, 1988		

CALIBRATION STANDARD ID: 32B40A8; 32B40B7; 32B40C7; 32B40A4; 32B40B3; 32B40C4

ANALYTE CONCENTRATION: N/A

TYPE OF CALIBRATION: Efficiency

SST-103 Rev. (Draft) 8/15/90 Short Interim

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

DETECTOR No. 12

		2",5" STD TIME ZERO DATE (HD):	15883
RADIONUCLIDE:	Co-60	1" STD TIME ZERO DATE (HD):	15883
HALF LIFE:	1925	DATE COUNTED (HD):	15911
COUNT TIME:	5	DATE COUNTED 1" (HD)	15912
CPM BKG:	25		
CPM 1" BKG:	25		

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	04/19/88		127944	127628	127543	127566
32B40B7	1	04/19/88		244043	242862	243562	244673
32B40C7	1	04/19/88		367576	367566	365053	366147
32B40A4	2	04/19/88		110722	110750	110709	110989
32B40B3	2	04/19/88		212054	214257	215505	213619
32B40C4	2	04/19/88		316383	314049	315143	314081

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
32B40A8	1"	69550	25509	1.01	25777	0.3706
32B40B7	1"	134700	48732	1.01	49244	0.3656
32B40C7	1"	201000	73292	1.01	74061	0.3685

AVERAGE, 1" = 0.3682 +/- @95% 0.0050 1.35 % ON 04/19/88

STANDARD ID		STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
32B40A4	2"	70480	22134	1.01	22358	0.3172
32B40B3	2"	135100	42747	1.01	43180	0.3196
32B40C4	2"	202400	62958	1.01	63596	0.3142

AVERAGE, 2" = 0.3170 +/- @95% 0.0053 1.67 % ON 04/18/88

STANDARD ID		STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
32B40A5	5"	70160	-25	1.01	-25	-0.0004
32B40B6	5"	135700	-25	1.01	-25	-0.0002
32B40C5	5"	201900	-25	1.01	-25	-0.0001

AVERAGE, 5" = -0.0002 +/- @95% 0.0002 -106.77 % ON 04/18/88

NEW EFFS FOR DET 12 Co-60 1" = 0.3682 2" = 0.3170

5" = -0.0002

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:CORE 6 COMPOSITE

INSTRUMENT	WA77228/WA401934
PROCEDURE/REV	LA-548-121/C-1
TECHNOLOGIST	R. D. Hale
DATE	01-26-90
TEMPERATURE	24 C
STARTING TIME	09:00
ENDING TIME	10:00
CHEMIST	S. A. Catlow

GEA Analysis

Fusion Dissolution

Samples are prepared in batch, but counted randomly.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0897
2	Reagent Blank	F0922
3	Sample Composite 5	F0899
4	Duplicate Composite 5	F0900
5	Sample Composite 6	F0923
6	Duplicate Composite 6	F0924
7	Spike Composite 6	F0925
8	Final LMCS Check Std	F0926
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	89B44/ 500 uL			22 mL
Spike	89B44/ 500 uL	F0923/ 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:	B-1
Instrument:	GEA Detector #1	Property Number:	401934
Technologist:	J. L. Anderson	Payroll Number:	61413
Date:	February 14, 1989		

Calibration Standard ID: 56B40 DI

Analyte Concentration: N/A

Type of Calibration: Gamma Energy Analysis (Efficiency)

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

Single Shell Tank
Calibration Record

Analyte:	Mixed Isotope Standards		
Procedure:	LQ-508-003	Revision:	B-1
Instrument:	GEA Detector #2	Property Number:	401934
Technologist:	J. L. Anderson	Payroll Number:	61413
Date:	September 28, 1988		

Calibration Standard ID: 56B40 D1

Analyte Concentration: N/A

Type of Calibration: Gamma Energy Analysis (Efficiency)

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

DETECTOR: 2
GEOMETRY CODE: 42
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 2
CALIBRATION DATE: 21-Oct-88
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	3.417000E-03
88.032	1.090000E-02
122.0614	1.408000E-02
165.853	1.516000E-02
279.1967	9.929000E-03
391.668	7.578000E-03
513.99	5.875000E-03
661.65	4.927000E-03
898.021	3.727000E-03
1173.237	3.085000E-03
1332.501	2.683000E-03
1836.129	2.102000E-03

EQUATION 0-122 KEV

```
LOG(EFF) =    -6.654070E+01
          +    2.583780E+01 *LOG(ENERGY)
          +   -2.677550E+00 *LOG(ENERGY)^2
```

EQUATION 122-1836 KEV

```
LOG(EFF) =    -1.050740E+02
          +    6.428950E+01 *LOG(ENERGY)
          +   -1.503170E+01 *LOG(ENERGY)^2
          +    1.533670E+00 *LOG(ENERGY)^3
          +   -5.838530E-02 *LOG(ENERGY)^4
```

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

DETECTOR: 2
GEOMETRY CODE: 43
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 3
CALIBRATION DATE: 28-Sep-88
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	1.476000E-03
88.032	4.721000E-03
122.0614	6.589000E-03
165.853	6.613000E-03
279.1967	4.692000E-03
391.668	3.542000E-03
513.99	2.810000E-03
661.65	2.327000E-03
898.021	1.790000E-03
1173.237	1.437000E-03
1332.501	1.277000E-03
1836.129	9.824000E-04

EQUATION 0-165 KEV

```
LOG(EFF) =    -5.826830E+01
          +    2.165450E+01 *LOG(ENERGY)
          +   -2.198930E+00 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =    -2.233890E+01
          +    1.174520E+01 *LOG(ENERGY)
          +   -2.739550E+00 *LOG(ENERGY)^2
          +    2.655450E-01 *LOG(ENERGY)^3
          +   -9.668420E-03 *LOG(ENERGY)^4
```

Single Shell Tank
Calibration Record

Analyte:	Mixed Isotope Standards		
Procedure:	LQ-508-003	Revision:	B-1
Instrument:	GEA Detector #3	Property Number:	401934
Technologist:	J. L. Anderson	Payroll Number:	61413
Date:	July 2, 1989		

Calibration Standard ID: 56B40 D1

Analyte Concentration: N/A

Type of Calibration: Gamma Energy Analysis (Efficiency)

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

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DETECTOR: 3
GEOMETRY CODE: 41
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 1
CALIBRATION DATE: 2-Jul-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56840 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	2.833765E-02
88.032	2.881764E-02
122.0614	2.756557E-02
165.853	2.270614E-02
279.1967	
391.668	1.285730E-02
513.99	
661.65	7.841011E-03
898.021	5.779292E-03
1173.237	4.773005E-03
1332.501	4.278530E-03
1836.129	3.371238E-03

EQUATION 0-165 KEV

```
LOG(EFF) =   -1.113845E+01
         +    3.484260E+00 *LOG(ENERGY)
         +   -3.990659E-01 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =   -2.052334E+01
         +    9.121738E+00 *LOG(ENERGY)
         +   -1.553578E+00 *LOG(ENERGY)^2
         +    8.018036E-02 *LOG(ENERGY)^3
```

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

DETECTOR: 3
GEOMETRY CODE: 42
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 2
CALIBRATION DATE: 2-Jul-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56840 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	7.455306E-03
88.032	7.462748E-03
122.0614	7.578302E-03
165.853	6.965814E-03
279.1967	
391.668	3.596591E-03
513.99	
661.65	2.318396E-03
898.021	1.824191E-03
1173.237	1.461179E-03
1332.501	1.321243E-03
1836.129	1.011332E-03

EQUATION 0-165 KEV

```
LOG(EFF) =    -6.838496E+00
          +    8.819509E-01 *LOG(ENERGY)
          +   -9.970528E-02 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =     3.082260E-01
          +   -1.410839E+00 *LOG(ENERGY)
          +    1.042898E-01 *LOG(ENERGY)^2
          +   -5.874725E-03 *LOG(ENERGY)^3
```

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

DETECTOR: 3
GEOMETRY CODE: 43
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 3
CALIBRATION DATE: 2-Jul-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56840 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	2.020462E-03
88.032	1.924344E-03
122.0614	2.027231E-03
165.853	1.712371E-03
279.1967	
391.668	1.056509E-03
513.99	
661.65	7.115743E-04
898.021	5.243928E-04
1173.237	4.551585E-04
1332.501	4.223636E-04
1836.129	3.139091E-04

EQUATION 0-165 KEV

```
LOG(EFF) =    -5.300788E+00
          +   -3.550643E-01 *LOG(ENERGY)
          +    3.272635E-02 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =    -9.815549E+00
          +    2.402920E+00 *LOG(ENERGY)
          +   -4.428877E-01 *LOG(ENERGY)^2
          +    2.059131E-02 *LOG(ENERGY)^3
```

Single Shell Tank
Calibration Record

Analyte:	Mixed Isotope Standards		
Procedure:	LQ-508-003	Revision:	B-1
Instrument:	GEA Detector #4	Property Number:	401934
Technologist:	J. L. Anderson	Payroll Number:	61413
Date:	September 1, 1989		
Calibration Standard ID:	56B40 D1		
Analyte Concentration:	N/A		
Type of Calibration:	Gamma Energy Analysis (Efficiency)		

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

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

DETECTOR: 4
GEOMETRY CODE: 41
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 1
CALIBRATION DATE: 1-Sep-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56840 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	2.682446E-02
88.032	8.210956E-02
122.0614	1.118411E-01
165.853	1.066653E-01
279.1967	
391.668	5.704220E-02
513.99	
661.65	3.685958E-02
898.021	2.541629E-02
1173.237	2.161710E-02
1332.501	1.973393E-02
1836.129	1.484468E-02

EQUATION 0-165 KEV

```
LOG(EFF) =   -5.844056E+01
           +  2.310700E+01 *LOG(ENERGY)
           +  2.371355E+00 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =   -1.718967E+01
           +  8.164155E+00 *LOG(ENERGY)
           +  -1.384196E+00 *LOG(ENERGY)^2
           +  7.025985E-02 *LOG(ENERGY)^3
```

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 20-SEP-90 10:26:22

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: SD1669
ANALYZED BY: LDT

SAMPLE DESCRIPTION: F897
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 26-JAN-90 AT 09:56:43

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 20-SEP-90 10:26:22

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	1126.66	562.80	1.41	538.	799.	10.4	CS-134, EU-152
2C	1138.88	568.91	1.41	553.	1388.	8.6	CS-134, BI-207
3	1209.64	604.28	1.48	591.	7995.	2.4	CS-134
4	1323.48	661.18	1.52	441.	12111.	1.9	CS-137
4B		661.82			35.	46.4	
5C	1591.80	795.33	1.54	262.	5691.	3.1	CS-134
6C	1604.00	801.43	1.54	251.	592.	9.6	CS-134
7	2346.30	1172.70	1.70	210.	5217.	2.8	CO-60
8	2664.66	1332.01	2.00	42.	4718.	2.9	CO-60
9	2729.93	1364.67	1.67	21.	137.	19.7	CS-134
10	2800.63	1400.06	2.10	13.	56.	33.2	I-132,BI-214
11	2921.20	1460.41	2.37	10.	167.	16.3	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 20-SEP-90 10:26:22

SAMPLE: F897
DATA COLLECTED ON 26-JAN-90 AT 09:56:43
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<8.08E-01		LLD<8.08E-01		911.07	
AG-108M	LLD<2.21E-01		LLD<2.21E-01		433.94	
AG-110M	LLD<1.05E+00		LLD<1.05E+00		657.76	
AM-241	LLD<8.76E-01		LLD<8.76E-01		59.54	
AM-243	LLD<2.45E-01		LLD<2.45E-01		74.67	
AR-41	LLD<1.27E-01		LLD<1.27E-01		1293.64	
AU-198	LLD<1.95E-01		LLD<1.95E-01		411.80	
BA-133	LLD<2.93E-01		LLD<2.93E-01		356.02	
BA-139	LLD<5.93E-01		LLD<5.93E-01		165.85	
BA-140	LLD<7.55E-01		LLD<7.55E-01		537.27	
BA-141	LLD<5.99E-01		LLD<5.99E-01		190.23	
BE-7	LLD<2.01E+00		LLD<2.01E+00		477.59	
BI-207	LLD<1.87E-01		LLD<1.87E-01		569.70	
BI-212	LLD<2.45E+00		LLD<2.45E+00		727.27	
BI-214	LLD<9.51E-01		LLD<9.51E-01		609.32	
CD-109	LLD<3.59E+00		LLD<3.59E+00		88.03	
CE-139	LLD<1.34E-01		LLD<1.34E-01		165.85	
CE-141	LLD<1.97E-01		LLD<1.97E-01		145.44	
CEPR144	LLD<1.68E+00		LLD<1.68E+00		133.51	
CO-56	LLD<1.87E-01		LLD<1.87E-01		846.76	
CO-57	LLD<1.10E-01		LLD<1.10E-01		122.06	
CO-58	LLD<1.76E-01		LLD<1.76E-01		810.75	
CO-60	2.24E+01	+-6.91E-01	2.24E+01	+-6.91E-01	1332.50	-0.49
					1173.24	-0.54
CR-51	LLD<1.54E+00		LLD<1.54E+00		320.09	
CS-134	2.05E+01	+-6.72E-01	2.05E+01	+-6.72E-01	795.84	-0.52
					604.70	-0.42
CS-136	LLD<1.78E-01		LLD<1.78E-01		818.51	
CS-137	3.75E+01	+-8.35E-01	3.75E+01	+-8.35E-01	661.65	-0.47
CS-138	LLD<1.55E-01		LLD<1.55E-01		1435.86	
EU-152	LLD<3.41E-01		LLD<3.41E-01		1408.01	
EU-154	LLD<3.68E-01		LLD<3.68E-01		1274.45	
EU-155	LLD<4.28E-01		LLD<4.28E-01		105.31	
FE-59	LLD<4.31E-01		LLD<4.31E-01		1099.25	
HF-181	LLD<2.24E-01		LLD<2.24E-01		482.20	
HG-203	LLD<1.77E-01		LLD<1.77E-01		279.20	
I-131	LLD<2.32E-01		LLD<2.32E-01		364.48	
I-132	LLD<2.08E-01		LLD<2.08E-01		667.69	
I-133	LLD<2.18E-01		LLD<2.18E-01		529.69	
I-134	LLD<2.66E-01		LLD<2.66E-01		847.03	
I-135	LLD<4.56E-01		LLD<4.56E-01		1260.41	
K-40	LLD<1.83E+00		LLD<1.83E+00		1460.75	
KR-85	LLD<4.45E+01		LLD<4.45E+01		513.99	
KR-85M	LLD<1.28E-01		LLD<1.28E-01		151.17	
KR-87	LLD<4.98E-01		LLD<4.98E-01		402.58	
KR-89	LLD<7.48E+00		LLD<7.48E+00		220.90	
LA-140	LLD<7.82E-02		LLD<7.82E-02		1596.20	

LA-142	LLD<4.14E-01	LLD<4.14E-01	641.83
MN-54	LLD<2.01E-01	LLD<2.01E-01	834.83
MN-56	LLD<2.11E-01	LLD<2.11E-01	846.76
NA-22	LLD<1.17E-01	LLD<1.17E-01	1274.55
NA-24	LLD<2.20E-01	LLD<2.20E-01	1368.60
NB-94	LLD<1.65E-01	LLD<1.65E-01	702.63
NB-95	LLD<1.72E-01	LLD<1.72E-01	765.78
NB-97	LLD<1.28E+00	LLD<1.28E+00	657.92
NP-238	LLD<7.90E-01	LLD<7.90E-01	984.45
NP-239	LLD<1.05E+00	LLD<1.05E+00	277.60
PA-233	LLD<4.65E-01	LLD<4.65E-01	311.98
PA-234M	LLD<4.00E+01	LLD<4.00E+01	1001.03
PB-210	LLD<5.19E+00	LLD<5.19E+00	465.03
PB-212	LLD<3.31E-01	LLD<3.31E-01	239.00
PB-214	LLD<5.02E-01	LLD<5.02E-01	351.92
PO-210	LLD<2.07E+04	LLD<2.07E+04	804.00
PO-214	LLD<8.09E+03	LLD<8.09E+03	799.70
PO-216	LLD<1.70E+04	LLD<1.70E+04	804.90
PU-239	LLD<1.47E+03	LLD<1.47E+03	129.30
PU-241	LLD<5.33E+04	LLD<5.33E+04	148.57
RA-224	LLD<3.57E+00	LLD<3.57E+00	240.99
RA-226	LLD<3.13E+00	LLD<3.13E+00	186.10
RB-88	LLD<7.19E-01	LLD<7.19E-01	1836.00
RB-89	LLD<9.62E-01	LLD<9.62E-01	1031.88
RN-220	LLD<1.74E+02	LLD<1.74E+02	549.73
RU-103	LLD<2.11E-01	LLD<2.11E-01	497.08
RURH106	LLD<3.47E+00	LLD<3.47E+00	621.80
SB-124	LLD<2.74E-01	LLD<2.74E-01	602.72
SB-125	LLD<1.65E+00	LLD<1.65E+00	176.33
SC-46	LLD<2.14E-01	LLD<2.14E-01	1120.45
SE-75	LLD<2.42E-01	LLD<2.42E-01	264.66
SN-113	LLD<2.88E-01	LLD<2.88E-01	391.67
SR-85	LLD<1.95E-01	LLD<1.95E-01	513.99
SR-91	LLD<3.44E-01	LLD<3.44E-01	555.60
SR-92	LLD<8.19E-02	LLD<8.19E-02	1383.94
TA-182	LLD<6.13E-01	LLD<6.13E-01	1121.30
TC-99M	LLD<1.14E-01	LLD<1.14E-01	140.51
TE-123M	LLD<1.24E-01	LLD<1.24E-01	159.00
TE-125M	LLD<3.20E+01	LLD<3.20E+01	109.27
TE-132	LLD<1.55E-01	LLD<1.55E-01	228.16
TH-228	LLD<1.08E+01	LLD<1.08E+01	84.37
TL-208	LLD<2.46E-01	LLD<2.46E-01	583.14
U-235	LLD<2.10E-01	LLD<2.10E-01	185.71
U-237	LLD<6.26E-01	LLD<6.26E-01	208.00
W-187	LLD<5.93E-01	LLD<5.93E-01	685.74
XE-131M	LLD<5.53E+00	LLD<5.53E+00	163.98
XE-133	LLD<3.98E-01	LLD<3.98E-01	81.00
XE-133M	LLD<1.36E+00	LLD<1.36E+00	233.21
XE-135	LLD<1.64E-01	LLD<1.64E-01	249.79
XE-138	LLD<1.23E+00	LLD<1.23E+00	258.41
Y-88	LLD<6.82E-02	LLD<6.82E-02	1836.06
Y-91	LLD<5.03E+01	LLD<5.03E+01	1204.90
Y-91M	LLD<2.60E-01	LLD<2.60E-01	555.60
ZN-65	LLD<5.17E-01	LLD<5.17E-01	1115.55
ZR-95	LLD<3.29E-01	LLD<3.29E-01	756.73
ZR-97	LLD<1.68E-01	LLD<1.68E-01	743.33
TOTAL	8.04E+01 +-1.28E+00	8.04E+01 +-1.28E+00	

STANDARD DEVIATION = 0.04

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.46E-09 UC/LI
TOTAL MEASURED ACTIVITY = 8.04E+01 (+-1.28E+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
1126.66	562.80	799.	10.4	3.42E+01
1138.88	568.91	1388.	8.6	5.99E+01
1604.00	801.43	592.	9.6	3.39E+01
2729.93	1364.67	137.	19.7	1.23E+01
2800.63	1400.06	56.	33.2	5.13E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2921.20	1460.41	167.	16.3	1.59E+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                                 20-SEP-90  12:43:49


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

MCA UNIT NUMBER:   1     /     ADC UNIT NUMBER: 2.0
DETECTOR NUMBER:    2    /     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: SD2872
ANALYZED BY:        LDT

SAMPLE DESCRIPTION: F922
GEOMETRY DESCRIPTION:
SAMPLE SIZE:   1.0000E-03 LI       / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 26-JAN-90 AT 11:07:24

COLLECT LIVE TIME:    3000. SECONDS
        REAL TIME:    3000. SECONDS
        DEAD TIME:    00.00 %

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

ENERGY CALIBRATION PERFORMED 17-MAR-89
EFFICIENCY CALIBRATION PERFORMED 21-OCT-88
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222-S COUNTING ROOM 20-SEP-90 12:43:49

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	1167.33	583.29	1.04	34.	17.	116.9	EU-154,
1B		583.37			15.	31.6	TL-208
2	2921.44	1460.26	2.33	10.	136.	18.6	K-40
2B		1460.85			156.	3.8	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0012
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 30-AUG-88 AT 16:46:00
BACKGROUND LIVE TIME: 60000. SECONDS

222-S COUNTING ROOM 20-SEP-90 12:43:49

SAMPLE: F922
DATA COLLECTED ON 26-JAN-90 AT 11:07:24
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				ENERGY COMPARISON (KEV)	
	MEASURED	ERROR	DECAY CORRECTED	ERROR	EXPECT	DIFF
AC-228	LLD<1.88E-01		LLD<1.88E-01		911.07	
AG-108M	LLD<3.41E-02		LLD<3.41E-02		433.94	
AG-110M	LLD<6.00E-02		LLD<6.00E-02		657.76	
AM-241	LLD<2.45E-01		LLD<2.45E-01		59.54	
AM-243	LLD<6.72E-02		LLD<6.72E-02		74.67	
AR-41	LLD<6.30E-02		LLD<6.30E-02		1293.64	
AU-198	LLD<3.18E-02		LLD<3.18E-02		411.80	
BA-133	LLD<4.96E-02		LLD<4.96E-02		356.02	
BA-139	LLD<1.32E-01		LLD<1.32E-01		165.85	
BA-140	LLD<1.27E-01		LLD<1.27E-01		537.27	
BA-141	LLD<1.18E-01		LLD<1.18E-01		190.23	
BE-7	LLD<2.95E-01		LLD<2.95E-01		477.59	
BI-207	LLD<3.76E-02		LLD<3.76E-02		569.70	
BI-212	LLD<7.02E-01		LLD<7.02E-01		727.27	
BI-214	LLD<1.03E-01		LLD<1.03E-01		609.32	
CD-109	LLD<8.50E-01		LLD<8.50E-01		88.03	
CE-139	LLD<2.99E-02		LLD<2.99E-02		165.85	
CE-141	LLD<4.64E-02		LLD<4.64E-02		145.44	
CEPR144	LLD<3.85E-01		LLD<3.85E-01		133.51	
CO-56	LLD<3.98E-02		LLD<3.98E-02		846.76	
CO-57	LLD<2.42E-02		LLD<2.42E-02		122.06	
CO-58	LLD<4.18E-02		LLD<4.18E-02		810.75	
CO-60	LLD<5.24E-02		LLD<5.24E-02		1332.50	
CR-51	LLD<2.78E-01		LLD<2.78E-01		320.09	
CS-134	LLD<4.42E-02		LLD<4.42E-02		795.84	
CS-136	LLD<3.31E-02		LLD<3.31E-02		818.51	
CS-137	LLD<5.22E-02		LLD<5.22E-02		661.65	
CS-138	LLD<7.57E-02		LLD<7.57E-02		1435.86	
EU-152	LLD<2.75E-01		LLD<2.75E-01		1408.01	
EU-154	LLD<1.18E-01		LLD<1.18E-01		1274.45	
EU-155	LLD<1.15E-01		LLD<1.15E-01		105.31	
FE-59	LLD<7.50E-02		LLD<7.50E-02		1099.25	
HF-181	LLD<3.92E-02		LLD<3.92E-02		482.20	
HG-203	LLD<3.01E-02		LLD<3.01E-02		279.20	
I-131	LLD<3.47E-02		LLD<3.47E-02		364.48	
I-132	LLD<5.09E-02		LLD<5.09E-02		667.69	
I-133	LLD<3.45E-02		LLD<3.45E-02		529.69	
I-134	LLD<6.23E-02		LLD<6.23E-02		847.03	
I-135	LLD<1.24E-01		LLD<1.24E-01		1260.41	
K-40	LLD<1.05E+00		LLD<1.05E+00		1460.75	
KR-85	LLD<1.15E+01		LLD<1.15E+01		513.99	
KR-85M	LLD<2.88E-02		LLD<2.88E-02		151.17	
KR-87	LLD<7.26E-02		LLD<7.26E-02		402.58	
KR-89	LLD<1.34E+00		LLD<1.34E+00		220.90	
LA-140	LLD<4.24E-02		LLD<4.24E-02		1596.20	
LA-142	LLD<7.24E-02		LLD<7.24E-02		641.83	
MN-54	LLD<4.27E-02		LLD<4.27E-02		834.83	

MN-56	LLD<4.49E-02	LLD<4.49E-02	846.76
NA-22	LLD<4.18E-02	LLD<4.18E-02	1274.55
NA-24	LLD<4.84E-02	LLD<4.84E-02	1368.60
NB-94	LLD<3.15E-02	LLD<3.15E-02	702.63
NB-95	LLD<4.44E-02	LLD<4.44E-02	765.78
NB-97	LLD<6.98E-02	LLD<6.98E-02	657.92
NP-238	LLD<1.67E-01	LLD<1.67E-01	984.45
NP-239	LLD<2.00E-01	LLD<2.00E-01	277.60
PA-233	LLD<8.02E-02	LLD<8.02E-02	311.98
PA-234M	LLD<9.76E+00	LLD<9.76E+00	1001.03
PB-210	LLD<7.93E-01	LLD<7.93E-01	465.03
PB-212	LLD<6.74E-02	LLD<6.74E-02	239.00
PB-214	LLD<7.35E-02	LLD<7.35E-02	351.92
PO-210	LLD<3.32E+03	LLD<3.32E+03	804.00
PO-214	LLD<4.24E+02	LLD<4.24E+02	799.70
PO-216	LLD<2.20E+03	LLD<2.20E+03	804.90
PU-239	LLD<3.39E+02	LLD<3.39E+02	129.30
PU-241	LLD<1.08E+04	LLD<1.08E+04	148.57
RA-224	LLD<5.89E-01	LLD<5.89E-01	240.99
RA-226	LLD<6.37E-01	LLD<6.37E-01	186.10
RB-88	LLD<3.15E-01	LLD<3.15E-01	1836.00
RB-89	LLD<2.57E-01	LLD<2.57E-01	1031.88
RN-220	LLD<3.09E+01	LLD<3.09E+01	549.73
RU-103	LLD<3.62E-02	LLD<3.62E-02	497.08
RURH106	LLD<8.23E-01	LLD<8.23E-01	621.80
SB-124	LLD<3.89E-02	LLD<3.89E-02	602.72
SB-125	LLD<3.46E-01	LLD<3.46E-01	176.33
SC-46	LLD<5.86E-02	LLD<5.86E-02	1120.45
SE-75	LLD<5.24E-02	LLD<5.24E-02	264.66
SN-113	LLD<5.28E-02	LLD<5.28E-02	391.67
SR-85	LLD<5.05E-02	LLD<5.05E-02	513.99
SR-91	LLD<6.89E-02	LLD<6.89E-02	555.60
SR-92	LLD<5.79E-02	LLD<5.79E-02	1383.94
TA-182	LLD<1.89E-01	LLD<1.89E-01	1121.30
TC-99M	LLD<2.49E-02	LLD<2.49E-02	140.51
TE-123M	LLD<2.86E-02	LLD<2.86E-02	159.00
TE-125M	LLD<8.75E+00	LLD<8.75E+00	109.27
TE-132	LLD<2.80E-02	LLD<2.80E-02	228.16
TH-228	LLD<2.83E+00	LLD<2.83E+00	84.37
TL-208	LLD<4.63E-02	LLD<4.63E-02	583.14
U-235	LLD<4.24E-02	LLD<4.24E-02	185.71
U-237	LLD<1.07E-01	LLD<1.07E-01	208.00
W-187	LLD<1.07E-01	LLD<1.07E-01	685.74
XE-131M	LLD<1.23E+00	LLD<1.23E+00	163.98
XE-133	LLD<9.02E-02	LLD<9.02E-02	81.00
XE-133M	LLD<2.14E-01	LLD<2.14E-01	233.21
XE-135	LLD<2.73E-02	LLD<2.73E-02	249.79
XE-138	LLD<2.45E-01	LLD<2.45E-01	258.41
Y-88	LLD<2.99E-02	LLD<2.99E-02	1836.06
Y-91	LLD<1.60E+01	LLD<1.60E+01	1204.90
Y-91M	LLD<5.21E-02	LLD<5.21E-02	555.60
ZN-65	LLD<1.17E-01	LLD<1.17E-01	1115.55
ZR-95	LLD<6.03E-02	LLD<6.03E-02	756.73
ZR-97	LLD<4.35E-02	LLD<4.35E-02	743.33
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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
1167.33	583.29	17.	116.9	1.01E+00
2921.44	1460.26	136.	18.6	1.78E+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 WESTINGHOUSE HANFORD          20-SEP-90  13:00:59


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

MCA UNIT NUMBER:   1     /     ADC UNIT NUMBER: 1.0
DETECTOR NUMBER:    4    /     GEOMETRY NUMBER:  41
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: SD4006
ANALYZED BY:        MAX

SAMPLE DESCRIPTION: F923
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 26-JAN-90 AT 13:32:33

COLLECT LIVE TIME:    3000. SECONDS
        REAL TIME:    3004. SECONDS
        DEAD TIME:     0.13 %

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

ENERGY CALIBRATION PERFORMED 26-DEC-89
EFFICIENCY CALIBRATION PERFORMED  1-SEP-89
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222-S COUNTING ROOM WESTINGHOUSE HANFORD 20-SEP-90 13:00:59

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	53.55	26.96	1.14	523.	294.	24.4	
1B		27.06			123.	34.3	
2	1023.04	511.43	2.68	400.	381.	18.4	RN-222,I-133,
2B		510.74			335.	16.9	TL-208,NA-22,
							ZN-65,RH-106
3	1218.93	609.36	1.49	236.	141.	36.1	BI-214,
3B		609.25			197.	22.8	RU-103
4	1323.57	661.67	1.67	185.	10594.	1.9	CS-137
4B		661.35			379.	12.7	
5	1821.92	910.86	1.76	81.	116.	30.2	
5B		910.95			144.	27.4	
6	2239.75	1119.84	2.84	81.	98.	35.4	BI-214,SC-46,
							TA-182
7	2921.53	1460.94	2.77	22.	824.	7.1	K-40
7B		1460.80			854.	7.1	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0014
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 8-SEP-89 AT 12:00:00
BACKGROUND LIVE TIME: 3000. SECONDS

222-S COUNTING ROOM WESTINGHOUSE HANFORD 20-SEP-90 13:00:59

SAMPLE: F923
DATA COLLECTED ON 26-JAN-90 AT 13:32:33
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<1.42E+00		LLD<1.42E+00		911.07	
AG-108M	LLD<2.80E-01		LLD<2.80E-01		433.94	
AG-110M	LLD<1.66E+00		LLD<1.66E+00		657.76	
AM-241	LLD<1.92E+00		LLD<1.92E+00		59.54	
AM-243	LLD<4.74E-01		LLD<4.74E-01		74.67	
AR-41	LLD<2.95E-01		LLD<2.95E-01		1293.64	
AU-198	LLD<2.60E-01		LLD<2.60E-01		411.80	
BA-133	LLD<3.90E-01		LLD<3.90E-01		356.02	
BA-139	LLD<9.26E-01		LLD<9.26E-01		165.85	
BA-140	LLD<9.68E-01		LLD<9.68E-01		537.27	
BA-141	LLD<8.22E-01		LLD<8.22E-01		190.23	
BE-7	LLD<2.72E+00		LLD<2.72E+00		477.59	
BI-207	LLD<2.28E-01		LLD<2.28E-01		569.70	
BI-212	LLD<3.49E+00		LLD<3.49E+00		727.27	
BI-214	LLD<7.77E-01		LLD<7.77E-01		609.32	
CD-109	LLD<6.80E+00		LLD<6.80E+00		88.03	
CE-139	LLD<2.10E-01		LLD<2.10E-01		165.85	
CE-141	LLD<3.27E-01		LLD<3.27E-01		145.44	
CEPR144	LLD<2.87E+00		LLD<2.87E+00		133.51	
CO-56	LLD<2.41E-01		LLD<2.41E-01		846.76	
CO-57	LLD<1.95E-01		LLD<1.95E-01		122.06	
CO-58	LLD<2.15E-01		LLD<2.15E-01		810.75	
CO-60	LLD<2.24E-01		LLD<2.24E-01		1332.50	
CR-51	LLD<2.09E+00		LLD<2.09E+00		320.09	
CS-134	LLD<2.28E-01		LLD<2.28E-01		795.84	
CS-136	LLD<2.29E-01		LLD<2.29E-01		818.51	
CS-137	5.90E+01	+-1.30E+00	5.90E+01	+-1.30E+00	661.65	0.02
CS-138	LLD<5.13E-01		LLD<5.13E-01		1435.86	
EU-152	LLD<1.28E+00		LLD<1.28E+00		1408.01	
EU-154	LLD<7.15E-01		LLD<7.15E-01		1274.45	
EU-155	LLD<8.12E-01		LLD<8.12E-01		105.31	
FE-59	LLD<4.57E-01		LLD<4.57E-01		1099.25	
HF-181	LLD<3.36E-01		LLD<3.36E-01		482.20	
HG-203	LLD<2.48E-01		LLD<2.48E-01		279.20	
I-131	LLD<2.71E-01		LLD<2.71E-01		364.48	
I-132	LLD<3.00E-01		LLD<3.00E-01		667.69	
I-133	LLD<2.89E-01		LLD<2.89E-01		529.69	
I-134	LLD<3.22E-01		LLD<3.22E-01		847.03	
I-135	LLD<9.77E-01		LLD<9.77E-01		1260.41	
K-40	LLD<8.67E+00		LLD<8.67E+00		1460.75	
KR-85	LLD<7.15E+01		LLD<7.15E+01		513.99	
KR-85M	LLD<2.31E-01		LLD<2.31E-01		151.17	
KR-87	LLD<5.93E-01		LLD<5.93E-01		402.58	
KR-89	LLD<9.77E+00		LLD<9.77E+00		220.90	
LA-140	LLD<2.46E-01		LLD<2.46E-01		1596.20	
LA-142	LLD<5.46E-01		LLD<5.46E-01		641.83	
MN-54	LLD<2.37E-01		LLD<2.37E-01		834.83	

MN-56	LLD<2.72E-01	LLD<2.72E-01	846.76
NA-22	LLD<2.21E-01	LLD<2.21E-01	1274.55
NA-24	LLD<2.66E-01	LLD<2.66E-01	1368.60
NB-94	LLD<2.27E-01	LLD<2.27E-01	702.63
NB-95	LLD<2.24E-01	LLD<2.24E-01	765.78
NB-97	LLD<2.32E+00	LLD<2.32E+00	657.92
NP-238	LLD<8.79E-01	LLD<8.79E-01	984.45
NP-239	LLD<1.44E+00	LLD<1.44E+00	277.60
PA-233	LLD<5.88E-01	LLD<5.88E-01	311.98
PA-234M	LLD<4.79E+01	LLD<4.79E+01	1001.03
PB-210	LLD<7.20E+00	LLD<7.20E+00	465.03
PB-212	LLD<6.10E-01	LLD<6.10E-01	239.00
PB-214	LLD<6.21E-01	LLD<6.21E-01	351.92
PO-210	LLD<1.57E+04	LLD<1.57E+04	804.00
PO-214	LLD<2.22E+03	LLD<2.22E+03	799.70
PO-216	LLD<1.17E+04	LLD<1.17E+04	804.90
PU-239	LLD<2.46E+03	LLD<2.46E+03	129.30
PU-241	LLD<8.66E+04	LLD<8.66E+04	148.57
RA-224	LLD<5.17E+00	LLD<5.17E+00	240.99
RA-226	LLD<5.52E+00	LLD<5.52E+00	186.10
RB-88	LLD<2.55E+00	LLD<2.55E+00	1836.00
RB-89	LLD<9.99E-01	LLD<9.99E-01	1031.88
RN-220	LLD<2.06E+02	LLD<2.06E+02	549.73
RU-103	LLD<2.82E-01	LLD<2.82E-01	497.08
RURH106	LLD<4.62E+00	LLD<4.62E+00	621.80
SB-124	LLD<2.42E-01	LLD<2.42E-01	602.72
SB-125	LLD<2.41E+00	LLD<2.41E+00	176.33
SC-46	LLD<2.83E-01	LLD<2.83E-01	1120.45
SE-75	LLD<3.37E-01	LLD<3.37E-01	264.66
SN-113	LLD<3.58E-01	LLD<3.58E-01	391.67
SR-85	LLD<3.14E-01	LLD<3.14E-01	513.99
SR-91	LLD<3.92E-01	LLD<3.92E-01	555.60
SR-92	LLD<3.14E-01	LLD<3.14E-01	1383.94
TA-182	LLD<7.53E-01	LLD<7.53E-01	1121.30
TC-99M	LLD<1.88E-01	LLD<1.88E-01	140.51
TE-123M	LLD<1.98E-01	LLD<1.98E-01	159.00
TE-125M	LLD<6.25E+01	LLD<6.25E+01	109.27
TE-132	LLD<2.26E-01	LLD<2.26E-01	228.16
TH-228	LLD<2.09E+01	LLD<2.09E+01	84.37
TL-208	LLD<3.99E-01	LLD<3.99E-01	583.14
U-235	LLD<3.06E-01	LLD<3.06E-01	185.71
U-237	LLD<9.36E-01	LLD<9.36E-01	208.00
W-187	LLD<7.81E-01	LLD<7.81E-01	685.74
XE-131M	LLD<8.85E+00	LLD<8.85E+00	163.98
XE-133	LLD<7.49E-01	LLD<7.49E-01	81.00
XE-133M	LLD<1.84E+00	LLD<1.84E+00	233.21
XE-135	LLD<2.12E-01	LLD<2.12E-01	249.79
XE-138	LLD<1.67E+00	LLD<1.67E+00	258.41
Y-88	LLD<2.42E-01	LLD<2.42E-01	1836.06
Y-91	LLD<1.08E+02	LLD<1.08E+02	1204.90
Y-91M	LLD<2.96E-01	LLD<2.96E-01	555.60
ZN-65	LLD<8.27E-01	LLD<8.27E-01	1115.55
ZR-95	LLD<3.32E-01	LLD<3.32E-01	756.73
ZR-97	LLD<2.24E-01	LLD<2.24E-01	743.33
TOTAL	5.90E+01 +-1.30E+00	5.90E+01 +-1.30E+00	

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.16E-08 UC/LI
TOTAL MEASURED ACTIVITY = 5.90E+01 (+-1.30E+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
53.55	26.96	171.	48.7	1.79E+02
2239.75	1119.84	98.	35.4	1.44E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1023.04	511.43	381.	18.4	2.73E+00
1218.93	609.36	141.	36.1	1.18E+00
1821.92	910.86	116.	30.2	1.41E+00
2921.53	1460.94	824.	7.1	1.52E+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 WESTINGHOUSE HANFORD          20-SEP-90  13:05:47


               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: 3.0
DETECTOR NUMBER:    3    /     GEOMETRY NUMBER:  41
SPECTRUM SIZE:  4096 CHANNELS
ORDER OF SMOOTHING FUNCTION:     5
NUMBER OF BACKGROUND CHANNELS:  4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 95.0%
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: SD3989
ANALYZED BY:        MAX

SAMPLE DESCRIPTION: F924
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 26-JAN-90 AT 13:34:33

COLLECT LIVE TIME:    3000. SECONDS
        REAL TIME:    3003. SECONDS
        DEAD TIME:     0.10 %

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

ENERGY CALIBRATION PERFORMED 17-OCT-89
EFFICIENCY CALIBRATION PERFORMED 31-JUL-89
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222-S COUNTING ROOM WESTINGHOUSE HANFORD 20-SEP-90 13:05:47

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	63.62	32.39	1.14	903.	447.	19.7	CE-144
2	1322.88	661.44	1.48	125.	2325.	4.3	CS-137
2B		661.41			81.	28.8	
3	2920.73	1460.46	1.99	36.	588.	8.8	K-40
3B		1460.58			611.	5.5	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 95.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0013
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 15-JAN-90 AT 11:00:00
BACKGROUND LIVE TIME: 7000. SECONDS

222-S COUNTING ROOM WESTINGHOUSE HANFORD 20-SEP-90 13:05:47

SAMPLE: F924
DATA COLLECTED ON 26-JAN-90 AT 13:34:33
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<7.37E+00		LLD<7.37E+00		911.07	
AG-108M	LLD<1.29E+00		LLD<1.29E+00		433.94	
AG-110M	LLD<6.62E+00		LLD<6.62E+00		657.76	
AM-241	LLD<2.30E+00		LLD<2.30E+00		59.54	
AM-243	LLD<1.43E+00		LLD<1.43E+00		74.67	
AR-41	LLD<1.61E+00		LLD<1.61E+00		1293.64	
AU-198	LLD<1.24E+00		LLD<1.24E+00		411.80	
BA-133	LLD<1.88E+00		LLD<1.88E+00		356.02	
BA-139	LLD<4.98E+00		LLD<4.98E+00		165.85	
BA-140	LLD<5.21E+00		LLD<5.21E+00		537.27	
BA-141	LLD<5.05E+00		LLD<5.05E+00		190.23	
BE-7	LLD<1.36E+01		LLD<1.36E+01		477.59	
BI-207	LLD<1.35E+00		LLD<1.35E+00		569.70	
BI-212	LLD<2.22E+01		LLD<2.22E+01		727.27	
BI-214	LLD<3.92E+00		LLD<3.92E+00		609.32	
CD-109	LLD<2.34E+01		LLD<2.34E+01		88.03	
CE-139	LLD<1.13E+00		LLD<1.13E+00		165.85	
CE-141	LLD<1.92E+00		LLD<1.92E+00		145.44	
CEPR144	LLD<1.58E+01		LLD<1.58E+01		133.51	
CO-56	LLD<1.34E+00		LLD<1.34E+00		846.76	
CO-57	LLD<1.02E+00		LLD<1.02E+00		122.06	
CO-58	LLD<1.34E+00		LLD<1.34E+00		810.75	
CO-60	LLD<1.63E+00		LLD<1.63E+00		1332.50	
CR-51	LLD<1.01E+01		LLD<1.01E+01		320.09	
CS-134	LLD<1.47E+00		LLD<1.47E+00		795.84	
CS-136	LLD<1.31E+00		LLD<1.31E+00		818.51	
CS-137	6.05E+01	+-2.91E+00	6.05E+01	+-2.91E+00	661.65	-0.21
CS-138	LLD<2.82E+00		LLD<2.82E+00		1435.86	
EU-152	LLD<8.52E+00		LLD<8.52E+00		1408.01	
EU-154	LLD<5.19E+00		LLD<5.19E+00		1274.45	
EU-155	LLD<3.80E+00		LLD<3.80E+00		105.31	
FE-59	LLD<3.13E+00		LLD<3.13E+00		1099.25	
HF-181	LLD<1.66E+00		LLD<1.66E+00		482.20	
HG-203	LLD<1.22E+00		LLD<1.22E+00		279.20	
I-131	LLD<1.36E+00		LLD<1.36E+00		364.48	
I-132	LLD<1.72E+00		LLD<1.72E+00		667.69	
I-133	LLD<1.43E+00		LLD<1.43E+00		529.69	
I-134	LLD<1.98E+00		LLD<1.98E+00		847.03	
I-135	LLD<5.77E+00		LLD<5.77E+00		1260.41	
K-40	LLD<4.55E+01		LLD<4.55E+01		1460.75	
KR-85	LLD<3.65E+02		LLD<3.65E+02		513.99	
KR-85M	LLD<1.42E+00		LLD<1.42E+00		151.17	
KR-87	LLD<2.89E+00		LLD<2.89E+00		402.58	
KR-89	LLD<5.05E+01		LLD<5.05E+01		220.90	
LA-140	LLD<1.55E+00		LLD<1.55E+00		1596.20	
LA-142	LLD<2.90E+00		LLD<2.90E+00		641.83	
MN-54	LLD<1.57E+00		LLD<1.57E+00		834.83	

MN-56	LLD<1.52E+00	LLD<1.52E+00	846.76
NA-22	LLD<1.93E+00	LLD<1.93E+00	1274.55
NA-24	LLD<1.56E+00	LLD<1.56E+00	1368.60
NB-94	LLD<1.27E+00	LLD<1.27E+00	702.63
NB-95	LLD<1.48E+00	LLD<1.48E+00	765.78
NB-97	LLD<8.02E+00	LLD<8.02E+00	657.92
NP-238	LLD<4.90E+00	LLD<4.90E+00	984.45
NP-239	LLD<6.88E+00	LLD<6.88E+00	277.60
PA-233	LLD<2.86E+00	LLD<2.86E+00	311.98
PA-234M	LLD<3.00E+02	LLD<3.00E+02	1001.03
PB-210	LLD<3.54E+01	LLD<3.54E+01	465.03
PB-212	LLD<2.51E+00	LLD<2.51E+00	239.00
PB-214	LLD<3.82E+00	LLD<3.82E+00	351.92
PO-210	LLD<1.12E+05	LLD<1.12E+05	804.00
PO-214	LLD<1.30E+04	LLD<1.30E+04	799.70
PO-216	LLD<7.39E+04	LLD<7.39E+04	804.90
PU-239	LLD<1.36E+04	LLD<1.36E+04	129.30
PU-241	LLD<4.85E+05	LLD<4.85E+05	148.57
RA-224	LLD<2.78E+01	LLD<2.78E+01	240.99
RA-226	LLD<3.01E+01	LLD<3.01E+01	186.10
RB-88	LLD<1.55E+01	LLD<1.55E+01	1836.00
RB-89	LLD<6.89E+00	LLD<6.89E+00	1031.88
RN-220	LLD<1.16E+03	LLD<1.16E+03	549.73
RU-103	LLD<1.37E+00	LLD<1.37E+00	497.08
RURH106	LLD<2.64E+01	LLD<2.64E+01	621.80
SB-124	LLD<1.31E+00	LLD<1.31E+00	602.72
SB-125	LLD<1.39E+01	LLD<1.39E+01	176.33
SC-46	LLD<2.41E+00	LLD<2.41E+00	1120.45
SE-75	LLD<1.73E+00	LLD<1.73E+00	264.66
SN-113	LLD<1.70E+00	LLD<1.70E+00	391.67
SR-85	LLD<1.60E+00	LLD<1.60E+00	513.99
SR-91	LLD<2.15E+00	LLD<2.15E+00	555.60
SR-92	LLD<2.32E+00	LLD<2.32E+00	1383.94
TA-182	LLD<5.02E+00	LLD<5.02E+00	1121.30
TC-99M	LLD<1.08E+00	LLD<1.08E+00	140.51
TE-123M	LLD<1.08E+00	LLD<1.08E+00	159.00
TE-125M	LLD<3.00E+02	LLD<3.00E+02	109.27
TE-132	LLD<1.21E+00	LLD<1.21E+00	228.16
TH-228	LLD<6.56E+01	LLD<6.56E+01	84.37
TL-208	LLD<1.92E+00	LLD<1.92E+00	583.14
U-235	LLD<1.84E+00	LLD<1.84E+00	185.71
U-237	LLD<4.85E+00	LLD<4.85E+00	208.00
W-187	LLD<4.43E+00	LLD<4.43E+00	685.74
XE-131M	LLD<4.85E+01	LLD<4.85E+01	163.98
XE-133	LLD<2.11E+00	LLD<2.11E+00	81.00
XE-133M	LLD<1.05E+01	LLD<1.05E+01	233.21
XE-135	LLD<1.13E+00	LLD<1.13E+00	249.79
XE-138	LLD<8.82E+00	LLD<8.82E+00	258.41
Y-88	LLD<1.47E+00	LLD<1.47E+00	1836.06
Y-91	LLD<7.34E+02	LLD<7.34E+02	1204.90
Y-91M	LLD<1.62E+00	LLD<1.62E+00	555.60
ZN-65	LLD<4.89E+00	LLD<4.89E+00	1115.55
ZR-95	LLD<2.11E+00	LLD<2.11E+00	756.73
ZR-97	LLD<1.42E+00	LLD<1.42E+00	743.33
TOTAL	6.05E+01 +-2.91E+00	6.05E+01 +-2.91E+00	

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.16E-08 UC/LI
TOTAL MEASURED ACTIVITY = 6.05E+01 (+-2.91E+00) UC/LI

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

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 95.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
63.62	32.39	447.	19.7	6.98E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2920.73	1460.46	588.	8.8	4.91E+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                                 20-SEP-90  10:47:04


                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: SD1671
ANALYZED BY:        MAX

SAMPLE DESCRIPTION: F925
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 26-JAN-90 AT 13:36:26

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
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222-S COUNTING ROOM 20-SEP-90 10:47:04

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	1126.71	562.83	1.29	570.	713.	10.0	CS-134, EU-152
2C	1138.91	568.92	1.29	547.	1250.	9.1	CS-134, BI-207
3	1209.62	604.26	1.47	603.	8025.	2.4	CS-134
4C	1323.47	661.17	1.44	375.	13922.	1.8	CS-137
4B		661.82			35.	46.4	
5C	1591.77	795.31	1.57	288.	5744.	3.0	CS-134
6C	1603.95	801.40	1.57	303.	589.	7.8	CS-134
7	2346.29	1172.69	1.81	201.	5283.	2.8	CO-60
8	2664.69	1332.02	1.90	26.	4796.	2.9	CO-60
9	2729.71	1364.56	1.59	21.	158.	18.1	CS-134
10	2801.22	1400.36	2.06	8.	66.	27.8	BI-214
11	2921.06	1460.34	2.21	5.	206.	14.1	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 20-SEP-90 10:47:04

SAMPLE: F925
DATA COLLECTED ON 26-JAN-90 AT 13:36:26
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<7.62E+00		LLD<7.62E+00		911.07	
AG-108M	LLD<2.30E+00		LLD<2.30E+00		433.94	
AG-110M	LLD<1.13E+01		LLD<1.13E+01		657.76	
AM-241	LLD<1.01E+01		LLD<1.01E+01		59.54	
AM-243	LLD<2.57E+00		LLD<2.57E+00		74.67	
AR-41	LLD<1.50E+00		LLD<1.50E+00		1293.64	
AU-198	LLD<2.04E+00		LLD<2.04E+00		411.80	
BA-133	LLD<3.03E+00		LLD<3.03E+00		356.02	
BA-139	LLD<6.16E+00		LLD<6.16E+00		165.85	
BA-140	LLD<8.01E+00		LLD<8.01E+00		537.27	
BA-141	LLD<6.12E+00		LLD<6.12E+00		190.23	
BE-7	LLD<2.09E+01		LLD<2.09E+01		477.59	
BI-207	LLD<1.98E+00		LLD<1.98E+00		569.70	
BI-212	LLD<2.69E+01		LLD<2.69E+01		727.27	
BI-214	LLD<9.38E+00		LLD<9.38E+00		609.32	
CD-109	LLD<3.80E+01		LLD<3.80E+01		88.03	
CE-139	LLD<1.39E+00		LLD<1.39E+00		165.85	
CE-141	LLD<2.12E+00		LLD<2.12E+00		145.44	
CEPR144	LLD<1.77E+01		LLD<1.77E+01		133.51	
CO-56	LLD<1.85E+00		LLD<1.85E+00		846.76	
CO-57	LLD<1.16E+00		LLD<1.16E+00		122.06	
CO-58	LLD<1.78E+00		LLD<1.78E+00		810.75	
CO-60	2.28E+02	+-6.95E+00	2.28E+02	+-6.95E+00	1332.50	-0.48
					1173.24	-0.54
CR-51	LLD<1.61E+01		LLD<1.61E+01		320.09	
CS-134	2.07E+02	+-6.73E+00	2.07E+02	+-6.73E+00	795.84	-0.53
					604.70	-0.43
CS-136	LLD<1.83E+00		LLD<1.83E+00		818.51	
CS-137	4.31E+02	+-9.45E+00	4.31E+02	+-9.45E+00	661.65	-0.48
CS-138	LLD<1.07E+00		LLD<1.07E+00		1435.86	
EU-152	LLD<3.74E+00		LLD<3.74E+00		1408.01	
EU-154	LLD<3.63E+00		LLD<3.63E+00		1274.45	
EU-155	LLD<4.48E+00		LLD<4.48E+00		105.31	
FE-59	LLD<4.14E+00		LLD<4.14E+00		1099.25	
HF-181	LLD<2.27E+00		LLD<2.27E+00		482.20	
HG-203	LLD<1.81E+00		LLD<1.81E+00		279.20	
I-131	LLD<2.35E+00		LLD<2.35E+00		364.48	
I-132	LLD<2.10E+00		LLD<2.10E+00		667.69	
I-133	LLD<2.25E+00		LLD<2.25E+00		529.69	
I-134	LLD<2.68E+00		LLD<2.68E+00		847.03	
I-135	LLD<4.50E+00		LLD<4.50E+00		1260.41	
K-40	LLD<1.83E+01		LLD<1.83E+01		1460.75	
KR-85	LLD<4.65E+02		LLD<4.65E+02		513.99	
KR-85M	LLD<1.35E+00		LLD<1.35E+00		151.17	
KR-87	LLD<5.09E+00		LLD<5.09E+00		402.58	
KR-89	LLD<7.67E+01		LLD<7.67E+01		220.90	
LA-140	LLD<9.43E-01		LLD<9.43E-01		1596.20	

LA-142	LLD<4.47E+00	LLD<4.47E+00	641.83
MN-54	LLD<1.87E+00	LLD<1.87E+00	834.83
MN-56	LLD<2.08E+00	LLD<2.08E+00	846.76
NA-22	LLD<1.08E+00	LLD<1.08E+00	1274.55
NA-24	LLD<2.46E+00	LLD<2.46E+00	1368.60
NB-94	LLD<1.67E+00	LLD<1.67E+00	702.63
NB-95	LLD<1.70E+00	LLD<1.70E+00	765.78
NB-97	LLD<1.37E+01	LLD<1.37E+01	657.92
NP-238	LLD<8.38E+00	LLD<8.38E+00	984.45
NP-239	LLD<1.06E+01	LLD<1.06E+01	277.60
PA-233	LLD<4.84E+00	LLD<4.84E+00	311.98
PA-234M	LLD<3.93E+02	LLD<3.93E+02	1001.03
PB-210	LLD<5.40E+01	LLD<5.40E+01	465.03
PB-212	LLD<3.45E+00	LLD<3.45E+00	239.00
PB-214	LLD<5.18E+00	LLD<5.18E+00	351.92
PO-210	LLD<2.02E+05	LLD<2.02E+05	804.00
PO-214	LLD<8.10E+04	LLD<8.10E+04	799.70
PO-216	LLD<1.67E+05	LLD<1.67E+05	804.90
PU-239	LLD<1.55E+04	LLD<1.55E+04	129.30
PU-241	LLD<5.48E+05	LLD<5.48E+05	148.57
RA-224	LLD<3.69E+01	LLD<3.69E+01	240.99
RA-226	LLD<3.33E+01	LLD<3.33E+01	186.10
RB-88	LLD<7.19E+00	LLD<7.19E+00	1836.00
RB-89	LLD<1.08E+01	LLD<1.08E+01	1031.88
RN-220	LLD<1.68E+03	LLD<1.68E+03	549.73
RU-103	LLD<2.15E+00	LLD<2.15E+00	497.08
RURH106	LLD<3.59E+01	LLD<3.59E+01	621.80
SB-124	LLD<2.66E+00	LLD<2.66E+00	602.72
SB-125	LLD<1.72E+01	LLD<1.72E+01	176.33
SC-46	LLD<2.31E+00	LLD<2.31E+00	1120.45
SE-75	LLD<2.51E+00	LLD<2.51E+00	264.66
SN-113	LLD<2.92E+00	LLD<2.92E+00	391.67
SR-85	LLD<2.04E+00	LLD<2.04E+00	513.99
SR-91	LLD<3.61E+00	LLD<3.61E+00	555.60
SR-92	LLD<9.07E-01	LLD<9.07E-01	1383.94
TA-182	LLD<6.30E+00	LLD<6.30E+00	1121.30
TC-99M	LLD<1.18E+00	LLD<1.18E+00	140.51
TE-123M	LLD<1.28E+00	LLD<1.28E+00	159.00
TE-125M	LLD<3.39E+02	LLD<3.39E+02	109.27
TE-132	LLD<1.61E+00	LLD<1.61E+00	228.16
TH-228	LLD<1.14E+02	LLD<1.14E+02	84.37
TL-208	LLD<2.48E+00	LLD<2.48E+00	583.14
U-235	LLD<2.20E+00	LLD<2.20E+00	185.71
U-237	LLD<6.35E+00	LLD<6.35E+00	208.00
W-187	LLD<5.36E+00	LLD<5.36E+00	685.74
XE-131M	LLD<5.88E+01	LLD<5.88E+01	163.98
XE-133	LLD<4.13E+00	LLD<4.13E+00	81.00
XE-133M	LLD<1.44E+01	LLD<1.44E+01	233.21
XE-135	LLD<1.68E+00	LLD<1.68E+00	249.79
XE-138	LLD<1.25E+01	LLD<1.25E+01	258.41
Y-88	LLD<6.82E-01	LLD<6.82E-01	1836.06
Y-91	LLD<5.14E+02	LLD<5.14E+02	1204.90
Y-91M	LLD<2.73E+00	LLD<2.73E+00	555.60
ZN-65	LLD<4.63E+00	LLD<4.63E+00	1115.55
ZR-95	LLD<3.35E+00	LLD<3.35E+00	756.73
ZR-97	LLD<1.72E+00	LLD<1.72E+00	743.33
TOTAL	8.66E+02 +-1.35E+01	8.66E+02 +-1.35E+01	

STANDARD DEVIATION = 0.04

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.54E-09 UC/LI
TOTAL MEASURED ACTIVITY = 8.66E+02 (+-1.35E+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
1126.71	562.83	713.	10.0	3.05E+01
1138.91	568.92	1250.	9.1	5.40E+01
1603.95	801.40	589.	7.8	3.38E+01
2729.71	1364.56	158.	18.1	1.42E+01
2801.22	1400.36	66.	27.8	6.03E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2921.06	1460.34	206.	14.1	1.95E+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                                  20-SEP-90  12:51:22

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

MCA UNIT NUMBER:   1     /     ADC UNIT NUMBER: 2.0
DETECTOR NUMBER:    2    /     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: SD2873
ANALYZED BY:        MAX

SAMPLE DESCRIPTION: F926
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 26-JAN-90 AT 13:38:21

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 17-MAR-89
EFFICIENCY CALIBRATION PERFORMED 21-OCT-88
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222-S COUNTING ROOM 20-SEP-90 12:51:22

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	1127.26	563.26	1.59	571.	571.	13.0	CS-134, EU-152
2C	1139.41	569.33	1.59	550.	1018.	11.0	CS-134, BI-207
3	1210.24	604.74	1.56	538.	6009.	2.8	CS-134
4	1324.02	661.62	1.61	411.	9135.	2.2	CS-137
4B		661.85			36.	13.9	
5C	1592.20	795.70	1.70	294.	4266.	3.8	CS-134
6C	1604.37	801.78	1.70	287.	428.	14.5	CS-134
7	2346.50	1172.80	1.99	275.	3765.	3.5	CO-60
8	2664.92	1332.01	2.09	36.	3542.	3.3	CO-60
8B		1332.24			9.	37.4	
9	2730.60	1364.85	1.63	14.	120.	20.8	CS-134
10	2921.58	1460.33	2.19	18.	162.	17.8	K-40
10B		1460.85			156.	3.8	

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 BK0012
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 30-AUG-88 AT 16:46:00
BACKGROUND LIVE TIME: 60000. SECONDS

222-S COUNTING ROOM 20-SEP-90 12:51:22

SAMPLE: F926
DATA COLLECTED ON 26-JAN-90 AT 13:38:21
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<1.14E+00		LLD<1.14E+00		911.07	
AG-108M	LLD<2.89E-01		LLD<2.89E-01		433.94	
AG-110M	LLD<1.42E+00		LLD<1.42E+00		657.76	
AM-241	LLD<1.32E+00		LLD<1.32E+00		59.54	
AM-243	LLD<3.44E-01		LLD<3.44E-01		74.67	
AR-41	LLD<1.87E-01		LLD<1.87E-01		1293.64	
AU-198	LLD<2.57E-01		LLD<2.57E-01		411.80	
BA-133	LLD<3.45E-01		LLD<3.45E-01		356.02	
BA-139	LLD<7.18E-01		LLD<7.18E-01		165.85	
BA-140	LLD<1.02E+00		LLD<1.02E+00		537.27	
BA-141	LLD<7.26E-01		LLD<7.26E-01		190.23	
BE-7	LLD<2.43E+00		LLD<2.43E+00		477.59	
BI-207	LLD<2.58E-01		LLD<2.58E-01		569.70	
BI-212	LLD<3.80E+00		LLD<3.80E+00		727.27	
BI-214	LLD<2.00E+00		LLD<2.00E+00		609.32	
CD-109	LLD<4.44E+00		LLD<4.44E+00		88.03	
CE-139	LLD<1.62E-01		LLD<1.62E-01		165.85	
CE-141	LLD<2.60E-01		LLD<2.60E-01		145.44	
CEPR144	LLD<2.12E+00		LLD<2.12E+00		133.51	
CO-56	LLD<2.69E-01		LLD<2.69E-01		846.76	
CO-57	LLD<1.34E-01		LLD<1.34E-01		122.06	
CO-58	LLD<2.47E-01		LLD<2.47E-01		810.75	
CO-60	2.32E+01	+-8.27E-01	2.32E+01	+-8.27E-01	1332.50	-0.49
					1173.24	-0.43
CR-51	LLD<1.96E+00		LLD<1.96E+00		320.09	
CS-134	2.15E+01	+-8.53E-01	2.15E+01	+-8.53E-01	795.84	-0.15
					604.70	0.05
CS-136	LLD<2.60E-01		LLD<2.60E-01		818.51	
CS-137	3.93E+01	+-9.81E-01	3.93E+01	+-9.81E-01	661.65	-0.03
CS-138	LLD<2.50E-01		LLD<2.50E-01		1435.86	
EU-152	LLD<6.78E-01		LLD<6.78E-01		1408.01	
EU-154	LLD<4.85E-01		LLD<4.85E-01		1274.45	
EU-155	LLD<6.07E-01		LLD<6.07E-01		105.31	
FE-59	LLD<5.62E-01		LLD<5.62E-01		1099.25	
HF-181	LLD<2.93E-01		LLD<2.93E-01		482.20	
HG-203	LLD<2.08E-01		LLD<2.08E-01		279.20	
I-131	LLD<2.67E-01		LLD<2.67E-01		364.48	
I-132	LLD<6.51E-01		LLD<6.51E-01		667.69	
I-133	LLD<2.66E-01		LLD<2.66E-01		529.69	
I-134	LLD<4.14E-01		LLD<4.14E-01		847.03	
I-135	LLD<6.96E-01		LLD<6.96E-01		1260.41	
K-40	LLD<2.21E+00		LLD<2.21E+00		1460.75	
KR-85	LLD<5.96E+01		LLD<5.96E+01		513.99	
KR-85M	LLD<1.68E-01		LLD<1.68E-01		151.17	
KR-87	LLD<5.82E-01		LLD<5.82E-01		402.58	
KR-89	LLD<8.62E+00		LLD<8.62E+00		220.90	
LA-140	LLD<1.33E-01		LLD<1.33E-01		1596.20	

LA-142	LLD<5.92E-01	LLD<5.92E-01	641.83
MN-54	LLD<2.60E-01	LLD<2.60E-01	834.83
MN-56	LLD<3.03E-01	LLD<3.03E-01	846.76
NA-22	LLD<1.72E-01	LLD<1.72E-01	1274.55
NA-24	LLD<2.04E-01	LLD<2.04E-01	1368.60
NB-94	LLD<2.20E-01	LLD<2.20E-01	702.63
NB-95	LLD<2.30E-01	LLD<2.30E-01	765.78
NB-97	LLD<1.61E+00	LLD<1.61E+00	657.92
NP-238	LLD<1.13E+00	LLD<1.13E+00	984.45
NP-239	LLD<1.33E+00	LLD<1.33E+00	277.60
PA-233	LLD<4.97E-01	LLD<4.97E-01	311.98
PA-234M	LLD<5.12E+01	LLD<5.12E+01	1001.03
PB-210	LLD<6.21E+00	LLD<6.21E+00	465.03
PB-212	LLD<3.98E-01	LLD<3.98E-01	239.00
PB-214	LLD<5.59E-01	LLD<5.59E-01	351.92
PO-210	LLD<2.35E+04	LLD<2.35E+04	804.00
PO-214	LLD<1.03E+04	LLD<1.03E+04	799.70
PO-216	LLD<1.83E+04	LLD<1.83E+04	804.90
PU-239	LLD<1.93E+03	LLD<1.93E+03	129.30
PU-241	LLD<6.20E+04	LLD<6.20E+04	148.57
RA-224	LLD<4.16E+00	LLD<4.16E+00	240.99
RA-226	LLD<3.93E+00	LLD<3.93E+00	186.10
RB-88	LLD<8.49E-01	LLD<8.49E-01	1836.00
RB-89	LLD<1.41E+00	LLD<1.41E+00	1031.88
RN-220	LLD<2.34E+02	LLD<2.34E+02	549.73
RU-103	LLD<2.49E-01	LLD<2.49E-01	497.08
RURH106	LLD<4.90E+00	LLD<4.90E+00	621.80
SB-124	LLD<4.86E-01	LLD<4.86E-01	602.72
SB-125	LLD<2.03E+00	LLD<2.03E+00	176.33
SC-46	LLD<3.26E-01	LLD<3.26E-01	1120.45
SE-75	LLD<3.07E-01	LLD<3.07E-01	264.66
SN-113	LLD<3.69E-01	LLD<3.69E-01	391.67
SR-85	LLD<2.62E-01	LLD<2.62E-01	513.99
SR-91	LLD<4.59E-01	LLD<4.59E-01	555.60
SR-92	LLD<1.47E-01	LLD<1.47E-01	1383.94
TA-182	LLD<8.84E-01	LLD<8.84E-01	1121.30
TC-99M	LLD<1.38E-01	LLD<1.38E-01	140.51
TE-123M	LLD<1.57E-01	LLD<1.57E-01	159.00
TE-125M	LLD<4.28E+01	LLD<4.28E+01	109.27
TE-132	LLD<1.81E-01	LLD<1.81E-01	228.16
TH-228	LLD<1.42E+01	LLD<1.42E+01	84.37
TL-208	LLD<3.23E-01	LLD<3.23E-01	583.14
U-235	LLD<2.61E-01	LLD<2.61E-01	185.71
U-237	LLD<7.44E-01	LLD<7.44E-01	208.00
W-187	LLD<8.46E-01	LLD<8.46E-01	685.74
XE-131M	LLD<6.89E+00	LLD<6.89E+00	163.98
XE-133	LLD<4.98E-01	LLD<4.98E-01	81.00
XE-133M	LLD<1.64E+00	LLD<1.64E+00	233.21
XE-135	LLD<1.89E-01	LLD<1.89E-01	249.79
XE-138	LLD<1.41E+00	LLD<1.41E+00	258.41
Y-88	LLD<8.05E-02	LLD<8.05E-02	1836.06
Y-91	LLD<7.12E+01	LLD<7.12E+01	1204.90
Y-91M	LLD<3.47E-01	LLD<3.47E-01	555.60
ZN-65	LLD<7.13E-01	LLD<7.13E-01	1115.55
ZR-95	LLD<4.21E-01	LLD<4.21E-01	756.73
ZR-97	LLD<2.38E-01	LLD<2.38E-01	743.33
TOTAL	8.40E+01 +-1.54E+00	8.40E+01 +-1.54E+00	

STANDARD DEVIATION = 0.24

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.46E-09 UC/LI
TOTAL MEASURED ACTIVITY = 8.40E+01 (+-1.54E+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
1127.26	563.26	571.	13.0	3.37E+01
1139.41	569.33	1018.	11.0	6.06E+01
1604.37	801.78	428.	14.5	3.43E+01
2730.60	1364.85	120.	20.8	1.48E+01

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2921.58	1460.33	162.	17.8	2.12E+01

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	WA77344
Procedure/Rev	LA-925-106/A-1
Technologist	R. D. Hale
Date	01-26-90
Temperature	24 C
Starting Time	10:00
Ending Time	11:00
Chemist	S. A. Catlow

Uranium Analysis

Fusion Dissolution

	Description	Lab ID
1	Initial LMCS Check Std	F0897
2	Reagent Blank	F0922
3	Sample Composite 5	F0899
4	Duplicate Composite 5	F0900
5	Sample Composite 6	F0923
6	Duplicate Composite 6	F0924
7	Spike Composite 6	F0925
8	Final LMCS Check Std	F0926
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	58838 / 1 uL			5.7 mL
Spike	58838 / 1 uL	F0899/ 1 uL		5.8 mL

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

Analytical Batch

Lab Segment Serial #:F0917

Customer ID: Core 6 Composite

Instrument	E60044
Procedure/Rev	LA-503-156/C-2
Technologist	R. D. Hale
Date	02-08-90
Temperature	23 C
Starting Time	09:00; 02-07-90
Ending Time	15:00; 02-08-90
Chemist	S. A. Catlow

Americium Analysis

Fusion Dissolution

	Description		Lab ID
1	Initial LMCS Check Std		F0897
2	Reagent Blank		F0946
3	Sample	Composite 5	F0899
4	Duplicate	Composite 5	F0900
5	Sample	Composite 5	F0905
6	Duplicate	Composite 5	F0906
7	Sample	Composite 6	F0923
8	Duplicate	Composite 6	F0924
9	Sample	Composite 6	F0929
10	Duplicate	Composite 6	F0930
11	Sample	Composite 8	F0947

	Description		Lab ID
12	Duplicate	Composite 8	F0948
13	Sample	Composite 8	F0953
14	Duplicate	Composite 8	F0954
15	Spike	Composite 5	F0949
16	Final LMCS Check Std		F0950
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	16B43/100 uL			N/A
Spike	16B43/100 uL	F0947/1 mL		N/A

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

AEA ENERGY CALIBRATION

	TECH/ SHIFT	DATE	BELL #1	BELL #2	BELL#3	BELL #4	BELL #5	BELL #6	BELL #7	BELL #8
Np-237	VR/D	2/3/90	83	151	151	152	155	156	out	153
Pu 239/240		2/3/90	111	229	229	230	232	233	of	232
Am-241/Pu238		2/3/90	137	301	301	301	303	303	service	303
Cm-243/Cm-244		2/3/90	161	367	368	368	369	369		370
Np-237	AJ/D	2/4/90	83	151	150	152	152	154	out	150
Pu-239/240		2/4/90	110	229	228	230	230	231	of	229
Am-241/Pu-238		2/4/90	136	300	300	300	301	301	service	300
Cm-243/Cm-244		2/4/90	160	367	366	367	367	367		368
Np-237	AJ/D	2/5/90	82	149	148	150	153	155	out	151
Pu-239/240		2/5/90	110	228	226	228	231	231	of	230
Am-241/Pu-238		2/5/90	135	229	298	299	301	302	service	301
Cm-243/Cm-244		2/5/90	159	365	365	366	368	367		368
Np-237	VR/D	2/7/90	82	149	149	150	153	154	out	151
Pu-239/240		2/7/90	110	227	227	228	230	231	of	230
Am-241/Pu-238		2/7/90	135	298	299	298	301	301	service	301
Cm-243/Cm-244		2/7/90	159	364	365	365	367	367		368
Np-237	VR/D	2/8/90	81	150	150	152	155	156	out	152
Pu-239/240		2/8/90	109	227	228	230	232	233	of	231
Am-241/Pu-238		2/8/90	135	298	299	300	303	303	service	302
Cm-243/Cm-244		2/8/90	158	365	365	366	369	368		370
Np-237	VR/D	2/9/90	81	149	149	150	152	153	out	151
Pu-239/240		2/9/90	109	227	228	228	230	230	of	230
Am-241/Pu-238		2/9/90	135	299	299	299	301	300	service	301
Cm-243/Cm-244		2/9/90	159	365	366	365	367	366		369
Np-237	AJ/C	2/10/90	82	149	148	151	153	155	out	151
Pu-239/240		2/10/90	110	227	227	229	231	232	of	230
Am-241/Pu-238		2/10/90	136	299	298	300	302	302	service	302
Cm-243/Cm-244		2/10/90	160	365	365	366	368	367		369

F897-6582

GENERAL ALPHA ENERGY ANALYSIS
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F 897 SEC.COMP#7 6M
File ID: SD2726.SPC

Counted on: 2/13/90 @ 0: 0
Detector/Geometry number: 2/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2841.1	2830.9	298.349	298.349	24.000	16.162	12.000	5.953
2	3932.2	3937.6	253.170	253.170	20.000	13.999	10.000	4.917

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Pu238	0.4269	5.499	5.509	-0.010	0.08	63.53	1399.46	0.626E-03
	Am241		5.480	5.509	-0.029				0.479E-03
2		0.5731		5.297		0.07	85.29	1343.14	0.605E-03

DETECTOR CALIBRATION

Energy(MEV) = 4.107 + (0.0047)*Channel
Energy range (MeV): 4.107 TO 6.514
Efficiency = 0.0635 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	75197.0	100.000
Smoothed	75196.7	100.000
Composite fit	74407.8	98.950
Residuals	788.9	1.049

Analyzed by: _____
MAX

F897-6582

Raw Data Dump for GEA Spectrum: SP1SD2726.SPC

1	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
11	0.	0.	3.	1.	1.	2.	0.	0.	1.	1.
21	0.	2.	0.	0.	0.	3.	0.	2.	0.	2.
31	0.	1.	2.	1.	0.	3.	1.	3.	0.	0.
41	2.	1.	2.	1.	0.	1.	0.	0.	2.	0.
51	1.	3.	2.	1.	1.	2.	1.	1.	0.	0.
61	2.	3.	0.	1.	2.	2.	0.	1.	2.	1.
71	1.	1.	2.	0.	4.	3.	0.	2.	1.	1.
81	0.	0.	3.	1.	1.	3.	1.	0.	1.	2.
91	1.	1.	0.	0.	3.	1.	1.	5.	1.	3.
101	0.	2.	2.	1.	0.	0.	0.	1.	0.	2.
111	1.	3.	1.	1.	4.	2.	6.	2.	2.	0.
121	3.	2.	4.	2.	2.	2.	1.	4.	1.	3.
131	1.	2.	1.	1.	0.	4.	0.	2.	4.	2.
141	3.	5.	3.	2.	4.	1.	3.	1.	3.	0.
151	5.	4.	4.	0.	5.	1.	3.	2.	4.	5.
161	5.	5.	2.	5.	5.	4.	4.	7.	5.	3.
171	5.	7.	9.	8.	9.	9.	4.	3.	8.	8.
181	7.	6.	8.	8.	12.	10.	16.	11.	20.	12.
191	10.	12.	8.	19.	19.	24.	16.	11.	18.	29.
201	29.	25.	27.	33.	30.	33.	54.	49.	54.	52.
211	51.	63.	71.	83.	82.	88.	97.	95.	124.	150.
221	133.	181.	173.	204.	215.	224.	237.	237.	281.	330.
231	331.	354.	403.	433.	533.	506.	580.	676.	789.	843.
241	946.	1078.	1170.	1345.	1457.	1612.	1749.	1823.	2038.	2181.
251	2189.	2326.	2241.	2102.	1961.	1704.	1479.	1218.	972.	729.
261	589.	448.	393.	342.	265.	225.	192.	180.	203.	151.
271	145.	137.	171.	170.	185.	209.	236.	259.	274.	332.
281	396.	421.	508.	541.	628.	660.	766.	872.	995.	1063.
291	1157.	1288.	1385.	1402.	1481.	1579.	1557.	1612.	1547.	1444.
301	1185.	1132.	923.	796.	635.	528.	407.	333.	242.	160.
311	130.	99.	75.	57.	45.	29.	18.	12.	5.	2.
321	2.	4.	0.	1.	0.	1.	1.	1.	0.	0.
331	1.	1.	2.	1.	2.	2.	1.	1.	2.	2.
341	3.	1.	4.	4.	3.	0.	0.	0.	2.	0.
351	1.	2.	3.	1.	0.	0.	0.	0.	2.	0.
361	0.	0.	1.	0.	0.	3.	1.	0.	1.	0.
371	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.
421	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.
431	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	1.	0.	0.	2.	0.
471	1.	0.	1.	1.	0.	1.	0.	1.	0.	1.
481	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
511	0.	0.								

F897.-6582

SPECTRUM SD2726.SPC

1 LEGEND: RAW = ... MODELED PEAKS = 1,2,..., ETC 15192.4

```
2.
...2
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1.......................................2
..1...2.....
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G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F946 AM
File ID: SD3956.SPC

Counted on: 2/12/90 @15: 0
Detector/Geometry number: 3/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	4.9	4.3	353.061	353.061	24.000	27.195	12.000	4.586
2	122.1	47.0	296.965	296.965	12.000	0.111	6.000	4.586
3	2724.3	2794.8	253.936	253.936	24.000	18.856	12.000	4.432
4	4.3	3.1	108.136	108.136	72.000	295.052	36.000	17.485

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Ra224	0.0020	5.680	5.715	-0.035	0.13	0.15	0.82	0.368E-06
2	Th228	0.0007	5.430	5.445	-0.015	0.00	0.05	0.38	0.171E-06
3	Am243	0.9935	5.234	5.239	-0.005	0.09	78.29	3533.97	0.159E-02
4	U 235	0.0038	4.396	4.539	-0.143	1.42	0.30	2.64	0.119E-05

DETECTOR CALIBRATION

Energy(MEV) = 4.020 + (0.0048)*Channel
Energy range (MeV): 4.020 TO 6.477
Efficiency = 0.2014 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	39211.0	100.000
Smoothed	39209.6	99.996
Composite fit	39401.6	100.486
Residuals	-192.0	-0.490

Analyzed by: _____
MAX

Raw Data Dump for AEA Spectrum: SP:SD3956.SPC

1	0.	0.	0.	0.	0.	2.	0.	2.	0.	0.
11	1.	1.	0.	0.	1.	1.	0.	0.	0.	1.
21	3.	2.	1.	0.	0.	0.	3.	1.	1.	1.
31	3.	0.	1.	2.	0.	0.	1.	1.	0.	1.
41	0.	1.	2.	4.	1.	0.	1.	1.	0.	1.
51	0.	0.	3.	0.	0.	0.	1.	0.	0.	0.
61	0.	0.	1.	3.	1.	1.	1.	1.	1.	2.
71	0.	1.	1.	4.	2.	1.	0.	3.	3.	2.
81	1.	1.	1.	0.	0.	3.	2.	1.	0.	0.
91	1.	0.	0.	1.	1.	0.	0.	2.	3.	0.
101	1.	2.	2.	3.	3.	1.	4.	4.	1.	0.
111	2.	3.	2.	1.	1.	1.	2.	0.	4.	3.
121	1.	1.	1.	1.	2.	0.	3.	3.	3.	1.
131	2.	2.	3.	1.	5.	2.	2.	5.	1.	2.
141	3.	0.	1.	4.	3.	4.	2.	3.	2.	2.
151	3.	3.	3.	1.	2.	9.	2.	3.	3.	3.
161	5.	8.	6.	9.	0.	4.	5.	5.	7.	7.
171	5.	11.	2.	5.	5.	8.	12.	7.	8.	6.
181	11.	13.	15.	17.	9.	15.	21.	19.	14.	20.
191	28.	26.	22.	24.	31.	47.	38.	33.	49.	42.
201	42.	43.	40.	50.	57.	48.	62.	66.	86.	70.
211	84.	95.	99.	130.	148.	116.	141.	174.	159.	214.
221	197.	216.	235.	228.	257.	304.	342.	330.	370.	386.
231	442.	468.	496.	541.	546.	628.	598.	665.	778.	826.
241	863.	911.	967.	1074.	1099.	1169.	1251.	1278.	1305.	1377.
251	1445.	1512.	1452.	1456.	1360.	1349.	1273.	1129.	961.	830.
261	725.	583.	443.	341.	246.	222.	159.	122.	101.	72.
271	65.	43.	44.	39.	28.	13.	14.	6.	9.	5.
281	6.	6.	3.	0.	6.	5.	8.	2.	9.	5.
291	9.	4.	8.	5.	3.	5.	5.	10.	8.	9.
301	2.	6.	2.	1.	5.	3.	2.	5.	1.	1.
311	1.	2.	0.	0.	2.	0.	0.	1.	0.	2.
321	0.	0.	3.	1.	1.	0.	1.	0.	2.	1.
331	0.	2.	0.	1.	0.	2.	1.	1.	1.	2.
341	3.	1.	0.	1.	0.	2.	2.	3.	2.	4.
351	2.	5.	2.	0.	1.	4.	2.	3.	1.	0.
361	1.	0.	1.	0.	2.	1.	1.	0.	1.	0.
371	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.
421	0.	0.	0.	0.	0.	3.	0.	1.	1.	0.
431	0.	1.	1.	0.	1.	2.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
471	0.	0.	1.	0.	2.	2.	1.	2.	2.	3.
481	1.	0.	0.	1.	0.	0.	0.	0.	1.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

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          SPECTRUM SD3956.SPC
1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..., ETC                10532.2

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G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-923 SEG.COMP#9 AM
File ID: SD5632.SPC

Counted on: 2/27/90 @20: 0
Detector/Geometry number: 5/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	4.5	3.7	351.308	351.308	16.000	30.000	8.000	0.000
2	517.3	510.9	304.505	304.505	24.000	12.970	12.000	4.630
3	2043.4	2035.1	258.774	258.774	24.000	11.834	12.000	4.467

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Ra224	0.0250	5.680	5.746	-0.066	0.14	1.32	6.03	0.272E-05
	Pu236		5.756	5.746	0.010				0.261E-05
2	Pu238	0.2035	5.499	5.526	-0.027	0.06	10.74	64.03	0.288E-04
3		0.7714		5.311		0.06	40.71	174.74	0.787E-04

DETECTOR CALIBRATION
Energy(MEV) = 4.094 + (0.0047)*Channel
Energy range (MeV): 4.094 TO 6.501
Efficiency = 0.2330 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	26795.0	100.000
Smoothed	26794.0	99.996
Composite fit	26388.3	98.482
Residuals	405.7	1.514

Analyzed by: _____
VR

```
          SPECTRUM SD5632.SPC
1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,.., ETC              7368.7
1
1
1
1
1
1
1
1
1
1
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1
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1
1
1
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1
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1
1
1
3.
1..3
1........3
1......................3
1.................................................3.
1.......................................................................3.
1.......................3.
23....
1.2
1......2
1...............2
1..............2
1..2
1
1
1
1
1
1
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Raw Data Dump for AEA Spectrum: SP:SD5632.SPC

1	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
11	2.	0.	0.	0.	1.	1.	0.	0.	0.	0.
21	0.	1.	0.	1.	1.	1.	0.	0.	1.	0.
31	0.	0.	1.	0.	2.	0.	2.	0.	2.	0.
41	1.	2.	1.	2.	0.	2.	1.	0.	1.	0.
51	0.	2.	0.	1.	0.	2.	0.	0.	1.	0.
61	1.	0.	1.	0.	0.	1.	0.	0.	0.	0.
71	3.	1.	2.	0.	1.	0.	1.	0.	0.	0.
81	1.	1.	3.	0.	1.	1.	1.	0.	1.	0.
91	1.	1.	0.	1.	0.	1.	0.	0.	1.	1.
101	2.	1.	2.	1.	0.	1.	2.	1.	2.	2.
111	1.	0.	1.	0.	0.	2.	1.	1.	1.	1.
121	1.	0.	1.	2.	3.	2.	1.	3.	0.	0.
131	2.	0.	4.	1.	3.	0.	1.	2.	2.	3.
141	3.	0.	0.	2.	0.	3.	3.	1.	1.	2.
151	3.	1.	2.	2.	3.	5.	0.	6.	2.	4.
161	3.	1.	3.	3.	4.	4.	1.	5.	6.	2.
171	1.	4.	6.	7.	3.	8.	3.	6.	4.	6.
181	8.	3.	6.	6.	7.	5.	7.	8.	11.	7.
191	11.	6.	13.	9.	11.	13.	17.	12.	19.	12.
201	17.	10.	17.	20.	7.	24.	14.	26.	16.	17.
211	16.	33.	20.	26.	21.	25.	25.	27.	40.	32.
221	42.	38.	44.	43.	56.	67.	59.	62.	82.	70.
231	91.	79.	122.	113.	132.	140.	176.	171.	173.	217.
241	222.	279.	279.	354.	366.	398.	503.	515.	607.	656.
251	704.	785.	883.	1002.	1024.	1132.	1184.	1242.	1187.	1146.
261	928.	795.	554.	461.	349.	217.	173.	132.	107.	95.
271	84.	80.	73.	70.	66.	41.	29.	38.	40.	37.
281	27.	34.	44.	49.	43.	58.	58.	83.	65.	77.
291	96.	117.	125.	128.	174.	164.	218.	196.	240.	251.
301	285.	249.	350.	286.	297.	249.	227.	205.	155.	110.
311	90.	72.	55.	50.	31.	22.	13.	14.	11.	4.
321	2.	2.	3.	2.	1.	0.	2.	1.	0.	1.
331	0.	3.	0.	1.	1.	1.	0.	0.	0.	1.
341	1.	0.	2.	3.	1.	1.	2.	3.	2.	1.
351	2.	6.	1.	1.	0.	1.	2.	0.	1.	1.
361	1.	0.	1.	1.	0.	2.	0.	1.	0.	1.
371	0.	1.	0.	0.	0.	0.	2.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	0.	0.	0.	1.	0.	1.
421	0.	2.	0.	0.	0.	0.	0.	2.	1.	1.
431	1.	0.	2.	1.	1.	0.	0.	1.	1.	2.
441	2.	0.	1.	0.	1.	0.	0.	0.	1.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	1.	0.	0.	0.	0.	0.	0.	0.	2.	2.
481	1.	2.	2.	1.	1.	1.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	1.								

P924-0102

GENERAL ALPHA ENERGY ANALYSIS
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-924 SEG.COMP@10 AM
File ID: S03959.SPC

Counted on: 2/13/90 @10: 0
Detector/Geometry number: 3/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	420.2	406.6	300.515	300.515	28.000	21.820	14.000	2.509
2	1095.7	1009.7	254.925	254.925	28.000	21.600	14.000	1.623
3	48.5	43.0	44.953	44.953	320.000	269.005	160.000	175.350

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Th228	0.2196	5.430	5.462	-0.032	0.10	17.90	125.21	0.564E-04
	Am241		5.480	5.462	0.018				0.426E-04
2	Am243	0.7433	5.234	5.244	-0.010	0.10	60.60	2735.46	0.123E-02
3	U 238	0.0371	4.200	4.236	-0.036	1.29	3.03	19.53	0.880E-05

DETECTOR CALIBRATION
Energy(MEV) = 4.020 + (0.0048)*Channel
Energy range (MeV): 4.020 TO 6.477
Efficiency = 0.2014 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	43176.0	100.000
Smoothed	43160.9	99.965
Composite fit	40767.4	94.421
Residuals	2393.5	5.544

Analyzed by: _____
DM

F 724-61 82

Raw Data Dump for AEA Spectrum: SP:SD3959.SPC

1	0.	0.	0.	0.	0.	15.	11.	19.	23.	15.
11	11.	20.	21.	13.	14.	15.	21.	13.	21.	23.
21	16.	20.	19.	13.	12.	19.	20.	27.	17.	24.
31	17.	17.	26.	23.	23.	23.	26.	19.	44.	30
41	29.	44.	28.	33.	27.	32.	21.	36.	23.	31.
51	30.	40.	22.	26.	28.	27.	39.	25.	30.	39.
61	29.	33.	32.	25.	25.	32.	34.	28.	31.	40.
71	32.	43.	45.	49.	36.	41.	42.	33.	39.	28.
81	33.	43.	43.	40.	33.	48.	46.	42.	45.	46.
91	34.	45.	41.	37.	42.	52.	39.	53.	44.	48.
101	44.	59.	53.	46.	52.	66.	32.	54.	59.	49.
111	56.	52.	59.	46.	62.	70.	50.	53.	60.	50.
121	57.	70.	60.	71.	71.	81.	66.	66.	76.	74.
131	67.	74.	65.	59.	59.	62.	85.	78.	75.	72.
141	78.	76.	73.	85.	92.	92.	103.	105.	73.	96.
151	105.	96.	89.	117.	97.	101.	122.	80.	106.	115.
161	111.	108.	104.	109.	104.	130.	129.	107.	130.	141.
171	135.	130.	114.	119.	125.	134.	129.	140.	153.	138.
181	141.	131.	152.	143.	144.	167.	160.	189.	179.	161.
191	190.	160.	181.	165.	186.	189.	178.	192.	185.	172.
201	206.	196.	223.	200.	195.	211.	203.	206.	223.	253.
211	234.	224.	221.	241.	224.	254.	254.	271.	252.	255.
221	296.	307.	287.	280.	251.	283.	255.	276.	326.	273.
231	307.	289.	316.	302.	318.	334.	349.	350.	377.	388.
241	409.	450.	422.	450.	476.	476.	538.	580.	567.	581.
251	585.	614.	677.	628.	635.	625.	564.	547.	527.	490.
261	406.	334.	303.	268.	206.	175.	165.	147.	166.	129.
271	126.	112.	126.	105.	120.	114.	125.	113.	104.	109.
281	115.	96.	98.	120.	112.	124.	95.	128.	152.	172.
291	168.	183.	180.	188.	198.	212.	194.	226.	219.	263.
301	200.	224.	192.	173.	160.	150.	125.	107.	92.	75.
311	55.	46.	42.	31.	27.	20.	16.	10.	8.	5.
321	4.	1.	1.	1.	1.	0.	0.	1.	0.	1.
331	0.	0.	2.	0.	0.	2.	0.	0.	1.	1.
341	1.	3.	0.	2.	0.	0.	1.	0.	0.	0.
351	3.	0.	2.	1.	1.	2.	2.	0.	1.	0.
361	0.	0.	0.	1.	1.	0.	4.	1.	3.	0.
371	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
381	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
401	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	1.	0.	1.	1.	0.	1.
421	0.	0.	2.	1.	0.	0.	1.	1.	0.	0.
431	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
451	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	2.	1.	0.	0.	1.	0.	0.	0.
471	1.	0.	1.	2.	0.	0.	1.	0.	2.	3.
481	0.	0.	3.	0.	1.	0.	0.	0.	1.	0.
491	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

F 924.-6182

SPECTRUM SD3959.SPC

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1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..., ETC                    4600.0
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G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-949 SEG.COMP#11 AM
File ID: SD3958.SPC

Counted on: 2/13/90 @ 1: 0
Detector/Geometry number: 3/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak	Peak height		Peak center		FWHM		Tau	
ID	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	69.9	45.7	294.281	294.281	16.000	8.685	8.000	0.000
2	1416.7	1464.9	248.325	248.325	32.000	25.605	16.000	4.657
3	2.4	3.3	101.979	101.979	152.000	2.000	76.000	0.200
4	0.0	0.1	27.155	27.155	0.000	0.200	0.000	0.200

PEAK RESULTS

Peak		AEA	Peak Centroid				Count		Activity
ID	Isotope	Fract.	Exp.	Obs.	Diff.	FWHM	Rate c/m	d/m	uCi/ea
1	Th228	0.2115	5.430	5.432	-0.002	0.04	13.54	94.68	0.426E-04
2	Am243	0.7866	5.234	5.212	0.022	0.12	50.35	2272.65	0.102E-02
3		0.0019		4.509		0.01	0.12	0.61	0.274E-06
4		0.0000		4.150		0.00	0.00	0.00	0.106E-08

DETECTOR CALIBRATION
Energy(MEV) = 4.020 + (0.0048)*Channel
Energy range (MeV): 4.020 TO 6.477
Efficiency = 0.2014 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	31305.0	100.000
Smoothed	31295.7	99.970
Composite fit	32005.0	102.236
Residuals	-709.3	-2.266

Analyzed by: _____
MAX

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          SPECTRUM SD3958.SPC
 1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,.., ETC                5540.0
  1
  1
 .1
 41
 .1
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 31
 31
 31
 31
 31
 31
 31
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 21
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281	25.	24.	19.	15.	27.	27.	32.	31.	21.	17.
291	39.	32.	29.	37.	36.	39.	41.	53.	48.	46.
301	44.	39.	46.	50.	38.	25.	19.	11.	15.	14.
311	13.	10.	3.	3.	0.	1.	1.	2.	1.	1.
321	1.	2.	4.	3.	4.	8.	2.	6.	5.	12.
331	15.	11.	19.	28.	19.	44.	58.	66.	61.	79.
341	111.	133.	223.	251.	317.	337.	410.	462.	517.	649.
351	696.	725.	856.	938.	951.	1047.	1069.	1106.	1083.	981.
361	942.	817.	655.	565.	445.	311.	234.	159.	99.	75.
371	48.	23.	21.	5.	6.	0.	2.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	1.	0.	2.	2.	1.	1.
421	3.	1.	1.	1.	0.	0.	1.	3.	0.	0.
431	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
451	0.	0.	0.	2.	2.	1.	0.	2.	0.	2.
461	7.	2.	5.	2.	6.	1.	5.	4.	8.	7.
471	4.	7.	7.	2.	2.	3.	5.	1.	2.	0.
481	2.	0.	0.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Raw Data Dump for AEA Spectrum: SP:SD3958.SPC

1	0.	0.	0.	0.	0.	8.	10.	10.	11.	10.
11	11.	11.	18.	16.	6.	10.	10.	14.	7.	12.
21	16.	15.	9.	10.	17.	10.	16.	15.	9.	10.
31	9.	17.	16.	4.	11.	8.	10.	11.	16.	14.
41	17.	9.	11.	14.	14.	19.	23.	12.	11.	17.
51	18.	9.	12.	14.	20.	17.	16.	12.	18.	11.
61	18.	17.	12.	15.	8.	20.	17.	11.	17.	14.
71	12.	20.	20.	21.	20.	17.	13.	18.	16.	25.
81	17.	22.	18.	14.	24.	15.	19.	20.	14.	21.
91	27.	25.	23.	20.	22.	15.	24.	22.	30.	29.
101	24.	23.	20.	23.	29.	17.	23.	19.	26.	18.
111	22.	24.	25.	23.	29.	22.	26.	18.	24.	33.
121	24.	33.	25.	30.	29.	28.	27.	24.	31.	23.
131	19.	29.	28.	36.	31.	30.	29.	33.	27.	27.
141	28.	29.	31.	41.	32.	44.	46.	42.	28.	49.
151	54.	34.	47.	33.	31.	38.	37.	50.	42.	51.
161	51.	47.	41.	45.	60.	37.	60.	43.	44.	38.
171	37.	40.	59.	48.	55.	59.	60.	65.	57.	60.
181	53.	59.	68.	65.	64.	60.	74.	56.	86.	84.
191	68.	75.	82.	82.	76.	93.	101.	86.	95.	102.
201	110.	109.	110.	144.	129.	131.	137.	140.	152.	151.
211	155.	170.	165.	181.	183.	201.	199.	213.	208.	236.
221	216.	270.	261.	292.	303.	324.	347.	335.	400.	403.
231	396.	472.	456.	515.	498.	565.	564.	588.	650.	672.
241	661.	696.	733.	764.	768.	747.	758.	762.	760.	739.
251	693.	664.	626.	613.	511.	472.	422.	360.	297.	263.
261	177.	187.	139.	101.	85.	61.	52.	35.	41.	26.
271	25.	18.	16.	19.	17.	18.	7.	16.	12.	14.
281	13.	16.	11.	11.	10.	16.	12.	12.	14.	7.
291	9.	15.	16.	16.	17.	10.	8.	17.	9.	9.
301	5.	7.	5.	9.	5.	1.	3.	2.	2.	3.
311	1.	1.	2.	3.	1.	1.	0.	0.	2.	0.
321	2.	0.	1.	1.	0.	1.	1.	1.	2.	0.
331	0.	1.	1.	4.	2.	0.	1.	1.	2.	1.
341	1.	2.	1.	1.	0.	1.	1.	1.	2.	1.
351	1.	1.	0.	0.	1.	1.	0.	0.	0.	0.
361	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
371	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
401	0.	1.	0.	0.	1.	0.	0.	1.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	1.	0.	0.	0.	0.	2.	0.
431	0.	1.	0.	0.	0.	0.	0.	1.	0.	1.
441	1.	0.	0.	0.	1.	0.	1.	0.	0.	0.
451	0.	1.	2.	0.	0.	1.	0.	0.	0.	0.
461	0.	1.	1.	0.	1.	1.	1.			

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F950 AM
File ID: SD2724.SPC

Counted on: 2/12/90 @15: 0
Detector/Geometry number: 2/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	17.8	11.2	347.151	347.151	12.000	0.091	6.000	0.000
2	2259.9	2267.7	299.307	299.307	24.000	17.119	12.000	4.348
3	3066.1	3106.7	253.961	253.961	24.000	14.243	12.000	3.364

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Ra224	0.0265	5.680	5.713	-0.033	0.00	3.83	20.48	0.922E-05
2	Pu238	0.4131	5.499	5.488	0.011	0.08	59.70	416.86	0.188E-03
	Am241		5.480	5.488	-0.008				0.144E-03
3		0.5604		5.275		0.07	80.98	407.15	0.183E-03

DETECTOR CALIBRATION

Energy(MEV) = 4.081 + (0.0047)*Channel
Energy range (MeV): 4.081 TO 6.487
Efficiency = 0.1989 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	71370.0	100.000
Smoothed	71369.7	100.000
Composite fit	72254.9	101.240
Residuals	-885.3	-1.240

Analyzed by: _____
MAX

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          SPECTRUM SD2724.SPC
1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,.., ETC              12207.0
1
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1..2.......................................3...
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1..........2.
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1.....................................2.
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Raw Data Dump for AEA Spectrum: SP:SD2724.SPC

1	0.	0.	0.	0.	0.	0.	1.	0.	0.	3.
11	2.	1.	0.	0.	1.	0.	0.	1.	2.	0.
21	0.	0.	1.	0.	2.	0.	1.	1.	0.	2.
31	1.	1.	2.	0.	1.	0.	1.	2.	2.	1.
41	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
51	0.	0.	0.	3.	0.	1.	1.	1.	0.	2.
61	1.	0.	3.	0.	0.	0.	0.	0.	1.	1.
71	1.	3.	0.	1.	0.	0.	1.	1.	1.	3.
81	2.	1.	3.	2.	1.	3.	0.	2.	3.	1.
91	0.	3.	3.	4.	1.	3.	4.	3.	2.	2.
101	1.	0.	2.	2.	2.	5.	1.	2.	0.	0.
111	1.	0.	2.	0.	4.	0.	1.	2.	2.	0.
121	2.	4.	2.	0.	2.	1.	2.	0.	2.	4.
131	1.	0.	1.	4.	2.	3.	4.	3.	5.	4.
141	3.	4.	3.	5.	3.	2.	5.	6.	3.	5.
151	6.	5.	10.	10.	2.	4.	7.	7.	8.	7.
161	6.	9.	2.	1.	8.	6.	10.	7.	8.	11.
171	9.	10.	9.	12.	9.	20.	22.	10.	13.	17.
181	19.	17.	20.	14.	34.	24.	24.	21.	27.	31.
191	43.	42.	29.	45.	45.	46.	53.	58.	48.	65.
201	64.	60.	70.	83.	97.	82.	93.	116.	116.	107.
211	121.	147.	163.	150.	174.	187.	188.	193.	213.	215.
221	288.	298.	313.	329.	324.	372.	383.	403.	413.	443.
231	449.	479.	519.	562.	548.	572.	626.	662.	750.	843.
241	894.	933.	1006.	1146.	1214.	1338.	1373.	1513.	1536.	1619.
251	1686.	1740.	1708.	1741.	1678.	1583.	1410.	1245.	1020.	842.
261	701.	564.	388.	337.	309.	280.	270.	278.	227.	222.
271	211.	244.	256.	239.	264.	270.	296.	300.	339.	359.
281	435.	446.	466.	483.	567.	652.	671.	675.	733.	854.
291	934.	972.	1045.	1059.	1103.	1226.	1223.	1235.	1222.	1260.
301	1132.	1017.	891.	839.	693.	545.	470.	350.	298.	222.
311	171.	115.	93.	70.	50.	40.	21.	12.	8.	7.
321	3.	3.	0.	3.	0.	1.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	1.	2.	4.	2.	1.
341	1.	1.	2.	3.	1.	5.	1.	2.	1.	2.
351	2.	2.	1.	0.	0.	0.	1.	2.	0.	0.
361	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
371	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
381	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	1.	2.	1.	2.	0.	0.	0.	0.
431	1.	2.	0.	0.	1.	0.	1.	0.	0.	0.
441	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
461	2.	1.	0.	1.	0.	0.	0.	0.	2.	0.
471	0.	0.	1.	1.	1.	4.	1.	0.	1.	0.
481	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	WA77390
PROCEDURE/REV	LA-378-103/A-2
TECHNOLOGIST	R. Hale
DATE	7-09-90
TEMPERATURE	24 C
STARTING TIME	09:00
ENDING TIME	15:00
CHEMIST	S. A. Catlow

Iodine 129 Analysis

Fusion Dissolution

(*) Total volume sent for counting.

	DESCRIPTION		LAB ID
1	Initial LMCS Check Std		F0921
2	Reagent Blank		F0922
3	Sample	Composite 6	F0923
4	Duplicate	Composite 6	F0924
5	Sample	Composite 13	F1073
6	Duplicate	Composite 13	F1074
7	Spike	Composite 13	F1075
8	Final LMCS Check Std		F1076
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	38B46/1 mL			*2 mL
Spike	38B46/1 mL	F0923/1mL		*2 mL

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

Single Shell Tank
Calibration Record

Analyte:	I-129		
Procedure:	LQ-508-003	Revision:	B-1
Instrument:	Jupiter Canberra	Property Number:	401934
Technologist:	J. L. Anderson	Payroll Number:	61413
Date:	January 9, 1989		

Calibration Standard ID: 104B16A:105B16A

Analyte Concentration: N/A

Type of Calibration: Efficiency

Comments:

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

POOR COPY RECEIVED

POOR COPY RECEIVED

[illegible] 121, ISOTOPE FILE

[illegible]	Isotope	Half-life	MPC Value	Calc.Limit
	Energy	Abs.Int.(%)		
1	I 129	[illegible]	---	---
	39.6	7.50		
2	[illegible]	[illegible]	---	[illegible]
	69.5	35.90		
3	[illegible]	[illegible]	---	[illegible]
	74.7	66.00		
4	[illegible] 125	1001.40	---	[illegible]
	176.3	6.80		
5	[illegible]	[illegible]	---	[illegible]
	136.0	59.00		
	121.1	17.30		

Maximum Energy Error for Isotope Peak Identification = 1.5 KeV

MPC values are corrected for decay.

Command-- ?

POOR COPY RECEIVED

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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

05-SEP-9013:28:02

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: 4.0
DETECTOR NUMBER: 6 / GEOMETRY NUMBER: 1
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 95.0%
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: SD6231
ANALYZED BY: 61453

SAMPLE DESCRIPTION: F-921-6585
GEOMETRY DESCRIPTION: I-129/CULTURE TUBE
SAMPLE SIZE: 1.0000E+00 EA / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL129

COLLECT STARTED ON 9-JUL-90 AT 18:49:11

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3003. SECONDS
DEAD TIME: 0.10 %

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

ENERGY CALIBRATION PERFORMED 21-JUN-90
EFFICIENCY CALIBRATION PERFORMED 18-JUN-90

05-SEP-9013:28:02

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	149.32	29.72	1.63	680.	8924.	2.6	
2C	169.76	33.81	1.63	454.	2002.	5.0	CE-144
3	199.69	39.79	1.54	166.	1259.	6.9	I-129,BI-212, CE-144

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 95.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0024
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 5-JUN-90 AT 13:00:00
BACKGROUND LIVE TIME: 3000. SECONDS
BACKGROUND WAS INSIGNIFICANT

05-SEP-9013:28:02

SAMPLE: F-921-6585
DATA COLLECTED ON 9-JUL-90 AT 18:49:11
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/EA MEASURED	ERROR	DECAY CORRECTED	ERROR	ENERGY COMPARISON (KEV) EXPECT	DIFF
AM-241	LLD<1.95E-06		LLD<1.95E-06		59.54	
AM-243	LLD<7.94E-07		LLD<7.94E-07		74.67	
I-129	2.90E-04	+-2.00E-05	2.90E-04	+-2.00E-05	39.60	0.19
SB-125	LLD<1.87E-05		LLD<1.87E-05		176.33	
SE-75	LLD<1.63E-06		LLD<1.63E-06		136.00	
SN-113	LLD<3.23E-06		LLD<3.23E-06		391.67	
TOTAL	2.90E-04	+-2.00E-05	2.90E-04	+-2.00E-05		

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 5.77E-03 UC/EA
TOTAL MEASURED ACTIVITY = 2.90E-04 (+-2.00E-05) UC/EA
% TECH. SPEC. = 5.04 (+-0.35)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 95.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
149.32	29.72	8924.	2.6	1.23E+01
169.76	33.81	2002.	5.0	1.87E+00

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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

05-SEP-9013:32:50

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: 4.0
DETECTOR NUMBER: 6 / GEOMETRY NUMBER: 1
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 95.0%
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: SD6232
ANALYZED BY: 61453

SAMPLE DESCRIPTION: F-922-6385
GEOMETRY DESCRIPTION: I-129/CULTURE TUBE
SAMPLE SIZE: 1.0000E+00 EA / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL129

COLLECT STARTED ON 9-JUL-90 AT 19:53:27

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3003. SECONDS
DEAD TIME: 0.10 %

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

ENERGY CALIBRATION PERFORMED 21-JUN-90
EFFICIENCY CALIBRATION PERFORMED 18-JUN-90

05-SEP-9013:32:50

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

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 95.0%

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0024
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 5-JUN-90 AT 13:00:00
BACKGROUND LIVE TIME: 3000. SECONDS
BACKGROUND WAS INSIGNIFICANT

05-SEP-9013:32:50

SAMPLE: F-922-6385
DATA COLLECTED ON 9-JUL-90 AT 19:53:27
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/EA				ENERGY COMPARISON (KEV)	
	MEASURED	ERROR	DECAY CORRECTED	ERROR	EXPECT	DIFF
AM-241	LLD<1.77E-06		LLD<1.77E-06		59.54	
AM-243	LLD<8.73E-07		LLD<8.73E-07		74.67	
I-129	LLD<1.50E-05		LLD<1.50E-05		39.60	
SB-125	LLD<2.29E-05		LLD<2.29E-05		176.33	
SE-75	LLD<1.53E-06		LLD<1.53E-06		136.00	
SN-113	LLD<3.44E-06		LLD<3.44E-06		391.67	
TOTAL	0.00E-01	+-0.00E-01	0.00E-01	+-0.00E-01		

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 95.0%

ALL DETECTED PEAKS WERE USED IN THE ANALYSIS

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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

05-SEP-9013:35:05

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: 4.0
DETECTOR NUMBER: 6 / GEOMETRY NUMBER: 1
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 95.0%
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: SD6233
ANALYZED BY: 61453

SAMPLE DESCRIPTION: F-923-6085
GEOMETRY DESCRIPTION: I-129/CULTURE TUBE
SAMPLE SIZE: 1.0000E+00 EA / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL129

COLLECT STARTED ON 9-JUL-90 AT 21:15:44

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3003. SECONDS
DEAD TIME: 0.10 %

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

ENERGY CALIBRATION PERFORMED 21-JUN-90
EFFICIENCY CALIBRATION PERFORMED 18-JUN-90

05-SEP-9013:35:05

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

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 95.0%

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0024
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 5-JUN-90 AT 13:00:00
BACKGROUND LIVE TIME: 3000. SECONDS
BACKGROUND WAS INSIGNIFICANT

05-SEP-9013:35:05

SAMPLE: F-923-6085
DATA COLLECTED ON 9-JUL-90 AT 21:15:44
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/EA				ENERGY COMPARISON (KEV)	
	MEASURED	ERROR	DECAY CORRECTED	ERROR	EXPECT	DIFF
AM-241	LLD<1.63E-06		LLD<1.63E-06		59.54	
AM-243	LLD<9.31E-07		LLD<9.31E-07		74.67	
I-129	LLD<1.53E-05		LLD<1.53E-05		39.60	
SB-125	LLD<1.52E-05		LLD<1.52E-05		176.33	
SE-75	LLD<1.82E-06		LLD<1.82E-06		136.00	
SN-113	LLD<4.16E-06		LLD<4.16E-06		391.67	
TOTAL	0.00E-01	+-0.00E-01	0.00E-01	+-0.00E-01		

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 95.0%

ALL DETECTED PEAKS WERE USED IN THE ANALYSIS

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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

05-SEP-9013:37:03

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: 4.0
DETECTOR NUMBER: 6 / GEOMETRY NUMBER: 1
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 95.0%
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: SD6234
ANALYZED BY: 61453

SAMPLE DESCRIPTION: F-924-6185
GEOMETRY DESCRIPTION: I-129/CULTURE TUBE
SAMPLE SIZE: 1.0000E+00 EA / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL129

COLLECT STARTED ON 9-JUL-90 AT 22:13:48

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3003. SECONDS
DEAD TIME: 0.10 %

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

ENERGY CALIBRATION PERFORMED 21-JUN-90
EFFICIENCY CALIBRATION PERFORMED 18-JUN-90

05-SEP-9013:37:03

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

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 95.0%

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0024
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 5-JUN-90 AT 13:00:00
BACKGROUND LIVE TIME: 3000. SECONDS
BACKGROUND WAS INSIGNIFICANT

05-SEP-9013:37:03

SAMPLE: F-924-6185
DATA COLLECTED ON 9-JUL-90 AT 22:13:48
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/EA				ENERGY COMPARISON (KEV)	
	MEASURED	ERROR	DECAY CORRECTED	ERROR	EXPECT	DIFF
AM-241	LLD<1.77E-06		LLD<1.77E-06		59.54	
AM-243	LLD<7.94E-07		LLD<7.94E-07		74.67	
I-129	LLD<1.68E-05		LLD<1.68E-05		39.60	
SB-125	LLD<1.90E-05		LLD<1.90E-05		176.33	
SE-75	LLD<1.55E-06		LLD<1.55E-06		136.00	
SN-113	LLD<3.82E-06		LLD<3.82E-06		391.67	
TOTAL	0.00E-01 +-0.00E-01		0.00E-01 +-0.00E-01			

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 95.0%

ALL DETECTED PEAKS WERE USED IN THE ANALYSIS

1075

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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

10-JUL-9003:13:37

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: 4.0
DETECTOR NUMBER: 6 / GEOMETRY NUMBER: 1
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 80.0%
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

SPECTRAL DATA READ DIRECTLY FROM MULTICHANNEL ANALYZER AN1:
ANALYZED BY: EMB

SAMPLE DESCRIPTION: F1075-6285
GEOMETRY DESCRIPTION: I-129/CULTURE TUBE
SAMPLE SIZE: 1.0000E+00 EA / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL129

COLLECT STARTED ON 10-JUL-90 AT 02:23:26

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3004. SECONDS
DEAD TIME: 0.13 %

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

ENERGY CALIBRATION PERFORMED 21-JUN-90
EFFICIENCY CALIBRATION PERFORMED 18-JUN-90

10-JUL-9003:13:37

SAMPLE: F1075-6285
DATA COLLECTED ON 10-JUL-90 AT 02:23:26
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/EA MEASURED	ERROR	DECAY CORRECTED	ERROR	ENERGY COMPARISON (KEV) EXPECT	DIFF
AM-241	LLD<9.35E-07		LLD<9.35E-07		59.54	
AM-243	LLD<4.30E-07		LLD<4.30E-07		74.67	
I-129	2.82E-04	+-2.12E-05	2.82E-04	+-2.12E-05	39.60	0.15
SB-125	LLD<9.30E-06		LLD<9.30E-06		176.33	
SE-75	LLD<8.89E-07		LLD<8.89E-07		136.00	
SN-113	LLD<1.36E-06		LLD<1.36E-06		391.67	
TOTAL	2.82E-04	+-2.12E-05	2.82E-04	+-2.12E-05		

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 5.77E-03 UC/EA
TOTAL MEASURED ACTIVITY = 2.82E-04 (+-2.12E-05) UC/EA
% TECH. SPEC. = 4.90 (+-0.37)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 80.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
100.97	20.06	292.	31.3	2.02E+00
149.28	29.72	9110.	2.8	1.25E+01
169.76	33.81	2046.	6.5	1.92E+00

10-JUL-9003:13:37

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	100.97	20.06	1.66	410.	292.	31.3	
PEAK AT CHANNEL 136.4 DROPPED FROM MULTIPLET ANALYSIS							
2C	149.28	29.72	1.62	738.	9110.	2.8	
3C	169.76	33.81	1.62	528.	2046.	6.5	CE-144
4	199.51	39.75	1.67	228.	1225.	7.5	I-129,BI-212, CE-144

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 80.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0024
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 5-JUN-90 AT 13:00:00
BACKGROUND LIVE TIME: 3000. SECONDS
BACKGROUND WAS INSIGNIFICANT

1014

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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

10-JUL-9004:41:00

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: 4.0
DETECTOR NUMBER: 6 / GEOMETRY NUMBER: 1
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 80.0%
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

SPECTRAL DATA READ DIRECTLY FROM MULTICHANNEL ANALYZER AN1:
ANALYZED BY: EMB

SAMPLE DESCRIPTION: F1076-6585
GEOMETRY DESCRIPTION: I-129/CULTURE TUBE
SAMPLE SIZE: 1.0000E+00 EA / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL129

COLLECT STARTED ON 10-JUL-90 AT 03:50:50

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3004. SECONDS
DEAD TIME: 0.13 %

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

ENERGY CALIBRATION PERFORMED 21-JUN-90
EFFICIENCY CALIBRATION PERFORMED 18-JUN-90

10-JUL-9004:41:00

SAMPLE: F1076-6585
DATA COLLECTED ON 10-JUL-90 AT 03:50:50
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/EA MEASURED	ERROR	DECAY CORRECTED	ERROR	ENERGY COMPARISON (KEV) EXPECT	DIFF
AM-241	LLD<9.50E-07		LLD<9.50E-07		59.54	
AM-243	LLD<4.45E-07		LLD<4.45E-07		74.67	
I-129	3.20E-04	+-2.17E-05	3.20E-04	+-2.17E-05	39.60	0.03
SB-125	LLD<7.31E-06		LLD<7.31E-06		176.33	
SE-75	LLD<9.07E-07		LLD<9.07E-07		136.00	
SN-113	LLD<1.59E-06		LLD<1.59E-06		391.67	
TOTAL	3.20E-04	+-2.17E-05	3.20E-04	+-2.17E-05		

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 5.77E-03 UC/EA
TOTAL MEASURED ACTIVITY = 3.20E-04 (+-2.17E-05) UC/EA
% TECH. SPEC. = 5.55 (+-0.38)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 80.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
149.33	29.73	9855.	2.6	1.35E+01
169.85	33.83	2266.	5.9	2.12E+00

10-JUL-9004:41:00

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
PEAK AT CHANNEL 133.5 DROPPED FROM MULTIPLET ANALYSIS							
1C	149.33	29.73	1.62	731.	9855.	2.6	
2C	169.85	33.83	1.62	508.	2266.	5.9	CE-144
3	198.88	39.63	1.46	218.	1387.	6.8	I-129,BI-212, CE-144

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 80.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0024
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 5-JUN-90 AT 13:00:00
BACKGROUND LIVE TIME: 3000. SECONDS
BACKGROUND WAS INSIGNIFICANT

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	Tennelec
Procedure/Rev	LA-933-141/G-1
Technologist	R. D. Hale
Date	3-12-90
Temperature	23 C
Starting Time	10:00
Ending Time	17:00
Chemist	S. A. Catlow

Neptunium Analysis
Fusion Dissolution

Mount Volume = 500 uL

	Description	Lab ID
1	Inital LMCS Check Std	F0897
2	Reagent Blank	F0898
3	Sample Composite 5	F0899
4	Duplicate Composite 5	F0900
5	Sample Composite 6	F0923
6	Duplicate Composite 6	F0924
7	Sample Composite 8	F0947
8	Duplicate Composite 8	F0948
9	Sample Composite 7	F0977
10	Duplicate Composite 7	F0978
11	Spike Composite 7	F0979

	Description	Lab ID
12	Final LMCS Check Std	F0980
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	148B33/100 uL			N/A
Spike	148B33/100 uL	F0947/250 uL		N/A

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

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	E60044
Procedure/Rev	LA-503-156/C-2
Technologist	R. D. Hale
Date	02-08-90
Temperature	23 C
Starting Time	09:00; 02-07-90
Ending Time	15:00; 02-08-90
Chemist	S. A. Catlow

Plutonium Analysis

Fusion Dissolution

	Description	Lab ID
1	Initial LMCS Check Std	F0903
2	Reagent Blank	F0946
3	Sample Composite 5	F0899
4	Duplicate Composite 5	F0900
5	Sample Composite 5	F0905
6	Duplicate Composite 5	F0906
7	Sample Composite 6	F0923
8	Duplicate Composite 6	F0924
9	Sample Composite 6	F0929
10	Duplicate Composite 6	F0930
11	Sample Composite 8	F0947

	Description	Lab ID
12	Duplicate Composite 8	F0948
13	Sample Composite 8	F0953
14	Duplicate Composite 8	F0954
15	Spike Composite 5	F0949
16	Final LMCS Check Std	F0950
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	16B43/100uL			N/A
Spike	16B43/100uL	F0947/1mL		N/A

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

AEA ENERGY CALIBRATION

	TECH/ SHIFT	DATE	BELL #1	BELL #2	BELL#3	BELL #4	BELL #5	BELL #6	BELL #7	BELL #8
Np-237	VR/D	2/3/90	83	151	151	152	155	156	out	153
Pu 239/240		2/3/90	111	229	229	230	232	233	of	232
Am-241/Pu238		2/3/90	137	301	301	301	303	303	service	303
Cm-243/Cm-244		2/3/90	161	367	368	368	369	369		370
Np-237	AJ/D	2/4/90	83	151	150	152	152	154	out	150
Pu-239/240		2/4/90	110	229	228	230	230	231	of	229
Am-241/Pu-238		2/4/90	136	300	300	300	301	301	service	300
Cm-243/Cm-244		2/4/90	160	367	366	367	367	367		368
Np-237	AJ/D	2/5/90	82	149	148	150	153	155	out	151
Pu-239/240		2/5/90	110	228	226	228	231	231	of	230
Am-241/Pu-238		2/5/90	135	229	298	299	301	302	service	301
Cm-243/Cm-244		2/5/90	159	365	365	366	368	367		368
Np-237	VR/D	2/7/90	82	149	149	150	153	154	out	151
Pu-239/240		2/7/90	110	227	227	228	230	231	of	230
Am-241/Pu-238		2/7/90	135	298	299	298	301	301	service	301
Cm-243/Cm-244		2/7/90	159	364	365	365	367	367		368
Np-237	VR/D	2/8/90	81	150	150	152	155	156	out	152
Pu-239/240		2/8/90	109	227	228	230	232	233	of	231
Am-241/Pu-238		2/8/90	135	298	299	300	303	303	service	302
Cm-243/Cm-244		2/8/90	158	365	365	366	369	368		370
Np-237	VR/D	2/9/90	81	149	149	150	152	153	out	151
Pu-239/240		2/9/90	109	227	228	228	230	230	of	230
Am-241/Pu-238		2/9/90	135	299	299	299	301	300	service	301
Cm-243/Cm-244		2/9/90	159	365	366	365	367	366		369
Np-237	AJ/C	2/10/90	82	149	148	151	153	155	out	151
Pu-239/240		2/10/90	110	227	227	229	231	232	of	230
Am-241/Pu-238		2/10/90	136	299	298	300	302	302	service	302
Cm-243/Cm-244		2/10/90	160	365	365	366	368	367		369

G E N E R A L A L P H A E N E R G Y A N A L Y S I S

Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F903 SEG/COMP/#13 PU
File ID: SD4709.SPC

Counted on: 2/ 9/90 @ 0: 0
Detector/Geometry number: 4/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	5.2	4.8	469.869	469.869	20.000	12.660	10.000	5.524
2	2145.9	2208.4	358.677	358.677	20.000	10.661	10.000	4.945
3	280.4	285.9	302.189	302.189	20.000	10.454	10.000	3.516
4	229.4	64.8	264.079	264.079	12.000	6.706	6.000	4.662
5	2612.8	2618.0	229.858	229.858	20.000	10.762	10.000	5.781

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0010		6.322		0.06	0.09	0.47	0.311E-06
2	Cm244	0.4328	5.796	5.789	0.007	0.05	39.74	198.99	0.896E-04
	Cm243		5.786	5.789	-0.003				0.123E-03
3	Pu238	0.0630	5.499	5.518	-0.019	0.05	5.79	40.26	0.181E-04
	Am241		5.480	5.518	-0.038				0.139E-04
4		0.0096		5.335		0.03	0.88	4.41	0.199E-05
5	Pu239	0.4935	5.143	5.170	-0.027	0.05	45.32	226.93	0.102E-03
	Pu240		5.144	5.170	-0.026				0.102E-03

DETECTOR CALIBRATION

Energy(MEV) = 4.067 + (0.0048)*Channel
Energy range (MeV): 4.067 TO 6.525
Efficiency = 0.1997 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	45919.0	100.000
Smoothed	45918.7	99.999
Composite fit	45910.5	99.982
Residuals	8.1	0.018

Analyzed by: _____
VR

SPECTRUM SD4709.SPC

P903-7581
9724.5

1 LEGEND: RAW = ... MODELED PEAKS = 1,2,..., ETC

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1

F903-7587

Raw Data Dump for AEA Spectrum: SP:SD4709.SPC

1	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
11	1.	1.	0.	0.	0.	1.	1.	1.	0.	2.
21	1.	0.	0.	1.	0.	0.	1.	0.	1.	0.
31	2.	0.	0.	0.	1.	1.	0.	1.	0.	1.
41	1.	1.	0.	0.	0.	2.	0.	2.	1.	0.
51	1.	1.	0.	0.	1.	0.	0.	1.	4.	0.
61	0.	1.	0.	1.	1.	0.	1.	0.	1.	1.
71	0.	1.	0.	0.	1.	0.	1.	1.	0.	0.
81	0.	0.	2.	1.	1.	1.	1.	0.	0.	1.
91	2.	1.	1.	1.	1.	0.	2.	2.	0.	1.
101	1.	0.	1.	1.	0.	1.	1.	0.	1.	1.
111	0.	3.	0.	0.	0.	0.	2.	2.	0.	1.
121	1.	0.	0.	1.	1.	0.	3.	0.	0.	0.
131	2.	0.	3.	0.	1.	3.	5.	2.	2.	0.
141	1.	1.	2.	4.	1.	5.	1.	4.	1.	1.
151	6.	4.	2.	1.	3.	2.	2.	7.	4.	3.
161	2.	1.	7.	4.	3.	7.	8.	2.	4.	4.
171	5.	10.	7.	8.	5.	7.	11.	11.	7.	6.
181	9.	9.	8.	12.	5.	6.	8.	9.	7.	11.
191	9.	7.	11.	13.	6.	8.	10.	12.	11.	11.
201	15.	22.	26.	29.	37.	37.	70.	47.	85.	97.
211	120.	136.	207.	238.	290.	347.	427.	535.	585.	700.
221	784.	890.	972.	1153.	1192.	1345.	1426.	1577.	1629.	1426.
231	1296.	1248.	1035.	787.	555.	407.	263.	132.	81.	59.
241	20.	15.	7.	8.	12.	8.	10.	8.	19.	24.
251	20.	21.	21.	30.	27.	27.	29.	36.	31.	35.
261	37.	35.	37.	40.	35.	41.	33.	23.	19.	15.
271	15.	9.	15.	7.	12.	8.	14.	14.	9.	27.
281	29.	25.	36.	39.	44.	36.	53.	55.	66.	74.
291	88.	80.	83.	100.	99.	139.	114.	139.	150.	170.
301	172.	150.	148.	143.	120.	106.	81.	46.	34.	25.
311	21.	9.	9.	4.	3.	5.	13.	6.	12.	10.
321	6.	14.	14.	8.	11.	18.	16.	10.	17.	14.
331	23.	32.	40.	44.	50.	49.	56.	87.	111.	142.
341	156.	223.	240.	320.	349.	455.	532.	592.	653.	754.
351	805.	890.	954.	999.	1084.	1256.	1220.	1250.	1184.	1191.
361	976.	851.	680.	466.	302.	176.	75.	43.	26.	11.
371	3.	0.	0.	1.	0.	0.	0.	1.	0.	1.
381	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
411	0.	1.	0.	0.	0.	0.	0.	3.	0.	2.
421	1.	0.	1.	0.	0.	1.	1.	1.	1.	0.
431	0.	0.	1.	0.	1.	0.	1.	0.	0.	0.
441	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
451	2.	1.	1.	0.	0.	0.	1.	0.	0.	1.
461	1.	1.	4.	1.	2.	2.	3.	5.	3.	3.
471	3.	0.	1.	3.	1.	3.	1.	0.	0.	0.
481	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F946 SEG/COMP/#8
File ID: SD2714.SPC

Counted on: 2/ 9/90 @ 0: 0
Detector/Geometry number: 2/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	4.2	4.2	468.114	468.114	20.000	16.828	14.000	13.274
2	1894.2	1914.8	357.234	357.234	20.000	12.011	10.000	5.995
3	83.9	85.9	299.394	299.394	20.000	14.183	10.000	2.399
4	57.9	57.7	262.857	262.857	20.000	7.005	10.000	2.100
5	21.9	23.3	227.770	227.770	20.000	6.104	10.000	2.418
6	4.0	2.6	172.563	172.563	20.000	59.890	10.000	4.025

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0021		6.275		0.08	0.08	0.37	0.166E-06
2	Pu236	0.8871	5.756	5.754	0.002	0.06	35.19	159.58	0.719E-04
3	Pu238	0.0686	5.499	5.482	0.017	0.07	2.72	16.80	0.757E-05
	Am241		5.480	5.482	-0.002				0.580E-05
4		0.0283		5.311		0.03	1.12	5.00	0.225E-05
5	Pu239	0.0096	5.143	5.146	-0.003	0.03	0.38	1.69	0.759E-06
	Pu240		5.144	5.146	-0.002				0.759E-06
6	Np237	0.0043	4.781	4.886	-0.105	0.28	0.17	0.88	0.395E-06

DETECTOR CALIBRATION
Energy(MEV) = 4.075 + (0.0047)*Channel
Energy range (MeV): 4.075 TO 6.482
Efficiency = 0.3250 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	19661.0	100.000
Smoothed	19661.0	100.000
Composite fit	19834.1	100.880
Residuals	-173.1	-0.880

Analyzed by: _____
VR

Raw Data Dump for AEA Spectrum: SP:SD2714.SPC

1	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
11	1.	0.	0.	1.	0.	0.	1.	0.	0.	0.
21	1.	0.	0.	2.	0.	0.	0.	1.	0.	0.
31	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.
51	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
61	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.
71	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
91	1.	1.	1.	0.	0.	0.	1.	0.	0.	0.
101	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
111	1.	0.	0.	0.	0.	0.	1.	2.	0.	0.
121	1.	0.	1.	1.	1.	0.	2.	0.	0.	1.
131	2.	1.	0.	1.	1.	0.	1.	0.	0.	1.
141	1.	1.	0.	1.	1.	1.	0.	2.	1.	1.
151	2.	0.	0.	2.	0.	1.	0.	1.	1.	0.
161	0.	1.	3.	1.	2.	0.	1.	1.	1.	4.
171	4.	4.	1.	1.	1.	1.	2.	1.	1.	0.
181	0.	3.	2.	2.	2.	0.	0.	2.	1.	2.
191	0.	2.	1.	0.	1.	3.	4.	4.	0.	2.
201	0.	3.	0.	2.	1.	0.	3.	4.	2.	5.
211	3.	4.	6.	3.	3.	3.	10.	6.	9.	15.
221	14.	13.	15.	13.	22.	8.	15.	15.	23.	10.
231	10.	5.	14.	12.	5.	3.	4.	5.	1.	7.
241	10.	8.	6.	5.	16.	11.	17.	14.	21.	12.
251	25.	25.	33.	24.	24.	38.	26.	25.	28.	40.
261	41.	52.	52.	33.	27.	26.	18.	19.	20.	22.
271	14.	10.	10.	18.	10.	17.	13.	17.	13.	18.
281	14.	27.	30.	28.	23.	24.	33.	35.	27.	36.
291	41.	34.	39.	40.	38.	51.	38.	42.	44.	48.
301	45.	48.	34.	25.	25.	24.	19.	7.	11.	8.
311	5.	6.	7.	5.	7.	6.	4.	5.	7.	15.
321	10.	6.	9.	21.	12.	12.	12.	17.	16.	18.
331	21.	44.	35.	38.	46.	56.	66.	101.	127.	133.
341	205.	250.	257.	334.	415.	511.	550.	597.	683.	687.
351	786.	904.	913.	1084.	1035.	1116.	1072.	1028.	939.	811.
361	684.	536.	405.	268.	192.	128.	66.	36.	16.	9.
371	5.	2.	2.	0.	0.	0.	0.	1.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	1.	0.	1.	1.	0.	2.
411	0.	0.	0.	0.	1.	1.	0.	0.	2.	0.
421	0.	2.	0.	0.	1.	1.	0.	1.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
451	0.	0.	1.	0.	1.	0.	1.	1.	2.	2.
461	1.	1.	3.	5.	0.	0.	4.	3.	3.	0.
471	2.	1.	2.	2.	3.	1.	0.	0.	1.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

SPECTRUM SD2714.SPC

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1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..., ETC                     7179.2









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G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-923 SEG.COMP#9 PU
File ID: SD5534.SPC

Counted on: 2/10/90 @13: 0
Detector/Geometry number: 5/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	6.5	6.6	469.732	469.732	16.000	11.095	8.000	6.629
2	1765.0	1811.2	358.845	358.845	16.000	10.478	8.000	4.652
3	148.0	151.0	301.609	301.609	20.000	11.848	10.000	3.146
4	247.5	48.3	264.708	264.708	12.000	3.723	6.000	4.809
5	3189.0	3200.6	229.684	229.684	20.000	10.406	10.000	5.258
6	28.3	20.1	150.471	150.471	32.000	128.608	16.000	34.450
7	10.6	10.3	25.333	25.333	20.000	15.914	10.000	5.018

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0012		6.309		0.05	0.11	0.48	0.216E-06
2	Cm244	0.3499	5.796	5.776	0.020	0.05	32.87	139.99	0.631E-04
	Cm243		5.786	5.776	0.010				0.864E-04
3	Pu238	0.0377	5.499	5.502	-0.003	0.06	3.54	20.96	0.944E-05
	Am241		5.480	5.502	-0.022				0.723E-05
4		0.0049		5.324		0.02	0.46	1.96	0.884E-06
5	Pu239	0.5923	5.143	5.156	-0.013	0.05	55.64	236.98	0.107E-03
	Pu240		5.144	5.156	-0.012				0.107E-03
6	Np237	0.0118	4.640	4.776	-0.136	0.62	1.10	78.41	0.353E-04
	Np237		4.781	4.776	0.005				0.244E-05
7		0.0023		4.175		0.08	0.22	0.92	0.415E-06

DETECTOR CALIBRATION

Energy(MEV) = 4.054 + (0.0048)*Channel
Energy range (MeV): 4.054 TO 6.511
Efficiency = 0.2348 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	46679.0	100.000
Smoothed	46677.3	99.996
Composite fit	46974.4	100.633
Residuals	-297.4	-0.637

Analyzed by: _____
DM

SPECTRUM SD5584.SPC

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1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..,  ETC                11870.1

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Raw Data Dump for AEA Spectrum: SP:SD5584.SPC

1	0.	0.	0.	0.	0.	0.	2.	3.	3.	3.
11	1.	3.	4.	4.	2.	1.	4.	3.	3.	6.
21	6.	8.	5.	6.	4.	5.	8.	6.	1.	4.
31	3.	2.	2.	1.	0.	1.	1.	1.	0.	0.
41	1.	1.	0.	2.	2.	1.	1.	2.	1.	1.
51	1.	0.	3.	1.	1.	1.	2.	0.	0.	0.
61	1.	1.	2.	1.	1.	0.	0.	1.	1.	1.
71	1.	1.	0.	3.	1.	2.	1.	1.	1.	0.
81	0.	0.	2.	0.	1.	0.	2.	3.	1.	1.
91	0.	1.	1.	0.	0.	0.	1.	1.	0.	2.
101	1.	0.	3.	0.	2.	2.	3.	0.	1.	1.
111	1.	1.	0.	3.	1.	0.	2.	2.	2.	3.
121	4.	0.	5.	4.	3.	6.	2.	1.	4.	2.
131	3.	3.	4.	4.	4.	10.	5.	4.	6.	9.
141	5.	9.	10.	10.	16.	17.	14.	19.	16.	12.
151	17.	15.	14.	9.	10.	8.	6.	7.	9.	4.
161	6.	5.	11.	2.	6.	9.	10.	4.	12.	9.
171	10.	10.	14.	8.	7.	7.	7.	10.	9.	14.
181	16.	13.	10.	19.	7.	13.	10.	11.	14.	17.
191	14.	17.	12.	23.	17.	15.	22.	18.	21.	28.
201	23.	30.	43.	51.	57.	68.	90.	100.	109.	165.
211	174.	210.	275.	345.	376.	469.	526.	648.	727.	881.
221	993.	1132.	1223.	1432.	1568.	1587.	1743.	1851.	1869.	1874.
231	1597.	1479.	1178.	926.	616.	420.	238.	134.	85.	35.
241	20.	9.	9.	2.	10.	7.	7.	10.	10.	14.
251	12.	13.	18.	17.	24.	16.	17.	14.	19.	23.
261	27.	17.	23.	18.	25.	34.	14.	14.	19.	21.
271	13.	4.	17.	12.	9.	7.	9.	13.	11.	16.
281	23.	27.	20.	31.	32.	38.	34.	33.	51.	44.
291	49.	52.	64.	48.	63.	55.	88.	68.	95.	66.
301	97.	83.	68.	75.	65.	51.	38.	25.	23.	19.
311	18.	7.	7.	7.	5.	12.	5.	10.	8.	7.
321	3.	9.	13.	6.	7.	7.	15.	8.	16.	13.
331	19.	23.	26.	47.	30.	51.	69.	61.	110.	115.
341	174.	204.	206.	245.	297.	356.	425.	476.	557.	611.
351	629.	739.	769.	816.	898.	973.	952.	1030.	1016.	945.
361	905.	685.	577.	396.	254.	144.	78.	35.	18.	5.
371	2.	1.	2.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.
411	0.	0.	1.	1.	0.	0.	1.	1.	0.	1.
421	0.	0.	1.	1.	1.	3.	0.	0.	0.	0.
431	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	1.	1.	0.	1.	3.	2.
461	4.	2.	0.	1.	7.	3.	6.	1.	2.	4.
471	4.	4.	4.	1.	1.	0.	1.	1.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-924 SEG.COMP#10 PU
File ID: SD6020.SPC

Counted on: 2/10/90 @13: 0
Detector/Geometry number: 6/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	6.4	6.5	470.357	470.357	20.000	11.326	10.000	5.143
2	2156.9	2209.9	359.683	359.683	20.000	10.960	10.000	4.365
3	292.4	303.6	303.304	303.304	20.000	9.959	10.000	2.718
4	748.3	129.4	265.047	265.047	12.000	3.064	6.000	4.075
5	5166.4	5223.6	231.491	231.491	20.000	11.156	10.000	5.032
6	54.1	46.7	150.834	150.834	24.000	50.937	12.000	19.747
7	3.9	3.4	91.149	91.149	52.000	74.819	26.000	1.483
8	37.1	38.0	28.458	28.458	20.000	9.550	10.000	3.976

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exr.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0008		6.302		0.05	0.12	0.60	0.269E-06
2	Pu236	0.2836	5.756	5.771	-0.015	0.05	42.31	215.10	0.969E-04
	Cm243		5.786	5.771	0.015				0.130E-03
3	Pu238	0.0452	5.499	5.500	-0.001	0.05	6.74	46.65	0.210E-04
	Am241		5.480	5.500	-0.020				0.161E-04
4		0.0076		5.317		0.01	1.13	5.63	0.254E-05
5	Pu239	0.6455	5.143	5.156	-0.013	0.05	96.31	479.86	0.216E-03
	Pu240		5.144	5.156	-0.012				0.216E-03
6	Np237	0.0109	4.781	4.768	0.013	0.24	1.63	9.32	0.420E-05
7	U 235	0.0020	4.396	4.482	-0.086	0.36	0.30	2.63	0.118E-05
8	U 238	0.0044	4.200	4.181	0.019	0.05	0.66	4.25	0.192E-05

DETECTOR CALIBRATION

Energy(MEV) = 4.044 + (0.0048)*Channel
Energy range (MeV): 4.044 TO 6.502
Efficiency = 0.2007 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	73958.0	100.000
Smoothed	73957.2	99.999
Composite fit	74596.1	100.863
Residuals	-638.9	-0.864

Analyzed by: _____
DM

SPECTRUM SD6020.SPC

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1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..., ETC                18376.7
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Raw Data Dump for AEA Srectrum: SP:SD6020.SPC

1	0.	0.	0.	0.	0.	0.	1.	5.	2.	4.
11	6.	6.	4.	6.	9.	9.	10.	10.	11.	11.
21	18.	14.	17.	19.	26.	20.	24.	20.	25.	15.
31	24.	14.	11.	6.	6.	1.	5.	1.	1.	1.
41	0.	1.	2.	1.	1.	2.	2.	2.	1.	1.
51	0.	1.	0.	1.	1.	2.	1.	1.	1.	0.
61	4.	3.	0.	1.	0.	4.	2.	1.	1.	3.
71	0.	5.	1.	0.	1.	3.	2.	2.	1.	2.
81	1.	1.	0.	1.	0.	2.	3.	4.	2.	2.
91	2.	2.	3.	0.	3.	1.	1.	0.	2.	0.
101	2.	2.	3.	1.	2.	4.	3.	1.	3.	1.
111	0.	5.	1.	1.	3.	0.	6.	1.	5.	2.
121	2.	1.	2.	3.	6.	7.	10.	6.	10.	5.
131	10.	4.	7.	14.	17.	10.	13.	15.	13.	14.
141	17.	21.	22.	23.	27.	30.	32.	27.	28.	29.
151	22.	37.	29.	18.	22.	21.	11.	17.	16.	10.
161	13.	9.	11.	8.	9.	10.	17.	12.	10.	15.
171	11.	14.	12.	15.	16.	15.	15.	7.	14.	22.
181	13.	8.	18.	15.	14.	19.	14.	11.	13.	24.
191	21.	27.	29.	26.	31.	33.	26.	22.	44.	62.
201	49.	74.	69.	102.	105.	122.	160.	183.	215.	256.
211	256.	340.	418.	486.	571.	670.	809.	847.	1060.	1219.
221	1299.	1518.	1782.	1943.	2118.	2329.	2559.	2697.	2926.	2917.
231	2941.	2875.	2664.	2333.	1932.	1525.	1092.	759.	432.	274.
241	139.	86.	31.	38.	24.	10.	11.	12.	15.	24.
251	30.	22.	30.	25.	32.	36.	43.	48.	42.	41.
261	35.	45.	61.	59.	54.	44.	53.	41.	34.	32.
271	31.	19.	11.	17.	13.	14.	24.	21.	23.	16.
281	23.	32.	43.	33.	50.	45.	62.	67.	74.	89.
291	94.	91.	102.	131.	98.	134.	139.	130.	127.	144.
301	150.	179.	179.	165.	148.	133.	104.	102.	69.	45.
311	25.	17.	12.	9.	15.	6.	9.	8.	12.	11.
321	11.	13.	17.	7.	15.	16.	21.	26.	23.	33.
331	43.	39.	56.	77.	54.	88.	92.	112.	150.	160.
341	196.	210.	261.	355.	361.	430.	497.	544.	659.	708.
351	801.	856.	894.	936.	1031.	1087.	1150.	1182.	1253.	1170.
361	1171.	1030.	903.	655.	469.	330.	208.	117.	55.	30.
371	9.	5.	1.	1.	2.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
401	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
411	0.	0.	0.	0.	2.	0.	0.	0.	1.	1.
421	0.	1.	0.	0.	0.	1.	1.	0.	1.	2.
431	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	1.	1.	2.	2.	1.	1.
461	3.	3.	2.	4.	2.	3.	4.	2.	4.	3.
471	6.	2.	2.	3.	2.	0.	2.	1.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-949 SEG.COMP#11 PU
File ID: SD3954.SPC

Counted on: 2/11/90 @11: 0
Detector/Geometry number: 3/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	10.4	10.0	471.543	471.543	20.000	13.382	10.000	6.489
2	1898.2	1910.1	359.114	359.114	20.000	13.459	10.000	7.396
3	85.1	87.0	301.260	301.260	20.000	13.453	10.000	2.603
4	50.6	52.5	264.610	264.610	20.000	8.169	10.000	1.755
5	149.1	151.5	229.417	229.417	20.000	10.611	10.000	7.113

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0045		6.283		0.06	0.19	0.96	0.430E-06
2	Pu236	0.8469	5.756	5.744	0.012	0.06	35.86	181.69	0.810E-04
3	Th228	0.0593	5.430	5.466	-0.036	0.06	2.51	17.54	0.790E-05
	Am241		5.480	5.466	0.014				0.597E-05
4		0.0305		5.290		0.04	1.29	6.41	0.289E-05
5		0.0588		5.121		0.05	2.49	12.35	0.556E-05

DETECTOR CALIBRATION

Energy(MEV) = 4.020 + (0.0048)*Channel
Energy range (MeV): 4.020 TO 6.477
Efficiency = 0.2014 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	21109.0	100.000
Smoothed	21107.7	99.994
Composite fit	21170.5	100.291
Residuals	-62.9	-0.298

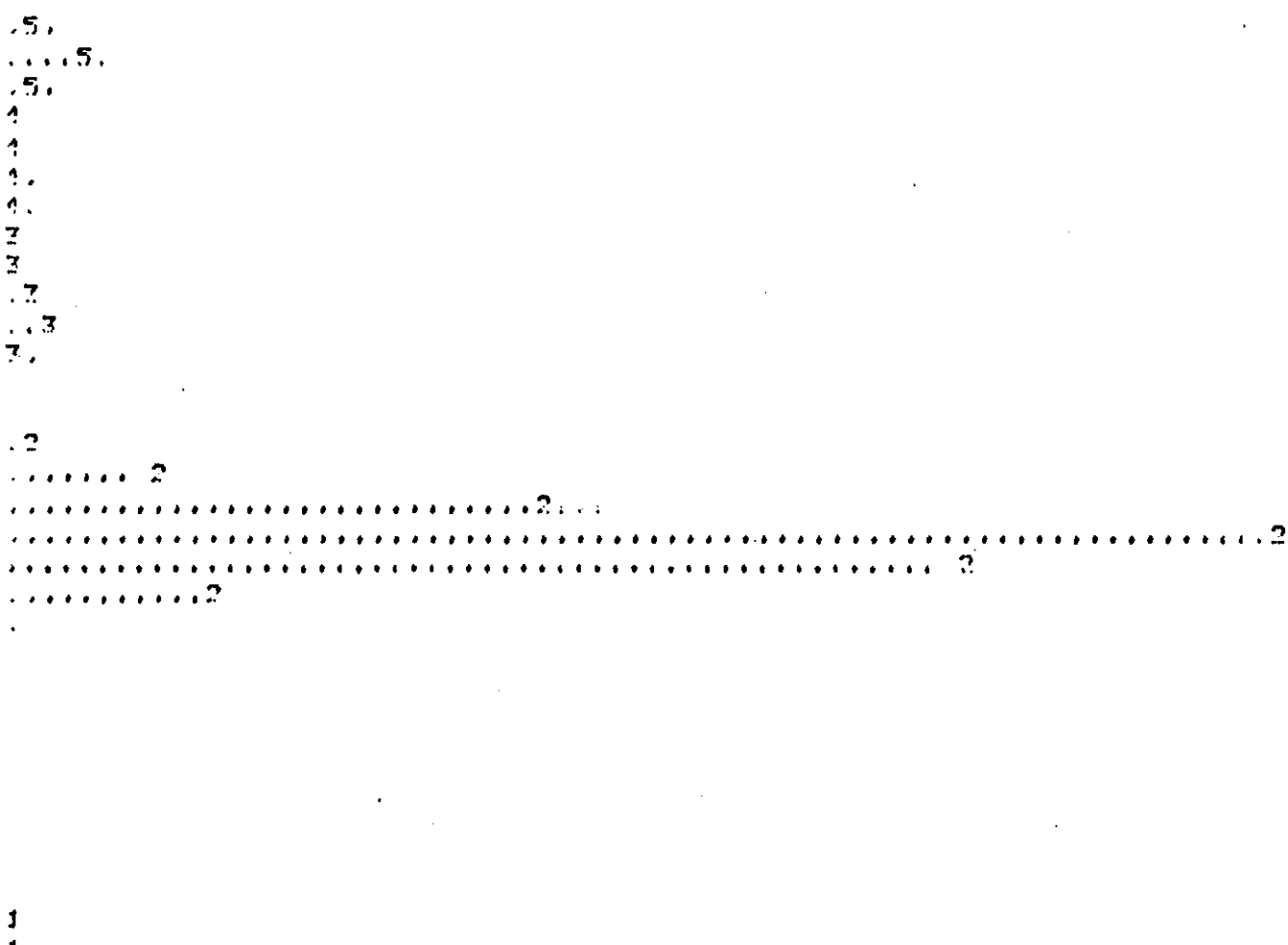
Analyzed by: _____
DM

Raw Data Dump for GEO Spectrum: SP:SD3954.SPC

1	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.
11	0.	0.	0.	0.	0.	2.	3.	2.	0.	2.
21	0.	0.	0.	1.	0.	0.	2.	0.	0.	0.
31	0.	0.	0.	0.	1.	0.	1.	0.	1.	0.
41	0.	0.	2.	0.	0.	1.	1.	0.	1.	1.
51	0.	0.	0.	1.	0.	1.	0.	0.	1.	0.
61	0.	1.	0.	0.	0.	0.	0.	1.	2.	0.
71	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.
81	1.	1.	0.	0.	2.	0.	1.	1.	0.	0.
91	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
101	1.	0.	1.	0.	0.	0.	1.	0.	1.	1.
111	1.	0.	1.	1.	0.	1.	1.	1.	0.	1.
121	3.	1.	0.	2.	2.	0.	1.	3.	0.	0.
131	0.	1.	0.	0.	1.	2.	1.	0.	2.	1.
141	2.	1.	1.	0.	1.	3.	3.	2.	0.	1.
151	2.	2.	3.	1.	2.	1.	2.	1.	0.	1.
161	3.	3.	1.	0.	2.	1.	0.	0.	0.	2.
171	1.	3.	0.	2.	2.	0.	1.	0.	3.	0.
181	5.	0.	0.	2.	3.	0.	1.	0.	2.	1.
191	4.	0.	1.	1.	0.	0.	0.	3.	1.	2.
201	2.	5.	3.	1.	1.	2.	1.	5.	0.	5.
211	1.	6.	8.	14.	18.	24.	26.	33.	34.	41.
221	53.	59.	70.	87.	77.	77.	100.	79.	96.	86.
231	80.	69.	58.	42.	43.	28.	20.	17.	6.	10.
241	7.	5.	7.	6.	12.	12.	9.	15.	14.	10.
251	21.	28.	16.	22.	19.	25.	30.	26.	26.	29.
261	32.	46.	31.	38.	32.	25.	30.	30.	25.	24.
271	19.	11.	12.	9.	10.	8.	13.	7.	11.	9.
281	25.	24.	19.	15.	27.	27.	32.	31.	21.	17.
291	39.	32.	29.	37.	36.	39.	41.	53.	48.	46.
301	44.	39.	46.	50.	38.	25.	19.	11.	15.	14.
311	13.	10.	3.	3.	0.	1.	1.	2.	1.	1.
321	1.	2.	4.	3.	4.	8.	2.	6.	5.	12.
331	15.	11.	19.	28.	19.	44.	58.	66.	61.	79.
341	111.	133.	223.	251.	317.	337.	410.	462.	517.	649.
351	696.	725.	856.	938.	951.	1047.	1069.	1106.	1083.	981.
361	942.	817.	655.	565.	445.	311.	234.	159.	99.	75.
371	48.	23.	21.	5.	6.	0.	2.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	1.	0.	2.	2.	1.	1.
421	3.	1.	1.	1.	0.	0.	1.	3.	0.	0.
431	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
451	0.	0.	0.	2.	2.	1.	0.	2.	0.	2.
461	7.	2.	5.	2.	6.	1.	5.	4.	8.	7.
471	4.	7.	7.	2.	2.	3.	5.	1.	2.	0.
481	2.	0.	0.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

SPECTRUM SD3954.SPC

1 LEGEND: RAW = ... MODELED PEAKS = 1,2,... ETC 6956.3



143

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F950 SEC/COMP/#12 PU
File ID: SD3946.SPC

Counted on: 2/ 9/90 @ 0: 0
Detector/Geometry number: 3/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	1946.0	1958.5	357.840	357.840	24.000	14.662	12.000	8.261
2	245.9	249.9	300.354	300.354	24.000	12.967	12.000	4.179
3	321.6	69.1	262.412	262.412	12.000	5.250	6.000	6.220
4	2343.9	2333.2	228.108	228.108	24.000	13.601	12.000	8.431
5	5.2	8.2	150.480	150.480	80.000	2.000	40.000	0.200
6	1.6	0.9	126.257	126.257	8.000	0.382	4.000	0.057

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Pu236	0.4328	5.756	5.738	0.018	0.07	37.89	191.98	0.865E-04
2	Th228	0.0625	5.430	5.462	-0.032	0.06	5.48	38.29	0.172E-04
	Am241		5.480	5.462	0.018				0.130E-04
3		0.0089		5.279		0.03	0.78	3.85	0.173E-05
4		0.4919		5.115		0.07	43.06	213.81	0.963E-04
5		0.0037		4.742		0.01	0.32	1.59	0.715E-06
6	Np237	0.0003	4.640	4.626	0.014	0.00	0.02	1.85	0.835E-06

DETECTOR CALIBRATION

Energy(MEV) = 4.020 + (0.0048)*Channel
Energy range (MeV): 4.020 TO 6.477
Efficiency = 0.2014 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	43612.0	100.000
Smoothed	43611.1	99.998
Composite fit	43772.9	100.369
Residuals	-161.8	-0.371

Analyzed by: _____
VR

Raw Data Dump for AEA Spectrum: SP:SD3946.SPC

1	0.	0.	0.	0.	0.	0.	2.	3.	1.	0.
11	2.	0.	1.	2.	1.	1.	1.	1.	0.	0.
21	1.	1.	2.	0.	0.	1.	1.	1.	1.	0.
31	1.	0.	1.	2.	1.	0.	0.	0.	0.	0.
41	0.	1.	2.	2.	0.	0.	1.	2.	1.	1.
51	0.	2.	0.	1.	1.	1.	0.	2.	1.	0.
61	0.	0.	1.	0.	1.	0.	2.	3.	1.	0.
71	0.	2.	1.	2.	1.	0.	0.	0.	1.	1.
81	1.	0.	1.	0.	1.	2.	0.	1.	0.	0.
91	2.	0.	0.	2.	0.	1.	1.	1.	2.	0.
101	2.	2.	2.	0.	1.	1.	2.	2.	1.	2.
111	2.	1.	3.	0.	3.	7.	1.	1.	2.	0.
121	2.	2.	3.	2.	3.	4.	5.	0.	1.	2.
131	3.	0.	1.	0.	0.	1.	0.	3.	4.	1.
141	1.	4.	7.	0.	5.	0.	2.	0.	3.	4.
151	4.	3.	2.	1.	3.	0.	2.	0.	1.	2.
161	2.	4.	1.	1.	3.	1.	1.	3.	0.	1.
171	6.	4.	4.	2.	6.	4.	2.	2.	1.	1.
181	0.	2.	4.	2.	1.	3.	0.	5.	4.	4.
191	4.	4.	7.	5.	2.	7.	7.	6.	9.	7.
201	16.	21.	23.	23.	42.	47.	66.	72.	112.	136.
211	164.	186.	224.	334.	394.	473.	562.	603.	726.	841.
221	902.	1109.	1134.	1198.	1312.	1294.	1379.	1310.	1233.	1074.
231	1017.	829.	709.	489.	402.	304.	204.	145.	82.	68.
241	36.	21.	16.	9.	13.	13.	16.	11.	18.	23.
251	23.	16.	20.	26.	25.	22.	16.	36.	35.	35.
261	27.	36.	30.	22.	29.	28.	21.	26.	22.	14.
271	12.	10.	4.	11.	18.	12.	14.	15.	24.	23.
281	38.	40.	34.	42.	43.	44.	69.	55.	73.	88.
291	86.	88.	107.	91.	121.	125.	121.	146.	126.	148.
301	123.	141.	115.	88.	73.	57.	41.	37.	24.	29.
311	12.	8.	7.	3.	2.	5.	3.	3.	5.	2.
321	6.	5.	1.	4.	6.	5.	4.	4.	8.	6.
331	24.	15.	24.	34.	31.	52.	68.	104.	118.	139.
341	169.	210.	290.	338.	347.	489.	518.	610.	674.	760.
351	844.	914.	957.	1047.	1099.	1043.	1095.	1059.	992.	929.
361	826.	722.	560.	460.	351.	230.	183.	130.	85.	44.
371	30.	14.	14.	6.	1.	2.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	2.	0.	2.	0.	0.	0.	0.	0.
431	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	1.	0.	1.	0.	1.	0.	0.	0.
461	0.	1.	1.	1.	1.	1.	0.	1.	1.	1.
471	3.	2.	1.	0.	0.	1.	2.	4.	1.	1.
481	0.	0.	0.	0.	0.	0.	2.	1.	2.	0.
491	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
511	0.	0.								

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        SPECTRUM SD3946.SPC
1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..., ETC                    8821.5



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Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:CORE 6 COMPOSITE

INSTRUMENT	HW38316
PROCEDURE/REV	LA-220-101/C-0
TECHNOLOGIST	M. Franz
DATE	02-21-90
TEMPERATURE	N/A
STARTING TIME	09:30
ENDING TIME	19:30
CHEMIST	S. A. Catlow

Strontium Analysis

Fusion Dissolution

(*) Sample is prepared as a dry mount.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0921
2	Reagent Blank	F0922
3	Sample Composite 6	F0923
4	Duplicate Composite 6	F0924
5	Spike Composite 6	F0925
6	Final LMCS Check Std	F0926
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
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21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT. VOL.	FINAL VOL. OF STD.
LMCS Check Std	106B44/ 1 mL			* N/A
Spike	106B44/1 mL	F0923/ 50 uL		* N/A

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

Single Shell Tank
Calibration Record

Analyte:	Stronium		
Procedure:	LQ-508-002	Revision:	A-2
Instrument:	Detector #10	Property Number:	WA38316
Technologist:	R. A. Jones	Payroll Number:	
Date:	5-21-89		

Calibration Standard ID: 48B16G; 48B16J; 48B16L

Analyte Concentration: 36760; 58980; 112700 cpm.

Type of Calibration: Efficiency

Comments:

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

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
48B16T	1"	40910	16834	1.16	19610	0.4793
48B16U	1"	54640	21718	1.16	25299	0.4630
48B16TV	1"	104000	41592	1.16	48450	0.4659

AVERAGE, 1" = 0.4694 +/- @95% 0.0171 3.64 % ON 05/21/89

STANDARD ID		STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
48B16G	2"	36760	12460	1.16	14514	0.3948
48B16J	2"	58980	20333	1.16	23686	0.4016
48B16L	2"	112700	39176	1.16	45636	0.4049

AVERAGE, 2" = 0.4005 +/- @95% 0.0101 2.52 % ON 05/21/89

STANDARD ID		STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
36B40A6	5"	0	0	1.16	0	ERR
36B40B6	5"	0	0	1.16	0	ERR
36B40C5	5"	0	0	1.16	0	ERR

AVERAGE, 5" = ERR +/- @95% ERR ERR % ON 05/21/89

NEW EFFS FOR DET 10 SrY-90 1" = 0.4694 2" = 0.4005

5" = ERR

Procedure LQ-508-005 "Calibration of Beta Detectors for Sr-90 And Y-90" is used to determine ^{90}Sr + ^{90}Y efficiencies from the above calibration using an equilibrium mixture of ^{90}SrY.

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

DETECTOR No. 10

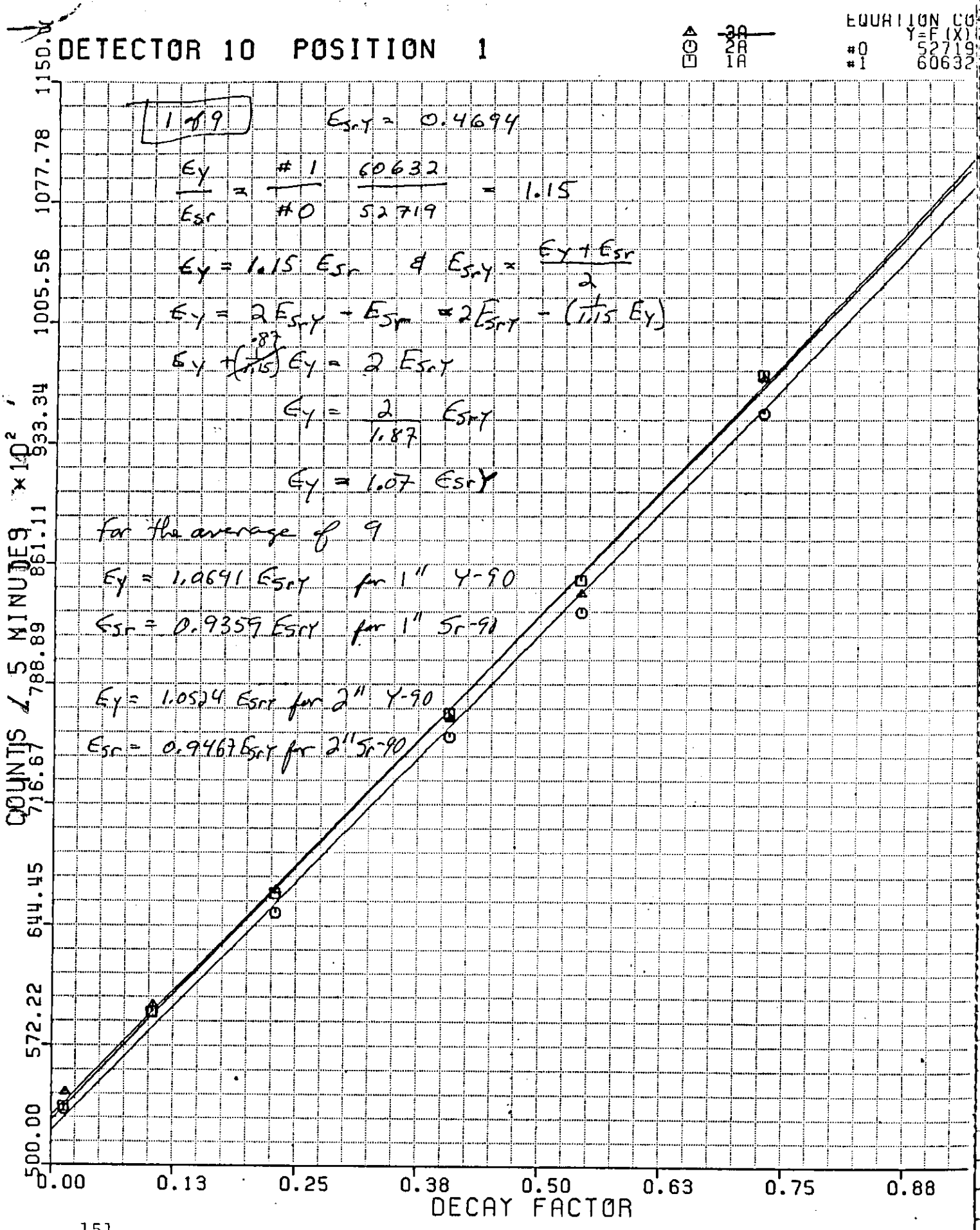
TIME ZERO DATE (HD): 13977

RADIONUCLIDE: SrY-90
HALF LIFE: 10590
COUNT TIME: 5
CPM BKG: 22

DATE COUNTED (HD): 16309

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.
48B16T	1	05/21/89		84795	84166	84768	83389
48B16U	1	05/21/89		107308	108714	109687	109090
48B16TV	1	05/21/89		208878	200713	210979	211700
48B16G	2	05/21/89		62088	62802	61690	63053
48B16J	2	05/21/89		102092	101782	101676	101546
48B16L	2	05/21/89		192834	198242	197051	195835
	5						
	5						
	5						



$\boxed{1 \text{ of } 9}$ $E_{SrY} = 0.4694$

$$\frac{E_Y}{E_{Sr}} = \frac{\#1}{\#0} \quad \frac{60632}{52719} = 1.15$$

$$E_Y = 1.15\, E_{Sr} \quad \& \quad E_{SrY} = \frac{E_Y + E_{Sr}}{2}$$

$$E_Y = 2E_{SrY} - E_{Sr} = 2E_{SrY} - \left(\frac{1}{1.15} E_Y\right)$$

$$E_Y + \left(\frac{1}{1.15}\right) E_Y = 2\, E_{SrY} \quad (.87)$$

$$E_Y = \frac{2}{1.87} E_{SrY}$$

$$E_Y = 1.07\, E_{SrY}$$

for the average of 9

$E_Y = 1.0641\, E_{SrY}$ for 1" Y-90

$E_{Sr} = 0.9359\, E_{SrY}$ for 1" Sr-90

$E_Y = 1.0524\, E_{SrY}$ for 2" Y-90

$E_{Sr} = 0.9467\, E_{SrY}$ for 2" Sr-90

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	WA77390
PROCEDURE/REV	LA-438-101/C-2
TECHNOLOGIST	S. C. Lai
DATE	02-14-90
TEMPERATURE	N/A
STARTING TIME	08:00
ENDING TIME	15:00
CHEMIST	S. A. Catlow

Technetium Analysis

Fusion Dissolution

	DESCRIPTION	LAB ID
1	Inital LMCS Check Std	F0921
2	Reagent Blank	F0922
3	Sample Composite 6	F0923
4	Duplicate Composite 6	F0924
5	Spike Composite 6	F0925
6	Final LMCS Check Std	F0926
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
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19		
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21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT. VOL.	FINAL VOL. OF STD.
LMCS Check Std	148B39/250 uL			20 mL
Spike	148B39/250 uL	F0923/500 uL		20 mL

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

Single Shell Tank
Calibration Record

Analyte:	TC-99		
Procedure:	LA-508-121	Revision:	A-0
Instrument:	Beckman Liquid Scintillator	Property Number:	WA77390
Technologist:	R. A. Jones	Payroll Number:	65801
Date:	September 19, 1988		

Calibration Standard ID: Packard 6008502 #2

Analyte Concentration: See Attached Calibration Sheets.

Type of Calibration: Quench Curve

Comments: Quench Curve

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

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POOR COPY RECEIVED

USER: 5 ID:TC-99, ALL PRESET TIME: 10.00 THU 15 FEB 1990 18:57
SAMPLE REPEAT: 1 CYCLE REPEAT: 1 SCR:N RS232:N
H#: 3 AGC:Y DCF:N RCM:Y 2 PHASE MONITOR:Y POST CHK:N VIAL:6 VOLUME:1
RCM-TIME: 0.10 INT:999.95
CHANNEL 1-LL:150 UL: 800 2SIGMA: 0.10 BKG SUB: 0.00 BKG 2SIG: 0.00 LSR: 0

SINGLE LABEL DPM SET UP ON 19 SEP 1988 08:22

UNKNOWN ID:TC 99 DIRECT UNKNOWN REPLICATES: 1
UNKNOWN NORM FACTOR ISO1:0 1.00000
UNKNOWN UNITS ISO1:DPM
UNKNOWN HALF LIFE CORRECTION:N
INDIVIDUAL UNKNOWN NORM FACTOR:N BACKGROUND QUENCH CURVES:Y
STANDARD ID:131E28-4 1-10 QUENCH LIMITS LOW:73.67 HIGH:207.7
HALF LIFE(DAYS) ISO1:N
STANDARD DPM: ISO1:0.00000000

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
31	**- 1	1	51.20	8.84	10.00	11.05	152.3	2.54		
	H#: 152, 152, 153									

BACKGROUND QUENCH CURVES: CONSTANT

CHANNEL 1
QUENCH CURVE COEFFICIENTS
A: 51.20000 B:0.00000000 C:0.00000000 D:0.00000000000

BACKGROUND QUENCH CURVE CORRELATION TABLE

BKG	H#	MEASURED CPM.	CALCULATED CPM.	PERCENT DIFF.	FLAG
1	152.3	51.20	51.20	0.00	

BACKGROUND QUENCH LIMITS LOW:0.000 HIGH:1000.
TOTAL QUENCH LIMITS LOW:73.67 HIGH:207.7

1	**- 1	1	921.10	2.08	10.00	22.47	140.3	0.26		
	H#: 141, 140, 140									
	ISO1 REF CH1:94.39							ISO1 DPM	:921.5985	
2	**- 4	1	3471.30	1.07	10.00	23.66	140.0	0.08		
	H#: 140, 140, 140									
	ISO1 REF CH1:94.39							ISO1 DPM	:3423.299	

f921
+spike

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG EN		ROMI 2P	
F922 3	**- 5	1	48.50	9.08	10.00	44.[illegible]	140.[illegible]		[illegible]	
	HH: 140, 140, 140								<20	
	ISO1 %EFF CH1:94.39							ISO1 DPM	[illegible].000000	
+Spike 4	**- 6	1	2631.70	1.22	10.00	56.[illegible]1	138.7		[illegible]	
	HH: 138, 139, 139									
	ISO1 %EFF CH1:94.40							ISO1 DPM	:2733.578	
F923 5	**- 7	1	60.60	8.12	10.00	67.1[illegible]	140.0		1.50	
	HH: 140, 139, 141									
	ISO1 %EFF CH1:94.39							ISO1 DPM	:9.958483	
+Spike 6	**- 8	1	2690.10	1.22	10.00	78.[illegible]5	140.7		0.12	
	HH: 140, 141, 141									
	ISO1 %EFF CH1:94.39							ISO1 DPM	:2795.775	
F924 7	**- 9	1	55.80	8.47	10.00	89.53	139.0		0.46	
	HH: 139, 139, 139									
	ISO1 %EFF CH1:94.40							ISO1 DPM	:4.873006	
+Spike 8	**-10	1	2541.80	1.25	10.00	100.73	138.3		0.10	
	HH: 138, 138, 139									
	ISO1 %EFF CH1:94.40							ISO1 DPM	:2630.763	
F925 9	**-11	1	934.00	2.07	10.00	111.9[illegible]	139.7		0.21	
	HH: 139, 140, 140									
	ISO1 %EFF CH1:94.39							ISO1 DPM	:935.2036	
+Spike 10	**-12	1	3357.90	1.09	10.00	123.09	139.0		0.07	
	HH: 139, 139, 139									
	ISO1 %EFF CH1:94.40							ISO1 DPM	:3507.951	
F926 11	**- 1	1	889.40	2.12	10.00	134.31	141.3		0.22	
	HH: 141, 142, 141									
	ISO1 %EFF CH1:94.39							ISO1 DPM	:963.0574	
+Spike 12	**- 2	1	3439.90	1.08	10.00	145.51	141.0		0.07	
	HH: 140, 141, 142									
	ISO1 %EFF CH1:94.39							ISO1 DPM	:3570.504	

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	N/A
Procedure/Rev	LA-505-151/A-0
Technologist	J. A. White
Date	4-30-90
Temperature	N/A
Starting Time	8:00
Ending Time	15:30
Chemist	S. A. Jones

ICP

Fusion Dissolution

	Description	Lab ID
1	LMCS Check Std	N/A
2	LMCS Digested Std	F0575
3	Reagent Blank	F0583
4	Sample 89-076	F0576
5	Duplicate 89-076	F0577
6	Spike 89-076	F0578
7	LMCS Digested Std	F0579
8	LMCS Check Std	N/A
9	Sample Composite 14	F1001
10	Duplicate Composite 14	F1002
11	Sample Composite 6	F0923

	Description	Lab ID
12	Duplicate Composite 6	F0924
13	Sample Composite 8	F0947
14	Duplicate Composite 8	F0948
15	LMCS Check Std	N/A
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	78C11K/5.0 mL	83B83A/1.0 mL	77C11J/1.0 mL	1.0 mL
Digested LMCS	78C11K/5.0 mL	83B83A/5.0 mL	77C11J/5.0 mL	50.0 mL
Spike of 89-076	78C11K/5.0 mL	82B38G/5.0 mL	77C11J/1.0 mL	
Spike (Continued)	F0578/0.4986 g			50.0 mL

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

ICP Results

RAW DATA SUMMARY

Date Analyzed:	April 30,1990	Acid Digested LMCS Standard	F0575
Procedure:	LA-505-151/A-0	Reagent Blank	F0583
Analyst:	J. A. White	Core 6 Composite	F0923
Digestion	Acid Digestion	Duplicate of Core 6 Composite	F0924
Procedure:	LA-505-159/A-0	Spike of 89-076	F0578
		Acid Digested LMCS Standard	F0579

	Instrument Starting LMCS Standard %		Acid Digest. LMCS Standard %	Reagent BLANK ppm	Wet Weight Sample ug/g	Wet Weight Sample Duplicate ug/g	Spike Recovery %	LMCS ACID Digestion %	Closing LMCS Standard %	
Aluminum	100.70%		92.02%	0.33	80713	111659	NOT CALC.	96.56%	99.27%	
Antimony	103.07%		87.00%	0.02 LT	-2012 LT	-1450 LT		67.00%	99.07%	
Arsenic	114.94%	#	99.86%	-0.02 LT	-387 LT	-391 LT		104.44%	113.03%	#
Barium	99.30%		93.10%	0.01	-37 LT	43	9.00%	92.70%	97.17%	
Beryllium	95.99%		87.90%	0.00 LT	-13 LT	-13 LT		90.60%	94.22%	
Bismuth	106.23%		94.31%	0.03 LT	14919	12799	NOT CALC.	101.54%	107.22%	
Boron	100.71%		93.20%	0.06	291	643	9.34%	92.60%	98.05%	
Cadmium	98.69%		93.70%	0.00 LT	-55 LT	-53 LT	8.31%	91.10%	96.89%	
Calcium	102.21%		143.70%	0.78	1206	1669	17.05%	144.90%	99.95%	
Cerium	92.37%		50.50%	-0.08 LT	-2932 LT	-2515 LT	-133.80%	0.80%	90.43%	
Chromium	90.41%		87.60%	0.01	322	491	23.25%	85.80%	88.92%	#
Cobalt	94.24%		95.40%	0.00 LT	-179 LT	-82 LT	0.73%	86.60%	99.92%	
Copper	100.63%		92.60%	0.01 LT	-156 LT	-128 LT	7.33%	90.60%	98.31%	
Europium	98.16%		92.70%	0.00 LT	-53 LT	-45 LT		94.90%	96.39%	
Iron	103.46%		128.30%	0.58	11319	14160	NOT CALC.	126.30%	100.84%	
Lanthanum	94.17%		89.66%	-0.01 LT	-267 LT	-160 LT	39.26%	91.90%	93.39%	
Lead	105.09%		96.71%	0.03 LT	-699 LT	-381 LT	56.37%	103.09%	108.06%	
Lithium	98.13%		88.00%	-0.01 LT	-147 LT	-128 LT	1.97%	86.20%	95.95%	
Magnesium	102.45%		108.40%	0.17	2310	1910	42.12%	107.20%	99.84%	
Manganese	100.16%		97.50%	0.03	2766	4086	21.19%	97.00%	98.30%	
Mercury	105.34%		89.88%	0.01	-60 LT	-61 LT		94.80%	104.63%	
Molybdenum	96.36%		87.60%	0.00 LT	-163 LT	-147 LT	43.03%	91.18%	94.24%	
Neodymium	85.78%	#	50.50%	-0.06 LT	-2552 LT	-2180 LT	-97.78%	18.90%	87.30%	#
Nickel	97.87%		94.20%	0.00 LT	5634	6348	11.29%	90.70%	96.04%	
Phosphorous	112.63%	#	96.46%	0.10	29753	26261	6.53%	105.20%	114.97%	#
Potassium	98.37%		74.68%	-0.09 LT	0	0	-183.40%	44.60%	98.37%	
Samarium	95.61%		3.00%	-0.12 LT	-3352 LT	-2914 LT		43.80%	99.90%	
Selenium	105.26%		88.26%	-0.02 LT	-1372 LT	-980 LT		95.04%	103.89%	
Silicon	90.12%		30.04%	0.82	14652	26507	53.57%	30.36%	87.78%	#
Silver	102.71%		91.20%	-0.01 LT	-249 LT	-215 LT	-8.76%	96.10%	102.54%	
Sodium	98.55%		97.68%	0.35	131801	127425	NOT CALC.	85.92%	96.79%	
Strontium	100.99%		96.30%	0.00	323	487	14.69%	96.00%	98.64%	
Sulfur	106.15%		95.42%	0.14	83 LT	407		101.22%	105.85%	
Tantalum	96.79%		76.60%	-0.01 LT	-513 LT	-500 LT	-18.40%	80.42%	95.64%	
Thallium	101.95%		83.48%	-0.11 LT	-2385 LT	-3475 LT		91.10%	101.34%	
Thorium	102.75%		87.41%	-0.08 LT	-2258 LT	-1993 LT		94.77%	102.26%	
Tin	100.68%		98.20%	0.02 LT	-200 LT	-186 LT	45.14%	94.72%	98.67%	
Titanium	99.79%		91.90%	0.09	-74 LT	-39 LT	49.15%	94.68%	96.79%	
Tungsten	83.80%	#	69.72%	0.01 LT	-408 LT	-420 LT		73.20%	81.87%	#
Uranium	102.10%			-0.89 LT	-16815 LT	-12003 LT		35.91%	107.36%	
Vanadium	95.92%		86.90%	-0.01 LT	-108 LT	-173 LT		90.90%	94.94%	
Zinc	100.16%		95.20%	0.08	98	126	13.42%	93.90%	98.31%	
Zirconium	98.91%		88.94%	-0.01 LT	-233 LT	-185 LT	42.85%	92.02%	96.18%	

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

ICP Results

RAW DATA

Date Analyzed:	April 30,1990	Acid Digested LMCS Standard	F0575
Procedure:	LA-505-151/A-0	Reagent Blank	F0583
Analyst:	J. A. White	Core 6 Composite	F0923
Digestion	Acid Digestion	Duplicate of Core 6 Composite	F0924
Procedure:	LA-505-159/A-0	Spike of 89-076	F0578
		Acid Digested LMCS Standard	F0579

	SST-1	SST-2	SST-3	Starting LMCS Standard Instrument Standard ppm	Recovery %		LMCS Acid Digestion Standard ppm	Acid Digestion Standard Recovery %	Reagent Blank ppm	Digestion Weight Volume Sample Dilution Three ppm
Aluminum				50.35	100.70%		4.60	92.02%	0.33	
Antimony	10.31				103.07%		0.87	87.00%	0.02	
Arsenic				57.47	114.94%	#	4.99	99.86%	-0.02 LT	
Barium	9.93				99.30%		0.93	93.10%	0.01 LT	
Beryllium				9.60	95.99%		0.88	87.90%	0.00	
Bismuth		53.22			106.23%		4.73	94.31%	0.03 LT	
Boron	10.07				100.71%		0.93	93.20%	0.06 LT	
Cadmium	9.87				98.69%		0.94	93.70%	0.00	
Calcium	10.22				102.21%		1.44	143.70%	0.78 LT	
Cerium	9.24				92.37%		0.51	50.50%	-0.08	
Chromium	9.04				90.41%		0.88	87.60%	0.01 LT	
Cobalt	9.42				94.24%		0.95	95.40%	0.00	
Copper	10.06				100.63%		0.93	92.60%	0.01 LT	
Europium		9.82			98.16%		0.93	92.70%	0.00 LT	
Iron	10.35				103.46%		1.28	128.30%	0.58 LT	
Lanthanum		47.18			94.17%		4.49	89.66%	-0.01	
Lead		52.65			105.09%		4.85	96.71%	0.03 LT	
Lithium	9.81				98.13%		0.88	88.00%	-0.01 LT	
Magnesium	10.25				102.45%		1.08	108.40%	0.17 LT	
Manganese	10.02				100.16%		0.98	97.50%	0.03	
Mercury				26.34	105.34%		2.25	89.88%	0.01	
Molybdenum				48.18	96.36%		4.38	87.60%	0.00	
Neodymium	8.58				85.78%	#	0.51	50.50%	-0.06 LT	
Nickel	9.79				97.87%		0.94	94.20%	0.00 LT	
Phosphorous				56.32	112.63%	#	4.82	96.46%	0.10 LT	
Potassium	24.59				98.37%		1.87	74.68%	-0.09	
Samarium		9.56			95.61%		0.03	3.00%	-0.12 LT	
Selenium				52.63	105.26%		4.41	88.26%	-0.02 LT	
Silicon				45.06	90.12%		1.50	30.04%	0.82 LT	
Silver		10.27			102.71%		0.91	91.20%	-0.01	
Sodium	24.64				98.55%		2.44	97.68%	0.35 LT	
Strontium	10.10				100.99%		0.96	96.30%	0.00	
Sulfur				53.08	106.15%		4.77	95.42%	0.14	
Tantalum				48.40	96.79%		3.83	76.60%	-0.01	
Thallium				50.98	101.95%		4.17	83.48%	-0.11 LT	
Thorium		51.48			102.75%		4.38	87.41%	-0.08 LT	
Tin	50.34				100.68%		4.91	98.20%	0.02 LT	
Titanium				49.90	99.79%		4.60	91.90%	0.09 LT	
Tungsten				20.95	83.80%	#	1.74	69.72%	0.01	
Uranium		51.15			102.10%		-0.68 LT		-0.89 LT	
Vanadium				9.59	95.92%		0.87	86.90%	-0.01 LT	
Zinc	10.02				100.16%		0.95	95.20%	0.08 LT	
Zirconium				49.46	98.91%		4.45	88.94%	-0.01 LT	
Dilution Factor	1.00	1.00	1.00				10.00		1.00	1.00

	0.00286 g/mL		Digestion	0.00238 g/mL		Digestion	0.00997 g/mL	
	0.5720 g		Weight	0.4762 g		Weight	0.4986 g	
	200.00 mL		Volume	200.00 mL		Volume	50.00 mL	
	Sample	Sample	Sample	Sample	Sample	Spike of	Spike of	Spike of
			Duplicate	Duplicate	Duplicate	Sample	Sample	Sample
	Dilution	Dilution	Dilution	Dilution	Dilution	Dilution	Dilution	Dilution
	Two	One	Three	Two	One	Three	Two	One
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Aluminum	230.84	258.19		265.86	257.96		546.54	533.49
Antimony	-38.74	-5.75 LT		-9.77	-3.45 LT		0.00	-2.44 LT
Arsenic	-10.15	-1.11 LT		-2.34	-0.93 LT		5.39	4.36
Barium	-1.84	-0.11 LT		0.12	0.10		1.27	0.90
Beryllium	-0.30	-0.04 LT		-0.03	-0.03 LT		0.97	0.96
Bismuth	3.99	42.67		26.10	30.48		178.87	171.48
Boron	2.65	0.83		6.79	1.53		4.16	0.93
Cadmium	-1.26	-0.16 LT		-0.25	-0.13 LT		0.92	0.83
Calcium	3.45	2.79		3.97	3.78		5.57	5.16
Cerium	-76.97	-8.39 LT		-0.64	-5.99 LT		2.31	-13.38 LT
Chromium	-1.66	0.92		1.01	1.17		14.15	13.27
Cobalt	-4.10	-0.51 LT		1.17	-0.20 LT		1.29	0.07 LT
Copper	-4.90	-0.45 LT		-0.20	-0.30 LT		1.61	0.73
Europium	-1.40	-0.15 LT		-0.02	-0.11 LT		0.99	0.73
Iron	32.37	32.95		33.72	33.45		262.92	258.11
Lanthanum	-5.51	-0.76 LT		-0.18	-0.38 LT		4.98	3.93
Lead	-20.97	-2.00 LT		-3.50	-0.91 LT		15.73	8.27
Lithium	-3.66	-0.42 LT		-0.04	-0.30 LT		0.82	0.20
Magnesium	6.61	3.91		4.55	5.85		5.54	2.41
Manganese	7.91	8.05		-0.60	9.73		39.70	39.05
Mercury	-1.08	-0.17 LT		0.49	-0.15 LT		10.25	2.93
Molybdenum	-3.49	-0.47 LT		-1.25	-0.35 LT		4.44	4.30
Neodymium	-54.86	-7.30 LT		-5.36	-5.19 LT		-2.80	-9.78 LT
Nickel	12.63	16.11		15.11	15.71		1.50	1.13
Phosphorous	85.10	105.31		62.53	58.89		38.10	34.07
Potassium	NA	NA		NA	NA		1.64	-18.34 LT
Samarium	-86.23	-9.59 LT		-1.47	-6.94 LT		0.89	-16.19 LT
Selenium	-34.58	-3.92 LT		-6.55	-2.33 LT		9.76	6.47
Silicon	41.91	27.65		63.11	31.37		4.95	5.36
Silver	-6.24	-0.71 LT		-0.36	-0.51 LT		0.12	-0.88 LT
Sodium	376.95	377.11		303.40	283.15		923.60	911.02
Strontium	0.17	0.92		1.16	1.13		4.99	4.85
Sulfur	-6.33	0.24 LT		2.50	0.97		18.84	16.44
Tantalum	-12.84	-1.47 LT		-1.57	-1.19 LT		0.30	-1.83 LT
Thallium	-106.20	-6.82 LT		15.91	-8.28 LT		12.16	-10.54 LT
Thorium	-58.16	-6.46 LT		-1.89	-4.75 LT		4.46	-5.64 LT
Tin	-4.73	-0.57 LT		-0.23	-0.44 LT		5.29	4.51
Titanium	-2.89	-0.21 LT		-0.18	-0.09 LT		4.92	4.58
Tungsten	-10.92	-1.17 LT		-2.96	-1.00 LT		0.61	0.33 LT
Uranium	-531.60	-48.09 LT		-8.36	-28.58 LT		41.18	-54.14 LT
Vanadium	-4.22	-0.31 LT		0.55	-0.41 LT		0.50	0.31 LT
Zinc	-0.51	0.28		0.28	0.30		3.23	2.89
Zirconium	-8.43	-0.67 LT		0.06	-0.44 LT		5.80	4.28
Dilution Factor	101.00	21.00	1.00	101.00	21.00	1.00	101.00	21.00

	Spike Recovery %	Standard LMCS Acid Digestion ppm	Acid Digestion Standard Recovery %	SST-1	SST-2	Ending LMCS Standard SST-3	Standard Recovery %		Spike Standard LMCS ppm added	Spike Standard ID Book # 82B38G 78C11K 77C11J
Aluminum	NOT CALC.	4.83	96.56%			50.35	100.70%		10.00	
Antimony		0.67	67.00%	10.31			103.07%			
Arsenic		5.22	104.44%			57.47	114.94%	#		
Barium	9.00%	0.93	92.70%	9.93			99.30%		10.00	
Beryllium		0.91	90.60%			9.60	95.99%			
Bismuth	NOT CALC.	5.09	101.54%		53.22		106.23%		10.00	
Boron	9.34%	0.93	92.60%	10.07			100.71%		10.00	
Cadmium	8.31%	0.91	91.10%	9.87			98.69%		10.00	
Calcium	17.05%	1.45	144.90%	10.22			102.21%		10.00	
Cerium	-133.80%	0.01	0.80%	9.24			92.37%		10.00	
Chromium	23.25%	0.86	85.80%	9.04			90.41%		10.00	
Cobalt	0.73%	0.87	86.60%	9.42			94.24%		10.00	
Copper	7.33%	0.91	90.60%	10.06			100.63%		10.00	
Europium		0.95	94.90%		9.82		98.16%			
Iron	NOT CALC.	1.26	126.30%	10.35			103.46%		10.00	
Lanthanum	39.26%	4.60	91.90%		47.18		94.17%		10.00	
Lead	56.37%	5.17	103.09%		52.65		105.09%		10.00	
Lithium	1.97%	0.86	86.20%	9.81			98.13%		10.00	
Magnesium	42.12%	1.07	107.20%	10.25			102.45%		10.00	
Manganese	21.19%	0.97	97.00%	10.02			100.16%		10.00	
Mercury		2.37	94.80%			26.34	105.34%			
Molybdenum	43.03%	4.56	91.18%			48.18	96.36%		10.00	
Neodymium	-97.78%	0.19	18.90%	8.58			85.78%	#	10.00	
Nickel	11.29%	0.91	90.70%	9.79			97.87%		10.00	
Phosphorous	6.53%	5.26	105.20%			56.32	112.63%	#	10.00	
Potassium	-183.40%	1.12	44.60%	24.59			98.37%		10.00	
Samarium		0.44	43.80%		9.56		95.61%			
Selenium		4.75	95.04%			52.63	105.26%			
Silicon	53.57%	1.52	30.36%			45.06	90.12%		10.00	
Silver	-8.76%	0.96	96.10%		10.27		102.71%		10.00	
Sodium	NOT CALC.	2.15	85.92%	24.64			98.55%		10.00	
Strontium	14.69%	0.96	96.00%	10.10			100.99%		10.00	
Sulfur		5.06	101.22%			53.08	106.15%			
Tantalum	-18.40%	4.02	80.42%			48.40	96.79%		9.95	
Thallium		4.56	91.10%			50.98	101.95%			
Thorium		4.75	94.77%		51.48		102.75%			
Tin	45.14%	4.74	94.72%	50.34			100.68%		10.00	
Titanium	49.15%	4.73	94.68%			49.90	99.79%		10.00	
Tungsten		1.83	73.20%			20.95	83.80%	#		
Uranium		1.80	35.91%		51.15		102.10%			
Vanadium		0.91	90.90%			9.59	95.92%			
Zinc	13.42%	0.94	93.90%	10.02			100.16%		10.00	
Zirconium	42.85%	4.60	92.02%			49.46	98.91%		9.98	
Dilution Factor		10.00		1.00	1.00	1.00			1.00	

	SST-1	SST-2	LMCS Standards Values ppm SST-3	LMCS Standard IDs Book # 78C11K 83B83A 77C11J	ACID DIGESTION LMCS STANDARD VALUES ppm in Sample	ACID DIGEST. LMCS IDs Book # 78C11K 83B83A 77C11J
Aluminum			50.00		50.00	
Antimony	10.00				10.00	
Arsenic			50.00		50.00	
Barium	10.00				10.00	
Beryllium			10.00		10.00	
Bismuth		50.10			50.10	
Boron	10.00				10.00	
Cadmium	10.00				10.00	
Calcium	10.00				10.00	
Cerium	10.00				10.00	
Chromium	10.00				10.00	
Cobalt	10.00				10.00	
Copper	10.00				10.00	
Europium		10.00			10.00	
Iron	10.00				10.00	
Lanthanum		50.10			50.10	
Lead		50.10			50.10	
Lithium	10.00				10.00	
Magnesium	10.00				10.00	
Manganese	10.00				10.00	
Mercury			25.00		25.00	
Molybdenum			50.00		50.00	
Neodymium	10.00				10.00	
Nickel	10.00				10.00	
Phosphorous			50.00		50.00	
Potassium	25.00				25.00	
Samarium		10.00			10.00	
Selenium			50.00		50.00	
Silicon			50.00		50.00	
Silver		10.00			10.00	
Sodium	25.00				25.00	
Strontium	10.00				10.00	
Sulfur			50.00		50.00	
Tantalum			50.00		50.00	
Thallium			50.00		50.00	
Thorium		50.10			50.10	
Tin	50.00				50.00	
Titanium			50.00		50.00	
Tungsten			25.00		25.00	
Uranium		50.10			50.10	
Vanadium			10.00		10.00	
Zinc	10.00				10.00	
Zirconium			50.00		50.00	
Dilution Factor					1.00	

ICP Calibration Report

Procedure: LA-505-151 Revision: A-0
Instrument: WB39939
Technologist: J.A. White
Date: April 30, 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 - April 30, 1990

Sample name : SST0
Programme : SST 30-Apr-90 10:18:35

NAME	MV INT	RSD
AL	2.20	1.14
SB	0.53	0.78
AS	1.55	1.03
BA	4.02	0.97
BE	0.94	2.32
BI	6.18	0.72
B	5.52	1.17
CD	3.43	0.84
CA	0.51	1.71
CE	5.67	1.02
CR	1.58	1.26
CO	0.26	0.32
CU	3.20	0.99
EU	4.28	1.17
FE	1.83	0.60
LA	0.37	1.10
PB	0.33	0.73
LI	3.96	0.95
MG	0.49	0.91
MN	1.01	1.12
HG	5.82	0.85
MO	2.81	0.71
ND	5.68	1.14
NI	5.34	0.50
P	1.67	0.91
K	3.20	0.53
SM	5.17	1.03
SE	2.48	0.87
SI	3.87	0.16
AG	16.70	0.91
NA	5.60	1.23
SR	3.81	0.83
S	0.92	1.48
TA	4.57	1.16
TL	5.03	0.87
TH	1.14	1.07
SN	1.97	1.05
TI	4.21	0.77
W	2.10	1.53
U	5.37	1.09
V1	5.09	0.93
ZN	4.69	0.65
ZR	4.95	0.85

ICP Calibration - April 30, 1990

Sample name : SST1
Programme : SST 30-Apr-90 10:22:40

NAME	MV INT	RSD
LI	553.61	0.25
K	16.56	0.20
NA	75.89	0.21

Sample name : SST2
Programme : SST 30-Apr-90 10:24:28

NAME	MV INT	RSD
BA	437.78	0.60
BE	571.45	0.61
CD	555.48	0.56
CA	588.05	0.58
CR	114.65	1.83
CO	6.01	1.37
CU	133.33	0.50
FE	174.15	0.59
MG	639.16	0.41
MN	415.50	0.44
NI	259.77	0.49
AG	621.48	0.46
SR	777.57	0.56
VI	236.32	1.15
ZN	844.10	0.47

Sample name : SST3
Programme : SST 30-Apr-90 10:27:02

NAME	MV INT	RSD
AL	26.28	0.55
B	783.88	0.71
HG	1144.05	0.43
MO	456.95	0.66
P	77.75	0.56
SI	103.25	0.59
S	49.36	0.80
TA	202.46	0.63
TI	662.47	0.57
W	104.41	0.63
ZR	243.32	0.51

Sample name : SST4
Programme : SST 30-Apr-90 10:29:04

NAME	MV INT	RSD
SB	10.88	1.02
AS	175.33	0.66
BI	155.55	0.56
PB	8.02	0.63
SE	75.98	0.55
TL	59.00	0.32

ICP Calibration - April 30, 1990

Sample name : SST4
Programme : SST 30-Apr-90 10:39:04

NAME	MV INT	RSD
SB	10.88	1.02
AS	175.33	0.66
BI	155.55	0.56
PB	8.02	0.63
SE	75.98	0.55
TL	59.00	0.32
TH	20.76	0.50
SN	383.46	0.71
U	16.25	0.47

Sample name : SST5
Programme : SST 30-Apr-90 10:31:35

NAME	MV INT	RSD
CE	31.38	0.28
EU	670.06	0.58
LA	8.07	0.35
ND	27.77	0.15
SM	18.02	0.28

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.0910	27.594	-0.457031E+01	0.207647E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	2.2010	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	26.280	50.000	50.000	50.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.5076	11.421	-0.516647E+01	0.956900E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.5343	0.0000	0.0000	0.0000	0.0000		CRV1
SST4	0	10.877	100.00	100.00	100.00	0.0000	0.0000	CRV1

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.4763	184.10	-0.094243E+00	0.575446E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.5540	0.0000	0.0000	0.0000	0.0000		CRV1
SST4	0	175.33	100.00	100.00	100.00	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.8152	459.67	-0.185168E+00	0.461076E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.0160	0.0000	0.0000	-0.000	-0.000		CRV1
SST2	0	437.78	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8955	600.02	-0.330466E-01	0.350565E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.9427	0.0000	0.0000	-0.000	-0.000		CRV1
SST2	0	571.45	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.8694	163.33	-0.413622E+01	0.669471E+00		

Name	Number	Int.	Conc	True	Calc	Conc	% Error	Curve

ICP Calibration - April 30, 1990

Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.8694	163.33	-0.413623E+01	0.669471E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	6.1783	0.0000	0.0000	0.0000	0.0000		CRV1
SST4	0	155.55	100.00	100.00	100.00	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.2468	823.07	-0.354798E+00	0.642382E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.5230	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	783.88	50.000	50.000	50.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.2547	583.25	-0.124118E+00	0.362283E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	3.4260	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	555.48	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4804	617.45	-0.172130E-01	0.340402E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.5057	0.0000	0.0000	0.0000	0.0000		CRV1

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4804	617.45	-0.172130E-01	0.340402E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.5057	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	588.05	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.3859	22.449	-0.721718E+01	0.127302E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.6692	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	21.380	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.4988	120.39	-0.279042E+00	0.176870E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.5277	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	114.65	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.2454	6.3147	-0.897666E+00	0.347484E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.2454	6.3147	-0.897666E+00	0.347484E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.2583	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	6.0146	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.0391	140.00	-0.491645E+00	0.153667E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	3.1990	0.0000	0.0000	-0.000	-0.000		CRV1
SST2	0	133.33	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.0651	703.57	-0.128540E+00	0.300397E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.2790	0.0000	0.0000	-0.000	-0.000		CRV1
SST5	0	670.06	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.7425	182.86	-0.212907E+00	0.116068E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.7425	182.86	-0.212907E+00	0.116068E-00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.8343	0.0000	0.0000	-0.000	-0.000		CRV1
SST2	0	174.15	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.3490	8.4735	-0.953782E+00	0.259650E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.3673	0.0000	0.0000	0.0000	0.0000		CRV1
SST5	0	8.0700	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.3018	8.4242	-0.412269E+01	0.129780E+02		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.3177	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	8.0230	100.00	100.00	100.00	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.7642	581.39	-0.360442E+00	0.909672E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.7642	581.39	-0.366442E+00	0.909672E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	3.9623	0.0000	0.0000	-0.000	-0.000		CRV1
SST1	0	553.61	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4699	671.12	-0.154907E-01	0.313154E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.4947	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	639.16	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.9614	436.28	-0.488312E-01	0.482522E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.0120	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	413.50	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.5284	1201.3	-0.255631E+00	0.439278E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.5284	1201.3	-0.255631E+00	0.439278E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.8193	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	1144.1	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.6654	479.79	-0.305898E+00	0.110098E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	2.8057	0.0000	0.0000	-0.000	-0.000		CRV1
SST3	0	456.95	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.3925	29.157	-0.513873E+01	0.905291E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.6763	0.0000	0.0000	0.0000	0.0000		CRV1
SST5	0	27.769	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.0746	372.76	-0.419898E+00	0.786081E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.0746	272.73	-0.419898E+00	0.786081E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.3417	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	259.77	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.5887	81.641	-0.109905E+01	0.657194E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.6723	0.0000	0.0000	-0.000	-0.000		CRV1
SST2	0	77.753	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.0375	17.383	-0.119679E+02	0.374308E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	3.1973	0.0000	0.0000	-0.000	-0.000		CRV1
SST1	0	16.555	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.9071	13.919	-0.803797E+01	0.155614E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.5071	18.919	-0.803797E+01	0.155614E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.1653	0.0000	0.0000	0.0000	0.0000		CRV1
SST5	0	18.018	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.3535	79.783	-0.337022E+01	0.136042E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	2.4773	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	75.984	100.00	100.00	100.00	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.6727	108.41	-0.194506E+01	0.503119E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	3.3660	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	105.25	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	15.864	652.56	-0.552230E+00	0.330697E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	15.294	652.56	-0.552230E+00	0.3306976-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	16.699	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	621.48	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.3184	79.688	-0.398203E+01	0.711388E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.5983	0.0000	0.0000	0.0000	0.0000		CRV1
SST1	0	75.893	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.6160	816.45	-0.583851E-01	0.259477E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	3.8063	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	777.57	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8696	51.824	-0.944798E+00	0.103219E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8696	51.824	-0.944798E+00	0.103219E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.9153	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	49.356	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.3377	212.58	-0.115365E+01	0.252660E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.5660	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	202.46	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.7769	61.950	-0.931668E+01	0.185284E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.0283	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	59.000	100.00	100.00	100.00	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.0789	21.796	-0.578772E+01	0.509632E+01		

Name	Number	Int.	Conc	True	Calc	Conc	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.0789	21.796	-0.578772E+01	0.509632E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.1357	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	20.758	100.00	100.00	100.00	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.8750	402.64	-0.517357E+00	0.262130E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.9737	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	382.46	100.00	100.00	100.00	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.0011	695.59	-0.319910E+00	0.759581E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.2117	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	662.47	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.9906	109.63	-0.102491E+01	0.488708E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.9906	109.63	-0.102401E+01	0.488708E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	2.0953	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	104.41	50.000	50.000	50.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.1025	17.057	-0.493930E+02	0.919625E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.3710	0.0000	0.0000	0.0000	0.0000		CRV1
SST4	0	16.245	100.00	100.00	100.00	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.8390	248.14	-0.440576E+00	0.884950E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.0937	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	236.32	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.4599	886.31	-0.111057E+00	0.238254E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - April 30, 1990

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.4599	885.31	-0.111057E+00	0.288264E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SSI0	0	4.6947	0.0000	0.0000	0.0000	0.0000		CRV1
SSI2	0	844.10	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.7060	255.49	-0.103907E+01	0.209757E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SSI0	0	4.9537	0.0000	0.0000	0.0000	0.0000		CRV1
SSI2	0	243.32	50.000	50.000	50.000	0.0000	0.0000	CRV1

Sample name : HNO3
Programme : SST 30-Apr-90 10:43:38

NAME	MV INT	CONCEN	RSD
Al	2.07	(-0.271	-28.40
Sb	0.52	-0.097	-47.26
As	1.46	(-0.055	-23.64
Ba	3.72	(-0.013	-24.03
Be	0.89	(-0.002	-15.54
Bi	5.86	(-0.212	-30.47
B	5.21	(-0.020	-24.53
Cd	3.25	(-0.006	-15.00
Ca	0.49	-0.001	-27.50
Ce	5.28	(-0.493	-25.71
Cr	1.49	(-0.016	-32.16
Co	0.26	-0.003	-416.33
Cu	2.98	(-0.033	-22.66
Eu	3.97	(-0.009	-22.84
Fe	1.72	(-0.013	-39.64
La	0.36	-0.030	-24.74
Pb	0.31	-0.087	-30.00
Li	3.70	(-0.034	-36.91
Mg	0.48	-0.001	-23.33
Mn	0.97	-0.002	-27.43
Hg	5.39	(-0.019	-23.88
Mo	2.67	-0.015	-18.69
Nd	5.30	(-0.344	-34.84
Ni	5.04	(-0.023	-14.02

ICP Analysis - April 30, 1990 Acid Blank

Sample name : HNO3
Programme : SST 30-Apr-90 10:43:33

NAME	MV INT	CONCEN	RSD
Al	2.07	(-0.271	-29.40
Sb	0.52	-0.097	-47.26
As	1.46	(-0.055	-23.84
Ba	3.72	(-0.013	-24.03
Be	0.89	(-0.002	-16.54
Bi	5.86	(-0.212	-30.47
B	5.21	(-0.020	-24.51
Cd	3.35	(-0.006	-16.00
Ca	0.49	-0.001	-27.50
Ce	5.38	(-0.493	-26.71
Cr	1.49	(-0.016	-32.16
Co	0.26	-0.003	-416.33
Cu	2.98	(-0.033	-22.66
Eu	3.97	(-0.009	-22.84
Fe	1.72	(-0.013	-39.64
La	0.36	-0.030	-24.74
Pb	0.21	-0.087	-30.00
Li	3.70	(-0.024	-26.91
Mg	0.48	-0.001	-23.32
Mn	0.97	-0.002	-27.42
Hg	5.29	(-0.019	-26.88
Mo	2.67	-0.015	-18.69
Nd	5.30	(-0.344	-34.84
Ni	5.04	(-0.023	-14.02
P	1.55	(-0.081	-36.19
K	3.01	(-0.715	-20.15
Sm	4.80	(-0.574	-24.72
Se	2.34	(-0.189	-20.21
Si	3.52	(-0.170	-17.75
Ag	15.49	(-0.040	-25.00
Na	5.30	(-0.284	-24.11
Sr	3.58	(-0.006	-22.84
S	0.87	(-0.047	-48.24
Ta	4.35	(-0.080	-33.71
Tl	4.64	(-0.711	-18.53
Th	1.07	(-0.357	-24.30
Sn	1.88	-0.025	-25.61
Ti	3.97	(-0.018	-22.57
W	3.01	-0.041	-55.36
U	4.98	(-3.556	-23.85
V	4.74	(-0.031	-15.04
Zn	4.56	-0.003	-40.02
Zr	4.68	(-0.057	-24.52

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : 78C11K
Sample code 1 : SST1
Sample code 2 : DIRECT
Programme : SST 30-Apr-90 10:47:11

NAME	MV INT	CONCEN	RSD
Al	2.11	-0.184	-17.70
Sb	1.59	10.220	1.14
As	1.60	0.028	30.88
Ba	221.15	10.011	0.74
Be	0.90	-0.001	-5.08
Bi	5.86	(-0.212	-25.19
B	164.63	10.221	0.57
Cd	278.30	9.958	0.31
Ca	304.51	10.348	0.63
Ce	12.92	9.225	0.64
Cr	53.36	9.159	0.14
Co	3.36	10.760	1.05
Cu	59.24	10.149	0.64
Eu	4.69	0.012	8.16
Fe	91.46	10.402	0.50
La	0.38	0.021	40.18
Pb	0.31	-0.087	-45.00
Li	112.63	9.885	0.72
Mg	331.14	10.354	0.55
Mn	311.08	10.136	0.38
Hg	5.49	(-0.014	-26.63
Mo	2.76	-0.005	-35.28
Nd	15.28	8.697	0.53
Ni	131.03	9.880	0.45
P	1.57	(-0.065	-22.18
K	9.81	24.754	0.71
Sm	4.62	(-0.655	-7.29
Se	5.11	3.577	0.29
Si	3.50	(-0.186	-6.34
Ag	15.05	(-0.054	-9.22
Na	40.43	24.775	0.72
Sr	397.78	10.183	0.78
S	1.19	0.281	5.51
Ta	4.21	(-0.089	-9.60
Tl	4.74	(-0.531	-13.49
Th	1.08	-0.263	-13.41
Sn	194.81	50.548	0.48
Ti	3.89	(-0.025	-6.87
W	2.32	0.110	19.93
U	5.34	-0.242	-161.17
V	4.65	(-0.038	-3.84
Zn	427.59	10.076	0.38
Zr	4.62	(-0.070	-10.76

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : 0353BA
Sample code 1 : SSI2
Sample code 2 : DIRECT
Programme : SSI 30-Apr-90 10:51:22

NAME	MV INT	CONCEN	RSD
Al	4.83	5.403	1.06
Sb	0.59	0.506	15.44
As	4.86	1.904	0.49
Ba	4.15	0.008	41.72
Be	0.95	0.000	590.95
Bi	87.19	54.237	0.48
B	6.43	0.058	5.12
Cd	3.51	0.003	70.68
Ca	0.95	0.015	0.53
Ce	5.85	0.231	51.91
Cr	2.01	0.076	3.89
Co	0.26	0.022	65.74
Cu	4.84	0.252	2.62
Eu	332.08	9.847	0.53
Fe	2.28	0.052	9.49
La	18.70	147.592	0.57
Pb	4.49	54.192	0.77
Li	3.78	-0.017	-35.39
Mg	0.70	0.006	2.60
Mn	1.20	0.009	10.25
Hg	6.61	0.035	13.56
Mo	2.87	0.007	65.51
Nd	6.23	0.497	13.09
Ni	5.47	0.010	70.09
P	2.04	0.241	16.83
K	3.06	-0.510	-28.09
Sm	11.52	9.893	0.94
Se	2.61	0.186	29.70
Si	4.97	0.554	4.10
Ag	330.66	10.383	0.32
Na	5.35	-0.177	-35.46
Sr	3.93	0.003	43.13
S	1.08	0.172	11.68
Ta	5.08	0.130	12.59
Tl	8.35	6.149	1.65
Th	11.36	52.117	0.51
Sn	2.21	0.061	7.65
Ti	4.89	0.051	7.84
W	2.08	-0.006	-320.63
U	11.17	53.350	1.02
V	7.62	0.218	2.19
Zn	5.31	0.015	9.77
Zr	5.39	0.091	13.82

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : 77C11J
Sample code 1 : SST3
Sample code 2 : DIRECT
Programme : SST 30-Apr-90 10:55:14

NAME	MV INT	CONCEN	RSD
Al	26.63	50.724	0.78
Sb	0.66	1.180	4.00
As	102.18	57.907	0.65
Ba	4.35	0.015	14.93
Be	274.75	9.599	0.44
Bi	7.64	0.976	4.50
B	7.79	0.145	63.09
Cd	3.78	0.013	14.22
Ca	1.33	0.028	0.78
Ce	5.67	-0.003	-3791.9
Cr	1.80	0.039	8.06
Co	0.30	0.130	4.09
Cu	3.53	0.051	9.08
Eu	4.31	0.001	197.69
Fe	2.23	0.045	6.28
La	0.37	0.002	449.97
Pb	0.33	0.160	29.23
Li	3.93	-0.003	-139.58
Mg	0.75	0.008	1.41
Mn	1.35	0.017	3.97
Hg	610.23	26.551	1.04
Mo	447.34	48.942	0.75
Nd	5.76	0.078	27.28
Ni	11.76	0.505	2.03
P	85.81	155.297	1.90
K	3.19	-0.021	-617.67
Sm	5.20	0.049	223.45
Se	41.77	53.457	0.70
Si	94.75	45.724	0.05
Ag	27.70	0.364	0.96
Na	6.67	0.764	5.72
Sr	3.93	0.003	33.90
S	52.37	153.113	1.45
Ta	198.74	49.059	0.82
Tl	32.54	50.980	0.55
Th	1.31	0.899	6.24
Sn	2.70	0.190	1.02
Ti	666.34	50.294	1.21
W	45.40	21.163	0.74
U	6.96	14.601	0.84
V	117.64	9.734	0.45
Zn	6.22	0.036	3.11
Zr	241.29	49.573	1.15

ICP Analysis - April 30, 1990 Acid Blank

Sample name : HNO3
Programme : SSI 30-Apr-90 12:34:17

NAME	MV INT	CONCEN	RSD
Al	2.08	(-0.259	-12.25
Sb	0.51	-0.219	-14.18
As	1.46	(-0.055	-17.31
Ba	3.73	(-0.013	-14.05
Be	0.88	(-0.002	-5.72
Bi	5.77	(-0.271	-14.47
B	5.30	-0.015	-5.80
Cd	3.22	(-0.007	-14.73
Ca	0.51	0.000	1374.72
Ce	5.28	(-0.501	-12.50
Cr	1.48	(-0.017	-20.54
Co	0.25	-0.032	-10.71
Cu	2.99	(-0.032	-13.86
Eu	3.98	(-0.009	10.85
Fe	1.72	(-0.014	-23.15
La	0.35	-0.038	-20.83
Pb	0.31	(-0.134	-29.57
Li	3.69	(-0.024	-11.58
Mg	0.48	-0.001	-16.08
Mn	0.96	(-0.003	-22.24
Hg	6.14	0.014	23.77
Mo	2.61	(-0.021	-11.63
Nd	5.22	(-0.413	-14.22
Ni	4.98	(-0.029	-17.89
P	1.52	(-0.099	-21.40
K	3.01	(-0.719	-15.96
Sm	4.80	(-0.564	-12.59
Se	2.33	(-0.205	-6.63
Si	3.49	(-0.188	-11.63
Ag	15.49	(-0.040	-11.93
Na	5.20	(-0.385	-11.45
Sr	3.58	(-0.006	-13.66
S	0.87	-0.043	-15.11
Ta	4.26	(-0.077	-15.41
Tl	4.66	(-0.685	-19.60
Th	1.06	(-0.382	-14.75
Sn	1.87	(-0.028	-20.06
Ti	3.97	(-0.018	-13.83
W	1.96	(-0.065	-23.43
U	4.99	(-3.544	-11.87
V	4.77	(-0.028	-16.50
Zn	4.43	(-0.006	-13.66
Zr	4.69	(-0.055	-13.26

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : 78C11K
Sample code 1 : SST1
Sample code 2 : DIRECT
Programme : SST 30-Apr-90 12:37:55

NAME	MV INT	CONCEN	RSD
Al	2.21	0.017	481.36
Sb	1.58	10.146	1.55
As	1.65	0.058	45.93
Ba	214.14	9.688	0.21
Be	0.93	-0.000	-170.69
Bi	6.02	-0.106	-66.10
B	157.48	9.761	0.21
Cd	275.01	9.839	0.95
Ca	393.26	9.965	0.35
Ce	12.95	9.274	1.40
Cr	52.27	8.967	0.76
Co	3.15	10.065	1.94
Cu	66.87	9.785	0.04
Eu	4.90	0.019	16.64
Fe	88.78	10.092	0.38
La	0.38	0.038	27.27
Pb	0.31	-0.039	-69.39
Li	108.86	9.542	0.06
Mg	320.92	10.034	0.15
Mn	205.58	9.871	0.41
Hg	5.77	-0.002	-132.93
Mo	2.80	-0.001	-589.75
Nd	15.44	8.836	2.72
Ni	128.67	9.694	0.83
P	1.70	0.020	174.66
K	9.80	24.722	1.34
Sm	4.89	(-0.432	-41.18
Se	5.11	3.580	3.66
Si	3.64	(-0.115	-34.45
Ag	15.91	-0.026	-43.85
Na	39.77	24.307	0.32
Sr	384.54	9.841	0.20
S	1.23	0.323	12.01
Ta	4.42	-0.036	-85.06
Tl	5.12	0.163	130.52
Th	1.13	-0.015	-800.86
Sn	192.97	50.066	1.01
Ti	4.04	-0.013	-45.76
W	2.37	0.136	6.95
U	5.61	2.176	51.46
V	4.96	-0.011	-48.65
Zn	418.64	9.863	0.56
Zr	4.82	-0.028	-63.66

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : 83B38A
Sample code 1 : SSI2
Sample code 2 : DIRECI
Programme : SSI 30-Apr-90 12:41:50

NAME	MV INT	CONCEN	%SD
Al	4.93	5.675	1.44
Sb	0.60	0.632	13.20
As	4.94	1.947	0.79
Ba	4.46	0.020	8.93
Be	0.99	0.002	21.33
Bi	86.68	53.895	0.62
B	6.76	0.080	4.01
Cd	3.67	0.009	11.70
Ca	0.96	0.015	0.59
Ce	6.23	0.715	9.44
Cr	2.10	0.093	4.29
Co	0.27	0.031	27.96
Cu	5.00	0.277	1.70
Eu	321.80	9.538	0.01
Fe	2.38	0.064	5.91
La	18.30	146.549	0.24
Pb	4.54	54.733	0.75
Li	4.03	0.006	37.89
Mg	0.72	0.007	1.59
Mn	1.24	0.011	2.33
Hg	7.04	0.054	10.18
Mo	2.96	0.017	12.08
Nd	6.55	0.793	2.42
Ni	5.72	0.030	12.90
P	2.16	0.318	10.32
K	3.23	0.077	83.81
Sm	11.66	10.101	0.72
Se	2.72	0.331	8.45
Si	5.13	0.636	2.33
Ag	324.69	10.185	0.31
Na	5.74	0.098	39.42
Sr	4.14	0.009	8.10
S	1.14	0.232	5.30
Ta	5.36	0.202	7.10
Tl	8.65	6.710	1.14
Th	11.15	51.055	0.50
Sn	2.28	0.081	5.42
Ti	5.11	0.068	4.82
W	2.16	0.033	41.26
U	11.33	54.754	0.92
V	7.81	0.235	2.64
Zn	5.45	0.018	5.02
Zr	5.64	0.145	4.96

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : 77C11J
Sample code 1 : SST3
Sample code 2 : NINECT
Programme : SST 30-Apr-90 12:45:40

NAME	MV INT	CONCEN	%SD
Al	26.17	49.767	0.85
Sb	0.67	1.286	8.25
As	100.42	56.894	0.07
Ba	4.58	0.026	8.50
Be	264.74	9.248	1.04
Bi	7.87	1.130	2.76
B	6.72	0.077	3.70
Cd	3.94	0.019	6.82
Ca	1.32	0.028	0.76
Ce	6.01	0.437	18.10
Cr	1.86	0.050	7.68
Co	0.30	0.146	1.37
Cu	3.69	0.075	6.41
Eu	4.57	0.009	16.79
Fe	2.32	0.057	5.01
La	0.38	0.033	20.89
Pb	0.34	0.264	14.75
Li	4.15	0.017	25.80
Mg	0.76	0.008	1.12
Mn	1.39	0.018	3.83
Hg	606.61	26.391	0.48
Mo	433.92	47.465	0.72
Nd	6.09	0.375	24.79
Ni	11.89	0.515	1.50
P	88.16	>56.839	0.76
K	3.34	0.523	21.48
Sm	5.50	0.528	17.73
Se	41.18	52.652	0.56
Si	90.99	43.834	0.94
Ag	28.29	0.383	0.51
Na	6.97	0.973	3.88
Sr	4.11	0.008	12.13
S	52.29	>53.028	0.44
Ta	195.97	48.361	0.26
Tl	32.11	50.172	0.92
Th	1.36	1.159	3.44
Sn	2.74	0.201	5.00
Ti	640.58	48.337	1.21
W	44.26	30.607	1.30
U	7.17	16.594	2.52
V	113.77	9.400	1.24
Zn	6.35	0.039	2.82
Zr	234.08	48.061	1.00

ICP Analysis - April 30, 1990 Acid Digested LMCS Check Standard

Sample name : F575
Sample code 1 : SSTI
Sample code 2 : DIGEST
Sample code 3 : 89076
Programme : SST 30-Apr-90 12:50:22

NAME	NV INT	CONCEN	RSD
Al	2.24	0.083	82.50
Sb	0.62	0.870	8.41
As	1.49	-0.037	-29.42
Ba	24.20	0.931	0.65
Be	0.89	(-0.002	-22.69
Bi	5.91	-0.180	-36.61
B	20.63	0.932	0.72
Cd	29.28	0.937	1.16
Ca	42.68	1.436	0.83
Ce	6.07	0.505	25.50
Cr	6.53	0.876	0.95
Co	0.53	0.954	1.31
Cu	9.23	0.926	0.98
Eu	4.08	(-0.006	-39.07
Fe	12.89	1.283	1.13
La	0.36	-0.023	-46.63
Pb	0.32	-0.017	-156.12
Li	13.64	0.880	0.49
Mg	35.12	1.084	0.69
Mn	21.21	0.975	0.64
Hg	5.84	0.001	480.14
Mo	2.68	-0.014	-20.07
Nd	6.23	0.505	23.67
Ni	17.33	0.942	1.17
P	1.75	0.017	176.28
K	3.70	1.867	8.85
Sm	4.84	(-0.508	-28.18
Se	2.63	0.210	32.17
Si	5.34	0.740	23.59
Ag	15.65	(-0.035	-31.14
Na	9.03	2.442	2.48
Sr	41.06	0.963	0.71
S	1.02	0.111	20.83
Ta	4.32	(-0.063	-36.43
Tl	4.70	(-0.616	-33.51
Th	1.08	(-0.294	-30.60
Sn	20.70	4.910	1.01
Ti	4.98	0.059	9.23
W	2.07	-0.014	-56.03
U	5.07	(-2.737	-34.18
V	4.73	(-0.032	-24.14
Zn	44.65	0.952	0.87
Zr	4.72	-0.048	-30.10

ICP Analysis - April 30, 1990 Acid Digested LMCS Check Standard

Sample name : F575
Sample code 1 : 9812
Sample code 2 : DIGEST
Sample code 3 : 89076
Programme : SST 30-Apr-90 12:54:41

NAME	MV INT	CONCEN	%SD
Al	2.35	0.315	12.90
Sb	0.51	-0.251	-22.21
As	1.71	0.089	8.94
Ba	3.65	(-0.017	-11.89
Be	0.87	(-0.002	-9.59
Bi	13.24	4.725	0.32
B	5.76	0.015	12.35
Cd	3.20	(-0.008	-18.53
Ca	12.88	0.421	1.05
Ce	5.06	(-0.781	-11.02
Cr	1.56	-0.003	-134.68
Co	0.35	-0.037	-19.52
Cu	3.08	-0.018	-21.44
Eu	35.13	0.927	1.03
Fe	3.50	0.194	1.25
La	2.10	4.493	1.17
Pb	0.69	4.845	0.71
Li	3.52	(-0.040	-9.09
Mg	3.01	0.079	0.68
Mn	1.28	0.013	6.10
Hg	5.54	-0.012	-8.57
Mo	2.58	(-0.025	-11.33
Nd	5.06	(-0.562	-4.27
Ni	4.95	(-0.031	-8.96
P	1.59	(-0.055	-30.39
K	2.89	(-1.138	-10.76
Sm	5.18	0.030	254.39
Se	2.28	(-0.262	-10.54
Si	4.54	0.336	3.14
Ag	44.28	0.912	0.29
Na	5.43	-0.117	-36.97
Sr	3.61	(-0.005	-18.06
S	0.95	0.036	18.37
Ta	4.13	(-0.111	-13.68
Tl	4.79	-0.443	-39.26
Th	2.00	4.379	0.12
Sn	1.91	-0.016	-39.51
Ti	4.91	0.053	3.31
W	1.91	(-0.088	-7.68
U	5.30	-0.681	-72.57
V	4.87	-0.019	-28.17
Zn	5.13	0.010	9.45
Zr	4.56	(-0.082	-11.72

ICP Analysis - April 30, 1990 Acid Digested LMCS Check Standard

Sample name : F575
Sample code 1 : SST3
Sample code 2 : DIGEST
Sample code 3 : 89076
Programme : SST 30-Apr-90 12:58:32

NAME	MV INT	CONCEN	RSD
Al	4.42	4.601	0.46
Sb	0.53	-0.003	-2163.4
As	10.23	4.993	0.91
Ba	3.97	-0.002	-113.71
Be	26.02	0.879	0.58
Bi	6.17	-0.007	-688.01
B	6.08	0.036	4.64
Cd	3.38	-0.002	-103.64
Ca	12.37	0.404	0.76
Ce	5.40	-0.348	-24.31
Cr	1.62	0.008	20.81
Co	0.26	-0.000	*******
Cu	3.12	-0.012	-40.72
Eu	4.05	(-0.007	-24.47
Fe	3.04	0.140	2.94
La	0.36	-0.030	-27.55
Pb	0.31	-0.061	-74.23
Li	3.76	(-0.019	-22.98
Mg	2.86	0.074	0.31
Mn	1.29	0.013	2.01
Hg	56.96	2.247	0.36
Mo	42.58	4.380	0.91
Nd	5.38	(-0.266	-25.73
Ni	5.73	0.031	40.75
P	9.01	4.823	3.32
K	3.07	-0.459	-24.15
Sm	4.90	(-0.410	-34.87
Se	5.72	4.413	0.35
Si	6.85	1.502	6.46
Ag	16.78	0.003	220.74
Na	6.03	0.307	14.03
Sr	3.80	-0.000	-908.03
S	5.54	4.771	0.88
Ta	19.73	3.830	41.32
Tl	7.28	4.174	4.39
Th	1.10	-0.187	-29.50
Sn	2.05	0.019	23.76
Ti	64.70	4.595	1.64
W	5.66	1.743	14.34
U	5.22	-1.358	-42.38
V	15.14	0.869	0.89
Zn	5.36	0.014	12.49
Zr	26.15	4.447	1.29

ICP Analysis - April 30, 1990 Reagent Blank

Sample name : F583
Sample code 1 : BLANK
Sample code 2 : DIRECT
Sample code 3 : 89076
Programme : SST 30-Apr-90 13:03:01

NAME	MV INT	CONCEN	RSD
Al	2.36	0.332	7.23
Sb	0.54	0.019	202.08
As	1.52	-0.018	-8.53
Ba	4.22	0.009	7.76
Be	0.95	0.000	214.93
Bi	6.23	0.031	71.33
B	6.44	0.059	4.47
Cd	3.45	0.001	46.89
Ca	23.54	0.784	0.07
Ce	5.61	-0.076	-40.93
Cr	1.65	0.013	4.90
Co	0.26	0.003	152.75
Cu	3.27	0.011	13.38
Dy	4.21	-0.002	-26.21
Fe	6.79	0.575	1.37
La	0.36	-0.013	-23.09
Pb	0.32	0.030	42.86
Li	3.90	-0.005	-25.47
Mg	5.77	0.165	0.40
Mn	1.52	0.025	1.26
Hg	6.03	0.009	30.21
Mo	2.79	-0.002	-69.78
Nd	5.61	-0.058	-72.86
Ni	5.37	0.002	103.69
P	1.82	0.095	17.72
K	3.17	-0.086	-59.03
Sm	5.09	-0.117	-30.15
Se	2.46	-0.019	-100.62
Si	5.50	0.822	3.18
Ag	16.42	-0.009	-26.78
Na	6.08	0.345	5.26
Sr	3.97	0.004	7.62
S	1.05	0.144	4.47
Ta	4.52	-0.011	-55.85
Tl	4.97	-0.112	-135.73
Th	1.13	-0.078	-48.95
Sn	2.04	0.017	32.12
Ti	5.37	0.088	1.47
W	2.11	0.005	165.86
U	5.27	-0.886	-28.47
V	5.03	-0.005	-57.18
Zn	8.14	0.083	1.24
Zr	4.90	-0.010	-35.41

ICP Analysis - April 30, 1990 Segment 89-076

Sample name : F576
Sample code 1 : SAMPLE
Sample code 2 : 100-10
Sample code 3 : 89076
Programme : SST 30-Apr-90 13:07:39

NAME	MV INT	CONCEN	DILCOR	RSD
Al	4.96	5.739	579.61	2.77
Sb	0.53	-0.090	-9.115	-59.65
As	1.48	-0.042	-4.243	-14.50
Ba	3.90	-0.005	-0.550	-55.76
Be	0.91	-0.001	-0.100	-45.38
Bi	9.20	2.022	204.22	4.69
B	6.02	0.032	3.233	32.35
Cd	3.31	-0.004	-0.435	-37.17
Ca	1.75	0.042	4.277	1.23
Ce	5.44	-0.297	-30.04	-37.36
Cr	3.31	0.129	13.070	4.24
Co	0.26	-0.010	-1.053	-117.06
Cu	3.10	-0.015	-1.490	-49.88
Eu	4.08	-0.006	-0.596	-35.44
Fe	27.56	2.986	301.56	1.37
La	0.36	-0.016	-1.573	-34.69
Pb	0.32	0.043	4.369	79.37
Li	3.79	-0.015	-1.565	-33.87
Mg	0.96	0.015	1.469	2.25
Mn	9.54	0.411	41.550	1.04
Hg	6.96	0.050	5.070	10.19
Mo	2.71	-0.011	-1.119	-23.65
Nd	5.39	(-0.264	(-26.64	-32.70
Ni	5.23	-0.009	-0.868	-72.39
P	2.30	0.410	41.397	10.82
K	3.07	-0.495	-50.03	-34.03
Sm	4.93	-0.359	-36.25	-38.79
Se	2.44	-0.057	-5.771	-116.89
Si	3.80	-0.032	-3.252	-168.17
Ag	16.03	-0.022	-2.228	-45.46
Na	19.88	10.161	1026.3	1.87
Sr	5.30	0.039	3.889	4.40
S	1.04	0.125	12.580	10.59
Ta	4.39	-0.046	-4.619	-51.46
Tl	4.81	-0.409	-41.29	-54.79
Th	1.09	-0.229	-23.16	-31.53
Sn	1.94	-0.009	-0.900	-70.61
Ti	4.09	-0.009	-0.933	-48.83
W	2.04	-0.027	-2.682	-58.43
U	5.17	-1.848	-186.7	-45.92
V	4.86	-0.020	-2.047	-39.48
Zn	5.56	0.021	2.086	8.19
Zr	4.79	-0.035	-3.517	-40.69

Dilution factor : 101.000

ICP Analysis - April 30, 1990 Segment 89-076

Sample name : F576
Sample code 1 : SAMPLE
Sample code 2 : 500-10
Sample code 3 : 89076
Programme : SGI 30-Apr-90 13:11:53

NAME	MV INT	CONCEN	DILCOR	RSD
Al	15.19	26.780	562.37	0.65
Sb	0.51	-0.222	-4.670	-36.98
As	1.43	(-0.072	(-1.511	-13.17
Ba	3.86	-0.007	-0.154	-30.13
Be	0.89	(-0.002	(-0.040	-18.44
Bi	20.25	9.418	197.77	0.61
B	5.66	0.009	0.186	149.71
Cd	3.20	(-0.008	(-0.169	-24.60
Ca	5.95	0.187	3.919	0.67
Ce	5.03	(-0.817	(-17.15	-11.31
Cr	5.07	0.617	12.953	0.50
Co	0.25	-0.042	-0.876	-20.97
Cu	3.06	-0.021	-0.451	-23.64
Eu	3.79	(-0.015	(-0.316	-11.27
Fe	119.65	13.674	287.16	0.53
La	0.35	(-0.052	(-1.091	-22.55
Pb	0.33	0.138	2.907	32.92
Li	3.50	(-0.042	(-0.884	-10.39
Mg	4.87	0.137	2.875	0.71
Mn	39.98	1.880	39.489	0.42
Hg	6.14	0.014	0.295	139.39
Mo	2.61	(-0.022	(-0.452	-5.38
Nd	5.05	(-0.571	(-11.98	-4.16
Ni	5.42	0.006	0.127	90.59
P	4.48	1.846	38.776	6.70
K	2.88	(-1.184	(-24.87	-9.96
Sm	4.55	(-0.962	(-20.20	-10.38
Se	2.48	0.002	0.038	1061.69
Si	3.89	0.012	0.257	47.98
Ag	15.31	(-0.046	(-0.961	-13.60
Na	72.14	47.333	994.00	0.74
Sr	11.03	0.187	3.921	0.73
S	1.49	0.595	12.493	4.43
Ta	4.10	(-0.118	(-2.471	-11.48
Tl	4.50	(-0.970	(-20.38	-9.80
Th	1.02	(-0.603	(-12.66	-11.87
Sn	1.87	(-0.026	(-0.547	-8.80
Ti	4.03	-0.014	-0.289	-20.35
W	1.95	(-0.069	(-1.444	-11.11
U	4.97	(-3.676	(-77.25	-16.64
V	4.66	(-0.037	(-0.779	-6.08
Zn	8.58	0.093	1.945	1.88
Zr	4.55	(-0.085	(-1.788	-10.97

Dilution factor : 21.0000

ICP Analysis - April 30, 1990 Duplicate Segment 89-076

Sample name : F577
Sample code 1 : DUPSAM
Sample code 2 : 100-10
Sample code 3 : 89076
Programme : SST 30-Apr-90 13:16:24

NAME	MV INT	CONCEN	DILCOR	RSD
Al	4.31	4.379	442.24	2.27
Sb	0.52	-0.106	-10.74	-31.93
As	1.47	(-0.048	(-4.882	-18.56
Ba	3.86	-0.007	-0.737	-30.40
Be	0.91	-0.001	-0.125	-12.76
Bi	8.59	1.615	163.09	1.83
B	6.00	0.030	3.073	22.67
Cd	3.28	-0.005	-0.517	-31.40
Ca	1.63	0.038	3.854	1.03
Ce	5.38	(-0.368	(-37.16	-23.27
Cr	2.27	0.123	12.374	3.39
Co	0.25	-0.027	-2.691	-27.15
Cu	3.08	-0.019	-1.914	-28.47
Eu	4.05	(-0.007	(-0.706	-17.64
Fe	26.32	2.842	287.01	1.16
La	0.36	-0.029	-2.885	-18.92
Pb	0.31	-0.069	-6.991	-28.64
Li	3.75	(-0.019	(-1.936	-19.56
Mg	0.97	0.015	1.502	1.82
Mn	9.03	0.387	39.064	1.07
Hg	6.68	0.038	3.813	20.58
Mo	2.68	-0.013	-1.353	-25.32
Nd	5.34	(-0.308	(-31.09	-25.18
Ni	5.27	-0.005	-0.535	-38.77
P	2.23	0.366	36.972	11.16
K	3.04	-0.594	-59.98	-13.83
Sm	4.89	(-0.428	(-43.27	-22.16
Se	2.41	-0.089	-8.977	-47.45
Si	3.73	-0.069	-6.928	-21.21
Ag	15.76	(-0.031	(-3.128	-18.36
Na	18.23	8.985	907.53	1.47
Sr	5.12	0.034	3.436	3.34
S	0.99	0.072	7.298	10.03
Ta	4.33	(-0.059	(-5.937	-33.78
Tl	4.80	-0.416	-41.98	-17.10
Th	1.00	-0.375	-37.80	-21.06
Sn	1.88	-0.026	-2.603	-27.22
Ti	4.02	-0.015	-1.476	19.39
W	2.01	-0.042	-4.245	-24.12
U	5.12	-2.305	-232.8	-24.08
V	4.90	-0.017	-1.698	-29.55
Zn	5.41	0.017	1.710	6.87
Zr	4.80	-0.032	-3.213	-24.64

Dilution factor : 101.000

ICP Analysis - April 30, 1990 Duplicate Segment 89-076

Sample code 1 : DUPSAM
Sample code 2 : 500-10
Sample code 3 : 89076
Programme : SST 30-Apr-90 13:20:31

NAME	MV INT	CONCEN	DILCOR	RSD
Al	13.19	22.805	479.91	0.36
Sb	0.54	0.045	0.948	130.34
As	1.56	0.005	0.105	317.73
Ba	4.32	0.014	0.291	25.89
Be	0.97	0.001	0.021	14.87
Bi	19.25	8.753	183.82	0.51
B	6.07	0.035	0.731	6.43
Cd	3.46	0.001	0.028	61.93
Ca	5.69	0.174	3.663	0.39
Ce	5.69	0.030	0.633	424.46
Cr	5.35	0.666	13.994	0.71
Co	0.26	0.001	0.024	754.92
Cu	3.40	0.031	0.641	28.18
Eu	4.29	0.000	0.006	818.59
Fe	130.94	13.824	290.30	0.38
La	0.37	0.003	0.073	338.20
Pb	0.34	0.298	6.268	5.02
Li	0.94	-0.002	-0.038	-323.35
Mg	5.87	0.168	3.532	2.70
Mn	39.84	1.874	39.345	0.42
Hg	6.52	0.031	0.647	17.36
Mo	2.82	0.002	0.042	112.72
Nd	5.67	-0.009	-0.196	-757.30
Ni	6.23	0.070	1.466	9.12
P	4.89	2.117	44.462	0.87
K	3.20	0.021	0.445	939.37
Sm	5.16	-0.010	-0.218	-1433.5
Se	2.71	0.317	6.657	12.74
Si	4.55	0.342	7.188	3.75
Ag	16.74	0.001	0.031	636.67
Na	68.33	44.619	936.99	0.08
Sr	10.99	0.186	3.897	0.57
S	1.45	0.548	11.517	1.52
Ta	4.60	0.007	0.154	272.02
Tl	5.22	0.356	7.484	16.15
Th	1.13	-0.005	-0.107	-1761.3
Sn	2.01	0.010	0.220	59.28
Ti	4.26	0.004	0.080	118.46
W	2.14	0.021	0.441	70.01
U	5.60	2.063	43.324	43.88
V	5.23	0.012	0.256	47.98
Zn	8.78	0.097	2.045	0.16
Zr	5.20	0.051	1.065	27.47

Dilution factor : 21.0000

ICP Analysis - April 30, 1990 Spike of Segment 89-076

Sample name : F578
Sample code 1 : SPIKE
Sample code 2 : 100-10
Sample code 3 : 89076
Programme : SST 30-Apr-90 13:24:32

NAME	MV INT	CONCEN	DILCOR	RSD
Al	4.81	5.411	546.54	1.71
Sb	0.53	0.000	0.000	
As	1.65	0.053	5.386	51.64
Ba	4.29	0.013	1.268	48.61
Be	1.22	0.010	0.974	4.25
Bi	8.82	1.771	178.87	7.09
B	6.16	0.041	4.155	29.93
Cd	3.68	0.009	0.917	38.74
Ca	2.13	0.055	5.574	1.03
Ce	5.69	0.023	2.314	1073.51
Cr	2.37	0.140	14.148	6.35
Co	0.26	0.013	1.287	81.82
Cu	3.30	0.016	1.609	95.58
Eu	4.61	0.010	0.993	44.73
Fe	24.26	2.603	262.92	1.46
La	0.39	0.049	4.983	33.84
Pb	0.33	0.156	15.729	42.76
Li	4.05	0.008	0.824	134.72
Mg	2.25	0.055	5.541	9.69
Mn	9.16	0.393	39.704	0.59
Hg	8.13	0.101	10.249	11.80
Mo	3.20	0.044	4.437	21.69
Nd	5.65	-0.028	-2.804	-698.22
Ni	5.53	0.015	1.501	87.54
P	2.25	0.377	38.100	14.26
K	3.19	-0.016	-1.638	-2061.7
Sm	5.17	0.009	0.891	3068.06
Se	2.55	0.097	9.756	98.59
Si	3.96	0.049	4.946	81.53
Ag	16.74	0.001	0.120	1632.19
Na	18.45	9.145	923.60	0.97
Sr	3.72	0.049	4.987	4.62
S	1.10	0.186	18.835	14.48
Ta	4.58	0.003	0.298	1159.86
Tl	5.09	0.120	12.164	310.12
Th	1.14	0.044	4.461	398.44
Sn	2.17	0.052	5.286	27.27
Ti	4.85	0.049	4.915	17.91
W	2.11	0.006	0.609	620.58
U	5.42	0.408	41.178	415.20
V	5.15	0.005	0.504	169.46
Zn	6.04	0.032	3.229	9.52
Zr	5.23	0.057	5.798	48.84

Dilution factor : 101.000

ICP Analysis - April 30, 1990 Spike of Segment 89-076

Sample name : F578
Sample code 1 : SPIKE
Sample code 2 : 500-10
Sample code 3 : 89076
Programme : SSI 30-Apr-90 13:28:48

NAME	MV INT	CONCEN	DILCOR	RSD
Al	14.44	25.404	533.49	1.19
Sb	0.52	-0.116	-2.437	-37.58
As	1.91	0.208	4.362	9.45
Ba	4.95	0.043	0.900	5.33
Be	2.24	0.046	0.956	0.91
Bi	18.38	8.166	171.48	1.20
B	6.22	0.044	0.934	12.66
Cd	4.52	0.040	0.831	3.16
Ca	7.72	0.246	5.156	1.01
Ce	5.17	(-0.637	(-13.38	-10.20
Cr	5.15	0.632	13.271	1.27
Co	0.26	0.003	0.079	230.94
Cu	3.43	0.035	0.733	12.07
Eu	5.44	0.035	0.732	4.81
Fe	107.73	12.291	258.11	0.83
La	0.44	0.187	3.926	4.46
Pb	0.35	0.394	8.267	5.71
Li	4.07	0.009	0.197	35.99
Mg	4.16	0.115	2.409	1.21
Mn	39.55	1.859	39.047	1.19
Hg	9.00	0.140	2.934	9.44
Mo	4.67	0.205	4.303	3.55
Nd	5.16	(-0.456	(-9.778	-6.03
Ni	6.03	0.054	1.129	6.00
P	4.14	1.622	34.066	3.63
K	2.06	(-0.873	(-18.34	-10.71
Sm	4.67	(-0.771	(-16.19	-9.94
Se	2.70	0.308	6.466	9.02
Si	4.37	0.255	5.357	6.54
Ag	15.44	(-0.042	(-0.876	-11.79
Na	66.59	43.382	911.02	1.21
Sr	12.74	0.231	4.849	1.36
S	1.67	0.783	16.438	3.46
Ta	4.22	(-0.087	(-1.831	-18.85
Tl	4.76	(-0.502	(-10.54	-12.57
Th	1.08	-0.268	-5.637	-18.70
Sn	2.79	0.215	4.514	3.85
Ti	7.08	0.218	4.578	2.11
W	2.13	0.016	0.332	56.31
U	5.09	(-2.578	(-54.14	-17.79
V	5.27	0.015	0.312	18.75
Zn	10.47	0.138	2.886	1.48
Zr	5.92	0.204	4.276	4.96

Dilution factor : 21.0000

ICP Analysis - April 30, 1990 Acid Digested LMCS Standard

Sample name : F579
Sample code 1 : SST1
Sample code 2 : DIGEST
Sample code 3 : 89076
Programme : SST 30-Apr-90 13:32:49

NAME	MV INT	CONCEN	RSD
Al	2.10	-0.213	-24.34
Sb	0.60	0.670	13.40
As	1.40	(-0.086	-15.06
Ba	24.11	0.527	0.74
Be	0.86	(-0.003	-15.48
Bi	5.61	(-0.381	-19.22
B	19.94	0.926	1.71
Cd	28.59	0.911	1.70
Ca	43.08	1.449	0.49
Ce	5.68	0.008	1382.82
Cr	6.43	0.858	1.75
Co	0.51	0.866	2.67
Cu	9.09	0.906	1.35
Eu	3.79	(-0.015	-12.03
Fe	12.72	1.263	1.38
La	0.35	(-0.057	-13.12
Pb	0.30	-0.199	-3.77
Li	13.44	0.862	0.90
Mg	34.72	1.072	0.85
Mn	21.12	0.970	1.35
Hg	5.88	0.003	51.46
Mo	2.56	(-0.027	-15.39
Nd	5.89	0.189	32.11
Ni	16.88	0.907	1.98
P	1.57	(-0.067	-50.80
K	3.50	1.115	16.45
Sm	4.46	(-1.066	-10.54
Se	2.50	0.024	67.92
Si	4.23	0.182	7.78
Ag	14.43	(-0.075	-9.09
Na	8.62	2.148	2.97
Sr	40.95	0.960	0.57
S	0.95	0.048	29.46
Ta	3.99	(-0.146	-9.53
Tl	4.41	(-1.145	-15.29
Th	1.01	(-0.654	-11.35
Sn	20.04	4.736	1.41
Ti	4.76	0.042	10.74
W	1.92	(-0.082	-18.61
U	4.69	(-6.244	-10.51
V	4.54	(-0.048	-12.60
Zn	44.11	0.939	1.29
Zr	4.46	(-0.103	-11.56

ICP Analysis - April 30, 1990 Acid Digested LMCS Standard

Sample name : F579
Sample code 1 : SST2
Sample code 2 : DIGEST
Sample code 3 : 89076
Programme : SST 30-Apr-90 13:36:35

NAME	MV INT	CONCEN	%SD
Al	2.45	0.516	15.33
Sb	0.53	-0.077	-36.02
As	1.79	0.135	5.33
Ba	3.85	-0.008	-36.29
Be	0.91	-0.001	-8.93
Bi	13.78	5.087	2.98
B	5.99	0.030	21.25
Cd	3.33	-0.004	-36.91
Ca	13.08	0.428	1.44
Ce	5.33	(-0.437	-23.79
Cr	1.61	0.006	72.19
Co	0.26	-0.012	-79.37
Cu	3.22	0.004	202.85
Eu	35.86	0.949	1.62
Fe	3.62	0.207	3.51
La	3.14	4.604	1.70
Pb	0.72	5.165	2.57
Li	3.70	(-0.024	-21.32
Mg	3.09	0.081	2.00
Mn	1.32	0.015	7.54
Hg	5.83	0.001	157.70
Mo	2.67	-0.015	-19.26
Nd	5.34	(-0.307	-27.19
Ni	5.16	-0.014	-28.12
P	1.73	0.037	92.66
K	3.03	(-0.631	-24.49
Sm	5.45	0.438	22.08
Se	2.35	(-0.179	-25.74
Si	4.46	0.297	10.06
Ag	45.76	0.961	2.59
Na	5.72	0.087	83.41
Sr	3.77	-0.001	-134.98
S	1.01	0.096	27.04
Ta	4.34	-0.057	-29.56
Tl	5.08	0.094	105.49
Th	2.07	4.748	2.46
Sn	2.00	0.007	65.04
Ti	5.11	0.068	8.28
W	2.00	-0.047	-20.87
U	5.57	1.799	45.94
V	5.09	-0.000	-1296.1
Zn	5.27	0.014	10.25
Zr	4.75	-0.043	-28.91

ICP Analysis - April 30, 1990 Acid Digested LMCS Standard

Sample name : F579
Sample code 1 : SST3
Sample code 2 : DIGEST
Sample code 3 : 89076
Programme : SST 30-Apr-90 13:40:16

NAME	MV INT	CONCZN	RSD
Al	4.53	4.828	1.86
Sb	0.54	0.039	52.04
As	10.63	5.232	0.96
Ba	4.07	0.002	110.87
Be	26.80	0.506	0.69
Bi	6.21	0.018	213.22
B	6.17	0.042	5.80
Cd	3.44	0.000	234.17
Ca	13.67	0.414	0.27
Ce	5.53	-0.182	-60.49
Cr	1.66	0.015	32.63
Co	0.26	0.012	17.32
Cu	3.19	-0.002	-310.16
Du	4.16	-0.003	-56.26
Fe	3.09	0.146	3.10
La	0.36	-0.015	-56.73
Pb	0.32	-0.022	-103.93
Li	3.85	-0.010	-46.53
Mg	2.92	0.076	0.99
Mn	1.31	0.014	6.39
Hg	59.78	2.370	1.68
Mo	44.22	4.559	1.09
Nd	5.49	-0.170	-56.37
Ni	5.77	0.033	14.43
P	9.68	5.260	3.29
K	3.12	-0.281	-56.48
Sm	5.93	-0.218	-51.59
Se	5.97	4.752	2.60
Si	6.88	1.518	1.21
Ag	17.13	0.014	51.58
Na	6.18	0.416	13.86
Sr	3.88	0.002	66.31
S	5.82	5.061	1.15
Ta	20.48	4.021	4.37
Tl	7.49	4.555	1.75
Th	1.13	-0.053	-128.51
Sn	3.07	0.024	15.67
Ti	66.34	4.734	0.30
W	5.84	1.830	0.44
U	5.35	-0.181	-393.91
V	15.61	0.909	1.08
Zn	5.37	0.016	9.75
Zr	26.89	4.601	0.60

ICP Analysis - April 30, 1990 Acid Blank

Sample name : HNO3
Programme : SST 30-Apr-90 13:44:04

NAME	MV INT	CONCEN	RSD
Al	2.13	-0.149	-57.35
Sb	0.52	-0.119	-70.69
As	1.49	-0.035	-42.07
Ba	3.86	-0.007	-49.89
Be	0.91	-0.001	-54.73
Bi	5.92	-0.172	-37.67
B	5.60	0.005	19.14
Cd	3.31	-0.004	-36.91
Ca	0.53	0.091	30.03
Ce	5.47	-0.258	-56.69
Cr	1.51	-0.013	-34.09
Co	0.25	-0.014	-62.93
Cu	3.08	-0.019	-46.58
Eu	4.12	-0.005	-49.93
Fe	1.79	-0.006	-68.81
La	0.36	-0.015	-53.91
Pb	0.32	-0.035	-112.50
Li	3.82	-0.013	-55.34
Mg	0.49	-0.000	-83.89
Mn	0.99	-0.001	-79.25
Hg	6.26	0.019	48.04
Mo	2.68	-0.014	-39.32
Nd	5.45	-0.206	-41.34
Ni	5.15	-0.015	-36.32
P	1.63	-0.037	-84.24
K	3.08	-0.439	-42.25
Sm	4.98	-0.295	-53.00
Se	2.38	-0.126	-46.57
Si	3.60	(-0.136	-30.29
Ag	15.96	-0.024	-44.31
Na	5.37	-0.162	-46.05
Sr	3.69	-0.003	-49.73
S	0.90	-0.021	-122.95
Ta	4.39	-0.043	-57.12
Tl	4.81	-0.408	-52.76
Th	1.09	-0.212	-47.21
Sn	1.92	-0.014	-89.84
Ti	4.06	-0.011	-45.56
W	2.02	-0.037	-45.59
U	5.15	-1.993	-47.78
V	4.84	-0.022	-47.71
Zn	4.60	-0.002	-62.91
Zr	4.81	-0.020	-52.54

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : 78C11K
Sample code 1 : SST1
Sample code 2 : DIRECT
Programme : SST 30-Apr-90 13:47:42

NAME	MV INT	CONCEN	RSD
Al	2.12	-0.170	-25.16
Sb	1.60	10.307	1.61
As	1.51	0.033	26.02
Ba	219.39	9.930	1.13
Be	0.90	-0.091	-20.38
Bi	5.83	(-0.231	-13.13
B	162.30	10.071	0.85
Cd	275.83	9.969	1.59
Ca	300.78	10.221	0.96
Ce	12.93	9.237	1.66
Cr	52.69	9.041	1.28
Co	2.97	9.424	1.53
Cu	68.07	10.063	1.09
Eu	4.72	0.013	13.39
Fe	90.97	10.346	0.91
La	0.38	0.031	20.97
Pb	0.32	-0.017	-114.56
Li	111.84	9.813	1.06
Mg	327.65	10.245	1.10
Mn	208.58	10.016	1.22
Hg	5.54	0.001	641.29
Mo	2.73	-0.008	-18.92
Nd	15.15	8.578	3.05
Ni	129.84	9.787	1.19
P	1.66	-0.006	-357.32
K	9.77	24.592	1.68
Sm	4.66	(-0.791	-11.63
Se	5.06	3.515	1.88
Si	3.48	(-0.192	-10.27
Ag	15.11	(-0.053	-12.51
Na	40.24	24.637	1.25
Sr	394.51	10.099	1.08
S	1.22	0.309	6.56
Ta	4.25	(-0.081	-15.16
Tl	4.78	-0.466	-8.86
Th	1.09	-0.229	-24.78
Sn	194.01	50.339	1.35
Ti	3.88	(-0.025	-12.08
W	2.31	0.107	1.85
U	5.37	-0.037	-1621.1
V	4.66	(-0.037	-13.17
Zn	425.07	10.016	1.30
Zr	4.65	(-0.063	-19.55

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : 83030A
Sample code 1 : SST2
Sample code 2 : DIRECT
Programme : SST 30-Apr-90 13:51:41

NAME	MV INT	CONCEN	RSD
Al	4.71	5.202	0.76
Sb	0.57	0.301	9.41
As	4.70	1.812	1.07
Ba	4.02	0.000	9500.53
Be	0.92	-0.001	-32.49
Bi	85.67	53.219	0.62
B	6.44	0.059	3.75
Cd	3.39	-0.001	-167.29
Ca	0.93	0.015	0.49
Ce	5.62	-0.066	-181.76
Cr	1.94	0.064	6.91
Co	0.35	-0.034	-36.33
Cu	4.69	0.230	2.62
Eu	331.05	9.816	1.01
Fe	2.27	0.050	11.96
La	10.54	)47.179	1.01
Pb	4.37	52.648	0.72
Li	3.61	(-0.032	-18.68
Mg	0.68	0.006	1.95
Mn	1.16	0.007	11.27
Hg	7.05	0.054	15.71
Mo	2.76	-0.005	-110.56
Nd	6.01	0.299	35.09
Ni	5.29	-0.004	-210.29
P	1.97	0.198	22.63
K	2.93	(-1.002	-13.94
Sm	11.31	9.561	0.79
Se	2.51	0.046	108.08
Si	4.78	0.458	5.17
Ag	337.29	10.271	0.70
Na	5.12	(-0.339	-20.02
Sr	3.80	-0.000	-953.70
S	1.05	0.136	14.02
Ta	4.89	0.082	31.37
Tl	8.14	5.757	3.53
Th	11.24	51.476	0.84
Sn	3.13	0.042	11.97
Ti	4.70	0.037	10.81
W	1.99	(-0.053	-13.60
U	10.93	51.150	0.63
V	7.40	0.199	2.08
Zn	5.17	0.011	11.13
Zr	5.23	0.058	21.24

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : 77C11J
Sample code 1 : SST3
Sample code 2 : DIRECT
Programme : SST 30-Apr-90 13:55:33

NAME	HV INT	CONCEN	RSD
Al	26.45	50.551	0.84
Sb	0.65	1.131	12.13
As	191.43	57.470	0.30
Ba	4.31	0.014	30.87
Be	274.76	9.599	0.72
Bi	7.57	0.929	6.87
B	7.01	0.096	36.85
Cd	3.75	0.012	14.34
Ca	1.33	0.028	0.69
Ce	5.62	-0.062	-281.29
Cr	1.79	0.036	18.26
Co	0.28	0.081	4.95
Cu	3.50	0.047	19.55
Eu	4.27	-0.000	-1564.3
Fe	2.24	0.047	9.32
La	0.37	0.000	*******
Pb	0.33	0.125	31.60
Li	3.89	-0.007	-116.33
Mg	0.75	0.008	2.39
Mn	1.34	0.016	6.52
Hg	605.34	26.336	0.60
Mo	440.43	48.181	0.43
Nd	5.68	0.005	1661.82
Ni	11.67	0.497	1.07
P	87.39	156.315	1.63
K	3.14	-0.201	-113.53
Sm	5.15	-0.029	-664.92
Se	41.17	52.632	0.98
Si	93.43	45.062	0.53
Ag	37.49	0.357	1.68
Na	6.61	0.719	12.11
Sr	3.91	0.003	73.73
S	52.34	153.077	1.14
Ta	196.11	48.395	0.56
Tl	32.54	50.976	0.69
Th	1.30	0.849	13.83
Sn	2.68	0.185	3.01
Ti	661.11	49.896	1.43
W	44.96	30.549	0.52
U	6.94	14.420	3.27
V	115.99	9.592	0.76
Zn	6.19	0.036	3.13
Zr	240.73	49.456	1.29

ICP Analysis - April 30, 1990 Core 6 Composite

Sample name : F923
Sample code 1 : SAMPLE
Sample code 2 : 100-10
Sample code 3 : 000006
Programme : SSI 30-Apr-90 14:44:14

NAME	MV INT	CONCEN	DILCOR	RSD
Al	3.30	2.236	230.84	2.35
Sb	0.49	(-0.384	(-38.74	-12.94
As	1.38	(-0.101	(-10.15	-2.64
Ba	3.63	(-0.018	(-1.839	-4.21
Be	0.86	(-0.003	(-0.299	-3.81
Bi	6.24	0.039	3.989	53.93
B	5.93	0.026	2.651	12.56
Cd	3.08	(-0.012	(-1.260	-6.47
Ca	1.51	0.034	3.450	1.05
Ce	5.07	(-0.762	(-76.97	-4.83
Cr	1.48	(-0.016	(-1.661	-3.78
Co	0.25	-0.041	-4.095	-9.90
Cu	2.88	(-0.049	(-4.909	-4.87
Eu	3.82	(-0.014	(-1.399	-6.28
Fe	4.60	0.321	32.371	1.75
La	0.35	(-0.055	(-5.507	-2.75
Pb	0.30	(-0.208	(-20.97	-7.22
Li	3.56	(-0.036	(-3.663	-4.03
Mg	2.58	0.065	6.606	1.20
Mn	2.64	0.078	7.911	0.98
Hg	5.58	-0.011	-1.083	-31.54
Mo	2.49	(-0.035	(-3.488	-4.18
Nd	5.08	(-0.543	(-54.86	-9.27
Ni	6.93	0.125	12.633	2.28
P	2.95	0.843	85.095	5.13
K	42.56	)147.35	) 14883	0.93
Sm	4.62	(-0.854	(-86.23	-4.72
Se	2.23	(-0.342	(-34.58	-13.37
Si	4.69	0.415	41.905	3.35
Ag	14.83	(-0.062	(-6.239	-4.87
Na	10.85	3.732	376.95	1.76
Sr	3.87	0.002	0.170	29.04
S	0.85	(-0.063	(-6.325	-41.25
Ta	4.06	(-0.127	(-12.84	-9.38
Tl	4.46	(-1.052	(-106.2	-7.98
Th	1.02	(-0.576	(-58.16	-5.89
Sn	1.80	(-0.047	(-4.730	-3.12
Ti	3.84	(-0.029	(-2.887	-5.00
W	1.87	(-0.108	(-10.92	-5.93
U	4.80	(-5.263	(-531.6	-4.33
V	4.61	(-0.042	(-4.219	-4.97
Zn	4.48	-0.005	-0.507	-18.06
Zr	4.56	(-0.083	(-8.432	-5.23

Dilution factor : 101.000

ICP Analysis - April 30, 1990 Core 6 Composite

Sample name : F933
Sample code 1 : SAMPLE
Sample code 2 : 500-10
Sample code 3 : 000006
Programme : SSI 30-Apr-90 14:48:34

NAME	NV INT	CONCEN	DILCOR	RSD
Al	8.12	12.295	258.19	0.83
Sb	0.51	(-0.274	(-5.753	-15.38
As	1.46	(-0.053	(-1.108	-27.91
Ba	3.91	-0.005	-0.105	-67.02
Be	0.89	(-0.002	(-0.036	-35.83
Bi	9.21	2.032	42.669	2.47
B	6.14	0.040	0.831	17.47
Cd	3.22	(-0.007	(-0.157	-13.60
Ca	4.41	0.133	2.792	0.83
Ce	5.36	(-0.399	(-8.385	-32.14
Cr	1.83	0.044	0.922	7.26
Co	0.35	-0.024	-0.511	-50.17
Cu	3.06	-0.021	-0.446	-38.70
Eu	4.04	(-0.007	(-0.153	-33.82
Fe	15.35	1.569	32.954	0.26
La	0.35	-0.036	-0.763	-29.74
Pb	0.31	-0.095	-1.999	-31.49
Li	3.74	(-0.020	(-0.421	-29.14
Mg	6.45	0.186	3.914	0.77
Mn	8.95	0.383	8.047	0.47
Hg	5.63	-0.008	-0.171	-21.37
Mo	2.60	(-0.032	(-0.467	-15.91
Nd	5.29	(-0.348	(-7.300	-19.13
Ni	15.10	0.767	16.114	0.48
P	9.30	5.015	105.31	2.87
K	191.61	)705.23	) 14810	0.66
Sm	4.87	(-0.456	(-9.586	-31.43
Se	3.34	(-0.187	(-3.923	-19.31
Si	6.48	1.316	27.646	2.26
Ag	15.67	(-0.034	(-0.712	-29.09
Na	30.84	17.957	377.11	0.82
Sr	5.51	0.044	0.924	2.83
S	0.93	0.011	0.238	149.47
Ta	4.29	(-0.070	(-1.466	-29.66
Tl	4.85	-0.325	-6.822	-43.13
Th	1.08	(-0.307	(-6.457	-29.20
Sn	1.87	(-0.027	(-0.572	-38.53
Ti	4.08	-0.010	-0.213	-42.13
W	1.98	(-0.056	(-1.167	-27.35
U	5.12	-2.290	-48.09	-39.96
V	4.92	-0.015	-0.309	-28.05
Zn	5.25	0.013	0.280	9.85
Zr	4.80	-0.032	-0.665	-47.82

Dilution factor : 21.0000

ICP Analysis - April 30, 1990 Duplicate of Core 6 Composite

Sample name : F924
Sample code 1 : DUPSAM
Sample code 2 : 100-10
Sample code 3 : 000006
Programme : 6SI 30-Apr-90 14:52:10

NAME	MV INT	CONCEN	DILCOR	%SD
Al	3.47	2.632	265.86	1.94
Sb	0.52	-0.097	-9.766	-102.14
As	1.51	-0.023	-2.344	-64.72
Ba	4.04	0.001	0.121	268.22
Be	0.93	-0.000	-0.031	-121.56
Bi	6.56	0.258	26.100	30.56
B	6.57	0.067	6.793	6.70
Cd	3.36	-0.002	-0.245	-94.60
Ca	1.66	0.039	3.974	1.07
Ce	5.66	-0.006	-0.643	-1837.6
Cr	1.63	0.010	1.012	35.31
Co	0.26	0.012	1.170	34.64
Cu	3.19	-0.002	-0.202	-421.58
Eu	4.27	-0.000	-0.019	-1262.0
Fe	4.71	0.334	33.715	0.53
La	0.37	-0.002	-0.175	-754.99
Pb	0.32	-0.035	-3.495	-99.21
Li	3.96	-0.000	-0.043	-1357.2
Mg	1.93	0.045	4.548	0.38
Mn	2.98	0.095	9.599	0.34
Hg	5.93	0.005	0.490	79.48
Mo	2.69	-0.012	-1.253	-29.45
Nd	5.62	-0.053	-5.364	-129.86
Ni	7.25	0.150	15.114	5.01
P	2.61	0.619	62.537	7.28
K	42.83	)148.36	) 14985	0.20
Sm	5.16	-0.015	-1.467	-927.48
Se	2.43	-0.065	-6.550	-53.46
Si	5.11	0.625	63.112	4.16
Ag	16.59	-0.004	-0.363	-355.89
Na	9.82	3.004	303.40	1.55
Sr	4.25	0.011	1.159	11.37
S	0.94	0.025	2.502	58.38
Ta	4.50	-0.015	-1.565	-136.53
Tl	5.11	0.157	15.906	50.08
Th	1.13	-0.019	-1.888	-472.34
Sn	1.97	-0.002	-0.229	-393.65
Ti	4.19	-0.002	-0.176	-270.18
W	2.04	-0.029	-2.962	-20.02
U	5.36	-0.083	-8.360	-987.00
V	5.16	0.005	0.547	67.18
Zn	4.81	0.003	0.276	65.05
Zr	4.96	0.001	0.056	2473.49

Dilution factor : 101.000

ICP Analysis - April 30, 1990 Duplicate of Core 6 Composite

Sample name : F924
Sample code 1 : DUPSAM
Sample code 2 : 500-10
Sample code 3 : 000006
Programme : SST 30-Apr-90 14:56:01

NAME	MV INT	CONCEN	DILCOR	RSD
Al	8.12	12.284	257.96	0.27
Sb	0.52	-0.164	-3.452	-29.61
As	1.48	-0.044	-0.930	-48.66
Ba	4.12	0.005	0.103	104.40
Be	0.90	-0.001	-0.031	-38.58
Bi	8.35	1.451	30.475	5.23
B	6.66	0.073	1.532	10.22
Cd	3.26	-0.006	-0.137	-37.69
Ca	5.79	0.180	3.777	0.74
Ce	5.45	-0.285	-5.988	-66.23
Cr	1.89	0.056	1.168	12.59
Co	0.26	-0.009	-0.195	-94.37
Cu	3.10	-0.014	-0.304	-82.83
Eu	4.11	-0.005	-0.107	-71.86
Fe	15.56	1.593	33.448	0.78
La	0.36	-0.018	-0.382	-71.96
Pb	0.31	-0.043	-0.908	-75.50
Li	3.80	-0.014	-0.304	-60.84
Mg	9.39	0.279	5.850	0.39
Mn	10.61	0.463	9.729	0.36
Hg	5.66	-0.007	-0.146	-47.60
Mo	2.65	(-0.017	(-0.351	-30.22
Nd	5.40	-0.247	-5.190	-54.77
Ni	14.86	0.748	15.714	1.35
P	5.94	2.804	58.885	1.39
K	197.82	)728.48	) 15298	0.11
Sm	4.95	-0.330	-6.939	-67.21
Se	2.40	-0.111	-2.333	-64.15
Si	6.84	1.494	31.373	2.93
Ag	15.96	-0.024	-0.512	-59.52
Na	24.55	13.483	283.15	0.36
Sr	5.89	0.054	1.131	2.41
S	0.96	0.046	0.968	19.39
Ta	4.34	-0.057	-1.190	-50.00
Tl	4.82	-0.394	-8.275	-56.87
Th	1.09	-0.226	-4.745	-56.63
Sn	1.89	-0.021	-0.444	-69.55
Ti	4.15	-0.004	-0.094	-146.61
W	2.00	-0.048	-0.999	-49.00
U	5.32	-1.361	-28.58	-97.41
V	4.87	-0.020	-0.411	-57.04
Zn	5.30	0.014	0.300	9.08
Zr	4.85	-0.021	-0.440	-103.65

Dilution factor : 21.0000

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ICP Analysis - April 30, 1990 Acid Blank

Sample name : HNO3
Programme : 6ST 30-Apr-90 15:16:50

NAME	MV INT	CONCEN	RSD
Al	2.03	(-0.350	-9.84
Sb	0.59	(-0.332	-15.41
As	1.43	(-0.071	-7.79
Ba	3.65	(-0.017	-10.33
Be	0.87	(-0.003	-14.86
Bi	5.63	(-0.365	-12.58
B	5.30	-0.014	-30.20
Cd	3.12	(-0.011	-12.74
Ca	0.48	(-0.001	-1.90
Ce	5.17	(-0.635	-9.74
Cr	1.43	(-0.026	-2.95
Co	0.25	-0.038	-5.25
Cu	2.93	(-0.041	-10.37
Eu	3.90	(-0.011	-11.66
Fe	1.69	(-0.016	-5.37
La	0.35	-0.045	-23.08
Pb	0.30	-0.182	-10.91
Li	3.63	(-0.030	-10.61
Mg	0.47	(-0.001	-11.08
Mn	0.94	(-0.004	-8.22
Hg	6.09	0.012	63.11
Mo	2.56	(-0.028	-10.89
Nd	5.16	(-0.464	-8.51
Ni	4.87	(-0.037	-14.03
P	1.51	(-0.105	-15.96
K	3.04	-0.598	-43.33
Sm	4.70	(-0.719	-9.33
Se	2.25	(-0.309	-10.34
Si	3.40	(-0.235	-5.91
Ag	15.09	(-0.053	-9.98
Na	5.09	(-0.364	-10.66
Sr	3.52	(-0.007	-10.24
S	0.85	(-0.070	-14.63
Ta	4.13	(-0.111	-3.49
Tl	4.56	(-0.874	-15.88
Th	1.04	(-0.484	-9.49
Sn	1.81	(-0.042	-12.77
Ti	3.88	(-0.026	-8.86
W	1.93	(-0.082	-5.54
U	4.87	(-4.574	-9.56
V	4.67	(-0.037	-10.54
Zn	4.36	(-0.008	-4.78
Zr	4.61	(-0.072	-10.10

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : F950
Sample code 1 : 78C11K
Sample code 2 : 66T1
Sample code 3 : DIRECT
Programme : SST 30-Apr-90 15:20:35

NAME	MV INT	CONCEN	RSD
Al	2.15	-0.114	-60.60
Sb	1.56	9.907	0.70
As	1.60	0.028	63.36
Ba	214.77	9.717	1.64
Be	0.91	-0.001	-36.65
Bi	5.80	(-0.254	-36.99
B	158.16	9.805	1.16
Cd	270.88	9.689	0.37
Ca	294.14	9.995	1.67
Ce	12.77	9.043	0.57
Cr	51.85	8.892	0.55
Co	3.13	9.992	2.40
Cu	67.17	9.831	1.30
Eu	4.78	0.015	15.65
Fe	88.72	10.084	0.95
La	0.38	0.028	24.80
Pb	0.31	-0.108	-18.33
Li	109.44	9.595	1.36
Mg	319.31	9.984	1.21
Mn	204.73	9.830	0.81
Hg	5.58	-0.010	-17.90
Mo	2.71	-0.011	-43.65
Nd	15.32	8.730	1.18
Ni	127.52	9.604	0.61
P	1.63	-0.029	-91.87
K	9.77	24.593	0.52
Sm	4.74	(-0.662	-24.29
Se	5.03	3.476	1.55
Si	3.52	(-0.176	-17.82
Ag	15.31	(-0.046	-23.26
Na	39.62	24.198	1.26
Sr	385.43	9.864	1.63
S	1.19	0.279	9.19
Ta	4.29	(-0.069	-26.41
Tl	4.92	-0.204	-95.10
Th	1.10	-0.173	-55.91
Sn	190.18	49.335	0.49
Ti	3.92	(-0.022	-33.68
W	2.30	0.098	12.51
U	5.44	0.619	156.29
V	4.81	(-0.025	-33.91
Zn	417.29	9.831	0.72
Zr	4.71	-0.052	-29.95

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : F950
Sample code 1 : 83B38A
Sample code 2 : SST2
Sample code 3 : DIRECT
Programme : SST 30-Apr-90 15:24:24

NAME	NV INT	CONCEN	RSD
Al	4.07	5.550	2.59
Sb	0.58	0.487	6.98
As	4.87	1.907	3.00
Ba	4.34	0.015	15.56
Be	0.96	0.001	41.62
Bi	86.42	53.719	1.78
B	6.81	0.083	6.19
Cd	3.55	0.004	34.06
Ca	0.95	0.015	2.47
Ce	6.07	0.507	17.36
Cr	2.04	0.082	5.70
Co	0.26	0.014	39.19
Cu	4.92	0.264	3.01
Eu	325.15	9.639	1.05
Fe	2.33	0.058	3.04
La	18.39	46.786	1.33
Pb	4.49	54.140	1.59
Li	3.93	-0.004	-87.97
Mg	0.70	0.007	2.98
Mn	1.21	0.010	7.90
Hg	6.83	0.045	12.70
Mo	3.87	0.007	38.33
Nd	6.35	0.614	9.37
Ni	5.57	0.018	35.31
P	2.10	0.293	5.39
K	3.25	0.208	40.49
Sm	11.59	9.990	1.86
Se	2.64	0.217	16.61
Si	5.03	0.587	4.87
Ag	336.75	10.254	1.33
Na	5.58	-0.011	-431.45
Sr	4.06	0.006	13.80
S	1.12	0.211	3.18
Ta	5.21	0.162	6.23
Tl	8.50	6.431	0.96
Th	11.19	51.233	1.47
Sn	2.19	0.057	11.16
Ti	4.96	0.057	7.34
W	2.09	-0.002	-482.82
U	11.22	53.789	2.14
V	7.72	0.228	2.04
Zn	5.28	0.014	7.03
Zr	5.53	0.121	7.89

ICP Analysis - April 30, 1990 LMCS Check Standard

Sample name : F950
Sample code 1 : 77C113
Sample code 2 : 6ST3
Sample code 3 : DIRECT
Programme : SST 30-Apr-90 15:28:08

NAME	MV INT	CONCEN	RSD
Al	26.10	49.634	0.87
Sb	0.66	1.193	7.71
As	99.77	56.517	1.16
Ba	4.49	0.032	4.81
Be	269.72	9.422	0.89
Bi	7.61	0.958	4.91
B	6.74	0.078	4.43
Cd	3.82	0.014	9.62
Ca	1.32	0.028	1.10
Ce	5.88	0.269	15.14
Cr	1.83	0.045	3.56
Co	0.29	0.124	2.80
Cu	3.62	0.064	4.15
Eu	4.47	0.006	17.39
Fe	2.29	0.053	7.47
La	0.38	0.022	42.14
Pb	0.33	0.190	10.41
Li	4.07	0.010	14.66
Mg	0.75	0.008	1.35
Mn	1.37	0.017	2.55
Hg	601.29	26.157	1.09
Mo	430.80	47.121	1.07
Nd	5.98	0.279	14.12
Ni	11.70	0.500	1.19
P	89.14	157.483	1.05
K	3.31	0.423	10.56
Sm	5.39	0.349	14.56
Se	40.66	51.947	1.51
Si	91.10	43.891	1.36
Ag	27.92	0.371	0.83
Na	6.84	0.886	3.55
Sr	4.04	0.006	8.96
S	52.19	152.926	1.13
Ta	193.83	47.819	1.36
Tl	32.38	50.670	1.68
Th	1.34	1.053	3.36
Sn	2.68	0.185	3.67
Ti	641.33	48.394	0.72
W	43.98	20.467	0.99
U	7.07	15.664	2.71
V	114.86	9.494	0.99
Zn	6.20	0.036	1.05
Zr	234.22	48.091	0.82

WATER DIGESTION TEST RESULTS

Single Shell Tank Project

Water Digestion
Sample Results
Units For Samples Are Wet Weight

Tank: 241-U-110
Core: 6
Segment: F0917
Customer ID: Core 6 Composite

	Check Standard	Blank		Sample		Duplicate Sample		Spike of Sample		Check Standard
Laboratory ID:	N/A	F0928		F0929		F0930		F0931		N/A
Water Digestion	N/A	N/A		6.88	g/L	7.17	g/L	6.13	g/L	N/A
Laboratory ID:	F0903	F0904		F0929		F0930		N/A		F0908
pH	101.10%	5.94		10.34		10.98		N/A		101.00%
Laboratory ID:	F0903	F0904		F0929		F0930		F0907		F0932
Ion Chromatrograph										
Fluoride	95.10%	<0.1	ppm	6.04+03	ug/g	5.40E+03	ug/g	125.50%		99.70%
Chloride	98.90%	1.78E-01	ppm	<1.47E+03	ug/g	<1.41E+03	ug/g	101.82%		103.50%
Nitrate	100.00%	7.51E-01	ppm	3.87E+04	ug/g	5.26E+04	ug/g	109.83%		100.80%
Phosphate	104.00%	<1.0	ppm	3.18E+04	ug/g	3.84E+04	ug/g	112.83%		103.20%
Sulfate	93.30%	<1.0	ppm	<1.47E+04	ug/g	<1.41E+04	ug/g	105.50%		92.30%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Total Organic Carbon	96.40%	5.3	ug	9.45E+02	ug/g	6.28E+02	ug/g	82.99%		96.80%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Ammonia	97.80%	<1.15E+02	ppm	<1.67E+04	ug/g	<1.60+04	ug/g	91.60%		95.60%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Carbonate	104.50%	4.6	ug	3.27E-03	ug/g	3.00E-03	ug/g	101.88%		104.20%
Laboratory ID:										
Chrome VI	*	*		*		*		*		*
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Nitrite	98.10%	<3.59E-01	ppm	8.43E+03	ug/g	1.17E+04	ug/g	90.20%		98.20%
Laboratory ID:	F0201	F0216		F0929		F0930		F0204		F0205
Total Alpha 02-06-90	97.30%	9.96E-07	uci/L	<6.57E-03	uci/g	Rerun		*		100.80%
Total Beta 02-06-90	105.10%	2.97E-05	uci/L	5.28	uci/g	Rerun		*		106.60%
Laboratory ID:	F0927	**		F0929		F0930		**		F0956
Total Alpha 02-08-90	93.30%	**		**		<3.67E-03	uci/g	**		103.80%
Total Beta 02-08-9	100.50%	**		**		1.45E+01		**		101.60%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
GEA Cs-137	104.00%	<5.14E-02	uci/L	4.55	uci/g	6.93	uci/g	105.40%		103.00%
Laboratory ID:	F0903	F0946		F0929		F0930		F0949		F0950
Plutonium 239	109.50%	<7.29E-03	uci/L	<1.51E-03	uci/g	<9.46E-04	uci/g	*		105.90%
Laboratory ID:	F0897	F0946		F0929		F0930		F0949		F0950
Americium 241	101.30%	<1.50E-02	uci/L	<2.66E-03	uci/g	<2.48E-03	uci/g	*		105.80%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Iodine 129	116.80%	<1.05E-01	uci/L	<9.00E-03	uci/g	<1.40E-02	uci/g	92.40%		98.20%
Laboratory ID:	F1058	F0904		F0929		F0930		F1081		F1077
Neptunium	70.80%	<1.08	uci/L	<1.57E-01	uci/g	<1.51E-01	uci/g	34.80%		71.60%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Technetium 99	107.90%	<2.04E-02	uci/L	5.02E-03	uci/g	3.97E-03	uci/g	*		104.40%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Tritium	102.90%	<1.13E-02	uci/L	2.73E-03	uci/g	2.34E-03	uci/g	104.70%		97.80%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Arsenic	95.69%	<0.01	ppm	<7.27E-1	ug/g	<6.97E-01	ug/g	88.14%		105.17%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Mercury	91.20%	8.14E-04	mg	1.32E-01	ug/g	1.00E-01	ug/g	92.03%		106.40%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Selenium	104.40%	<5.00E-06	mg	2.11E-01	ug/g	2.02E-01	ug/g	87.96%		96.20%

* Ratio Of Spike To Sample Insufficient To Calculate Spjke Recovery.
* * Analysis Was Not Run.

ICP Results ICP DATA SUMMARY

Date Analyzed:	JULY 9, 1990		Reagent Blank	F904
Procedure:	LA-505-151/A-0		Core 6 Composite	F929
Analyst:	J. A. WHITE	Duplicate of	Core 6 Composite	F930
Digestion	Acid Digestion	Spike of Core 5	Composite F905	F907
Procedure:	LA-505-159/A-0			

	Standard Recovery %	Acid Digestion Standard Recovery %	Reagent Blank ppm	Sample ug/g	Sample Duplicate ug/g	Spike Recovery %	Acid Digestion Standard Recovery %	Standard Recovery %
Aluminum	101.94%	not	0.62 LT	3823.95	2694.93	125.25%	Not	102.50%
Antimony	103.10%	analyzed	-0.25 LT	48.90 LT	-32.54 LT	102.82%	Analyzed	103.33%
Barium	108.49%	NA	0.04 LT	3.69 LT	3.98 LT	108.73%	NA	106.68%
Beryllium	107.33%	NA	0.01 LT	0.60 LT	0.30 LT	108.07%	NA	106.33%
Boron	103.83%	NA	2.40	289.22	389.25	103.11%	NA	103.08%
Cadmium	102.99%	NA	0.02 LT	1.10 LT	-0.40 LT	101.38%	NA	103.17%
Calcium	104.32%	NA	1.04	300.40	83.68	103.30%	NA	102.78%
Cerium	96.87%	NA	1.06 LT	66.77 LT	-28.26 LT	92.94%	NA	99.00%
Chromium	90.82%	NA	0.03 LT	379.24	297.81	90.91%	NA	90.53%
Cobalt	104.45%	NA	-0.31 LT	-15.27 LT	-15.22 LT	99.33%	NA	104.74%
Copper	104.12%	NA	0.08 LT	9.38 LT	13.83 LT	106.09%	NA	102.75%
Europium	96.18%	NA	0.02 LT	0.60 LT	-1.59 LT	95.07%	NA	96.20%
Iron	106.43%	NA	0.22 LT	47.01	103.28	106.52%	NA	106.33%
Lanthanum	93.88%	NA	0.06 LT	-7.98 LT	-3.98 LT	93.61%	NA	98.40%
Lithium	102.50%	NA	0.06 LT	3.39 LT	-0.40 LT	100.77%	NA	101.12%
Magnesium	107.64%	NA	0.45	622.75	2121.69	124.83%	NA	107.44%
Manganese	103.54%	NA	0.01 LT	2.00 LT	2.49 LT	101.90%	NA	102.93%
Mercury	104.05%	NA	0.77	41.42	38.21	100.76%	NA	104.93%
Molybdenum	98.32%	NA	0.03 LT	4.09 LT	-1.19 LT	99.61%	NA	98.41%
Neodymium	95.33%	NA	-0.21 LT	-86.73 LT	-154.63 LT	85.46%	NA	93.97%
Nickel	102.34%	NA	-0.01 LT	0.20 LT	5.47 LT	101.03%	NA	102.75%
Potassium	104.45%	NA	2.24 LT	316.37 LT	143.38 LT	100.02%	NA	106.83%
Selenium	99.48%	NA	0.30 LT	135.53 LT	116.12 LT	110.85%	NA	100.23%
Silver	103.78%	NA	0.08 LT	4.29 LT	-4.28 LT	101.89%	NA	107.60%
Sodium	101.90%	NA	4.10	102854.29	78376.12	NOT CALC.	NA	101.79%
Strontium	104.58%	NA	0.02 LT	1.40 LT	0.40 LT	102.87%	NA	103.14%
Sulfur	101.58%	NA	0.05 LT	411.28	421.39	94.22%	NA	102.49%
Tantalum	96.99%	NA	0.09 LT	9.58 LT	-15.42 LT	97.02%	NA	97.63%
Thallium	99.91%	NA	1.51	-21.06 LT	684.28	129.31%	NA	99.80%
Tin	102.44%	NA	0.06 LT	15.47 LT	21.89 LT	104.85%	NA	102.92%
Titanium	101.96%	NA	0.03 LT	3.89 LT	3.08 LT	102.98%	NA	101.79%
Vanadium	99.65%	NA	0.01 LT	-3.69 LT	-1.59 LT	101.98%	NA	98.23%
Zinc	103.98%	NA	0.21	26.15	48.96	103.43%	NA	103.54%
Zirconium	96.87%	NA	0.16 LT	12.48 LT	-0.20 LT	97.83%	NA	96.70%
Dilution Factor			21.00	21.00	21.00			

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

Single Shell Tank Project

Water Digestion
Results On the Laboratory Digestion

Tank: 241-U-110
Core: 6
Segment: F0917
Customer ID: Core 6 Composite

	Check Standard	Blank		Sample		Duplicate Sample		Spike of Sample		Check Standard
Laboratory ID:	N/A	F0928		F0929		F0930		F0931		N/A
Water Digestion	N/A	N/A		6.88	g/L	7.17	g/L	6.13	g/L	N/A
Laboratory ID:	F0903	F0904		F0929		F0930		N/A		F0908
pH	101.10%	5.94		10.34		10.98		N/A		101.00%
Laboratory ID:	F0903	F0904		F0929		F0930		F0907		F0932
Ion Chromatrograph										
Fluoride	95.10%	<0.1	ppm	4.15E+01	ppm	3.87E+01	ppm	125.50%		99.70%
Chloride	98.90%	1.78E-01	ppm	<10.1	ppm	<10.1	ppm	101.82%		103.50%
Nitrate	100.00%	7.51E-01	ppm	2.66E+02	ppm	3.77E+02	ppm	109.83%		100.80%
Phosphate	104.00%	<1.0	ppm	2.19E+02	ppm	2.75E+02	ppm	112.83%		103.20%
Sulfate	93.30%	<1.0	ppm	<101.00	ppm	<101.00	ppm	105.50%		92.30%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Total Organic Carbon	96.40%	5.3	ug	6.50E-03	g/L	4.50E-03	g/L	82.99%		96.80%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Ammonia	97.80%	<1.15E+02	ppm	<1.15E+02	ppm	<1.15E+02	ppm	91.60%		95.60%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Carbonate	104.50%	4.6	ug	2.25E-02	g/L	2.15E-02	g/L	101.88%		104.20%
Laboratory ID:										
Chrome VI	*	*		*		*		*		*
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Nitrite	98.10%	<3.59E-01	ppm	5.80E+01	ppm	8.37E+01	ppm	90.20%		98.20%
Laboratory ID:	F0201	F0216		F0929		F0930		F0204		F0205
Total Alpha 02-06-90	97.30%	9.96E-07	uci/L	<4.52E-02	uci/L	*		*		100.80%
Total Beta 02-06-90	105.10%	2.97E-05	uci/L	3.63E+01	uci/L	*		*		106.60%
Laboratory ID:	F0927	**		**		F0930		**		F0956
Total Alpha 02-08-90	93.30%	**		**		<2.63E-02	uci/L	**		103.80%
Total Beta 02-08-90	100.50%	**		**		1.04E+02	uci/L	**		101.60%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
GEA Cs-137	104.00%	<5.14E-02	uci/L	3.13E+01	uci/L	4.97E+01	uci/L	105.40%		103.00%
Laboratory ID:	F0903	F0946		F0929		F0930		F0949		F0950
Plutonium 239	109.50%	<7.29E-03	uci/L	<1.04E-02	uci/L	<6.78E-03	uci/L	*		105.90%
Laboratory ID:	F0897	F0946		F0929		F0930		F0949		F0950
Americium 241	101.30%	<1.50E-02	uci/L	<1.83E-02	uci/L	<1.78E-02	uci/L	*		105.80%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Iodine 129	116.80%	<1.05E-01	uci/L	<6.19E-02	uci/L	<1.00E-01	uci/L	92.40%		98.20%
Laboratory ID:	F1058	F0904		F0929		F0930		F1081		F1077
Neptunium	70.80%	<1.08	uci/L	<1.08	uci/L	<1.08	uci/L	34.80%		71.60%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Technetium 99	107.90%	<2.04E-02	uci/L	3.45E-02	uci/L	2.85E-02	uci/L	*		104.40%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Tritium	102.90%	<1.13E-02	uci/L	1.88E-02	uci/L	1.68E-02	uci/L	104.70%		97.80%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Arsenic	95.69%	<0.01	ppm	<.005	ppm	<.005	ppm	88.14%		105.17%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Mercury	91.20%	8.14E-04	mg	9.06E-04	ppm	7.17E-04	ppm	92.03%		106.40%
Laboratory ID:	F0927	F0928		F0929		F0930		F0931		F0932
Selenium	104.40%	<0.01	Ng	1.45E-03	ppm	1.45E-03	ppm	87.96%		96.20%

* Ratio Of Spike To Sample Insufficient To Calculate Spjke Recovery.
* Analysis Was Not Run.

Single Shell Tank Project

Water Digestion
Sample Results On The Third Leach

Tank: 241-U-110
Core: 6
Segment: F0917
Customer ID: Core 6 Composite

	Check Standard	Blank	Sample	Duplicate Sample	Spike Of Sample	Check Standar
Laboratory ID:	N/A	F0928	F0929	F0930	F0931	N/A
Water Digestion	N/A	N/A	10.02 g/L	10.05 g/L	10.08 g/L	N/A
Laboratory ID:	F0927	F0928	F0929	F0930	F0931	F0932
Total Organic Carbon 06-06-90	96.20%	4.9 ug	<5.49E+02 ug/g	<5.47E+02 ug/g	119.90%	96.97%
Laboratory ID:	F0927	F0928	F0929	F0930	F0931	F0932
Carbon 14	94.10%	<1.13E-03 uci/L	2.65E-04 uci/g	1.71E-04 uci/g	81.60%	98.10%
Laboratory ID:	F0927	F0928	F0929	F0930	F0931	F0932
Strontium 06-11-90	96.00%	1.55E-02 uci/L	*	5.94E-02 uci/g	90.75%	90.90%
Laboratory ID:	F1053	F1054	F0929	F0930	F1057	F1058
Stronium 06-25-90	88.40%	<3.80E-03 uci/L	6.77E-02 uci/g	**	98.10%	92.90%

* Rerun On 06-25-90.
** Analysis Was Not Run.

Single Shell Tank Project

Water Digestion
Sample Results On The Third Leach

Tank: 241-U-110
Core: 6
Segment: F0917
Customer ID: Core 6 Composite

	Check Standard	Blank	Sample	Duplicate Sample	Spike Of Sample	Check Standard
Laboratory ID:	N/A	F0928	F0929	F0930	F0931	N/A
Water Digestion	N/A	N/A	10.02 g/L	10.05 g/L	10.08 g/L	N/A
Laboratory ID:	F0927	F0928	F0929	F0930	F0931	F0932
Total Organic Carbon 06-06-90	96.20%	4.9 g/L	<5.50E-03 g/L	<5.50E-03 g/L	119.90%	96.97%
Laboratory ID:	F0927	F0928	F0929	F0930	F0931	F0932
Carbon 14	94.10%	<1.13E-03 uci/L	2.66E-03 uci/L	1.72E-03 uci/L	81.60%	98.10%
Laboratory ID:	F0927	F0928	F0929	F0930	F0931	F0932
Strontium 06-11-90	96.00%	1.55E-02 uci/L	*	5.97E-01 uci/L	90.75%	90.90%
Laboratory ID:	F1053	F1054	F0929	F0930	F1057	F1058
Stronium 06-25-90	88.40%	<3.80E-03 uci/L	6.78E-01 uci/L	**	98.10%	92.90%

* Rerun On 06-25-90.
** Analysis Was Not Run.

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	N/A
Procedure/Rev	LA-504-101/A-2
Technologist	J. M. Kankel
Date	01-29-90
Temperature	25 C
Starting Time	8:00; 01-25-90
Ending Time	09:30; 01-29-90
Chemist	H. S. Rich

Water Digestion

Note:

1) Sample is not spiked prior to digestion. This procedure provides a sample to be spiked later with the appropriate element.

2) Analysis performed on this digestion will be identified as "First Leaching".

	Description	Lab ID
1	Reagent Blank	F0928
2	Sample Composite 6	F0929
3	Duplicate Composite 6	F0930
4	Spike Composite 6	F0931
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)				

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Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	N/A
PROCEDURE/REV	LA-504-101/A-2
TECHNOLOGIST	M. Franz
DATE	5-30-90
TEMPERATURE	None
STARTING TIME	5-17-90
ENDING TIME	05-30-90
CHEMIST	H. S. Rich

Water Digestion

1) Sample is not spiked prior to digestion. This procedure provides a sample to be spiked later with the appropriate element.

2) Analysis performed on this digestion will be identified as "Third Leaching".

	DESCRIPTION		LAB ID
1	Reagent Blank		F0904
2	Sample	Composite 5	F0905
3	Duplicate	Composite 5	F0906
4	Spike	Composite 5	F0907
5	Reagent Blank	Composite 6	F0928
6	Sample	Composite 6	F0929
7	Duplicate	Composite 6	F0930
8	Spike	Composite 6	F0931
9	Reagent Blank	Composite 7	F0982
10	Sample	Composite 7	F0983
11	Duplicate	Composite 7	F0984

	DESCRIPTION		LAB ID
12	Spike	Composite 7	F0985
13	Reagent Blank	Composite 14	F1006
14	Sample	Composite 14	F1007
15	Duplicate	Composite 14	F1008
16	Spike	Composite 14	F1009
17	Reagent Blank	Composite 15	F1030
18	Sample	Composite 15	F1031
19	Duplicate	Composite 15	F1032
20	Spike	Composite 15	F1033
21	Reagent Blank	Composite 12	F1054
22	Sample	Composite 12	F1055

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

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Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	N/A
Procedure/Rev	LA-504-101/A-2
Technologist	M. Franz
Date	5-30-90
Temperature	None
Starting Time	05-17-90
Ending Time	05-30-90
Chemist	H. S. Rich

Water Digestion

Notes:

1) Sample is not spiked prior to digestion. This procedure provides a sample to be spiked later with the appropriate element.

2) Analysis performed on this digestion will be identified as "Third Leaching".

	Description	Lab ID
1	Duplicate Sample Composite 12	F1056
2	Spike Composite 12	F1057
3	Reagent Blank Composite 13	F1078
4	Sample Composite 13	F1079
5	Duplicate Composite 13	F1080
6	Spike Composite 13	F1081
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 #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	N/A
PROCEDURE/REV	LA-211-102
TECHNOLOGIST	M. Franz
DATE	02-06-90
TEMPERATURE	N/A
STARTING TIME	07:30
ENDING TIME	10:00
CHEMIST	R. E. Brandt

pH Analysis of the Water Digestion

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0903
2	Reagent Blank	F0904
3	Sample Composite 5	F0905
4	Duplicate Composite 5	F0906
5	Sample Composite 6	F0929
6	Duplicate Composite 6	F0930
7	Sample Composite 8	F0953
8	Duplicate Composite 8	F0954
9	Final LMCS Check Std	F0908
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	72C11 / 1 mL			1 mL

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

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Dionex 4000
PROCEDURE/REV	LA-533-105/A-3
TECHNOLOGIST	N. Wright
DATE	02-20-90
TEMPERATURE	24 C
STARTING TIME	11:40
ENDING TIME	14:20
CHEMIST	H. S. Rich

Ion Chromatograph Analysis
Water Analysis
(*) Chromatogram Only

	DESCRIPTION	LAB ID
1	Eluent Blank	•
2	Initial LMCS Check Std	F0903
3	Reagent Blank Composite 5	F0904
4	Sample Composite 5	F0905
5	Duplicate Composite 5	F0906
6	Spike Composite 5	F0907
7	Sample Composite 6	F0929
8	Duplicate Composite 6	F0930
9	Final LMCS Check Std	F0932
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	6C11HI/100 uL			10.1 mL
Spike	35C9-67/300 uL	F0907/100 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-2
INSTRUMENT:	Dionex 4000	PROPERTY NUMBER:	WB24721
TECHNOLOGIST:	Nora Wright	PAYROLL NUMBER:	6B107
DATE:	February 14, 1990		

CALIBRATION STANDARD ID: Book Number 35C9-67

ANALYTE CONCENTRATION: F-47 ppm; Cl-60 ppm; NO^3 -481 ppm; PO^4 -492 ppm; SO^4 - 482 ppm.

TYPE OF CALIBRATION:

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

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:\90021401.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 # 1 FLUORIDE Retention Time 0.97
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 5.44273E-004
Least Squares Intercept = 2.08122E-002
Ka = -6.49314E-009

Level	Amount	Area	Height
1	1.41700E-001	1336	246
2	3.53200E-001	3478	616
3	7.03000E-001	7271	1226
4	1.39220E+000	15622	2625
5	2.73070E+000	37180	5315
6	5.25910E+000	74116	11092

Component # 2 CHLORIDE Retention Time 1.53
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 7.08981E-004
Least Squares Intercept = -1.98232E-002
Ka = -1.71853E-008

Level	Amount	Area	Height
1	1.35700E-001	1267	200
2	3.38300E-001	2903	489
3	6.73300E-001	6430	1017
4	1.33330E+000	13713	2088
5	2.61540E+000	28370	4066
6	5.03700E+000	59291	9183

Component # 3 NITRITE Retention Time 1.95
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 6.03688E-004
Least Squares Intercept = 4.43181E-001
Ka = 3.82519E-009

Level	Amount	Area	Height
1	1.06990E+000	9937	1360
2	2.66670E+000	25698	3515
3	5.30700E+000	53506	7323
4	1.05099E+001	114215	15244
5	2.06146E+001	218918	28443
6	3.97026E+001	440177	49476

Component # 4 BROMIDE Retention Time 3.00
Reference Peak FLUORIDE Window Size 5.00%
Least Squares Slope = 1.66948E-003
Least Squares Intercept = 2.80223E-001
Ka = -5.76698E-010

Level	Amount	Area	Height
1	1.00100E+000	0	495
2	2.49500E+000	0	1341
3	4.96500E+000	0	2740
4	9.86850E+000	0	5689
5	1.92877E+001	0	11502
6	3.71471E+001	0	22240

Component # 5 NITRATE Retention Time 3.28
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 2.28401E-003
Least Squares Intercept = -7.74708E-003
Ka = 5.71081E-009

Level	Amount	Area	Height
1	1.12180E+000	5253	468
2	2.79600E+000	15077	1234
3	5.56430E+000	30767	2460
4	1.10197E+001	63964	4753
5	2.16145E+001	132213	9250
6	4.16284E+001	274103	17468

Component # 6 PHOSPHATE Retention Time 5.15
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 5.62393E-003
Least Squares Intercept = 1.29089E-001
Ka = -8.49058E-008

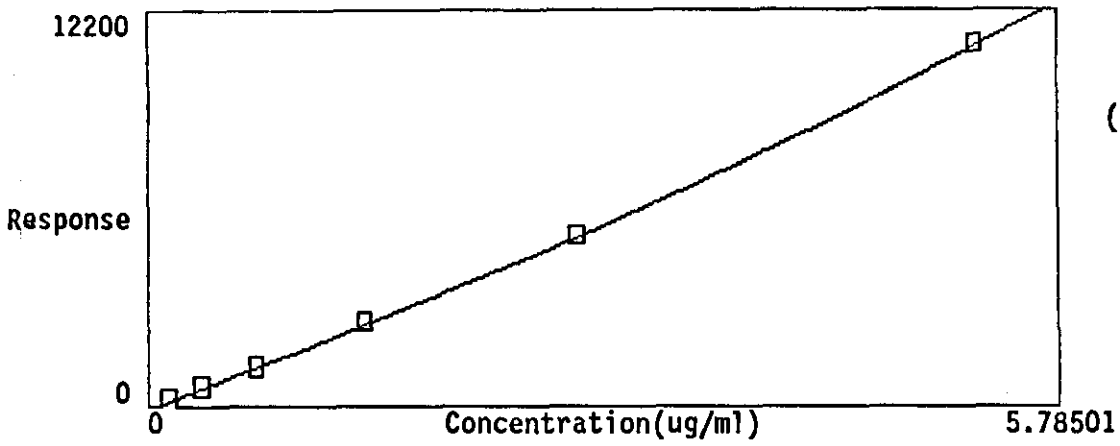
Level	Amount	Area	Height
1	1.06990E+000	2854	180
2	2.66670E+000	7216	437
3	5.30700E+000	16848	948
4	1.05090E+001	32539	1886
5	2.06146E+001	69406	3876
6	3.97026E+001	142872	8003

Component # 7 SULFATE Retention Time 6.43
Reference Peak C:\WINDOWS\AI400\METHOD\SST.MET Window Size
Least Squares Slope = 2.93889E-003
Least Squares Intercept = 2.61562E-001
Ka = -2.14409E-008

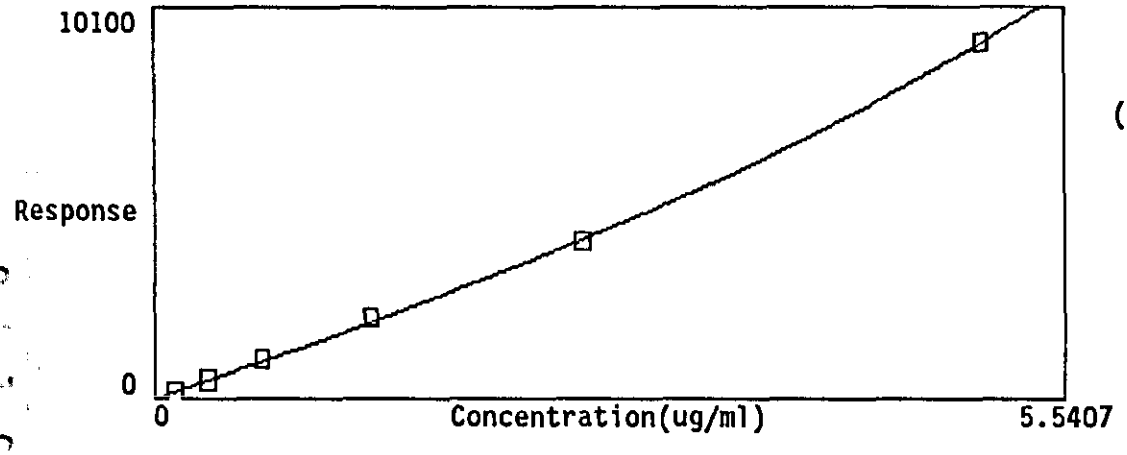
Level	Amount	Area	Height
1	1.18360E+000	6077	338
2	2.95020E+000	17483	922
3	5.87130E+000	36861	1890
4	1.16275E+001	79004	4005
5	2.28068E+001	163581	8158
6	4.39247E+001	343157	16953

Component # 8 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

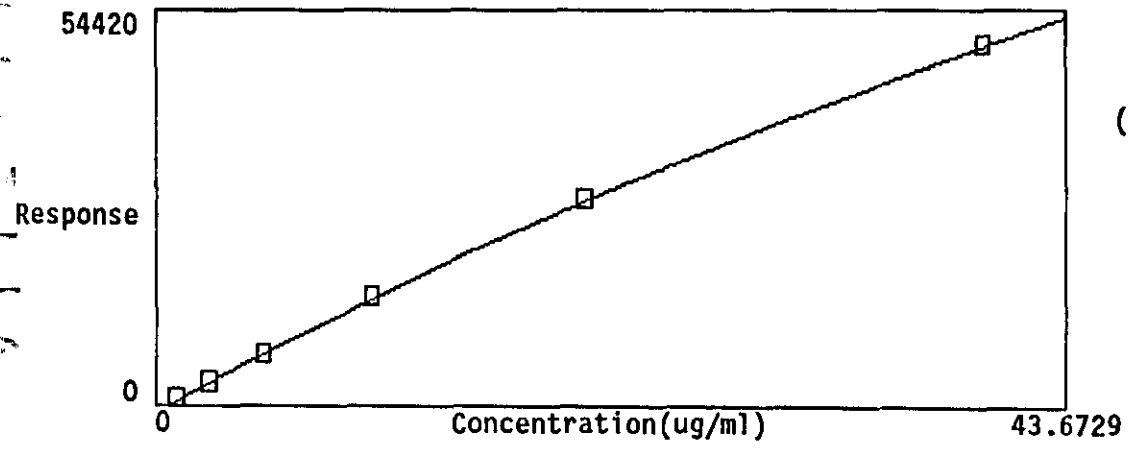
Level	Amount	Area	Height
1	0.00000E+000	0	0
2	0.00000E+000	0	0
3	0.00000E+000	0	0
4	0.00000E+000	0	0
5	0.00000E+000	0	0
6	0.00000E+000	98993	5848



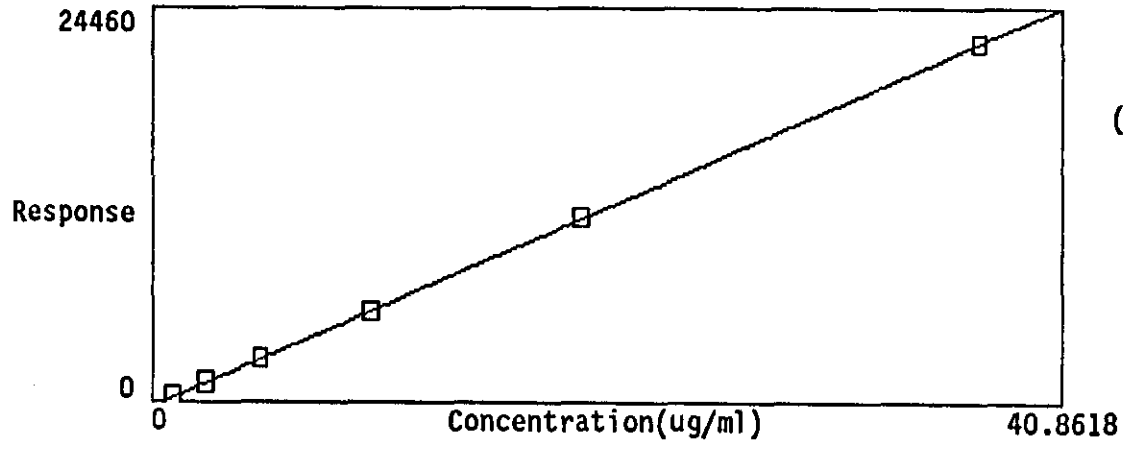
Component: FLUORIDE
Fit Type: Quadratic
Conc = (-6.493897e-009
(5.442836e-004 * Resp)+



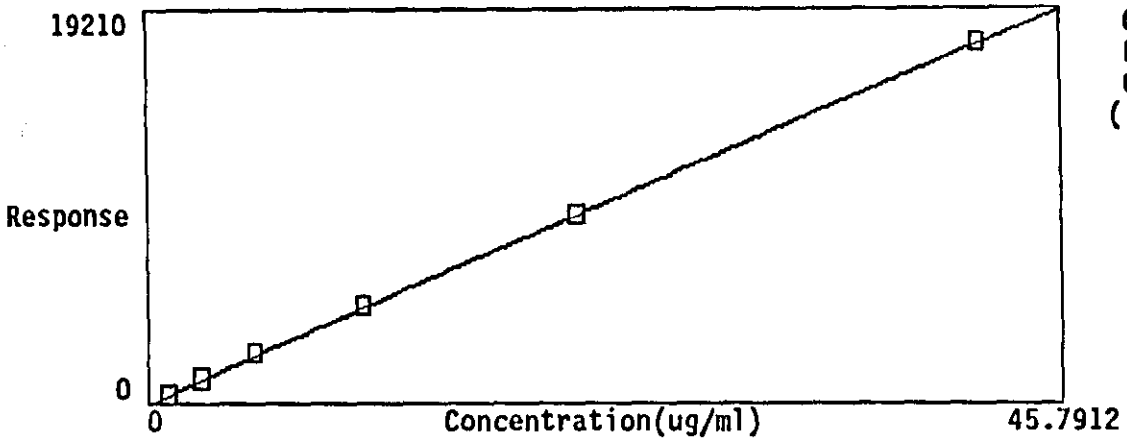
Component: CHLORIDE
Fit Type: Quadratic
Conc = (-1.718534e-008
(7.089808e-004 * Resp)+



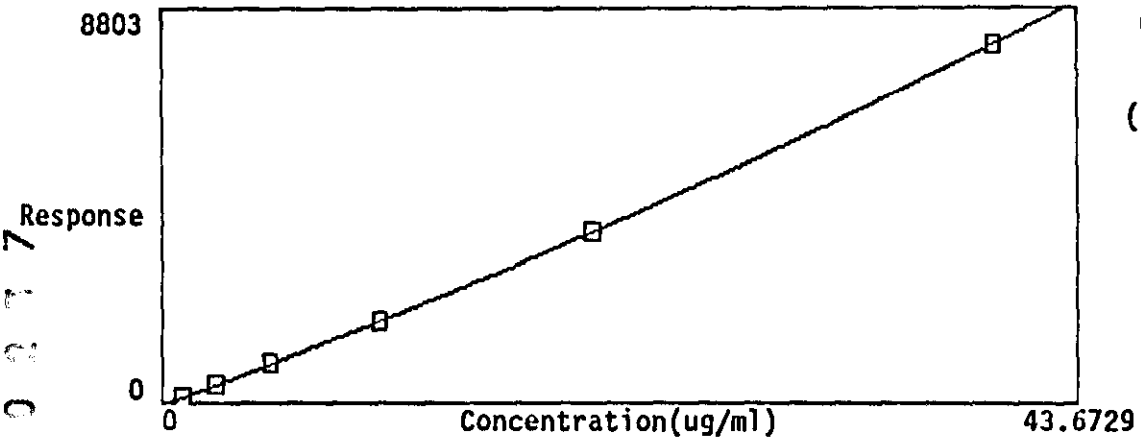
Component: NITRITE
Fit Type: Quadratic
Conc = (3.825193e-009 *
(6.036875e-004 * Resp)+



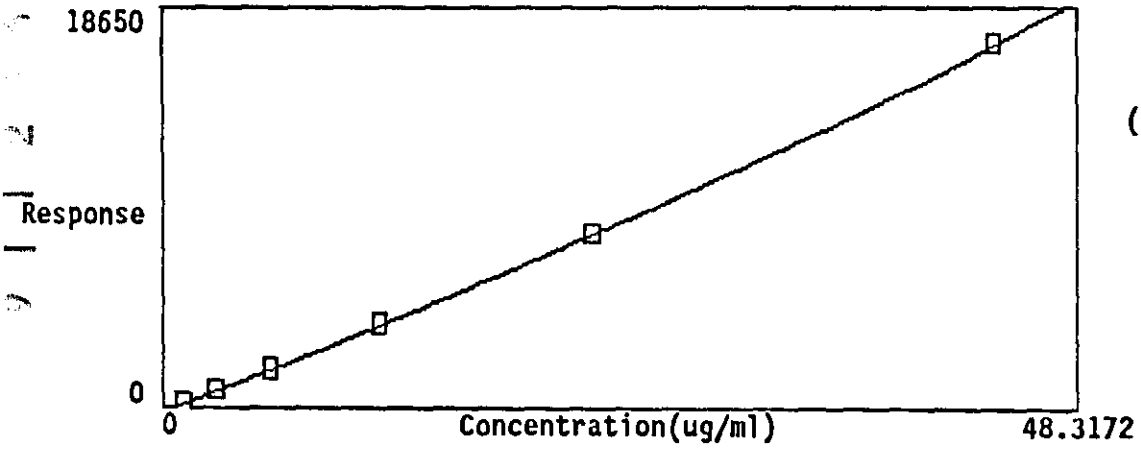
Component: BROMIDE
Fit Type: Quadratic
Conc = (-5.766983e-010
(1.669477e-003 * Resp)+



Component: NITRATE
Fit Type: Quadratic
Conc = (5.710807e-009 *
(2.284009e-003 * Resp)+



Component: PHOSPHATE
Fit Type: Quadratic
Conc = (-8.490584e-008
(5.623927e-003 * Resp)+



Component: SULFATE
Fit Type: Quadratic
Conc = (-2.144090e-008
(2.938890e-003 * Resp)+

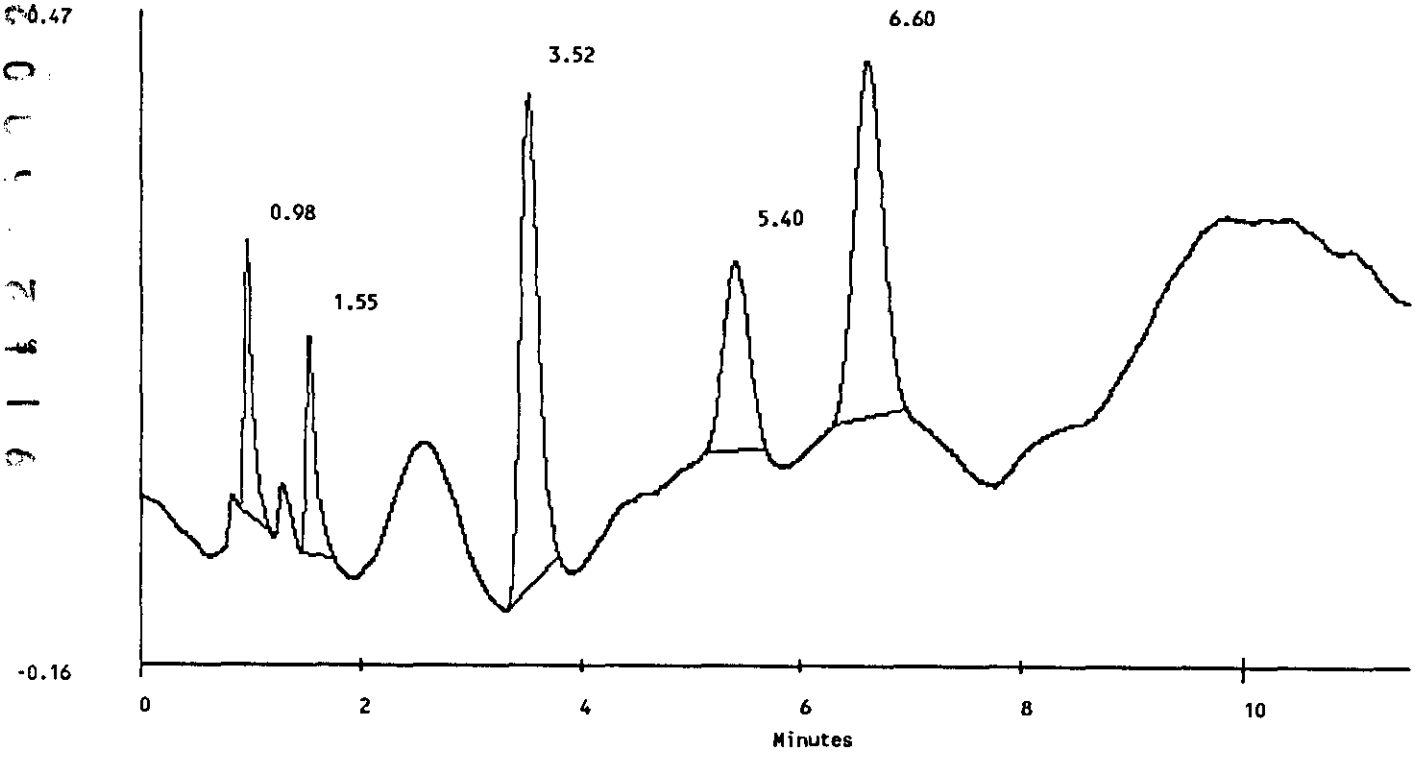
DATA REPROCESSED ON Thu Jun 28 15:54:30 1990

Sample Name: AUTOCAL1R Date: Wed Feb 14 14:51:13 1990
Data File : A:\90021401.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 = 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	0.98	FLUORIDE	1.417e-001	1.336e+003	246	1	0	0.00%
2	1.55	CHLORIDE	1.357e-001	1.267e+003	200	1	0	0.00%
3	3.52	NITRATE	1.122e+000	5.253e+003	468	1	0	0.00%
4	5.40	PHOSPHATE	1.070e+000	2.854e+003	180	1	0	0.00%
5	6.60	SULFATE	1.184e+000	6.077e+003	338	1	0	0.00%



DATA REPROCESSED ON Thu Apr 12 13:13:00 1990

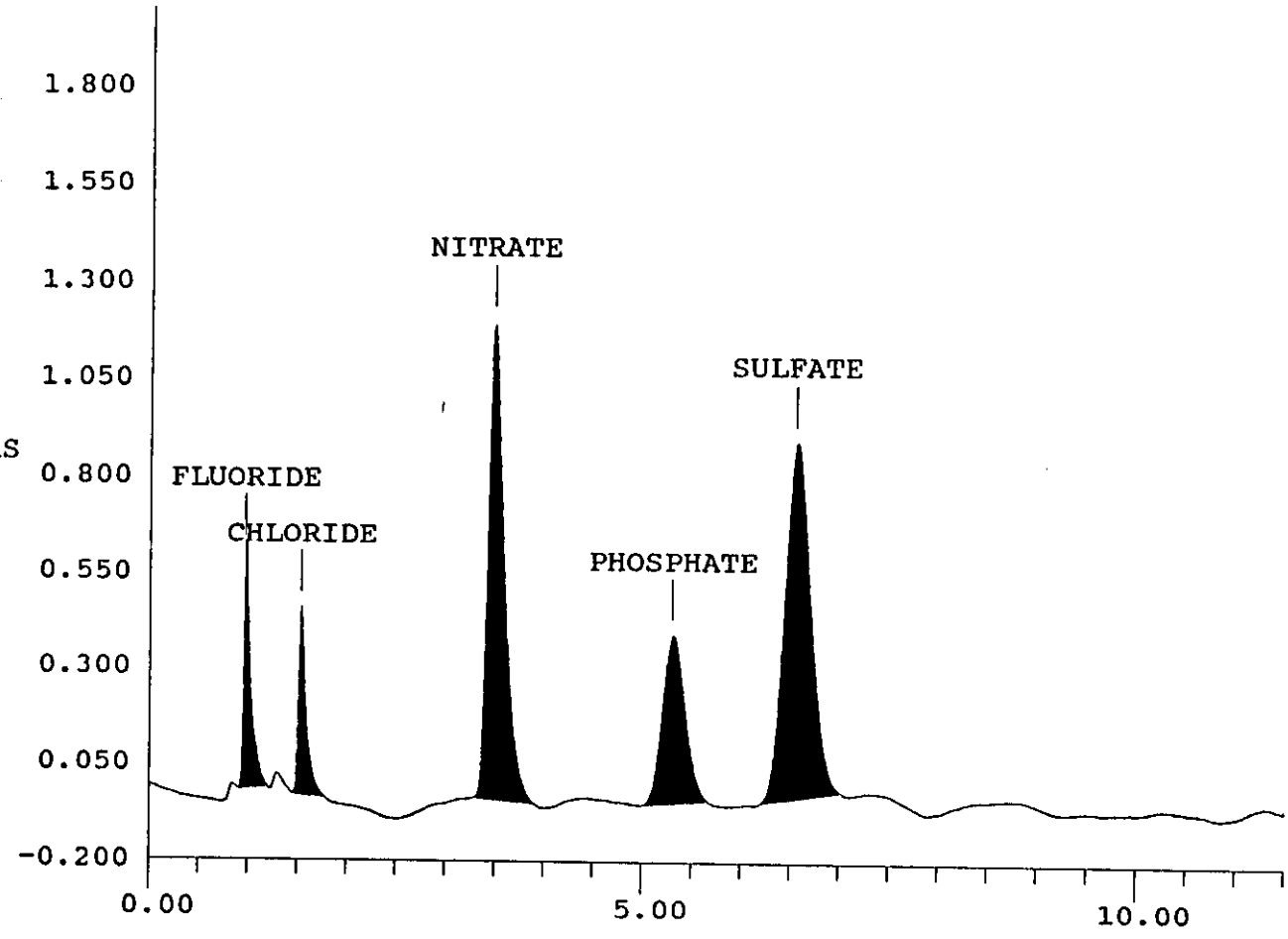
Sample Name: AUTOCAL2R Date: Wed Feb 14 15:03:32 1990
Data File : A:\90021401.D04
Method : c:\windows\ai400\method\SST.met
ACI Address: 1 System : 1 Inject#: 4 Detector: CDM

********** 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	0.97	FLUORIDE	2.338e-001	3.478e+003	616	1	0	0.00%
2	1.53	CHLORIDE	2.985e-001	2.903e+003	489	1	0	0.00%
3	3.48	NITRATE	2.393e+000	1.508e+004	1234	1	0	0.00%
4	5.30	PHOSPHATE	2.448e+000	7.216e+003	437	1	0	0.00%
5	6.55	SULFATE	2.398e+000	1.748e+004	922	1	0	0.00%

File: A:\90021401.D04 Sample: AUTOCAL2R



DATA REPROCESSED ON Thu Apr 12 13:15:05 1990

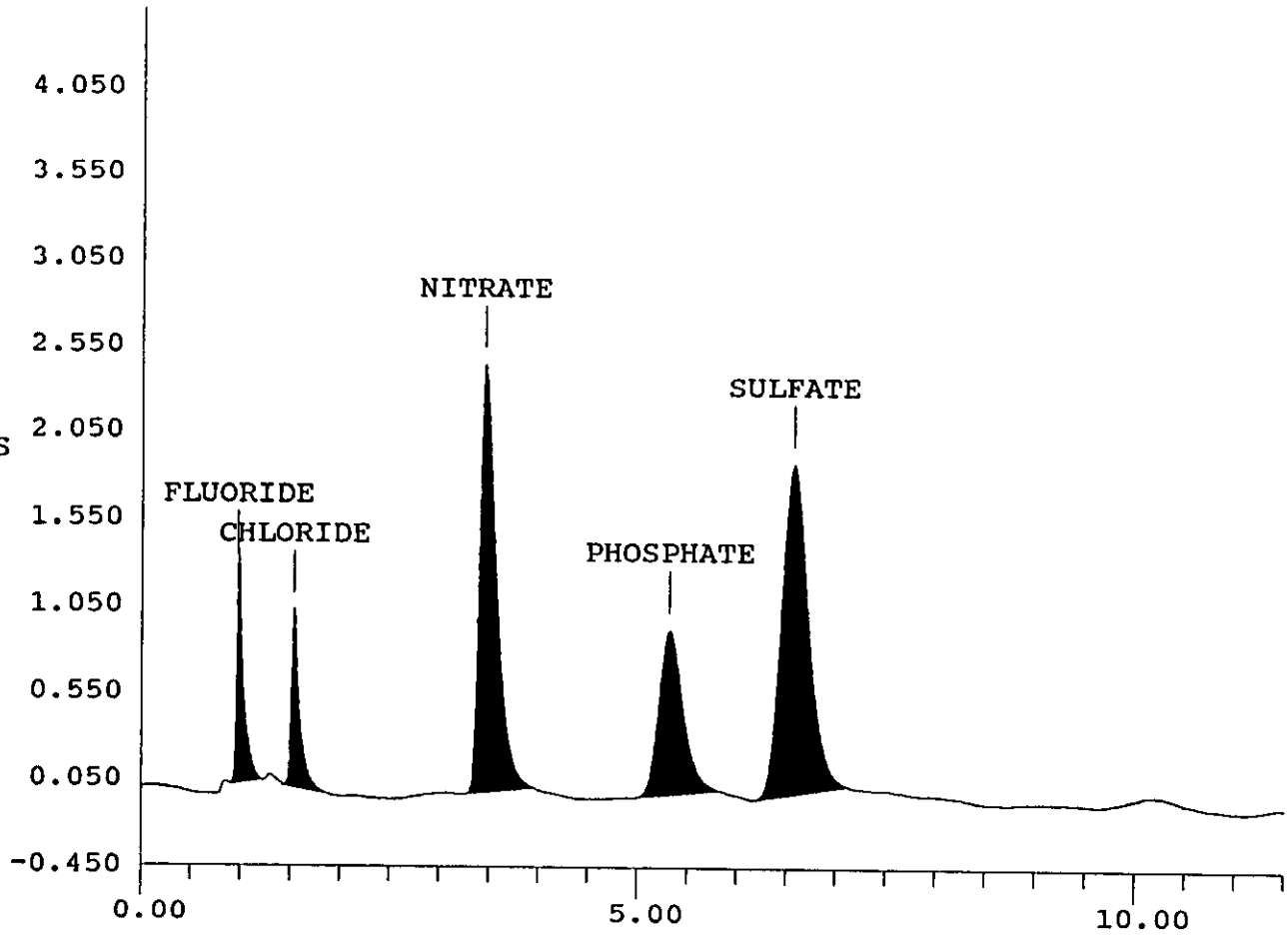
Sample Name: AUTOCAL3R Date: Wed Feb 14 15:15:50 1990
Data File : A:\90021401.D05
Method : c:\windows\ai400\method\SST.met
ACI Address: 1 System : 1 Inject#: 5 Detector: CDM

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

Stop time = 11.50 Minutes Number of Data Points = 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	0.97	FLUORIDE	4.653e-001	7.271e+003	1226	1	0	0.00%
2	1.53	CHLORIDE	5.941e-001	6.430e+003	1017	1	0	0.00%
3	3.45	NITRATE	4.762e+000	3.077e+004	2460	1	0	0.00%
4	5.32	PHOSPHATE	4.871e+000	1.685e+004	948	1	0	0.00%
5	6.57	SULFATE	4.772e+000	3.686e+004	1890	1	0	0.00%

File: A:\90021401.D05 Sample: AUTOCAL3R



DATA REPROCESSED ON Thu Apr 12 13:17:29 1990

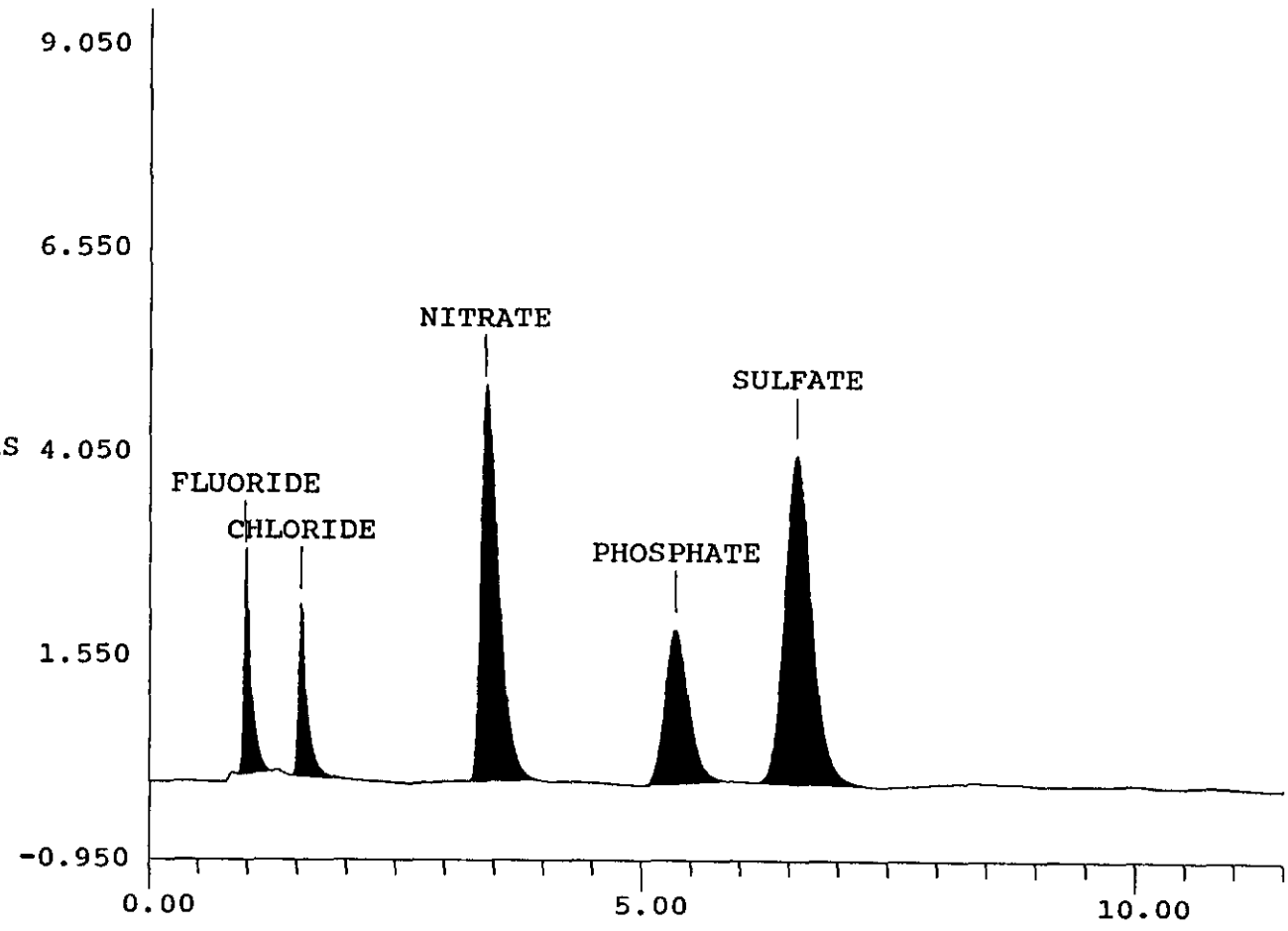
Sample Name: AUTOCAL4R Date: Wed Feb 14 15:28:08 1990
Data File : A:\90021401.D06
Method : c:\windows\ai400\method\SST.met
ACI Address: 1 System : 1 Inject#: 6 Detector: CDM

********** 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 = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	0.97	FLUORIDE	9.215e-001	1.562e+004	2625	1	0	0.00%
2	1.53	CHLORIDE	1.177e+000	1.371e+004	2088	1	0	0.00%
3	3.40	NITRATE	9.431e+000	6.396e+004	4753	1	0	0.00%
4	5.33	PHOSPHATE	9.647e+000	3.254e+004	1886	1	0	0.00%
5	6.57	SULFATE	9.451e+000	7.900e+004	4005	1	0	0.00%

File: A:\90021401.D06 Sample: AUTOCAL4R



DATA REPROCESSED ON Thu Apr 12 13:19:41 1990

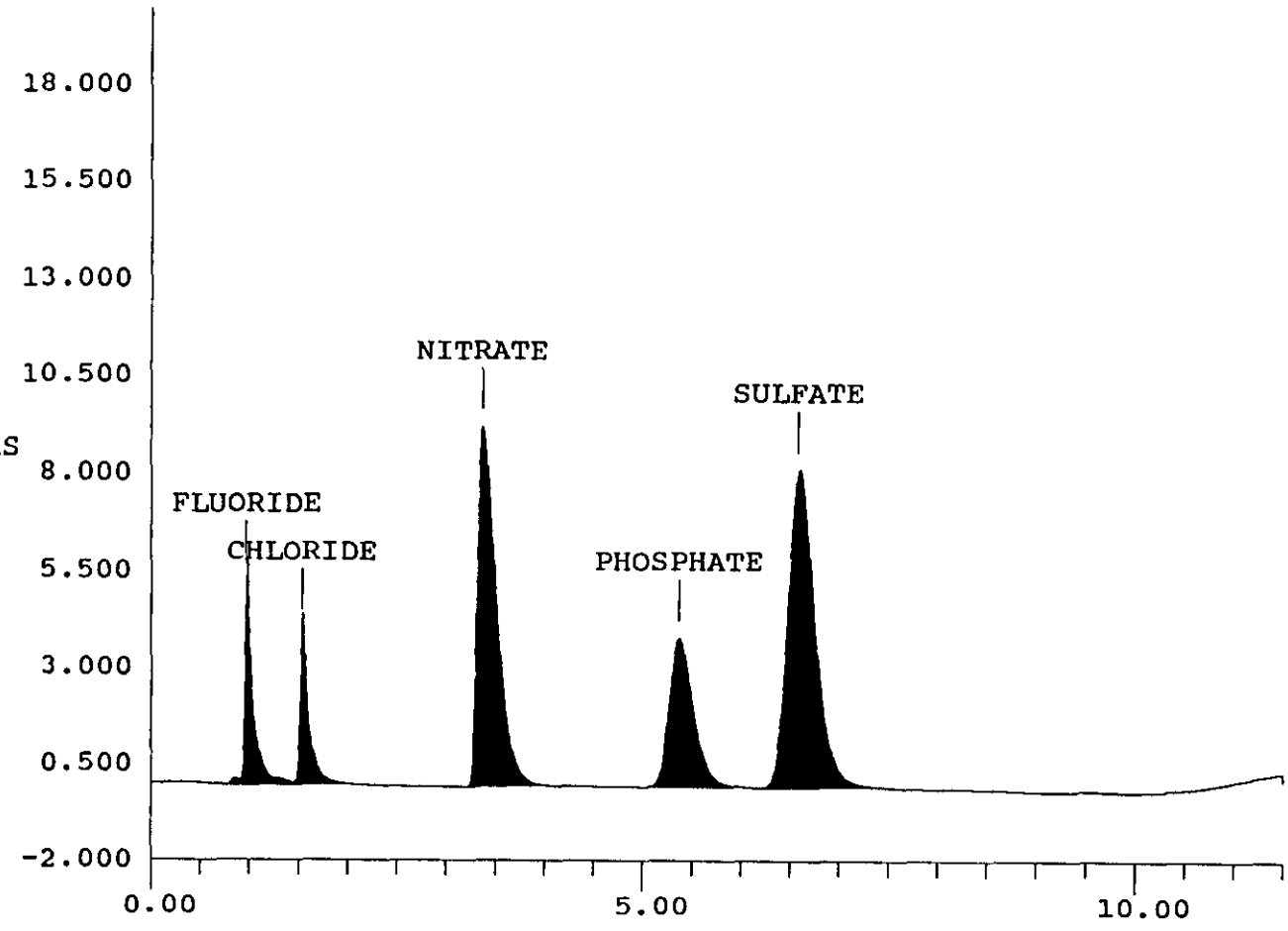
Sample Name: AUTOCAL5R Date: Wed Feb 14 15:40:27 1990
Data File : A:\90021401.D07
Method : c:\windows\ai400\method\SST.met
ACI Address: 1 System : 1 Inject#: 7 Detector: CDM

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

Stop time = 11.50 Minutes Number of Data Points = 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	0.97	FLUORIDE	1.808e+000	3.718e+004	5315	2	0	0.00%
2	1.53	CHLORIDE	2.308e+000	2.837e+004	4066	2	0	0.00%
3	3.37	NITRATE	1.850e+001	1.322e+005	9250	1	0	0.00%
4	5.37	PHOSPHATE	1.892e+001	6.941e+004	3876	1	0	0.00%
5	6.58	SULFATE	1.854e+001	1.636e+005	8158	1	0	0.00%

File: A:\90021401.D07 Sample: AUTOCAL5R



DATA REPROCESSED ON Thu Apr 12 13:24:37 1990

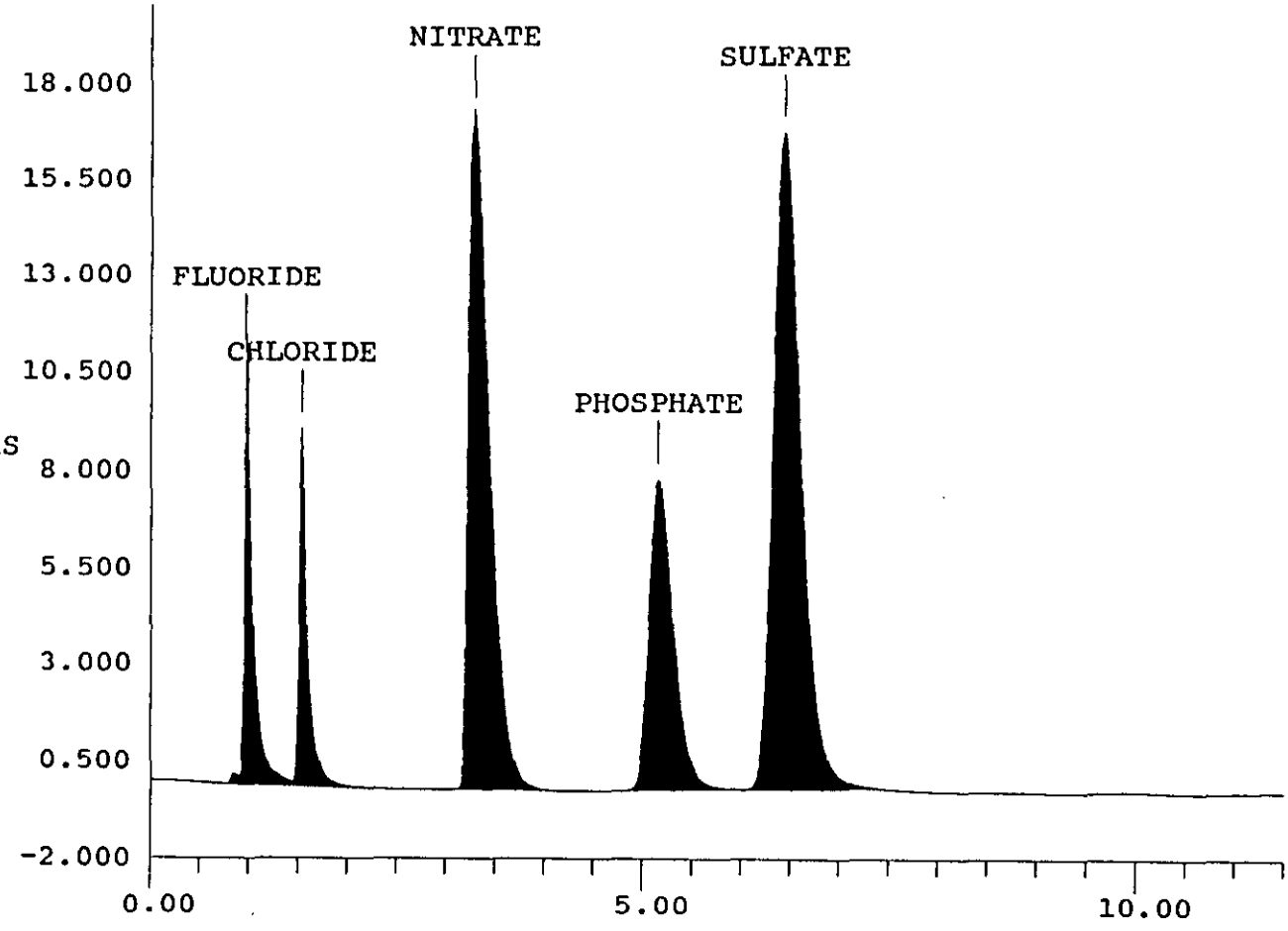
Sample Name: AUTOCAL6R Date: Wed Feb 14 15:52:46 1990
Data File : A:\90021401.D08
Method : c:\windows\ai400\method\SST.met
ACI Address: 1 System : 1 Inject#: 8 Detector: CDM

********** 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	0.97	FLUORIDE	3.481e+000	7.412e+004	11092	2	0	0.00%
2	1.53	CHLORIDE	4.444e+000	5.927e+004	9183	2	0	0.00%
3	3.28	NITRATE	3.563e+001	2.741e+005	17468	1	0	0.00%
4	5.15	PHOSPHATE	3.644e+001	1.429e+005	8003	1	0	0.00%
5	6.43	SULFATE	3.570e+001	3.432e+005	16953	1	0	0.00%

File: A:\90021401.D08 Sample: AUTOCAL6R



DIONEX SCHEDULE - A:\90021900.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/6C11HI	c:\windows\ai	c:\windows\ai	1	101	0
4	LMCS/73C11J	c:\windows\ai	c:\windows\ai	1	101	0
5	904B	c:\windows\ai	c:\windows\ai	1	1	0
6	905	c:\windows\ai	c:\windows\ai	1	101	0
7	906D	c:\windows\ai	c:\windows\ai	1	101	0
8	907S	c:\windows\ai	c:\windows\ai	1	101	0
9	929	c:\windows\ai	c:\windows\ai	1	101	0
10	930D	c:\windows\ai	c:\windows\ai	1	101	0
11	983	c:\windows\ai	c:\windows\ai	1	101	0
12	984D	c:\windows\ai	c:\windows\ai	1	101	0
13	LMCS/6C11HI	c:\windows\ai	c:\windows\ai	1	101	0
14	LMCS/73C11J	c:\windows\ai	c:\windows\ai	1	101	0

DATA REPROCESSED ON Thu Apr 12 09:53:16 1990

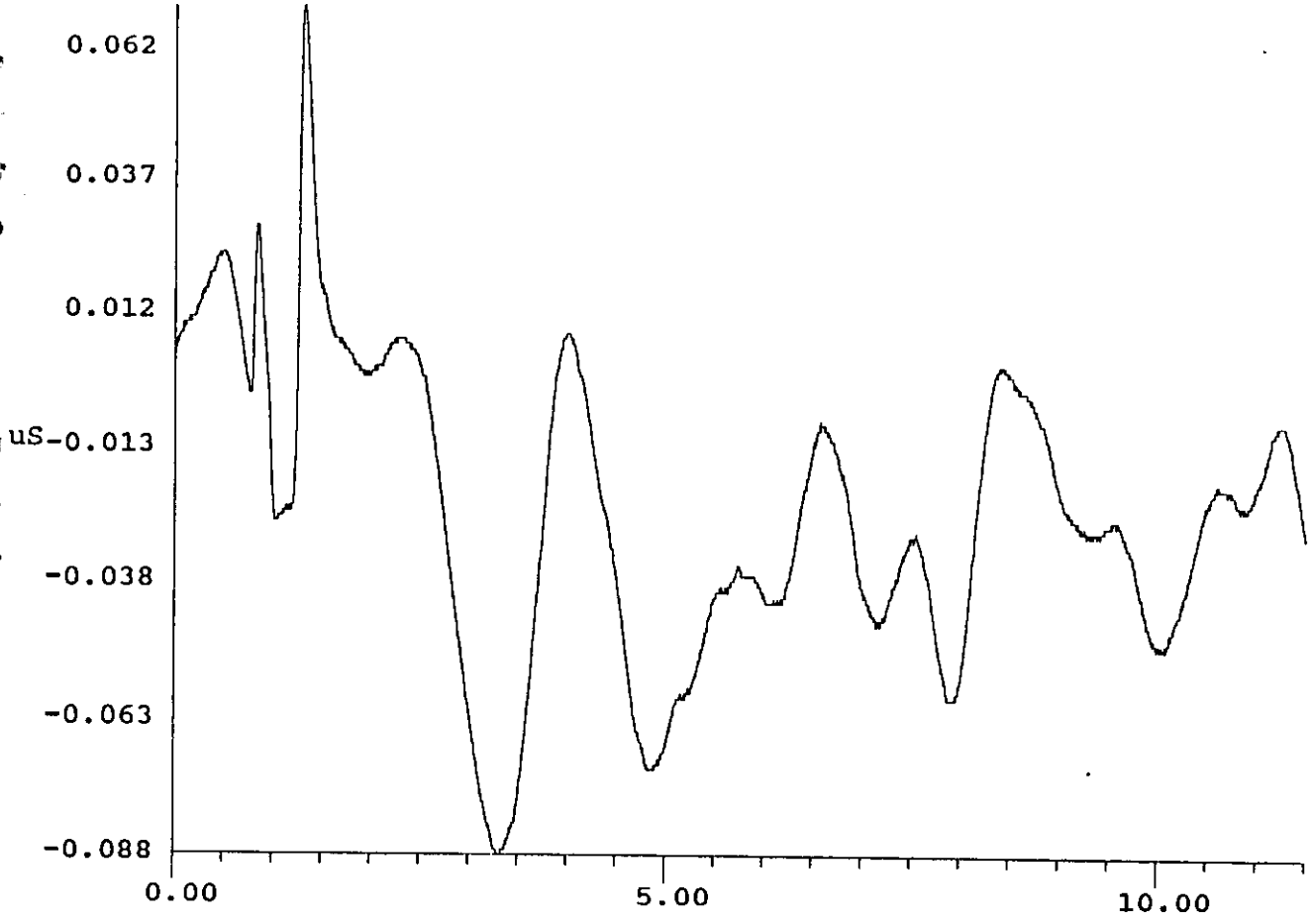
Sample Name: BLANK, Eluent	Date: Tue Feb 20 11:53:57 1990
Data File : A:\90-24563.D02	
Method : c:\windows\ai400\method\sst.met	
ACI Address: 1 System : 1 Inject#: 2	Detector: CDM

********** 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

File: A:\90-24563.D02 Sample: BLANK



DATA REPROCESSED ON Thu Apr 12 09:35:32 1990

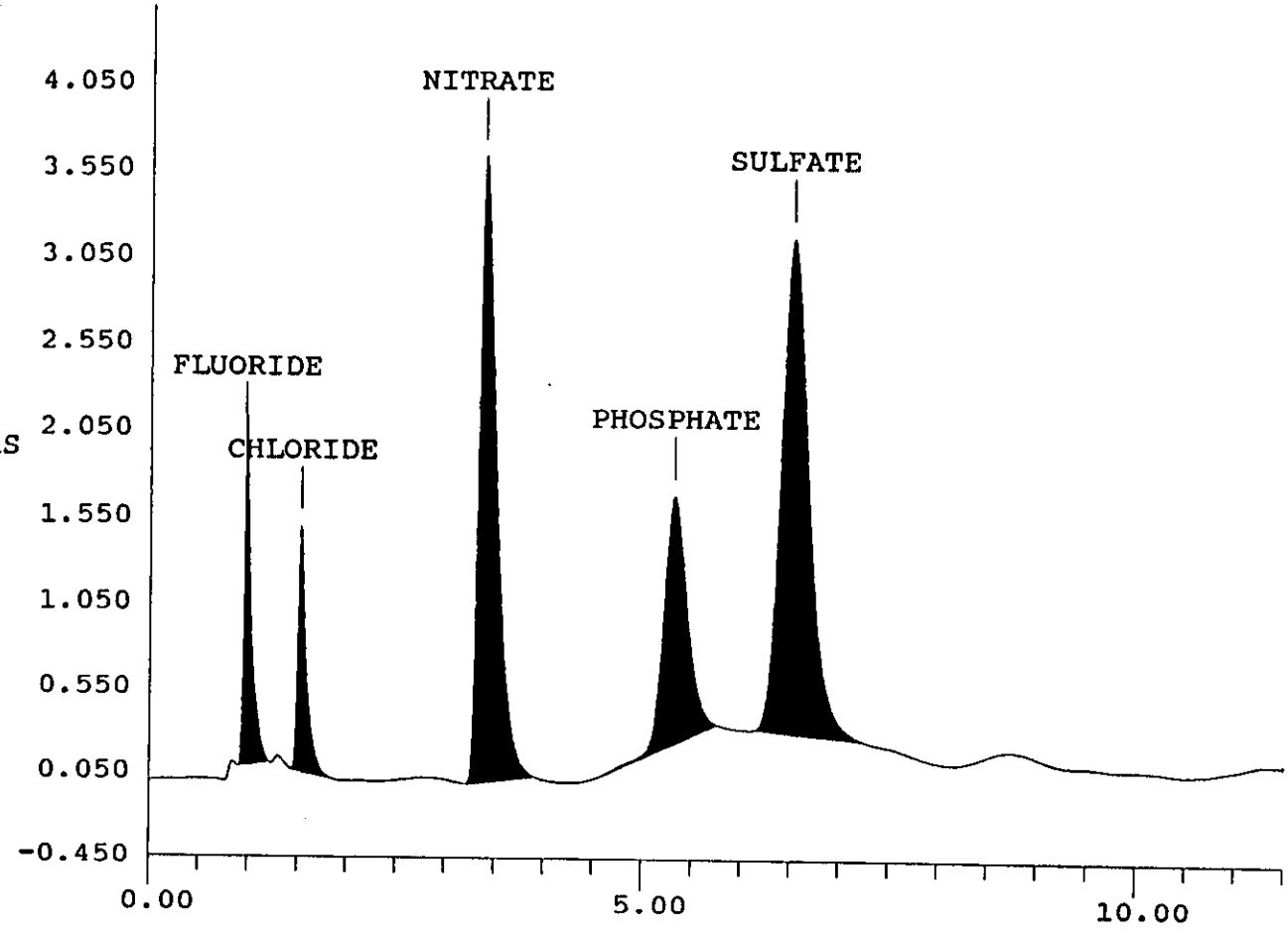
Sample Name: LMCS/6C11HI Date: Tue Feb 20 12:06:11 1990
Data File : C:\DX\DATA\90-24563.D03
Method : c:\windows\ai400\method\sst.met
ACI Address: 1 System : 1 Inject#: 3 Detector: CDM

********** 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 = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	0.97	FLUORIDE	6.846e+001	1.158e+004	1886	1	0	0.00%
2	1.53	CHLORIDE	8.602e+001	9.333e+003	1440	1	0	0.00%
3	3.38	NITRATE	7.220e+002	4.762e+004	3627	1	0	0.00%
4	5.32	PHOSPHATE	7.506e+002	2.515e+004	1448	1	0	0.00%
5	6.52	SULFATE	6.988e+002	5.803e+004	2867	1	0	0.00%

File: C:\DX\DATA\90-24563.D03 Sample: LMCS/6C11HI



DATA REPROCESSED ON Thu Apr 12 09:37:47 1990

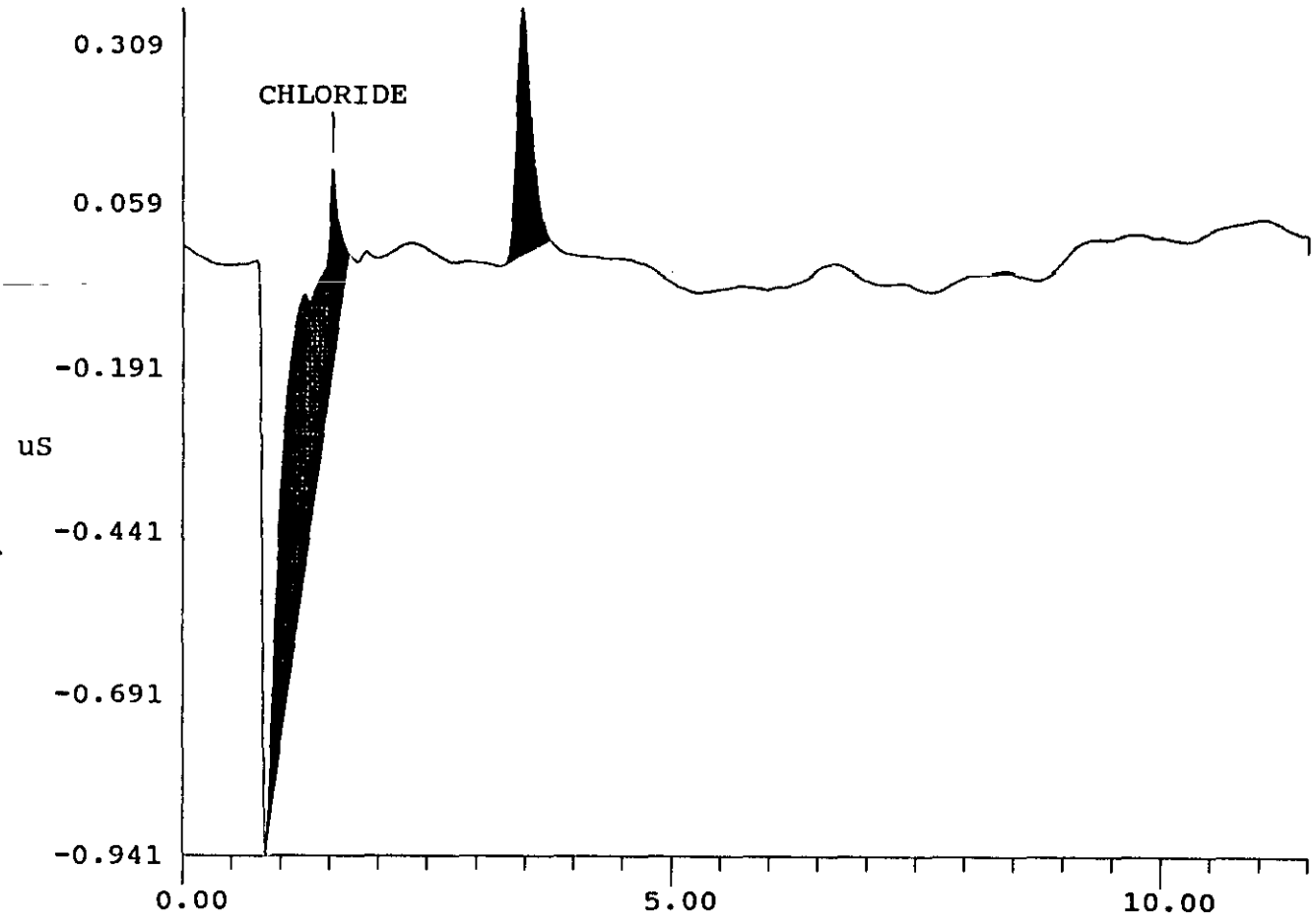
Sample Name: 904B Date: Tue Feb 20 12:30:41 1990
Data File : C:\DX\DATA\90021900.D05
Method : c:\windows\ai400\method\sst.met
ACI Address: 1 System : 1 Inject#: 5 Detector: CDM

********** 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 = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	BL	REF PEAK	% DELTA RET TIME
1	1.53	CHLORIDE	1.776e-001	1.584e+004	314	1	0	0.00%
2	3.47	NITRATE	7.508e-001	4.380e+003	387	1	0	5.69%

File: C:\DX\DATA\90021900.D05 Sample: 904B



DATA REPROCESSED ON Thu Apr 12 09:44:00 1990

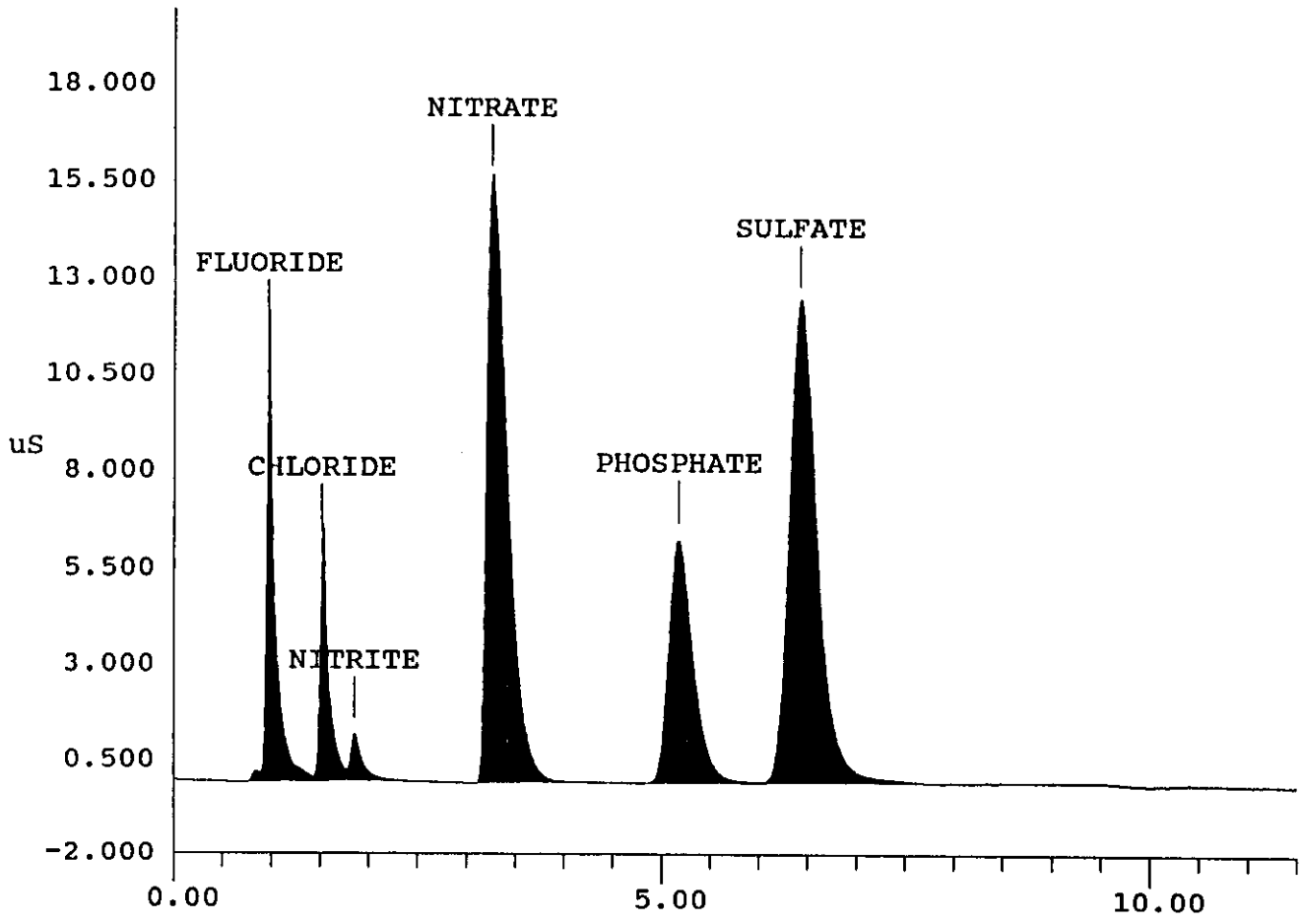
Sample Name: 907S Date: Tue Feb 20 13:07:21 1990
Data File : C:\DX\DATA\90021900.D08
Method : c:\windows\ai400\method\sst.met
ACI Address: 1 System : 1 Inject#: 8 Detector: CDM

********** 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	0.97	FLUORIDE	3.621e+002	8.006e+004	11486	2	0	0.00%
2	1.52	CHLORIDE	3.295e+002	4.304e+004	6164	2	0	0.00%
3	1.85	NITRITE	1.575e+002	1.030e+004	1200	2	0	0.00%
4	3.25	NITRATE	3.185e+003	2.428e+005	15530	1	0	-0.00%
5	5.17	PHOSPHATE	2.994e+003	1.139e+005	6322	2	0	-6.06%
6	6.42	SULFATE	2.743e+003	2.562e+005	12402	2	0	0.00%

File: C:\DX\DATA\90021900.D08 Sample: 907S

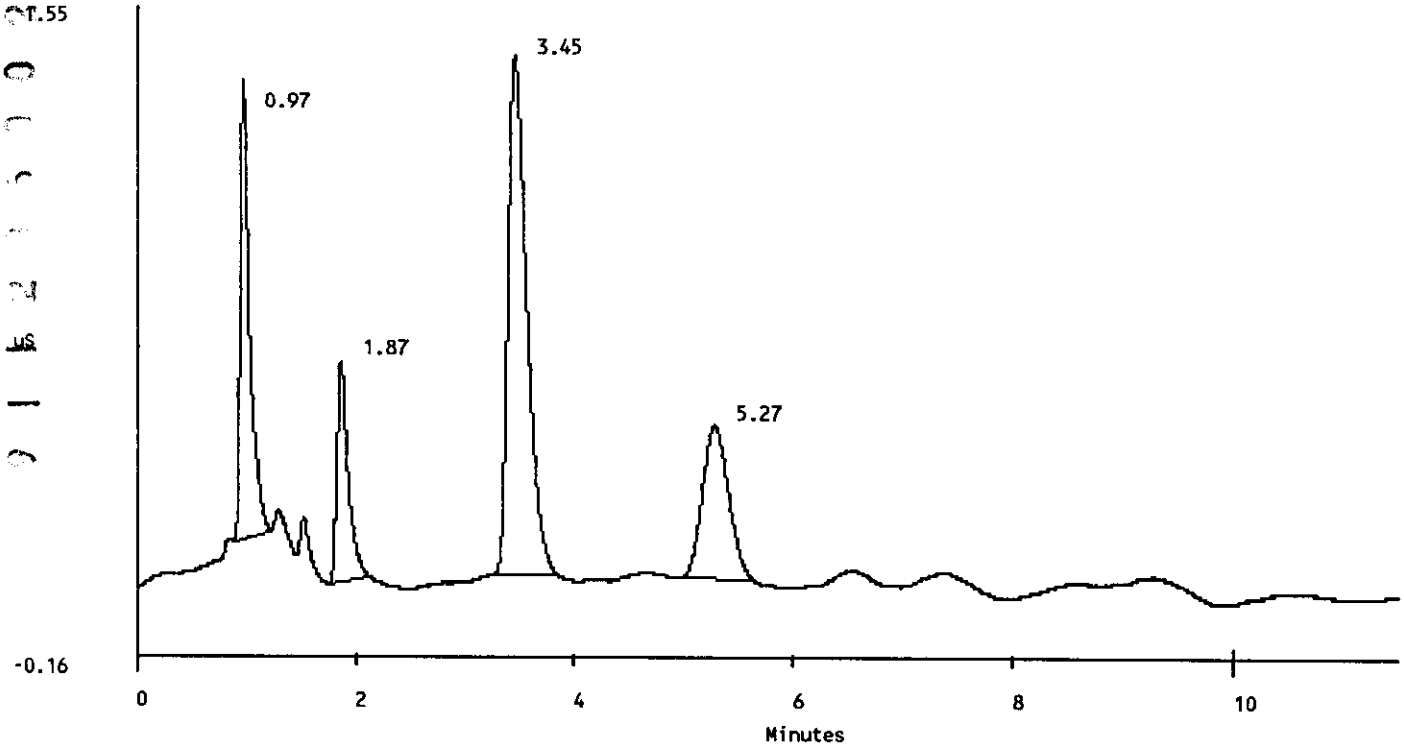


Sample Name: 929 Date: Tue Feb 20 13:19:37 1990
Data File : 90021900.D09
Method : c:\windows\ai400\method\sst.met
CIM Address: 1 System : 1 Cycle#: 9 Detector: CDM

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

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3451 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	0.97	FLUORIDE	4.147e+001	6.987e+003	1116	1	0	-0.34%
2	1.87	NITRITE	1.024e+002	4.057e+003	580	1	0	-1.75%
3	3.45	NITRATE	2.664e+002	1.614e+004	1348	1	0	5.18%
4	5.27	PHOSPHATE	2.194e+002	6.661e+003	400	1	0	-4.24%

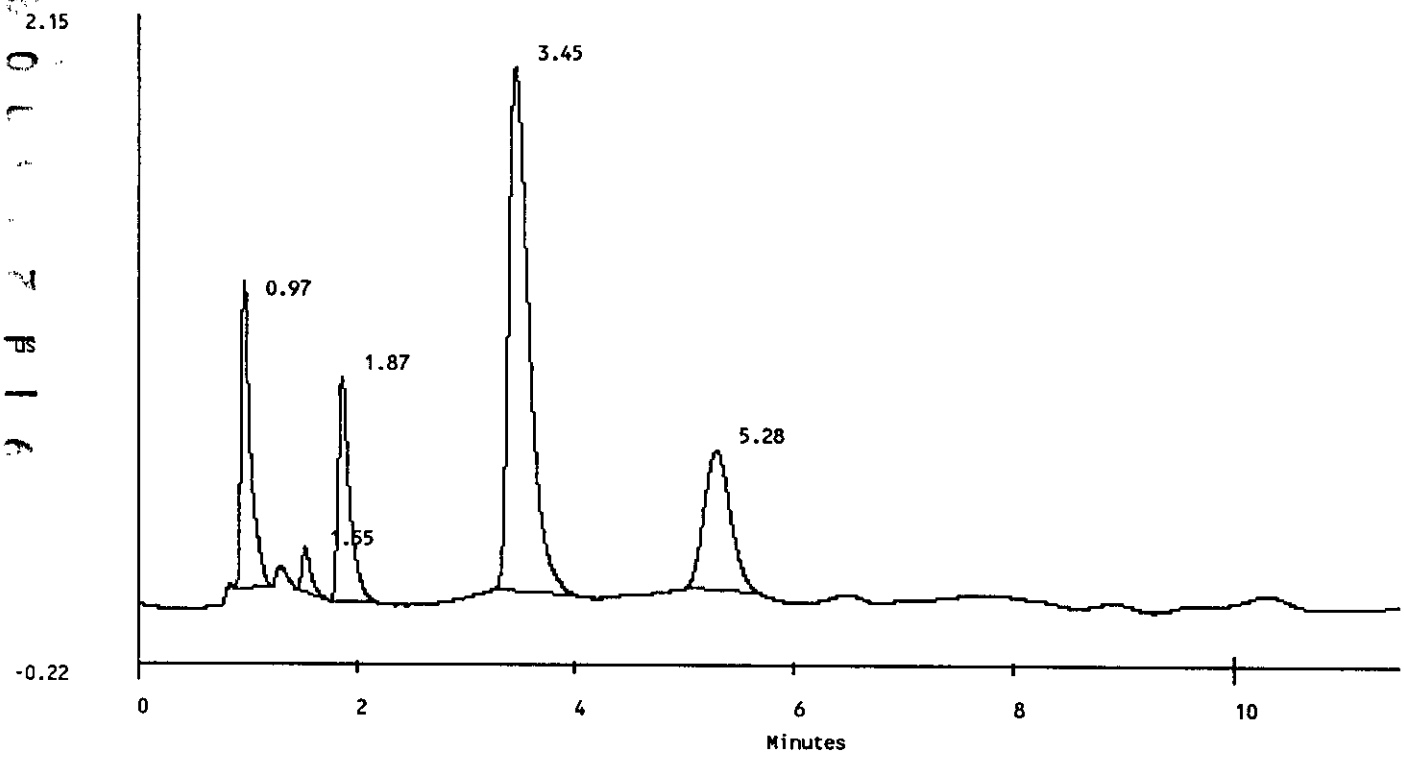


Sample Name: 930D Date: Tue Feb 20 13:31:52 1990
Data File : 90021900.D10
Method : c:\windows\ai400\method\sst.met
CIM Address: 1 System : 1 Cycle#: 10 Detector: CDM

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

Start Time = 0.00 minutes Stop time = 11.50 Minutes
Number of Data Points = 3451 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	0.97	FLUORIDE	3.867e+001	6.425e+003	1037	1	0	-0.34%
3	1.87	NITRITE	1.226e+002	5.710e+003	808	1	0	-1.75%
4	3.45	NITRATE	3.768e+002	2.431e+004	1903	1	0	5.18%
5	5.28	PHOSPHATE	2.749e+002	8.502e+003	508	1	0	-3.94%



DATA REPROCESSED ON Thu Apr 12 09:46:13 1990

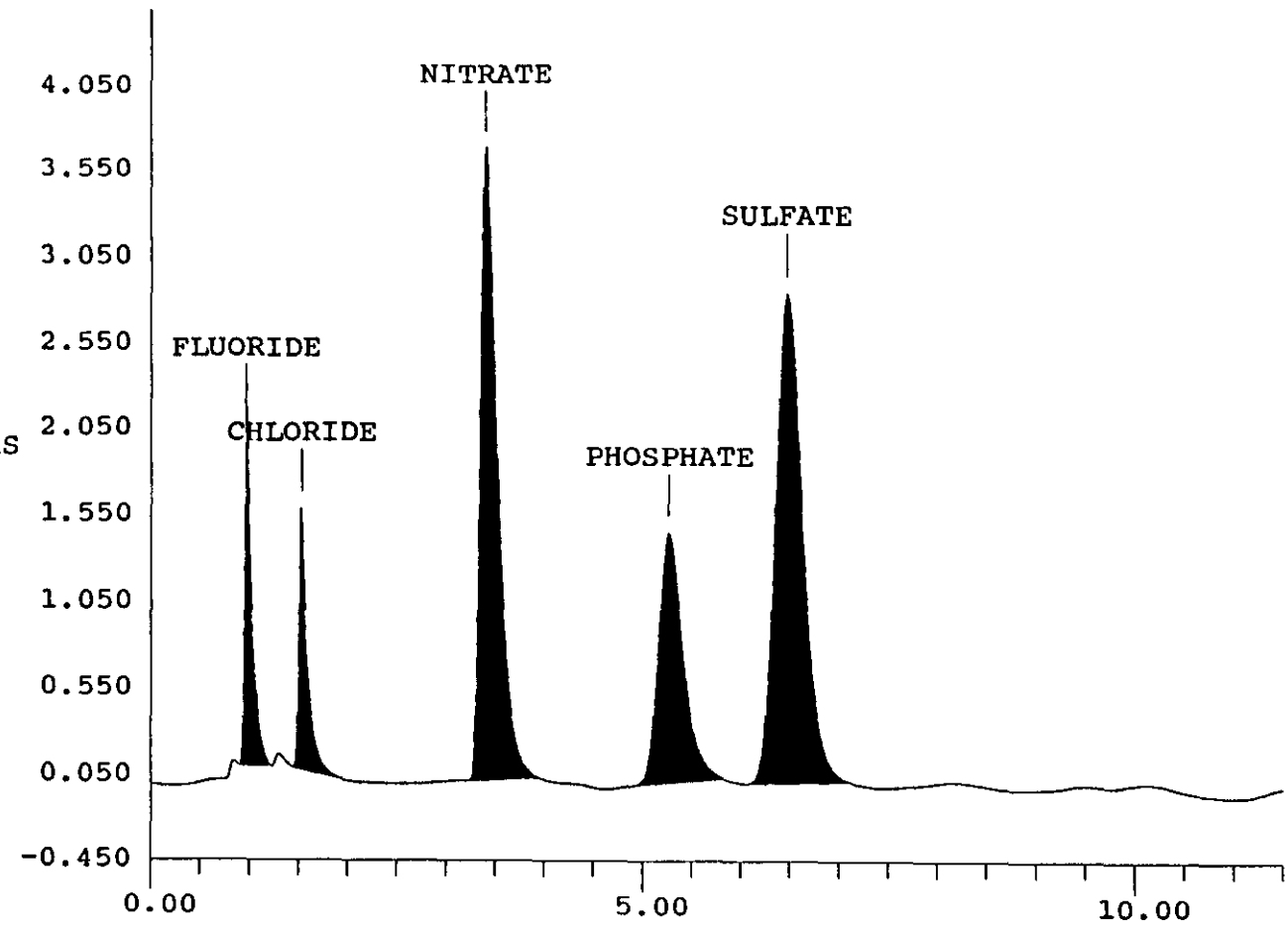
Sample Name: LMCS/6C11HI Date: Tue Feb 20 14:08:34 1990
Data File : C:\DX\DATA\90021900.D13
Method : c:\windows\ai400\method\sst.met
ACI Address: 1 System : 1 Inject#: 13 Detector: CDM

********** 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	0.97	FLUORIDE	7.175e+001	1.149e+004	1980	1	0	0.00%
2	1.53	CHLORIDE	9.007e+001	9.595e+003	1509	1	0	0.00%
3	3.40	NITRATE	7.281e+002	4.735e+004	3658	1	0	0.00%
4	5.27	PHOSPHATE	7.454e+002	2.612e+004	1438	1	0	0.00%
5	6.47	SULFATE	6.913e+002	5.618e+004	2835	1	0	0.00%

File: C:\DX\DATA\90021900.D13 Sample: LMCS/6C11HI



Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	WB39937
PROCEDURE/REV	LA-344-105/A-2
TECHNOLOGIST	E. Colvin
DATE	01-29-90
TEMPERATURE	N/A
STARTING TIME	12:30
ENDING TIME	15:00
CHEMIST	R. E. Brandt

Total Organic Carbon
Water Digestion
First Leach

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
7		
8		
9		
10		
11		

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

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT.VOL.	FINAL VOL. OF STD.
LMCS Check Std	70C11B/200 uL			2.2 mL
Spike	80C11/200 uL	F0931/200 uL		0.4 mL

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

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-927 Date: 01-29-1990 Time: 12:56:43

Blank = .5296993 Sample Size = 200 Dilution Factor = 11
% Difference = 10 Min Readings = 10 Max Readings = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	1.01	0.00	0.00
2	2.01	34.60	100.00
3	3.01	45.30	23.62
4	4.01	50.40	10.12
5	5.01	53.30	5.44
6	6.01	54.90	2.91
7	7.01	56.00	1.96
8	8.01	56.70	1.23
9	9.01	57.40	1.22
10	10.01	57.90	0.86

(57.9 - 5.300453)(11)/(200) = 2.892975 g/L Carbon

(57.9 - 5.300453)(11)/(200)(12) = .2410813 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-928 Date: 01-29-1990 Time: 12:43:57

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

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	1.01	0.00	0.00
2	2.01	1.60	100.00
3	3.01	2.60	38.46
4	4.01	3.30	21.21
5	5.01	3.80	13.16
6	6.01	4.10	7.32
7	7.01	4.40	6.82
8	8.01	4.70	6.38
9	9.01	5.00	6.00
10	10.01	5.30	5.66

BLANK VALUE = 5.3 / 10.00568 = .5296993 ug/minute

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-929 Date: 01-29-1990 Time: 13:09:19

Blank = .5296993 Sample Size = 200 Dilution Factor = 1
% Difference = 10 Min Readings = 10 Max Readings = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	1.01	0.00	0.00
2	2.01	2.50	100.00
3	3.01	3.40	26.47
4	4.01	4.10	17.07
5	5.01	4.60	10.87
6	6.01	5.10	9.80
7	7.01	5.50	7.27
8	8.01	5.80	5.17
9	9.01	6.20	6.45
10	10.01	6.60	6.06

(6.6 - 5.300453)(1)/(200) = 6.497736E-03 g/L Carbon

(6.6 - 5.300453)(1)/(200)(12) = 5.41478E-04 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-930 Date: 01-29-1990 Time: 13:20:19

Blank = .5296993 Sample Size = 200 Dilution Factor = 1
% Difference = 10 Min Readings = 10 Max Readings = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	1.01	0.00	0.00
2	2.01	2.40	100.00
3	3.01	3.30	27.27
4	4.00	3.90	15.38
5	5.01	4.40	11.36
6	6.01	4.90	10.20
7	7.01	5.20	5.77
8	8.01	5.60	7.14
9	9.01	5.90	5.08
10	10.01	6.20	4.84

(6.2 - 5.3)(1)/(200) = 4.499998E-03 g/L Carbon

(6.2 - 5.3)(1)/(200)(12) = 3.749998E-04 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-931 Date: 01-29-1990 Time: 13:31:50

Blank = .5296993 Sample Size = 200 Dilution Factor = 1
% Difference = 10 Min Readings = 10 Max Readings = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	1.01	0.00	0.00
2	2.01	*5.70	100.00
3	3.01	76.70	40.42
4	4.01	93.80	18.23
5	5.01	105.20	10.84
6	6.01	113.20	7.07
7	7.01	119.20	5.03
8	8.01	124.00	3.87
9	9.01	127.80	2.97
10	10.01	131.00	2.44

(131 - 5.3)(1)/(200) = .6285 g/L Carbon

(131 - 5.3)(1)/(200)(12) = .052375 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-932 Date: 01-29-1990 Time: 13:52:56

Blank = .5296993 Sample Size = 200 Dilution Factor = 11
% Difference = 10 Min Readings = 10 Max Readings = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	1.01	0.00	0.00
2	2.01	30.70	100.00
3	3.01	43.40	30.07
4	4.01	49.40	12.02
5	5.01	52.80	5.47
6	6.01	55.50	4.86
7	7.01	56.50	1.77
8	8.01	57.20	1.22
9	9.01	57.60	0.69
10	10.01	58.10	0.86

(58.1 - 5.3)(11)/(200) = 2.904 g/L Carbon

(58.1 - 5.3)(11)/(200)(12) = .242 Molar Carbon

Sample Run By: SOOZB_____

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	WB39937
Procedure/Rev	LA-344-105/A-3
Technologist	E. Colvin
Date	06-06-90
Temperature	N/A
Starting Time	08:30
Ending Time	11:30
Chemist	R. E. Brandt

Total Organic Carbon
Water Digestion
Third Leaching

	Description	Lab ID
1	Intiial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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	70C11D/200 uL			2.2 mL
Spike	80C11/200 uL	F0931/300 uL		0.5 mL

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

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-927 Date: 06-06-1990 Time: 09:53:14

Blank = .6994268 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	39.60	100.00
3	3.01	49.30	19.68
4	4.01	53.40	7.68
5	5.01	55.50	3.78
6	6.01	56.60	1.94
7	7.01	57.40	1.39

(57.4 - 4.900086)(11)/(200) = 2.887496 g/L Carbon

(57.4 - 4.900086)(11)/(200)(12) = .2406246 Molar Carbon

Sample Run By: 89028

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-928 Date: 06-06-1990 Time: 09:44:23

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	1.80	100.00
3	3.01	2.60	30.77
4	4.01	3.10	16.13
5	5.01	3.70	16.22
6	6.01	4.50	17.78
7	7.01	4.90	8.16

BLANK VALUE = 4.9 / 7.005738 = .6994268 ug/minute

Sample Run By: 80028

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-929 Date: 06-06-1990 Time: 10:01:19

Blank = .6994268 Sample Size = 200 Dilution Factor = .
% Difference = 10 Min Readings = 7 Max Readings = 7

Reading	Analysis Time	Coulometer	% Difference
1	1.01	0.00	0.00
2	2.01	1.80	100.00
3	3.01	2.70	33.33
4	4.01	3.20	15.63
5	5.01	3.90	17.95
6	6.01	4.50	13.33
7	7.01	5.00	10.00

(5 - 4.900086)(1.1)/(200) = 5.495301E-04 g/L Carbon

(5 - 4.900086)(1.1)/(200)(12) = 4.579417E-05 Molar Carbon

Sample Run By: B0020

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-930 Date: 06-06-1990 Time: 10:10:41

Blank = .6994268 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	2.60	26.92
4	4.01	3.30	21.21
5	5.01	3.90	15.38
6	6.01	4.50	13.33
7	7.01	5.10	11.76

(5.1 - 4.900684)(1.1)/(200) = 1.096241E-03 g/L Carbon

(5.1 - 4.900684)(1.1)/(200)(12) = 9.13534E-05 Molar Carbon

Sample Run By: 80028____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-931 Date: 06-06-1990 Time: 10:18:55

Blank = .6994268 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	85.40	100.00
3	3.01	105.90	19.36
4	4.01	114.00	7.11
5	5.01	117.50	2.98
6	6.01	119.20	1.43
7	7.01	120.30	0.91

(120.3 - 4.899873)(1.1)/(200) = .6347007 g/L Carbon

(120.3 - 4.899873)(1.1)/(200)(12) = 5.289173E-02 Molar Carbon

Sample Run By: B0028

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-932 Date: 06-06-1990 Time: 10:27:1A

Blank = .6994268 Sample Size = 200 Dilution Factor = 11
% Difference = 10 Min Readings = 7 Max Readings = 7

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	1.01	2.30	%-5082.61
2	2.01	40.50	54.32
3	3.01	50.00	19.00
4	4.01	53.90	7.24
5	5.01	55.80	3.41
6	6.01	57.10	2.28
7	7.01	57.80	1.21

(57.8 - 4.900641)(11)/(200) = 2.909465 g/L Carbon

(57.8 - 4.900641)(11)/(200)(12) = .2424554 Molar Carbon

Sample Run By: B002B

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	Metrohm Brinkman
Procedure/Rev	LA-634-102/C-5
Technologist	M. Franz
Date	02-01-90
Temperature	N/A
Starting Time	10:00
Ending Time	11:30
Chemist	R. E. Brandt

Ammonia Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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	4C110G/250 uL			30 mL
Spike Composite 5	4C110D/250 uL	F0931/1.0 mL		30 mL

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

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	WB39937
Procedure/Rev	LA-622-102/A-1
Technologist	E. Colvin
Date	02-06-90
Temperature	N/A
Starting Time	12:30
Ending Time	15:00
Chemist	R. E. Brandt

Carbonate Analysis

Water Digestion

	Description	Lab ID
1	Initial Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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	69C11C/50 uL			50 uL
Spike	69C11C/100 uL	F0931/200 uL		300 uL

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

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-927 Date: 02-06-1990 Time: 06:51:33

Blank = .6565933 Sample Size = 50 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	70.40	100.00
3	3.01	98.50	28.53
4	4.01	114.20	13.75
5	5.01	122.80	7.00
6	6.01	127.50	3.69
7	7.01	130.00	1.92

(130 - 4.599981)(1)/(50) = 2.508 g/L Carbon

(130 - 4.599981)(1)/(50)(12) = .209 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-928 Date: 02-06-1990 Time: 06:43:31

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	1.80	100.00
3	3.01	2.70	33.33
4	4.01	3.40	20.59
5	5.01	3.80	10.53
6	6.01	4.20	9.52
7	7.01	4.60	8.70

BLANK VALUE = 4.6 / 7.00586 = .6565933 ug/minute

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-929 Date: 02-06-1990 Time: 07:20:06

Blank = .6565933 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	4.50	100.00
3	3.01	6.30	28.57
4	4.01	7.30	13.70
5	5.01	8.00	8.75
6	6.01	8.60	6.98
7	7.01	9.10	5.49

(9.100001 - 4.59986)(1)/(200) = .0225007 g/L Carbon

(9.100001 - 4.59986)(1)/(200)(12) = 1.875058E-03 Molar Carbon

Sample Run By: B002B_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-930 Date: 02-06-1990 Time: 07:28:09

Blank = .6565933 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	4.40	100.00
3	3.01	6.10	27.87
4	4.01	7.20	15.28
5	5.01	7.90	8.86
6	6.01	8.40	5.95
7	7.01	8.90	5.62

(8.899999 - 4.600542)(1)/(200) = 2.149729E-02 g/L Carbon

(8.899999 - 4.600542)(1)/(200)(12) = 1.791441E-03 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-931 Date: 02-06-1990 Time: 07:36:39

Blank = .6565933 Sample Size = 200 Dilution Factor = 1
% Difference = 10 Min Readings = 7 Max Readings = 7

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	1.01	25.80	67.44
~~2~~	~~2.01~~	~~91.60~~	~~71.83~~
3	3.01	129.50	29.27
4	4.01	150.60	14.01
5	5.01	162.30	7.21
6	6.01	168.60	3.74
7	7.01	172.10	2.03

(172.1 - 4.59988)(1)/(200) = .8375006 g/L Carbon

(172.1 - 4.59988)(1)/(200)(12) = 6.979172E-02 Molar Carbon

Sample Run By: 80028_____

COULOMETER ANALYSIS REPORT
TICTOC Rev. 0

Sample: F-932 Date: 02-06-1990 Time: 07:45:04

Blank = .6565933 Sample Size = 50 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	73.00	100.00
3	3.01	98.40	25.81
4	4.01	113.30	13.15
5	5.01	121.90	7.05
6	6.01	126.80	3.86
7	7.01	129.60	2.16

(129.6 - 4.59986)(1)/(50) = 2.500003 g/L Carbon

(129.6 - 4.59986)(1)/(50)(12) = .2083336 Molar Carbon

Sample Run By: 80028_ _____

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	N/A
PROCEDURE/REV	LA-645-001
TECHNOLOGIST	M. Franz
DATE	01-30-90
TEMPERATURE	N/A
STARTING TIME	09:30
ENDING TIME	13:00
CHEMIST	R.K. Fuller

Nitrite Analysis

Water Digestion

Note: 8C11AT is 0.502 Molar Sodium Nitrite.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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.
Final LMCS Check Std	8C11AT/.5 uL			10.05 mL
Spike (See Note)	8C11AT/.5 uL	F0907/100 uL		10.15 mL

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

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	WA57276
Procedure/Rev	LA-548-101/C-1
Technologist	R. D. Hale
Date	02-06-90
Temperature	24 C
Starting Time	11:00
Ending Time	13:30
Chemist	S. A. Catlow

Total Alpha and Total Beta

Water Digestion/Fusion Dissolution

Detector #14

Samples were prepared in batch, but counted randomly.

	Description	Lab ID
1	Initial LMCS Check Std	F0201
2	Reagent Blank 89-044	F0216
3	Sample 89-044	F0202
4	Duplicate 89-044	F0203
5	Sample Composite 5	F0905
6	Duplicate Composite 5	F0906
7	Sample Composite 6	F0929
8	Duplicate Composite 6	F0930
9	Sample Composite 8	F0953
10	Duplicate Composite 8	F0954
11	Spike 89-044	F0204

	Description	Lab ID
12	Final LMCS Check Std	F0205
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	102B44/10 mL			N/A
Spike	102B44/10 mL	F0204/100 uL		N/A

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

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	WA57276
PROCEDURE/REV	LA-508-101/C-1
TECHNOLOGIST	M. Franz
DATE	02-08-90
TEMPERATURE	N/A
STARTING TIME	07:50
ENDING TIME	09:00
CHEMIST	S. A. Catlow

Total Alpha and Total Beta

Water Digestion

Detector #14

Samples were prepared in batch, but counted randomly.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Sample Composite 6	F0930
3	Duplicate Composite 8	F0954
4	Final LMCS Check Std	F0956
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.
LMCS Check Std	102B44/10 mL			N/A
Spike	N/A			

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

272.1

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		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		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 #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	WA77228/WA401934
PROCEDURE/REV	LA-548-121/C-1
TECHNOLOGIST	S. Cervantes
DATE	02-02-90
TEMPERATURE	25 C
STARTING TIME	14:00; 01-31-90
ENDING TIME	15:00; 01-31-90
CHEMIST	S. A. Catlow

GEA Analysis

Water Digestion

Samples are prepared in batch, but counted randomly.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank Composite 6	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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	89B44/500 uL			22 mL
Spike	89B44/500 uL	F0931/100 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:	B-1
Instrument:	GEA Detector #1	Property Number:	401934
Technologist:	J. L. Anderson	Payroll Number:	61413
Date:	February 14, 1989		

Calibration Standard ID: 56B40 D1

Analyte Concentration: N/A

Type of Calibration: Gamma Energy Analysis (Efficiency)

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: 56840 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: 56840 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

Single Shell Tank
Calibration Record

ANALYTE:	Mixed Isotope Standards		
PROCEDURE:	LQ-508-003	REVISION:	B-1
INSTRUMENT:	GEA Detector #2	PROPERTY NUMBER:	401934
TECHNOLOGIST:	J. L. Anderson	PAYROLL NUMBER:	61413
DATE:	September 28, 1988		

CALIBRATION STANDARD ID: 56B40 D1

ANALYTE CONCENTRATION: N/A

TYPE OF CALIBRATION: Gamma Energy Analysis (Efficiency)

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

DETECTOR: 2
GEOMETRY CODE: 42
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 2
CALIBRATION DATE: 21-Oct-88
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	3.417000E-03
88.032	1.090000E-02
122.0614	1.408000E-02
165.853	1.516000E-02
279.1967	9.929000E-03
391.668	7.578000E-03
513.99	5.875000E-03
661.65	4.927000E-03
898.021	3.727000E-03
1173.237	3.085000E-03
1332.501	2.683000E-03
1836.129	2.102000E-03

EQUATION 0-122 KEV

```
LOG(EFF) =    -6.654070E+01
          +    2.583780E+01 *LOG(ENERGY)
          +   -2.677550E+00 *LOG(ENERGY)^2
```

EQUATION 122-1836 KEV

```
LOG(EFF) =    -1.050740E+02
          +    6.428950E+01 *LOG(ENERGY)
          +   -1.503170E+01 *LOG(ENERGY)^2
          +    1.533670E+00 *LOG(ENERGY)^3
          +   -5.838530E-02 *LOG(ENERGY)^4
```

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

DETECTOR: 2
GEOMETRY CODE: 43
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 3
CALIBRATION DATE: 28-Sep-88
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	1.476000E-03
88.032	4.721000E-03
122.0614	6.589000E-03
165.853	6.613000E-03
279.1967	4.692000E-03
391.668	3.542000E-03
513.99	2.810000E-03
661.65	2.327000E-03
898.021	1.790000E-03
1173.237	1.437000E-03
1332.501	1.277000E-03
1836.129	9.824000E-04

EQUATION 0-165 KEV

```
LOG(EFF) =    -5.826830E+01
          +    2.165450E+01 *LOG(ENERGY)
          +   -2.190930E+00 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =    -2.233890E+01
          +    1.174520E+01 *LOG(ENERGY)
          +   -2.739550E+00 *LOG(ENERGY)^2
          +    2.655450E-01 *LOG(ENERGY)^3
          +   -9.668420E-03 *LOG(ENERGY)^4
```

Single Shell Tank
Calibration Record

Analyte:	Mixed Isotope Standards		
Procedure:	LQ-508-003	Revision:	B-1
Instrument:	GEA Detector #3	Property Number:	401934
Technologist:	J. L. Anderson	Payroll Number:	61413
Date:	July 2, 1989		

Calibration Standard ID: 56B40 D1

Analyte Concentration: N/A

Type of Calibration: Gamma Energy Analysis (Efficiency)

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

DETECTOR: 3
GEOMETRY CODE: 41
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 1
CALIBRATION DATE: 2-Jul-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56840 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	2.833765E-02
88.032	2.881764E-02
122.0614	2.756557E-02
165.853	2.270614E-02
279.1967	
391.668	1.285730E-02
513.99	
661.65	7.841011E-03
898.021	5.779292E-03
1173.237	4.773005E-03
1332.501	4.278530E-03
1836.129	3.371238E-03

EQUATION 0-165 KEV

```
LOG(EFF) =   -1.113845E+01
         +    3.484260E+00 *LOG(ENERGY)
         +   -3.990659E-01 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =   -2.052334E+01
         +    9.121738E+00 *LOG(ENERGY)
         +   -1.553578E+00 *LOG(ENERGY)^2
         +    8.018036E-02 *LOG(ENERGY)^3
```

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

DETECTOR: 3
GEOMETRY CODE: 42
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 2
CALIBRATION DATE: 2-Jul-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56840 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	7.455306E-03
88.032	7.462748E-03
122.0614	7.578302E-03
165.853	6.965814E-03
279.1967	
391.668	3.596591E-03
513.99	
661.65	2.318396E-03
898.021	1.824191E-03
1173.237	1.461179E-03
1332.501	1.321243E-03
1836.129	1.011332E-03

EQUATION 0-165 KEV

```
LOG(EFF) =    -6.838496E+00
          +    8.819509E-01 *LOG(ENERGY)
          +   -9.970528E-02 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =     3.082260E-01
          +   -1.410839E+00 *LOG(ENERGY)
          +    1.042898E-01 *LOG(ENERGY)^2
          +   -5.874725E-03 *LOG(ENERGY)^3
```

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

DETECTOR: 3
GEOMETRY CODE: 43
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 3
CALIBRATION DATE: 2-Jul-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56840 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	2.020462E-03
88.032	1.924344E-03
122.0614	2.027231E-03
165.853	1.712371E-03
279.1967	
391.668	1.056509E-03
513.99	
661.65	7.115743E-04
898.021	5.243928E-04
1173.237	4.551585E-04
1332.501	4.223636E-04
1836.129	3.139091E-04

EQUATION 0-165 KEV

```
LOG(EFF) =    -5.300788E+00
          +   -3.550643E-01 *LOG(ENERGY)
          +    3.272635E-02 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =    -9.815549E+00
          +    2.402920E+00 *LOG(ENERGY)
          +   -4.428877E-01 *LOG(ENERGY)^2
          +    2.059131E-02 *LOG(ENERGY)^3
```

Single Shell Tank
Calibration Record

ANALYTE:	Mixed Isotope Standards		
PROCEDURE:	LQ-508-003	REVISION:	B-1
INSTRUMENT:	GEA Detector #4	PROPERTY NUMBER:	401934
TECHNOLOGIST:	J. L. Anderson	PAYROLL NUMBER:	61413
DATE:	September 1, 1989		

CALIBRATION STANDARD ID: 56B40 D1

ANALYTE CONCENTRATION: N/A

TYPE OF CALIBRATION: Gamma Energy Analysis (Efficiency)

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

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

DETECTOR: 4
GEOMETRY CODE: 41
GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 1
CALIBRATION DATE: 1-Sep-89
ANALYST(S): J. L. ANDERSON/M. R. DOWELL
STANDARD ID: 56840 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	2.682446E-02
88.032	8.210956E-02
122.0614	1.118411E-01
165.853	1.066653E-01
279.1967	
391.668	5.704220E-02
513.99	
661.65	3.685958E-02
898.021	2.541629E-02
1173.237	2.161710E-02
1332.501	1.973393E-02
1836.129	1.484468E-02

EQUATION 0-165 KEV

```
LOG(EFF) =   -5.844056E+01
           +  2.310700E+01 *LOG(ENERGY)
           +  2.371355E+00 *LOG(ENERGY)^2
```

EQUATION 165-1836 KEV

```
LOG(EFF) =   -1.718967E+01
           +  8.164155E+00 *LOG(ENERGY)
           + -1.384196E+00 *LOG(ENERGY)^2
           +  7.025985E-02 *LOG(ENERGY)^3
```

GEA CALIBRATION RECORD PROCEDURE LQ-508-003

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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 WESTINGHOUSE HANFORD           05-SEP-90  13:38:53


                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: 3.0
DETECTOR NUMBER:    3    /     GEOMETRY NUMBER:  41
SPECTRUM SIZE:  4096 CHANNELS
ORDER OF SMOOTHING FUNCTION:     5
NUMBER OF BACKGROUND CHANNELS:  4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 95.0%
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: SD3025
ANALYZED BY:        VR

SAMPLE DESCRIPTION: F927 SEG/COMP/#13
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 31-JAN-90 AT 19:44:37

COLLECT LIVE TIME:    3000. SECONDS
        REAL TIME:    3012. SECONDS
        DEAD TIME:     0.40 %

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

ENERGY CALIBRATION PERFORMED 17-OCT-89
EFFICIENCY CALIBRATION PERFORMED 31-JUL-89
```

222-S COUNTING ROOM WESTINGHOUSE HANFORD 05-SEP-90 13:38:53

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?	59.49	30.33	1.23	1777.	622.	33.2	
2?	63.78	32.47	1.23	1693.	3937.	8.5	CE-144
3?	72.54	36.85	1.23	1522.	951.	22.6	TE-125M
4C	1126.20	563.15	1.42	895.	840.	12.1	CS-134, EU-152
5C	1138.34	569.22	1.42	838.	1498.	9.8	CS-134, BI-207
6C	1209.09	604.57	1.42	850.	9357.	2.7	CS-134
7C	1218.26	609.15	1.42	690.	127.	59.4	BI-214, RU-103
8	1322.92	661.46	1.53	656.	14757.	1.7	CS-137
8B		661.41			81.	28.8	
9C	1591.15	795.53	1.58	563.	6733.	3.1	CS-134
10C	1603.32	801.61	1.58	548.	660.	10.1	CS-134
11	2345.52	1172.71	1.98	495.	6211.	2.8	CO-60
12	2663.96	1332.00	1.89	111.	5729.	2.7	CO-60
13	2729.29	1364.68	2.04	49.	203.	18.2	CS-134
14	2920.46	1460.33	2.08	27.	665.	8.1	K-40
14B		1460.58			611.	5.5	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 95.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY
? - MULTIPLET ANALYSIS CONVERGED BUT GFIT > 4
B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0013
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 15-JAN-90 AT 11:00:00
BACKGROUND LIVE TIME: 7000. SECONDS

222-S COUNTING ROOM WESTINGHOUSE HANFORD 05-SEP-90 13:38:53

SAMPLE: F927 SEG/COMP/#13
DATA COLLECTED ON 31-JAN-90 AT 19:44:37
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<1.63E+00		LLD<1.63E+00		911.07	
AG-108M	LLD<3.28E-01		LLD<3.28E-01		433.94	
AG-110M	LLD<1.65E+00		LLD<1.65E+00		657.76	
AM-241	LLD<3.10E-01		LLD<3.10E-01		59.54	
AM-243	LLD<1.83E-01		LLD<1.83E-01		74.67	
AR-41	LLD<2.94E-01		LLD<2.94E-01		1293.64	
AU-198	LLD<3.08E-01		LLD<3.08E-01		411.80	
BA-133	LLD<3.84E-01		LLD<3.84E-01		356.02	
BA-139	LLD<7.94E-01		LLD<7.94E-01		165.85	
BA-140	LLD<1.28E+00		LLD<1.28E+00		537.27	
BA-141	LLD<8.77E-01		LLD<8.77E-01		190.23	
BE-7	LLD<3.14E+00		LLD<3.14E+00		477.59	
BI-207	LLD<3.25E-01		LLD<3.25E-01		569.70	
BI-212	LLD<4.58E+00		LLD<4.58E+00		727.27	
BI-214	LLD<2.40E+00		LLD<2.40E+00		609.32	
CD-109	LLD<3.24E+00		LLD<3.24E+00		88.03	
CE-139	LLD<1.80E-01		LLD<1.80E-01		165.85	
CE-141	LLD<2.81E-01		LLD<2.81E-01		145.44	
CEPR144	LLD<2.39E+00		LLD<2.39E+00		133.51	
CO-56	LLD<3.44E-01		LLD<3.44E-01		846.76	
CO-57	LLD<1.50E-01		LLD<1.50E-01		122.06	
CO-58	LLD<3.27E-01		LLD<3.27E-01		810.75	
CO-60	2.41E+01	+-7.12E-01	2.41E+01	+-7.12E-01	1332.50	-0.50
					1173.24	-0.52
CR-51	LLD<2.13E+00		LLD<2.13E+00		320.09	
CS-134	2.14E+01	+-7.13E-01	2.14E+01	+-7.13E-01	795.84	-0.32
					604.70	-0.12
CS-136	LLD<3.21E-01		LLD<3.21E-01		818.51	
CS-137	3.96E+01	+-8.79E-01	3.96E+01	+-8.79E-01	661.65	-0.19
CS-138	LLD<4.06E-01		LLD<4.06E-01		1435.86	
EU-152	LLD<1.34E+00		LLD<1.34E+00		1408.01	
EU-154	LLD<6.14E-01		LLD<6.14E-01		1274.45	
EU-155	LLD<5.50E-01		LLD<5.50E-01		105.31	
FE-59	LLD<8.19E-01		LLD<8.19E-01		1099.25	
HF-181	LLD<3.88E-01		LLD<3.88E-01		482.20	
HG-203	LLD<2.47E-01		LLD<2.47E-01		279.20	
I-131	LLD<3.27E-01		LLD<3.27E-01		364.48	
I-132	LLD<3.91E-01		LLD<3.91E-01		667.69	
I-133	LLD<3.32E-01		LLD<3.32E-01		529.69	
I-134	LLD<5.24E-01		LLD<5.24E-01		847.03	
I-135	LLD<8.43E-01		LLD<8.43E-01		1260.41	
K-40	LLD<4.57E+00		LLD<4.57E+00		1460.75	
KR-85	LLD<7.25E+01		LLD<7.25E+01		513.99	
KR-85M	LLD<2.18E-01		LLD<2.18E-01		151.17	
KR-87	LLD<7.16E-01		LLD<7.16E-01		402.58	
KR-89	LLD<9.62E+00		LLD<9.62E+00		220.90	
LA-140	LLD<1.83E-01		LLD<1.83E-01		1596.20	

LA-142	LLD<7.30E-01	LLD<7.30E-01	641.83
MN-54	LLD<3.52E-01	LLD<3.52E-01	834.83
MN-56	LLD<3.88E-01	LLD<3.88E-01	846.76
NA-22	LLD<2.32E-01	LLD<2.32E-01	1274.55
NA-24	LLD<2.47E-01	LLD<2.47E-01	1368.60
NB-94	LLD<2.86E-01	LLD<2.86E-01	702.63
NB-95	LLD<3.20E-01	LLD<3.20E-01	765.78
NB-97	LLD<2.01E+00	LLD<2.01E+00	657.92
NP-238	LLD<1.47E+00	LLD<1.47E+00	984.45
NP-239	LLD<1.43E+00	LLD<1.43E+00	277.60
PA-233	LLD<5.94E-01	LLD<5.94E-01	311.98
PA-234M	LLD<7.05E+01	LLD<7.05E+01	1001.03
PB-210	LLD<8.02E+00	LLD<8.02E+00	465.03
PB-212	LLD<4.75E-01	LLD<4.75E-01	239.00
PB-214	LLD<7.29E-01	LLD<7.29E-01	351.92
PO-210	LLD<2.93E+04	LLD<2.93E+04	804.00
PO-214	LLD<1.30E+04	LLD<1.30E+04	799.70
PO-216	LLD<2.25E+04	LLD<2.25E+04	804.90
PU-239	LLD<2.05E+03	LLD<2.05E+03	129.30
PU-241	LLD<7.34E+04	LLD<7.34E+04	148.57
RA-224	LLD<4.99E+00	LLD<4.99E+00	240.99
RA-226	LLD<5.15E+00	LLD<5.15E+00	186.10
RB-88	LLD<1.43E+00	LLD<1.43E+00	1836.00
RB-89	LLD<1.87E+00	LLD<1.87E+00	1031.88
RN-220	LLD<2.89E+02	LLD<2.89E+02	549.73
RU-103	LLD<3.30E-01	LLD<3.30E-01	497.08
RURH106	LLD<6.12E+00	LLD<6.12E+00	621.80
SB-124	LLD<5.30E-01	LLD<5.30E-01	602.72
SB-125	LLD<2.25E+00	LLD<2.25E+00	176.33
SC-46	LLD<4.76E-01	LLD<4.76E-01	1120.45
SE-75	LLD<3.33E-01	LLD<3.33E-01	264.66
SN-113	LLD<4.26E-01	LLD<4.26E-01	391.67
SR-85	LLD<3.18E-01	LLD<3.18E-01	513.99
SR-91	LLD<5.47E-01	LLD<5.47E-01	555.60
SR-92	LLD<2.97E-01	LLD<2.97E-01	1383.94
TA-182	LLD<1.24E+00	LLD<1.24E+00	1121.30
TC-99M	LLD<1.61E-01	LLD<1.61E-01	140.51
TE-123M	LLD<1.71E-01	LLD<1.71E-01	159.00
TE-125M	LLD<4.33E+01	LLD<4.33E+01	109.27
TE-132	LLD<2.22E-01	LLD<2.22E-01	228.16
TH-228	LLD<8.84E+00	LLD<8.84E+00	84.37
TL-208	LLD<3.74E-01	LLD<3.74E-01	583.14
U-235	LLD<3.15E-01	LLD<3.15E-01	185.71
U-237	LLD<8.98E-01	LLD<8.98E-01	208.00
W-187	LLD<1.05E+00	LLD<1.05E+00	685.74
XE-131M	LLD<7.67E+00	LLD<7.67E+00	163.98
XE-133	LLD<2.97E-01	LLD<2.97E-01	81.00
XE-133M	LLD<1.99E+00	LLD<1.99E+00	233.21
XE-135	LLD<2.20E-01	LLD<2.20E-01	249.79
XE-138	LLD<1.70E+00	LLD<1.70E+00	258.41
Y-88	LLD<1.35E-01	LLD<1.35E-01	1836.06
Y-91	LLD<1.09E+02	LLD<1.09E+02	1204.90
Y-91M	LLD<4.14E-01	LLD<4.14E-01	555.60
ZN-65	LLD<8.99E-01	LLD<8.99E-01	1115.55
ZR-95	LLD<5.63E-01	LLD<5.63E-01	756.73
ZR-97	LLD<2.95E-01	LLD<2.95E-01	743.33
TOTAL	8.51E+01 +-1.34E+00	8.51E+01 +-1.34E+00	

STANDARD DEVIATION = 0.18

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.46E-09 UC/LI
TOTAL MEASURED ACTIVITY = 8.51E+01 (+-1.34E+00) UC/LI
% TECH. SPEC. = ****** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 95.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
59.49	30.33	622.	33.2	1.02E+01
63.78	32.47	3937.	8.5	6.14E+01
72.54	36.85	951.	22.6	1.36E+01
1126.20	563.15	840.	12.1	3.08E+01
1138.34	569.22	1498.	9.8	5.54E+01
1603.32	801.61	660.	10.1	3.33E+01
2729.29	1364.68	203.	18.2	1.61E+01

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1218.26	609.15	127.	59.4	5.00E+00
2920.46	1460.33	665.	8.1	5.55E+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                                 05-SEP-90  13:47:54


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

MCA UNIT NUMBER:   1     /     ADC UNIT NUMBER: 2.0
DETECTOR NUMBER:    2    /     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: SD2909
ANALYZED BY:        VR

SAMPLE DESCRIPTION: F928 SEG/COM/#14
GEOMETRY DESCRIPTION:
SAMPLE SIZE:   1.0000E-03 LI       / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 31-JAN-90 AT 19:48:51

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 17-MAR-89
EFFICIENCY CALIBRATION PERFORMED 21-OCT-88
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222-S COUNTING ROOM 05-SEP-90 13:47:54

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	2921.10	1460.09	2.47	14.	171.	16.7	K-40
1B		1460.85			156.	3.8	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0012
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 30-AUG-88 AT 16:46:00
BACKGROUND LIVE TIME: 60000. SECONDS

222-S COUNTING ROOM 05-SEP-90 13:47:54

SAMPLE: F928 SEG/COM/#14
DATA COLLECTED ON 31-JAN-90 AT 19:48:51
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<1.88E-01		LLD<1.88E-01		911.07	
AG-108M	LLD<3.45E-02		LLD<3.45E-02		433.94	
AG-110M	LLD<6.16E-02		LLD<6.16E-02		657.76	
AM-241	LLD<2.55E-01		LLD<2.55E-01		59.54	
AM-243	LLD<6.38E-02		LLD<6.38E-02		74.67	
AR-41	LLD<4.58E-02		LLD<4.58E-02		1293.64	
AU-198	LLD<3.01E-02		LLD<3.01E-02		411.80	
BA-133	LLD<5.04E-02		LLD<5.04E-02		356.02	
BA-139	LLD<1.31E-01		LLD<1.31E-01		165.85	
BA-140	LLD<1.53E-01		LLD<1.53E-01		537.27	
BA-141	LLD<1.20E-01		LLD<1.20E-01		190.23	
BE-7	LLD<3.32E-01		LLD<3.32E-01		477.59	
BI-207	LLD<3.47E-02		LLD<3.47E-02		569.70	
BI-212	LLD<5.08E-01		LLD<5.08E-01		727.27	
BI-214	LLD<8.91E-02		LLD<8.91E-02		609.32	
CD-109	LLD<8.29E-01		LLD<8.29E-01		88.03	
CE-139	LLD<2.96E-02		LLD<2.96E-02		165.85	
CE-141	LLD<4.87E-02		LLD<4.87E-02		145.44	
CEPR144	LLD<3.93E-01		LLD<3.93E-01		133.51	
CO-56	LLD<4.42E-02		LLD<4.42E-02		846.76	
CO-57	LLD<2.60E-02		LLD<2.60E-02		122.06	
CO-58	LLD<4.08E-02		LLD<4.08E-02		810.75	
CO-60	LLD<5.75E-02		LLD<5.75E-02		1332.50	
CR-51	LLD<2.99E-01		LLD<2.99E-01		320.09	
CS-134	LLD<5.14E-02		LLD<5.14E-02		795.84	
CS-136	LLD<4.36E-02		LLD<4.36E-02		818.51	
CS-137	LLD<5.14E-02		LLD<5.14E-02		661.65	
CS-138	LLD<1.11E-01		LLD<1.11E-01		1435.86	
EU-152	LLD<2.61E-01		LLD<2.61E-01		1408.01	
EU-154	LLD<1.18E-01		LLD<1.18E-01		1274.45	
EU-155	LLD<1.15E-01		LLD<1.15E-01		105.31	
FE-59	LLD<7.50E-02		LLD<7.50E-02		1099.25	
HF-181	LLD<4.26E-02		LLD<4.26E-02		482.20	
HG-203	LLD<2.99E-02		LLD<2.99E-02		279.20	
I-131	LLD<3.29E-02		LLD<3.29E-02		364.48	
I-132	LLD<5.09E-02		LLD<5.09E-02		667.69	
I-133	LLD<3.63E-02		LLD<3.63E-02		529.69	
I-134	LLD<6.73E-02		LLD<6.73E-02		847.03	
I-135	LLD<1.50E-01		LLD<1.50E-01		1260.41	
K-40	LLD<1.00E+00		LLD<1.00E+00		1460.75	
KR-85	LLD<1.23E+01		LLD<1.23E+01		513.99	
KR-85M	LLD<2.93E-02		LLD<2.93E-02		151.17	
KR-87	LLD<6.93E-02		LLD<6.93E-02		402.58	
KR-89	LLD<1.31E+00		LLD<1.31E+00		220.90	
LA-140	LLD<5.34E-02		LLD<5.34E-02		1596.20	
LA-142	LLD<8.08E-02		LLD<8.08E-02		641.83	
MN-54	LLD<4.68E-02		LLD<4.68E-02		834.83	

MN-56	LLD<4.99E-02	LLD<4.99E-02	846.76
NA-22	LLD<4.18E-02	LLD<4.18E-02	1274.55
NA-24	LLD<4.84E-02	LLD<4.84E-02	1368.60
NB-94	LLD<3.94E-02	LLD<3.94E-02	702.63
NB-95	LLD<4.17E-02	LLD<4.17E-02	765.78
NB-97	LLD<6.86E-02	LLD<6.86E-02	657.92
NP-238	LLD<1.51E-01	LLD<1.51E-01	984.45
NP-239	LLD<1.87E-01	LLD<1.87E-01	277.60
PA-233	LLD<7.37E-02	LLD<7.37E-02	311.98
PA-234M	LLD<7.73E+00	LLD<7.73E+00	1001.03
PB-210	LLD<7.84E-01	LLD<7.84E-01	465.03
PB-212	LLD<6.71E-02	LLD<6.71E-02	239.00
PB-214	LLD<8.44E-02	LLD<8.44E-02	351.92
PO-210	LLD<3.86E+03	LLD<3.86E+03	804.00
PO-214	LLD<4.24E+02	LLD<4.24E+02	799.70
PO-216	LLD<2.48E+03	LLD<2.48E+03	804.90
PU-239	LLD<3.60E+02	LLD<3.60E+02	129.30
PU-241	LLD<1.16E+04	LLD<1.16E+04	148.57
RA-224	LLD<6.20E-01	LLD<6.20E-01	240.99
RA-226	LLD<6.42E-01	LLD<6.42E-01	186.10
RB-88	LLD<3.15E-01	LLD<3.15E-01	1836.00
RB-89	LLD<1.94E-01	LLD<1.94E-01	1031.88
RN-220	LLD<3.51E+01	LLD<3.51E+01	549.73
RU-103	LLD<3.43E-02	LLD<3.43E-02	497.08
RURH106	LLD<6.49E-01	LLD<6.49E-01	621.80
SB-124	LLD<4.01E-02	LLD<4.01E-02	602.72
SB-125	LLD<3.23E-01	LLD<3.23E-01	176.33
SC-46	LLD<5.00E-02	LLD<5.00E-02	1120.45
SE-75	LLD<4.81E-02	LLD<4.81E-02	264.66
SN-113	LLD<4.95E-02	LLD<4.95E-02	391.67
SR-85	LLD<5.38E-02	LLD<5.38E-02	513.99
SR-91	LLD<6.99E-02	LLD<6.99E-02	555.60
SR-92	LLD<5.79E-02	LLD<5.79E-02	1383.94
TA-182	LLD<1.43E-01	LLD<1.43E-01	1121.30
TC-99M	LLD<2.40E-02	LLD<2.40E-02	140.51
TE-123M	LLD<2.86E-02	LLD<2.86E-02	159.00
TE-125M	LLD<7.50E+00	LLD<7.50E+00	109.27
TE-132	LLD<3.04E-02	LLD<3.04E-02	228.16
TH-228	LLD<2.77E+00	LLD<2.77E+00	84.37
TL-208	LLD<4.36E-02	LLD<4.36E-02	583.14
U-235	LLD<4.21E-02	LLD<4.21E-02	185.71
U-237	LLD<1.13E-01	LLD<1.13E-01	208.00
W-187	LLD<1.48E-01	LLD<1.48E-01	685.74
XE-131M	LLD<1.23E+00	LLD<1.23E+00	163.98
XE-133	LLD<9.16E-02	LLD<9.16E-02	81.00
XE-133M	LLD<2.39E-01	LLD<2.39E-01	233.21
XE-135	LLD<2.68E-02	LLD<2.68E-02	249.79
XE-138	LLD<2.30E-01	LLD<2.30E-01	258.41
Y-88	LLD<2.99E-02	LLD<2.99E-02	1836.06
Y-91	LLD<1.52E+01	LLD<1.52E+01	1204.90
Y-91M	LLD<5.28E-02	LLD<5.28E-02	555.60
ZN-65	LLD<1.36E-01	LLD<1.36E-01	1115.55
ZR-95	LLD<7.20E-02	LLD<7.20E-02	756.73
ZR-97	LLD<4.15E-02	LLD<4.15E-02	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
2921.10	1460.09	171.	16.7	2.24E+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                                  05-SEP-90  13:56:09

                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: SD1723
ANALYZED BY:        VR

SAMPLE DESCRIPTION: F929 SEG/COMP/#15
GEOMETRY DESCRIPTION:
SAMPLE SIZE:   1.0000E-03 LI       / CONVERSION FACTOR: 1.0000E-01
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 31-JAN-90 AT 21:25:35

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 05-SEP-90 13:56:09

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	1323.61	661.25	1.55	49.	2049.	4.4	CS-137
1B		661.82			35.	46.4	
2	2921.28	1460.45	1.54	10.	159.	16.7	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 05-SEP-90 13:56:09

SAMPLE: F929 SEG/COMP/#15
DATA COLLECTED ON 31-JAN-90 AT 21:25:35
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<8.99E-01		LLD<8.99E-01		911.07	
AG-108M	LLD<4.33E-01		LLD<4.33E-01		433.94	
AG-110M	LLD<2.15E+00		LLD<2.15E+00		657.76	
AM-241	LLD<1.80E+00		LLD<1.80E+00		59.54	
AM-243	LLD<4.89E-01		LLD<4.89E-01		74.67	
AR-41	LLD<3.67E-01		LLD<3.67E-01		1293.64	
AU-198	LLD<3.27E-01		LLD<3.27E-01		411.80	
BA-133	LLD<5.60E-01		LLD<5.60E-01		356.02	
BA-139	LLD<1.15E+00		LLD<1.15E+00		165.85	
BA-140	LLD<1.21E+00		LLD<1.21E+00		537.27	
BA-141	LLD<1.17E+00		LLD<1.17E+00		190.23	
BE-7	LLD<3.59E+00		LLD<3.59E+00		477.59	
BI-207	LLD<2.62E-01		LLD<2.62E-01		569.70	
BI-212	LLD<4.22E+00		LLD<4.22E+00		727.27	
BI-214	LLD<8.86E-01		LLD<8.86E-01		609.32	
CD-109	LLD<7.71E+00		LLD<7.71E+00		88.03	
CE-139	LLD<2.59E-01		LLD<2.59E-01		165.85	
CE-141	LLD<3.79E-01		LLD<3.79E-01		145.44	
CEPR144	LLD<3.40E+00		LLD<3.40E+00		133.51	
CO-56	LLD<3.54E-01		LLD<3.54E-01		846.76	
CO-57	LLD<2.28E-01		LLD<2.28E-01		122.06	
CO-58	LLD<2.27E-01		LLD<2.27E-01		810.75	
CO-60	LLD<3.22E-01		LLD<3.22E-01		1332.50	
CR-51	LLD<2.60E+00		LLD<2.60E+00		320.09	
CS-134	LLD<3.35E-01		LLD<3.35E-01		795.84	
CS-136	LLD<2.82E-01		LLD<2.82E-01		818.51	
CS-137	3.13E+01	+-1.49E+00	3.13E+01	+-1.49E+00	661.65	-0.40
CS-138	LLD<5.92E-01		LLD<5.92E-01		1435.86	
EU-152	LLD<1.61E+00		LLD<1.61E+00		1408.01	
EU-154	LLD<1.09E+00		LLD<1.09E+00		1274.45	
EU-155	LLD<7.86E-01		LLD<7.86E-01		105.31	
FE-59	LLD<5.91E-01		LLD<5.91E-01		1099.25	
HF-181	LLD<3.53E-01		LLD<3.53E-01		482.20	
HG-203	LLD<3.17E-01		LLD<3.17E-01		279.20	
I-131	LLD<3.71E-01		LLD<3.71E-01		364.48	
I-132	LLD<4.27E-01		LLD<4.27E-01		667.69	
I-133	LLD<3.72E-01		LLD<3.72E-01		529.69	
I-134	LLD<5.06E-01		LLD<5.06E-01		847.03	
I-135	LLD<1.39E+00		LLD<1.39E+00		1260.41	
K-40	LLD<9.20E+00		LLD<9.20E+00		1460.75	
KR-85	LLD<9.92E+01		LLD<9.92E+01		513.99	
KR-85M	LLD<2.38E-01		LLD<2.38E-01		151.17	
KR-87	LLD<8.02E-01		LLD<8.02E-01		402.58	
KR-89	LLD<1.29E+01		LLD<1.29E+01		220.90	
LA-140	LLD<2.86E-01		LLD<2.86E-01		1596.20	
LA-142	LLD<7.24E-01		LLD<7.24E-01		641.83	
MN-54	LLD<2.94E-01		LLD<2.94E-01		834.83	

MN-56	LLD<3.99E-01	LLD<3.99E-01	846.76
NA-22	LLD<3.66E-01	LLD<3.66E-01	1274.55
NA-24	LLD<3.54E-01	LLD<3.54E-01	1368.60
NB-94	LLD<2.71E-01	LLD<2.71E-01	702.63
NB-95	LLD<2.23E-01	LLD<2.23E-01	765.78
NB-97	LLD<2.61E+00	LLD<2.61E+00	657.92
NP-238	LLD<1.26E+00	LLD<1.26E+00	984.45
NP-239	LLD<1.82E+00	LLD<1.82E+00	277.60
PA-233	LLD<8.12E-01	LLD<8.12E-01	311.98
PA-234M	LLD<5.57E+01	LLD<5.57E+01	1001.03
PB-210	LLD<8.97E+00	LLD<8.97E+00	465.03
PB-212	LLD<6.12E-01	LLD<6.12E-01	239.00
PB-214	LLD<8.22E-01	LLD<8.22E-01	351.92
PO-210	LLD<2.10E+04	LLD<2.10E+04	804.00
PO-214	LLD<2.84E+03	LLD<2.84E+03	799.70
PO-216	LLD<1.42E+04	LLD<1.42E+04	804.90
PU-239	LLD<2.99E+03	LLD<2.99E+03	129.30
PU-241	LLD<1.09E+05	LLD<1.09E+05	148.57
RA-224	LLD<7.06E+00	LLD<7.06E+00	240.99
RA-226	LLD<6.33E+00	LLD<6.33E+00	186.10
RB-88	LLD<2.65E+00	LLD<2.65E+00	1836.00
RB-89	LLD<1.29E+00	LLD<1.29E+00	1031.88
RN-220	LLD<2.47E+02	LLD<2.47E+02	549.73
RU-103	LLD<3.66E-01	LLD<3.66E-01	497.08
RURH106	LLD<5.37E+00	LLD<5.37E+00	621.80
SB-124	LLD<2.81E-01	LLD<2.81E-01	602.72
SB-125	LLD<3.39E+00	LLD<3.39E+00	176.33
SC-46	LLD<3.28E-01	LLD<3.28E-01	1120.45
SE-75	LLD<4.57E-01	LLD<4.57E-01	264.66
SN-113	LLD<4.23E-01	LLD<4.23E-01	391.67
SR-85	LLD<4.35E-01	LLD<4.35E-01	513.99
SR-91	LLD<5.48E-01	LLD<5.48E-01	555.60
SR-92	LLD<2.64E-01	LLD<2.64E-01	1383.94
TA-182	LLD<9.40E-01	LLD<9.40E-01	1121.30
TC-99M	LLD<2.33E-01	LLD<2.33E-01	140.51
TE-123M	LLD<2.37E-01	LLD<2.37E-01	159.00
TE-125M	LLD<6.13E+01	LLD<6.13E+01	109.27
TE-132	LLD<2.60E-01	LLD<2.60E-01	228.16
TH-228	LLD<2.09E+01	LLD<2.09E+01	84.37
TL-208	LLD<3.61E-01	LLD<3.61E-01	583.14
U-235	LLD<4.02E-01	LLD<4.02E-01	185.71
U-237	LLD<1.09E+00	LLD<1.09E+00	208.00
W-187	LLD<7.78E-01	LLD<7.78E-01	685.74
XE-131M	LLD<1.07E+01	LLD<1.07E+01	163.98
XE-133	LLD<8.14E-01	LLD<8.14E-01	81.00
XE-133M	LLD<2.49E+00	LLD<2.49E+00	233.21
XE-135	LLD<3.13E-01	LLD<3.13E-01	249.79
XE-138	LLD<2.26E+00	LLD<2.26E+00	258.41
Y-88	LLD<2.51E-01	LLD<2.51E-01	1836.06
Y-91	LLD<9.81E+01	LLD<9.81E+01	1204.90
Y-91M	LLD<4.14E-01	LLD<4.14E-01	555.60
ZN-65	LLD<1.08E+00	LLD<1.08E+00	1115.55
ZR-95	LLD<4.84E-01	LLD<4.84E-01	756.73
ZR-97	LLD<2.72E-01	LLD<2.72E-01	743.33
	---	---	
TOTAL	3.13E+01 +-1.49E+00	3.13E+01 +-1.49E+00	

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.16E-08 UC/LI
TOTAL MEASURED ACTIVITY = 3.13E+01 (+-1.49E+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
2921.28	1460.45	159.	16.7	1.51E+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 WESTINGHOUSE HANFORD           05-SEP-90  14:00:20


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

MCA UNIT NUMBER:   1     /     ADC UNIT NUMBER: 1.0
DETECTOR NUMBER:    4    /     GEOMETRY NUMBER:  41
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: SD4036
ANALYZED BY:        VR

SAMPLE DESCRIPTION: F930 SEG/COMP/#16
GEOMETRY DESCRIPTION:
SAMPLE SIZE:   1.0000E-03 LI       / CONVERSION FACTOR: 1.0000E-01
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 31-JAN-90 AT 22:59:59

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 26-DEC-89
EFFICIENCY CALIBRATION PERFORMED  1-SEP-89
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222-S COUNTING ROOM WESTINGHOUSE HANFORD 05-SEP-90 14:00:20

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	53.66	27.01	1.59	419.	285.	23.0	
1B		27.06			123.	34.3	
2	1021.75	510.79	2.66	569.	316.	24.8	RN-222,I-133,
2B		510.74			335.	16.9	TL-208,NA-22,
							ZN-65,RH-106
3	1166.71	583.25	2.30	266.	144.	37.2	EU-154,
3B		583.17			120.	39.2	TL-208
4	1218.61	609.20	1.86	251.	203.	26.8	BI-214,
4B		609.25			197.	22.8	RU-103
5	1323.46	661.62	1.72	271.	17583.	1.5	CS-137
5B		661.35			379.	12.7	
6	1821.77	910.78	2.11	87.	117.	30.6	
6B		910.95			144.	27.4	
7	2920.83	1460.59	2.54	39.	828.	7.3	K-40
7B		1460.80			854.	7.1	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0014
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 8-SEP-89 AT 12:00:00
BACKGROUND LIVE TIME: 3000. SECONDS

222-S COUNTING ROOM WESTINGHOUSE HANFORD 05-SEP-90 14:00:20

SAMPLE: F930 SEG/COMP/#16
DATA COLLECTED ON 31-JAN-90 AT 22:59:59
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<7.15E-01		LLD<7.15E-01		911.07	
AG-108M	LLD<1.69E-01		LLD<1.69E-01		433.94	
AG-110M	LLD<1.08E+00		LLD<1.08E+00		657.76	
AM-241	LLD<7.89E-01		LLD<7.89E-01		59.54	
AM-243	LLD<1.95E-01		LLD<1.95E-01		74.67	
AR-41	LLD<1.73E-01		LLD<1.73E-01		1293.64	
AU-198	LLD<1.61E-01		LLD<1.61E-01		411.80	
BA-133	LLD<2.09E-01		LLD<2.09E-01		356.02	
BA-139	LLD<4.58E-01		LLD<4.58E-01		165.85	
BA-140	LLD<5.28E-01		LLD<5.28E-01		537.27	
BA-141	LLD<4.28E-01		LLD<4.28E-01		190.23	
BE-7	LLD<1.69E+00		LLD<1.69E+00		477.59	
BI-207	LLD<1.25E-01		LLD<1.25E-01		569.70	
BI-212	LLD<1.51E+00		LLD<1.51E+00		727.27	
BI-214	LLD<3.93E-01		LLD<3.93E-01		609.32	
CD-109	LLD<2.86E+00		LLD<2.86E+00		88.03	
CE-139	LLD<1.04E-01		LLD<1.04E-01		165.85	
CE-141	LLD<1.51E-01		LLD<1.51E-01		145.44	
CEPR144	LLD<1.26E+00		LLD<1.26E+00		133.51	
CO-56	LLD<1.12E-01		LLD<1.12E-01		846.76	
CO-57	LLD<8.30E-02		LLD<8.30E-02		122.06	
CO-58	LLD<1.01E-01		LLD<1.01E-01		810.75	
CO-60	LLD<1.32E-01		LLD<1.32E-01		1332.50	
CR-51	LLD<1.15E+00		LLD<1.15E+00		320.09	
CS-134	LLD<1.26E-01		LLD<1.26E-01		795.84	
CS-136	LLD<9.25E-02		LLD<9.25E-02		818.51	
CS-137	4.97E+01	+-8.63E-01	4.97E+01	+-8.63E-01	661.65	-0.03
CS-138	LLD<2.74E-01		LLD<2.74E-01		1435.86	
EU-152	LLD<7.66E-01		LLD<7.66E-01		1408.01	
EU-154	LLD<5.04E-01		LLD<5.04E-01		1274.45	
EU-155	LLD<3.54E-01		LLD<3.54E-01		105.31	
FE-59	LLD<2.20E-01		LLD<2.20E-01		1099.25	
HF-181	LLD<1.98E-01		LLD<1.98E-01		482.20	
HG-203	LLD<1.30E-01		LLD<1.30E-01		279.20	
I-131	LLD<1.49E-01		LLD<1.49E-01		364.48	
I-132	LLD<1.62E-01		LLD<1.62E-01		667.69	
I-133	LLD<1.51E-01		LLD<1.51E-01		529.69	
I-134	LLD<1.47E-01		LLD<1.47E-01		847.03	
I-135	LLD<5.94E-01		LLD<5.94E-01		1260.41	
K-40	LLD<4.40E+00		LLD<4.40E+00		1460.75	
KR-85	LLD<3.83E+01		LLD<3.83E+01		513.99	
KR-85M	LLD<1.04E-01		LLD<1.04E-01		151.17	
KR-87	LLD<3.40E-01		LLD<3.40E-01		402.58	
KR-89	LLD<5.16E+00		LLD<5.16E+00		220.90	
LA-140	LLD<1.37E-01		LLD<1.37E-01		1596.20	
LA-142	LLD<3.22E-01		LLD<3.22E-01		641.83	
MN-54	LLD<1.19E-01		LLD<1.19E-01		834.83	

MN-56	LLD<1.26E-01	LLD<1.26E-01	846.76
NA-22	LLD<1.68E-01	LLD<1.68E-01	1274.55
NA-24	LLD<1.26E-01	LLD<1.26E-01	1368.60
NB-94	LLD<9.99E-02	LLD<9.99E-02	702.63
NB-95	LLD<1.15E-01	LLD<1.15E-01	765.78
NB-97	LLD<1.49E+00	LLD<1.49E+00	657.92
NP-238	LLD<4.68E-01	LLD<4.68E-01	984.45
NP-239	LLD<7.42E-01	LLD<7.42E-01	277.60
PA-233	LLD<3.16E-01	LLD<3.16E-01	311.98
PA-234M	LLD<2.08E+01	LLD<2.08E+01	1001.03
PB-210	LLD<4.31E+00	LLD<4.31E+00	465.03
PB-212	LLD<3.11E-01	LLD<3.11E-01	239.00
PB-214	LLD<3.41E-01	LLD<3.41E-01	351.92
PO-210	LLD<8.17E+03	LLD<8.17E+03	804.00
PO-214	LLD<1.23E+03	LLD<1.23E+03	799.70
PO-216	LLD<5.56E+03	LLD<5.56E+03	804.90
PU-239	LLD<1.12E+03	LLD<1.12E+03	129.30
PU-241	LLD<3.95E+04	LLD<3.95E+04	148.57
RA-224	LLD<2.71E+00	LLD<2.71E+00	240.99
RA-226	LLD<2.73E+00	LLD<2.73E+00	186.10
RB-88	LLD<1.33E+00	LLD<1.33E+00	1836.00
RB-89	LLD<5.44E-01	LLD<5.44E-01	1031.88
RN-220	LLD<1.11E+02	LLD<1.11E+02	549.73
RU-103	LLD<1.63E-01	LLD<1.63E-01	497.08
RURH106	LLD<2.44E+00	LLD<2.44E+00	621.80
SB-124	LLD<1.26E-01	LLD<1.26E-01	602.72
SB-125	LLD<1.19E+00	LLD<1.19E+00	176.33
SC-46	LLD<1.27E-01	LLD<1.27E-01	1120.45
SE-75	LLD<1.82E-01	LLD<1.82E-01	264.66
SN-113	LLD<2.10E-01	LLD<2.10E-01	391.67
SR-85	LLD<1.68E-01	LLD<1.68E-01	513.99
SR-91	LLD<2.19E-01	LLD<2.19E-01	555.60
SR-92	LLD<1.54E-01	LLD<1.54E-01	1383.94
TA-182	LLD<3.55E-01	LLD<3.55E-01	1121.30
TC-99M	LLD<8.64E-02	LLD<8.64E-02	140.51
TE-123M	LLD<9.32E-02	LLD<9.32E-02	159.00
TE-125M	LLD<2.64E+01	LLD<2.64E+01	109.27
TE-132	LLD<1.16E-01	LLD<1.16E-01	228.16
TH-228	LLD<8.42E+00	LLD<8.42E+00	84.37
TL-208	LLD<2.02E-01	LLD<2.02E-01	583.14
U-235	LLD<1.52E-01	LLD<1.52E-01	185.71
U-237	LLD<4.76E-01	LLD<4.76E-01	208.00
W-187	LLD<3.43E-01	LLD<3.43E-01	685.74
XE-131M	LLD<4.14E+00	LLD<4.14E+00	163.98
XE-133	LLD<3.18E-01	LLD<3.18E-01	81.00
XE-133M	LLD<9.34E-01	LLD<9.34E-01	233.21
XE-135	LLD<1.09E-01	LLD<1.09E-01	249.79
XE-138	LLD<9.25E-01	LLD<9.25E-01	258.41
Y-88	LLD<1.26E-01	LLD<1.26E-01	1836.06
Y-91	LLD<4.99E+01	LLD<4.99E+01	1204.90
Y-91M	LLD<1.66E-01	LLD<1.66E-01	555.60
ZN-65	LLD<3.74E-01	LLD<3.74E-01	1115.55
ZR-95	LLD<1.95E-01	LLD<1.95E-01	756.73
ZR-97	LLD<1.14E-01	LLD<1.14E-01	743.33
TOTAL	4.97E+01 +-8.63E-01	4.97E+01 +-8.63E-01	

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.16E-08 UC/LI
TOTAL MEASURED ACTIVITY = 4.97E+01 (+-8.63E-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
53.66	27.01	162.	48.2	1.68E+02

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1021.75	510.79	316.	24.8	2.27E+00
1166.71	583.25	144.	37.2	1.16E+00
1218.61	609.20	203.	26.8	1.71E+00
1821.77	910.78	117.	30.6	1.43E+00
2920.83	1460.59	828.	7.3	1.52E+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                                 05-SEP-90  13:51:55


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

MCA UNIT NUMBER:   1     /     ADC UNIT NUMBER: 2.0
DETECTOR NUMBER:    2    /     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: SD2910
ANALYZED BY:        VR

SAMPLE DESCRIPTION: F931 SEG/COMP/#17
GEOMETRY DESCRIPTION:
SAMPLE SIZE:   1.0000E-03 LI       / CONVERSION FACTOR: 1.0000E-01
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 31-JAN-90 AT 21:26:57

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 17-MAR-89
EFFICIENCY CALIBRATION PERFORMED 21-OCT-88
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222-S COUNTING ROOM 05-SEP-90 13:51:55

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	1127.34	563.30	1.59	564.	630.	11.8	CS-134, EU-152
2C	1139.45	569.35	1.59	563.	1074.	10.2	CS-134, BI-207
3	1210.18	604.71	1.50	605.	6107.	2.8	CS-134
4	1323.93	661.58	1.60	360.	10763.	2.0	CS-137
4B		661.85			36.	13.9	
5C	1592.16	795.68	1.71	301.	4246.	3.7	CS-134
6C	1604.44	801.82	1.71	260.	437.	8.9	CS-134
7	2346.42	1172.77	1.98	247.	3902.	3.4	CO-60
8	2664.78	1331.93	1.97	48.	3593.	3.3	CO-60
8B		1332.24			9.	37.4	
9	2729.28	1364.18	2.23	15.	121.	20.8	CS-134
10	2800.95	1400.02	1.06	20.	45.	44.6	I-132,BI-214
11	2921.06	1460.07	1.91	22.	154.	18.9	K-40
11B		1460.85			156.	3.8	

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 BK0012
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 30-AUG-88 AT 16:46:00
BACKGROUND LIVE TIME: 60000. SECONDS

222-S COUNTING ROOM 05-SEP-90 13:51:55

SAMPLE: F931 SEG/COMP/#17
DATA COLLECTED ON 31-JAN-90 AT 21:26:57
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<5.69E+00		LLD<5.69E+00		911.07	
AG-108M	LLD<1.47E+00		LLD<1.47E+00		433.94	
AG-110M	LLD<7.71E+00		LLD<7.71E+00		657.76	
AM-241	LLD<7.12E+00		LLD<7.12E+00		59.54	
AM-243	LLD<1.75E+00		LLD<1.75E+00		74.67	
AR-41	LLD<1.09E+00		LLD<1.09E+00		1293.64	
AU-198	LLD<1.32E+00		LLD<1.32E+00		411.80	
BA-133	LLD<1.77E+00		LLD<1.77E+00		356.02	
BA-139	LLD<3.75E+00		LLD<3.75E+00		165.85	
BA-140	LLD<5.14E+00		LLD<5.14E+00		537.27	
BA-141	LLD<3.67E+00		LLD<3.67E+00		190.23	
BE-7	LLD<1.26E+01		LLD<1.26E+01		477.59	
BI-207	LLD<1.33E+00		LLD<1.33E+00		569.70	
BI-212	LLD<1.91E+01		LLD<1.91E+01		727.27	
BI-214	LLD<1.00E+01		LLD<1.00E+01		609.32	
CD-109	LLD<2.31E+01		LLD<2.31E+01		88.03	
CE-139	LLD<8.49E-01		LLD<8.49E-01		165.85	
CE-141	LLD<1.34E+00		LLD<1.34E+00		145.44	
CEPR144	LLD<1.07E+01		LLD<1.07E+01		133.51	
CO-56	LLD<1.23E+00		LLD<1.23E+00		846.76	
CO-57	LLD<6.72E-01		LLD<6.72E-01		122.06	
CO-58	LLD<1.22E+00		LLD<1.22E+00		810.75	
CO-60	1.18E+02	+-4.19E+00	1.18E+02	+-4.19E+00	1332.50	-0.57
					1173.24	-0.47
CR-51	LLD<1.00E+01		LLD<1.00E+01		320.09	
CS-134	1.07E+02	+-4.09E+00	1.07E+02	+-4.09E+00	795.84	-0.17
					604.70	0.01
CS-136	LLD<1.36E+00		LLD<1.36E+00		818.51	
CS-137	2.32E+02	+-5.39E+00	2.32E+02	+-5.39E+00	661.65	-0.07
CS-138	LLD<1.18E+00		LLD<1.18E+00		1435.86	
EU-152	LLD<3.39E+00		LLD<3.39E+00		1408.01	
EU-154	LLD<2.58E+00		LLD<2.58E+00		1274.45	
EU-155	LLD<3.20E+00		LLD<3.20E+00		105.31	
FE-59	LLD<3.09E+00		LLD<3.09E+00		1099.25	
HF-181	LLD<1.51E+00		LLD<1.51E+00		482.20	
HG-203	LLD<1.08E+00		LLD<1.08E+00		279.20	
I-131	LLD<1.38E+00		LLD<1.38E+00		364.48	
I-132	LLD<3.32E+00		LLD<3.32E+00		667.69	
I-133	LLD<1.32E+00		LLD<1.32E+00		529.69	
I-134	LLD<1.89E+00		LLD<1.89E+00		847.03	
I-135	LLD<2.86E+00		LLD<2.86E+00		1260.41	
K-40	LLD<1.09E+01		LLD<1.09E+01		1460.75	
KR-85	LLD<2.98E+02		LLD<2.98E+02		513.99	
KR-85M	LLD<8.67E-01		LLD<8.67E-01		151.17	
KR-87	LLD<2.99E+00		LLD<2.99E+00		402.58	
KR-89	LLD<4.36E+01		LLD<4.36E+01		220.90	
LA-140	LLD<4.83E-01		LLD<4.83E-01		1596.20	

LA-142	LLD<3.07E+00	LLD<3.07E+00	641.83
MN-54	LLD<1.30E+00	LLD<1.30E+00	834.83
MN-56	LLD<1.39E+00	LLD<1.39E+00	846.76
NA-22	LLD<9.18E-01	LLD<9.18E-01	1274.55
NA-24	LLD<1.38E+00	LLD<1.38E+00	1368.60
NB-94	LLD<1.09E+00	LLD<1.09E+00	702.63
NB-95	LLD<1.20E+00	LLD<1.20E+00	765.78
NB-97	LLD<8.72E+00	LLD<8.72E+00	657.92
NP-238	LLD<5.87E+00	LLD<5.87E+00	984.45
NP-239	LLD<6.70E+00	LLD<6.70E+00	277.60
PA-233	LLD<2.53E+00	LLD<2.53E+00	311.98
PA-234M	LLD<2.56E+02	LLD<2.56E+02	1001.03
PB-210	LLD<3.21E+01	LLD<3.21E+01	465.03
PB-212	LLD<1.98E+00	LLD<1.98E+00	239.00
PB-214	LLD<2.77E+00	LLD<2.77E+00	351.92
PO-210	LLD<1.08E+05	LLD<1.08E+05	804.00
PO-214	LLD<5.17E+04	LLD<5.17E+04	799.70
PO-216	LLD<8.72E+04	LLD<8.72E+04	804.90
PU-239	LLD<9.72E+03	LLD<9.72E+03	129.30
PU-241	LLD<3.16E+05	LLD<3.16E+05	148.57
RA-224	LLD<2.13E+01	LLD<2.13E+01	240.99
RA-226	LLD<1.99E+01	LLD<1.99E+01	186.10
RB-88	LLD<5.79E+00	LLD<5.79E+00	1836.00
RB-89	LLD<6.84E+00	LLD<6.84E+00	1031.88
RN-220	LLD<1.12E+03	LLD<1.12E+03	549.73
RU-103	LLD<1.38E+00	LLD<1.38E+00	497.08
RURH106	LLD<2.49E+01	LLD<2.49E+01	621.80
SB-124	LLD<2.42E+00	LLD<2.42E+00	602.72
SB-125	LLD<1.03E+01	LLD<1.03E+01	176.33
SC-46	LLD<1.63E+00	LLD<1.63E+00	1120.45
SE-75	LLD<1.56E+00	LLD<1.56E+00	264.66
SN-113	LLD<1.89E+00	LLD<1.89E+00	391.67
SR-85	LLD<1.31E+00	LLD<1.31E+00	513.99
SR-91	LLD<2.34E+00	LLD<2.34E+00	555.60
SR-92	LLD<7.67E-01	LLD<7.67E-01	1383.94
TA-182	LLD<4.58E+00	LLD<4.58E+00	1121.30
TC-99M	LLD<6.92E-01	LLD<6.92E-01	140.51
TE-123M	LLD<7.86E-01	LLD<7.86E-01	159.00
TE-125M	LLD<2.17E+02	LLD<2.17E+02	109.27
TE-132	LLD<9.28E-01	LLD<9.28E-01	228.16
TH-228	LLD<7.31E+01	LLD<7.31E+01	84.37
TL-208	LLD<1.63E+00	LLD<1.63E+00	583.14
U-235	LLD<1.32E+00	LLD<1.32E+00	185.71
U-237	LLD<3.81E+00	LLD<3.81E+00	208.00
W-187	LLD<4.25E+00	LLD<4.25E+00	685.74
XE-131M	LLD<3.59E+01	LLD<3.59E+01	163.98
XE-133	LLD<2.53E+00	LLD<2.53E+00	81.00
XE-133M	LLD<8.46E+00	LLD<8.46E+00	233.21
XE-135	LLD<9.51E-01	LLD<9.51E-01	249.79
XE-138	LLD<7.37E+00	LLD<7.37E+00	258.41
Y-88	LLD<5.49E-01	LLD<5.49E-01	1836.06
Y-91	LLD<3.01E+02	LLD<3.01E+02	1204.90
Y-91M	LLD<1.77E+00	LLD<1.77E+00	555.60
ZN-65	LLD<3.49E+00	LLD<3.49E+00	1115.55
ZR-95	LLD<2.29E+00	LLD<2.29E+00	756.73
ZR-97	LLD<1.33E+00	LLD<1.33E+00	743.33
TOTAL	4.56E+02 +-7.96E+00	4.56E+02 +-7.96E+00	

STANDARD DEVIATION = 0.25

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.56E-09 UC/LI
TOTAL MEASURED ACTIVITY = 4.56E+02 (+-7.96E+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
1127.34	563.30	630.	11.8	3.71E+01
1139.45	569.35	1074.	10.2	6.40E+01
1604.44	801.82	437.	8.9	3.50E+01
2729.28	1364.18	121.	20.8	1.50E+01
2800.95	1400.02	45.	44.6	5.69E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2921.06	1460.07	154.	18.9	2.02E+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 WESTINGHOUSE HANFORD          05-SEP-90  13:43:28


                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: 3.0
DETECTOR NUMBER:    3    /     GEOMETRY NUMBER:  41
SPECTRUM SIZE:  4096 CHANNELS
ORDER OF SMOOTHING FUNCTION:     5
NUMBER OF BACKGROUND CHANNELS:  4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 95.0%
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: SD3026
ANALYZED BY:        VR

SAMPLE DESCRIPTION: F932 SEG/COMP/#18
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 31-JAN-90 AT 21:28:11

COLLECT LIVE TIME:    3000. SECONDS
        REAL TIME:    3011. SECONDS
        DEAD TIME:     0.37 %

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

ENERGY CALIBRATION PERFORMED 17-OCT-89
EFFICIENCY CALIBRATION PERFORMED 31-JUL-89
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222-S COUNTING ROOM WESTINGHOUSE HANFORD 05-SEP-90 13:43:28

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?	63.85	32.51	1.16	2123.	3244.	8.8	CE-144
2?	72.81	36.98	1.16	1626.	699.	27.8	
3C	1126.16	563.13	1.38	850.	826.	11.2	CS-134, EU-152
4C	1138.28	569.19	1.38	819.	1411.	9.6	CS-134, BI-207
5C	1209.06	604.56	1.43	825.	9396.	2.6	CS-134
6	1322.89	661.45	1.52	606.	14610.	1.7	CS-137
6B		661.41			81.	28.8	
7C	1591.13	795.52	1.56	496.	6580.	3.1	CS-134
8C	1603.32	801.61	1.56	467.	615.	11.2	CS-134
9	2345.60	1172.76	1.82	431.	6080.	2.8	CO-60
10	2663.95	1332.00	1.99	115.	5540.	2.7	CO-60
11	2728.92	1364.50	1.57	40.	162.	20.6	CS-134
12	2920.52	1460.36	1.98	59.	646.	8.8	K-40
12B		1460.58			611.	5.5	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 95.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY
? - MULTIPLET ANALYSIS CONVERGED BUT GFIT > 4
B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0013
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 15-JAN-90 AT 11:00:00
BACKGROUND LIVE TIME: 7000. SECONDS

222-S COUNTING ROOM WESTINGHOUSE HANFORD 05-SEP-90 13:43:28

SAMPLE: F932 SEG/COMP/#18
DATA COLLECTED ON 31-JAN-90 AT 21:28:11
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<1.57E+00		LLD<1.57E+00		911.07	
AG-108M	LLD<3.13E-01		LLD<3.13E-01		433.94	
AG-110M	LLD<1.65E+00		LLD<1.65E+00		657.76	
AM-241	LLD<3.03E-01		LLD<3.03E-01		59.54	
AM-243	LLD<1.82E-01		LLD<1.82E-01		74.67	
AR-41	LLD<2.52E-01		LLD<2.52E-01		1293.64	
AU-198	LLD<3.01E-01		LLD<3.01E-01		411.80	
BA-133	LLD<3.87E-01		LLD<3.87E-01		356.02	
BA-139	LLD<7.95E-01		LLD<7.95E-01		165.85	
BA-140	LLD<1.25E+00		LLD<1.25E+00		537.27	
BA-141	LLD<8.63E-01		LLD<8.63E-01		190.23	
BE-7	LLD<3.04E+00		LLD<3.04E+00		477.59	
BI-207	LLD<3.32E-01		LLD<3.32E-01		569.70	
BI-212	LLD<4.57E+00		LLD<4.57E+00		727.27	
BI-214	LLD<2.38E+00		LLD<2.38E+00		609.32	
CD-109	LLD<3.14E+00		LLD<3.14E+00		88.03	
CE-139	LLD<1.80E-01		LLD<1.80E-01		165.85	
CE-141	LLD<2.88E-01		LLD<2.88E-01		145.44	
CEPR144	LLD<2.38E+00		LLD<2.38E+00		133.51	
CO-56	LLD<3.29E-01		LLD<3.29E-01		846.76	
CO-57	LLD<1.52E-01		LLD<1.52E-01		122.06	
CO-58	LLD<3.34E-01		LLD<3.34E-01		810.75	
CO-60	2.33E+01	+-7.00E-01	2.33E+01	+-7.00E-01	1332.50	-0.51
					1173.24	-0.48
CR-51	LLD<2.11E+00		LLD<2.11E+00		320.09	
CS-134	2.09E+01	+-6.99E-01	2.09E+01	+-6.99E-01	795.84	-0.33
					604.70	-0.14
CS-136	LLD<3.34E-01		LLD<3.34E-01		818.51	
CS-137	3.92E+01	+-8.71E-01	3.92E+01	+-8.71E-01	661.65	-0.20
CS-138	LLD<3.29E-01		LLD<3.29E-01		1435.86	
EU-152	LLD<1.46E+00		LLD<1.46E+00		1408.01	
EU-154	LLD<7.45E-01		LLD<7.45E-01		1274.45	
EU-155	LLD<5.48E-01		LLD<5.48E-01		105.31	
FE-59	LLD<8.82E-01		LLD<8.82E-01		1099.25	
HF-181	LLD<3.82E-01		LLD<3.82E-01		482.20	
HG-203	LLD<2.50E-01		LLD<2.50E-01		279.20	
I-131	LLD<3.22E-01		LLD<3.22E-01		364.48	
I-132	LLD<3.83E-01		LLD<3.83E-01		667.69	
I-133	LLD<3.36E-01		LLD<3.36E-01		529.69	
I-134	LLD<5.03E-01		LLD<5.03E-01		847.03	
I-135	LLD<9.70E-01		LLD<9.70E-01		1260.41	
K-40	LLD<4.68E+00		LLD<4.68E+00		1460.75	
KR-85	LLD<7.07E+01		LLD<7.07E+01		513.99	
KR-85M	LLD<2.20E-01		LLD<2.20E-01		151.17	
KR-87	LLD<7.10E-01		LLD<7.10E-01		402.58	
KR-89	LLD<9.59E+00		LLD<9.59E+00		220.90	
LA-140	LLD<2.02E-01		LLD<2.02E-01		1596.20	

LA-142	LLD<7.56E-01	LLD<7.56E-01	641.83
MN-54	LLD<3.60E-01	LLD<3.60E-01	834.83
MN-56	LLD<3.71E-01	LLD<3.71E-01	846.76
NA-22	LLD<2.73E-01	LLD<2.73E-01	1274.55
NA-24	LLD<1.74E-01	LLD<1.74E-01	1368.60
NB-94	LLD<3.05E-01	LLD<3.05E-01	702.63
NB-95	LLD<3.19E-01	LLD<3.19E-01	765.78
NB-97	LLD<2.00E+00	LLD<2.00E+00	657.92
NP-238	LLD<1.54E+00	LLD<1.54E+00	984.45
NP-239	LLD<1.42E+00	LLD<1.42E+00	277.60
PA-233	LLD<5.86E-01	LLD<5.86E-01	311.98
PA-234M	LLD<7.08E+01	LLD<7.08E+01	1001.03
PB-210	LLD<8.08E+00	LLD<8.08E+00	465.03
PB-212	LLD<4.69E-01	LLD<4.69E-01	239.00
PB-214	LLD<7.28E-01	LLD<7.28E-01	351.92
PO-210	LLD<2.92E+04	LLD<2.92E+04	804.00
PO-214	LLD<1.28E+04	LLD<1.28E+04	799.70
PO-216	LLD<2.23E+04	LLD<2.23E+04	804.90
PU-239	LLD<2.05E+03	LLD<2.05E+03	129.30
PU-241	LLD<7.44E+04	LLD<7.44E+04	148.57
RA-224	LLD<5.04E+00	LLD<5.04E+00	240.99
RA-226	LLD<5.15E+00	LLD<5.15E+00	186.10
RB-88	LLD<1.66E+00	LLD<1.66E+00	1836.00
RB-89	LLD<1.92E+00	LLD<1.92E+00	1031.88
RN-220	LLD<2.79E+02	LLD<2.79E+02	549.73
RU-103	LLD<3.12E-01	LLD<3.12E-01	497.08
RURH106	LLD<6.10E+00	LLD<6.10E+00	621.80
SB-124	LLD<5.31E-01	LLD<5.31E-01	602.72
SB-125	LLD<2.24E+00	LLD<2.24E+00	176.33
SC-46	LLD<4.67E-01	LLD<4.67E-01	1120.45
SE-75	LLD<3.33E-01	LLD<3.33E-01	264.66
SN-113	LLD<4.29E-01	LLD<4.29E-01	391.67
SR-85	LLD<3.10E-01	LLD<3.10E-01	513.99
SR-91	LLD<5.45E-01	LLD<5.45E-01	555.60
SR-92	LLD<2.71E-01	LLD<2.71E-01	1383.94
TA-182	LLD<1.22E+00	LLD<1.22E+00	1121.30
TC-99M	LLD<1.61E-01	LLD<1.61E-01	140.51
TE-123M	LLD<1.69E-01	LLD<1.69E-01	159.00
TE-125M	LLD<4.29E+01	LLD<4.29E+01	109.27
TE-132	LLD<2.23E-01	LLD<2.23E-01	228.16
TH-228	LLD<8.91E+00	LLD<8.91E+00	84.37
TL-208	LLD<3.82E-01	LLD<3.82E-01	583.14
U-235	LLD<3.15E-01	LLD<3.15E-01	185.71
U-237	LLD<9.00E-01	LLD<9.00E-01	208.00
W-187	LLD<1.06E+00	LLD<1.06E+00	685.74
XE-131M	LLD<7.51E+00	LLD<7.51E+00	163.98
XE-133	LLD<2.95E-01	LLD<2.95E-01	81.00
XE-133M	LLD<1.95E+00	LLD<1.95E+00	233.21
XE-135	LLD<2.26E-01	LLD<2.26E-01	249.79
XE-138	LLD<1.70E+00	LLD<1.70E+00	258.41
Y-88	LLD<1.58E-01	LLD<1.58E-01	1836.06
Y-91	LLD<9.73E+01	LLD<9.73E+01	1204.90
Y-91M	LLD<4.12E-01	LLD<4.12E-01	555.60
ZN-65	LLD<8.98E-01	LLD<8.98E-01	1115.55
ZR-95	LLD<5.70E-01	LLD<5.70E-01	756.73
ZR-97	LLD<3.01E-01	LLD<3.01E-01	743.33
TOTAL	8.34E+01 +-1.32E+00	8.34E+01 +-1.32E+00	

STANDARD DEVIATION = 0.16

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.47E-09 UC/LI
TOTAL MEASURED ACTIVITY = 8.34E+01 (+-1.32E+00) UC/LI
% TECH. SPEC. = ****** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 95.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
63.85	32.51	3244.	8.8	5.06E+01
72.81	36.98	699.	27.8	1.00E+01
1126.16	563.13	826.	11.2	3.02E+01
1138.28	569.19	1411.	9.6	5.22E+01
1603.32	801.61	615.	11.2	3.11E+01
2728.92	1364.50	162.	20.6	1.28E+01

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2920.52	1460.36	646.	8.8	5.39E+01

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	E60044
PROCEDURE/REV	LA-503-156
TECHNOLOGIST	R. D. Hale
DATE	02-08-90
TEMPERATURE	23 C
STARTING TIME	09:00; 02-07-90
ENDING TIME	15:00; 02-08-90
CHEMIST	S. A. Catlow

Americium Analysis

Water Digestion

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0897
2	Reagent Blank	F0946
3	Sample Composite 5	F0899
4	Duplicate Composite 5	F0900
5	Sample Composite 5	F0905
6	Duplicate Composite 5	F0906
7	Sample Composite 6	F0923
8	Duplicate Composite 6	F0924
9	Sample Composite 6	F0929
10	Duplicate Composite 6	F0930
11	Sample Composite 8	F0947

	DESCRIPTION	LAB ID
12	Duplicate Composite 8	F0948
13	Sample Composite 8	F0953
14	Duplicate Composite 8	F0954
15	Spike Composite 8	F0949
16	Final LMCS Check Std	F0950
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	16B43/100 uL			N/A
Spike	16B43/100 uL	F0947/1 mL		N/A

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

AEA ENERGY CALIBRATION

	TECH/ SHIFT	DATE	BELL #1	BELL #2	BELL#3	BELL #4	BELL #5	BELL #6	BELL #7	BELL #8
Np-237	VR/D	2/3/90	83	151	151	152	155	156	out	153
Pu 239/240		2/3/90	111	229	229	230	232	233	of	232
Am-241/Pu238		2/3/90	137	301	301	301	303	303	service	303
Cm-243/Cm-244		2/3/90	161	367	368	368	369	369		370
Np-237	AJ/D	2/4/90	83	151	150	152	152	154	out	150
Pu-239/240		2/4/90	110	229	228	230	230	231	of	229
Am-241/Pu-238		2/4/90	136	300	300	300	301	301	service	300
Cm-243/Cm-244		2/4/90	160	367	366	367	367	367		368
Np-237	AJ/D	2/5/90	82	149	148	150	153	155	out	151
Pu-239/240		2/5/90	110	228	226	228	231	231	of	230
Am-241/Pu-238		2/5/90	135	229	298	299	301	302	service	301
Cm-243/Cm-244		2/5/90	159	365	365	366	368	367		368
Np-237	VR/D	2/7/90	82	149	149	150	153	154	out	151
Pu-239/240		2/7/90	110	227	227	228	230	231	of	230
Am-241/Pu-238		2/7/90	135	298	299	298	301	301	service	301
Cm-243/Cm-244		2/7/90	159	364	365	365	367	367		368
Np-237	VR/D	2/8/90	81	150	150	152	155	156	out	152
Pu-239/240		2/8/90	109	227	228	230	232	233	of	231
Am-241/Pu-238		2/8/90	135	298	299	300	303	303	service	302
Cm-243/Cm-244		2/8/90	158	365	365	366	369	368		370
Np-237	VR/D	2/9/90	81	149	149	150	152	153	out	151
Pu-239/240		2/9/90	109	227	228	228	230	230	of	230
Am-241/Pu-238		2/9/90	135	299	299	299	301	300	service	301
Cm-243/Cm-244		2/9/90	159	365	366	365	367	366		369
Np-237	AJ/C	2/10/90	82	149	148	151	153	155	out	151
Pu-239/240		2/10/90	110	227	227	229	231	232	of	230
Am-241/Pu-238		2/10/90	136	299	298	300	302	302	service	302
Cm-243/Cm-244		2/10/90	160	365	365	366	368	367		369

F897-6582

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-897 SEG.COMP#7 6M
File ID: SD2726.SPC

Counted on: 2/13/90 @ 0: 0
Detector/Geometry number: 2/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2841.1	2830.9	299.349	299.349	24.000	16.162	12.000	5.953
2	3932.2	3937.6	253.170	253.170	20.000	13.999	10.000	4.917

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Pu238	0.4269	5.499	5.509	-0.010	0.08	63.53	1399.46	0.626E-03
	Am241		5.480	5.509	-0.029				0.479E-03
2		0.5731		5.297		0.07	85.29	1343.14	0.605E-03

DETECTOR CALIBRATION

Energy(MEV) = 4.107 + (0.0047)*Channel
Energy range (MeV): 4.107 TO 6.514
Efficiency = 0.0635 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	75197.0	100.000
Smoothed	75196.7	100.000
Composite fit	74407.8	98.950
Residuals	788.9	1.049

Analyzed by: _____
MAX

F 817.-6582

Raw Data Dump for 6E6 Spectrum: SP:SD2726.SPC

1	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
11	0.	0.	3.	1.	1.	2.	0.	0.	1.	1.
21	0.	2.	0.	0.	0.	3.	0.	2.	0.	2.
31	0.	1.	2.	1.	0.	3.	1.	3.	0.	0.
41	2.	1.	2.	1.	0.	1.	0.	0.	2.	0.
51	1.	3.	2.	1.	1.	2.	1.	1.	0.	0.
61	2.	3.	0.	1.	2.	2.	0.	1.	2.	1.
71	1.	1.	2.	0.	4.	3.	0.	2.	1.	1.
81	0.	0.	3.	1.	1.	3.	1.	0.	1.	2.
91	1.	1.	0.	0.	3.	1.	1.	5.	1.	3.
101	0.	2.	2.	1.	0.	0.	0.	1.	0.	2.
111	1.	3.	1.	1.	4.	2.	6.	2.	2.	0.
121	3.	2.	4.	2.	2.	2.	1.	4.	1.	3.
131	1.	2.	1.	1.	0.	4.	0.	2.	4.	2.
141	3.	5.	3.	2.	4.	1.	3.	1.	3.	0.
151	5.	4.	4.	0.	5.	1.	3.	2.	4.	5.
161	5.	5.	2.	5.	5.	4.	4.	7.	5.	3.
171	5.	7.	9.	8.	9.	9.	4.	3.	8.	8.
181	7.	6.	8.	8.	12.	10.	16.	11.	20.	12.
191	10.	12.	8.	19.	19.	24.	16.	11.	18.	29.
201	28.	25.	27.	33.	30.	33.	54.	49.	54.	52.
211	51.	63.	71.	83.	82.	88.	97.	95.	124.	150.
221	133.	181.	173.	204.	215.	224.	237.	237.	281.	330.
231	331.	354.	403.	433.	533.	506.	590.	676.	789.	843.
241	946.	1078.	1170.	1345.	1457.	1612.	1749.	1823.	2038.	2181.
251	2189.	2326.	2241.	2102.	1961.	1704.	1479.	1318.	972.	729.
261	589.	448.	393.	342.	265.	225.	192.	180.	203.	151.
271	145.	137.	171.	170.	185.	209.	236.	259.	274.	332.
281	396.	421.	508.	541.	628.	660.	766.	872.	995.	1063.
291	1157.	1298.	1305.	1402.	1481.	1579.	1557.	1612.	1547.	1444.
301	1185.	1132.	923.	796.	635.	528.	407.	333.	242.	160.
311	130.	99.	75.	57.	45.	29.	18.	12.	5.	2.
321	2.	4.	0.	1.	0.	1.	1.	1.	0.	0.
331	1.	1.	2.	1.	2.	2.	1.	1.	2.	2.
341	3.	1.	4.	4.	3.	0.	0.	0.	2.	0.
351	1.	2.	3.	1.	0.	0.	0.	0.	2.	0.
361	0.	0.	1.	0.	0.	3.	1.	0.	1.	0.
371	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	1.	2.	0.	0.	0.	0.
421	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.
431	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	1.	0.	0.	2.	0.
471	1.	0.	1.	1.	0.	1.	0.	1.	0.	1.
481	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
511	0.	0.								

P897.-6582

SPECTRUM SD2726.SPC

1 LEGEND: RAW = ... MODELED PEAKS = 1,2,..., ETC 15192.4

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G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F946 AM
File ID: SD3956.SPC

Counted on: 2/12/90 @15: 0
Detector/Geometry number: 3/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	4.9	4.3	353.061	353.061	24.000	27.195	12.000	4.586
2	122.1	47.0	296.965	296.965	12.000	0.111	6.000	4.586
3	2724.3	2794.8	253.936	253.936	24.000	18.856	12.000	4.432
4	4.3	3.1	108.186	108.186	72.000	295.052	36.000	17.485

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Ra224	0.0020	5.680	5.715	-0.035	0.13	0.15	0.82	0.368E-06
2	Th228	0.0007	5.430	5.445	-0.015	0.00	0.05	0.38	0.171E-06
3	Am243	0.9935	5.234	5.239	-0.005	0.09	78.29	3533.97	0.159E-02
4	U 235	0.0038	4.396	4.539	-0.143	1.42	0.30	2.64	0.119E-05

DETECTOR CALIBRATION

Energy(MEV) = 4.020 + (0.0048)*Channel
Energy range (MeV): 4.020 TO 6.477
Efficiency = 0.2014 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	39211.0	100.000
Smoothed	39209.6	99.996
Composite fit	39401.6	100.486
Residuals	-192.0	-0.490

Analyzed by: _____
MAX

Raw Data Dump for AEA Spectrum: SP:SD3956.SPC

1	0.	0.	0.	0.	0.	2.	0.	2.	0.	0.
11	1.	1.	0.	0.	1.	1.	0.	0.	0.	1.
21	3.	2.	1.	0.	0.	0.	3.	1.	1.	1.
31	3.	0.	1.	2.	0.	0.	1.	1.	0.	1.
41	0.	1.	2.	4.	1.	0.	1.	1.	0.	1.
51	0.	0.	3.	0.	0.	0.	1.	0.	0.	0.
61	0.	0.	1.	3.	1.	1.	1.	1.	1.	2.
71	0.	1.	1.	4.	2.	1.	0.	3.	3.	2.
81	1.	1.	1.	0.	0.	3.	2.	1.	0.	0.
91	1.	0.	0.	1.	1.	0.	0.	2.	3.	0.
101	1.	2.	2.	3.	3.	1.	4.	4.	1.	0.
111	2.	3.	2.	1.	1.	1.	2.	0.	4.	3.
121	1.	1.	1.	1.	2.	0.	3.	3.	3.	1.
131	2.	2.	3.	1.	5.	2.	2.	5.	1.	2.
141	3.	0.	1.	4.	3.	4.	2.	3.	2.	2.
151	3.	3.	3.	1.	2.	9.	2.	3.	3.	3.
161	5.	8.	6.	9.	0.	4.	5.	5.	7.	7.
171	5.	11.	2.	5.	5.	8.	12.	7.	8.	6.
181	11.	13.	15.	17.	9.	15.	21.	19.	14.	20.
191	28.	26.	22.	24.	31.	47.	38.	33.	49.	42.
201	42.	43.	40.	50.	57.	48.	62.	66.	86.	70.
211	84.	95.	99.	130.	148.	116.	141.	174.	159.	214.
221	197.	216.	235.	228.	257.	304.	342.	330.	370.	386.
231	442.	468.	496.	541.	546.	628.	598.	665.	778.	826.
241	863.	911.	967.	1074.	1099.	1169.	1251.	1278.	1305.	1377.
251	1445.	1512.	1452.	1456.	1360.	1349.	1273.	1129.	961.	830.
261	725.	583.	443.	341.	246.	222.	159.	122.	101.	72.
271	65.	43.	44.	39.	28.	13.	14.	6.	9.	5.
281	6.	6.	3.	0.	6.	5.	8.	2.	9.	5.
291	9.	4.	8.	5.	3.	5.	5.	10.	8.	9.
301	2.	6.	2.	1.	5.	3.	2.	5.	1.	1.
311	1.	2.	0.	0.	2.	0.	0.	1.	0.	2.
321	0.	0.	3.	1.	1.	0.	1.	0.	2.	1.
331	0.	2.	0.	1.	0.	2.	1.	1.	1.	2.
341	3.	1.	0.	1.	0.	2.	2.	3.	2.	4.
351	2.	5.	2.	0.	1.	4.	2.	3.	1.	0.
361	1.	0.	1.	0.	2.	1.	1.	0.	1.	0.
371	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.
421	0.	0.	0.	0.	0.	3.	0.	1.	1.	0.
431	0.	1.	1.	0.	1.	2.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
471	0.	0.	1.	0.	2.	2.	1.	2.	2.	3.
481	1.	0.	0.	1.	0.	0.	0.	0.	1.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

SPECTRUM SD3956.SPC

1 LEGEND: RAW = ... MODELED PEAKS = 1,2,..., ETC 10532.2

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G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-929 SEG.COMP#15 AM
File ID: SD9076.SPC

Counted on: 2/13/90 @ 1: 0
Detector/Geometry number: 8/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	73.1	29.1	301.336	301.336	12.000	4.439	6.000	0.000
2	2228.9	2323.7	258.177	258.177	24.000	14.084	12.000	2.354
3	0.0	0.1	61.450	61.450	0.000	0.200	0.000	0.200
4	0.0	0.1	25.747	25.747	0.000	0.200	0.000	0.200

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Am241	0.1058	5.480	5.477	0.003	0.03	8.77	120.84	0.544E-04
2		0.8942		5.275		0.07	74.11	959.93	0.432E-03
3		0.0000		4.350		0.00	0.00	0.01	0.286E-08
4	U 238	0.0000	4.200	4.182	0.018	0.00	0.00	0.01	0.376E-08

DETECTOR CALIBRATION
Energy(MEV) = 4.061 + (0.0047)*Channel
Energy range (MeV): 4.061 TO 6.468
Efficiency = 0.0772 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	38785.0	100.000
Smoothed	38784.1	99.998
Composite fit	41438.2	106.841
Residuals	-2654.1	-6.843

Analyzed by: _____
MAX

Raw Data Dump for AEA Spectrum: SP:SD8076.SPC

1	0.	0.	0.	0.	0.	0.	1.	6.	1.	3.
11	6.	4.	2.	0.	1.	4.	1.	5.	4.	5.
21	1.	4.	7.	2.	5.	2.	3.	3.	3.	8.
31	1.	2.	1.	2.	1.	2.	4.	2.	3.	1.
41	4.	2.	2.	3.	2.	2.	5.	5.	1.	4.
51	2.	2.	2.	4.	4.	0.	5.	6.	3.	7.
61	4.	7.	3.	1.	4.	3.	3.	3.	2.	2.
71	4.	2.	8.	4.	8.	5.	5.	4.	6.	6.
81	3.	6.	5.	7.	4.	4.	8.	10.	3.	3.
91	4.	5.	4.	7.	4.	8.	5.	5.	2.	9.
101	10.	5.	6.	3.	6.	7.	8.	9.	10.	5.
111	4.	11.	11.	6.	6.	9.	5.	13.	9.	6.
121	8.	8.	8.	6.	9.	9.	9.	8.	7.	13.
131	18.	10.	11.	10.	10.	13.	10.	12.	11.	10.
141	8.	9.	12.	14.	17.	19.	14.	9.	13.	17.
151	14.	20.	18.	20.	19.	16.	16.	16.	11.	26.
161	14.	22.	17.	25.	26.	15.	23.	26.	22.	19.
171	17.	26.	22.	28.	20.	27.	28.	38.	29.	28.
181	34.	45.	37.	34.	38.	38.	44.	42.	38.	54.
191	49.	42.	47.	60.	56.	60.	58.	69.	55.	63.
201	76.	92.	76.	80.	88.	90.	91.	96.	139.	107.
211	140.	128.	125.	145.	189.	154.	181.	184.	199.	205.
221	201.	260.	264.	300.	317.	316.	361.	369.	418.	411.
231	477.	462.	544.	556.	555.	605.	599.	608.	643.	700.
241	663.	707.	758.	751.	719.	793.	864.	857.	897.	1003.
251	1000.	1045.	1084.	1066.	1094.	1187.	1231.	1215.	1240.	1196.
261	1054.	876.	810.	639.	446.	302.	216.	177.	143.	109.
271	84.	82.	60.	52.	40.	37.	19.	17.	8.	9.
281	11.	3.	3.	4.	6.	3.	10.	1.	3.	8.
291	6.	6.	5.	7.	1.	6.	7.	7.	7.	10.
301	9.	8.	5.	4.	4.	7.	3.	4.	3.	3.
311	3.	1.	1.	0.	0.	2.	0.	0.	0.	2.
321	2.	0.	1.	2.	0.	0.	0.	1.	0.	0.
331	0.	0.	0.	2.	4.	0.	2.	0.	2.	2.
341	3.	0.	0.	0.	1.	2.	1.	1.	0.	0.
351	2.	0.	0.	1.	1.	0.	0.	1.	1.	4.
361	0.	3.	5.	1.	1.	0.	2.	1.	4.	2.
371	0.	2.	0.	2.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

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          SPECTRUM SD8076.SPC
1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..., ETC                    8215.9
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G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-930 SEG.COMP#16 AM
File ID: S06026.SPC

Counted on: 2/13/90 @ 11: 0
Detector/Geometry number: 6/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	34.4	29.8	302.016	302.016	12.000	1.671	6.000	0.000
2	2369.3	2476.1	253.470	253.470	28.000	21.578	14.000	4.440
3	0.0	0.1	39.720	39.720	0.000	0.200	0.000	0.200
4	0.0	0.1	30.087	30.087	0.000	0.200	0.000	0.200

PEAK RESULTS

Peak ID	Isotope	AREA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Th228	0.1044	5.430	5.464	-0.034	0.01	8.93	187.20	0.843E-04
	Am241		5.480	5.464	0.016				0.637E-04
2	Am243	0.8956	5.234	5.241	-0.007	0.10	76.64	10367.43	0.467E-02
3		0.0000		4.257		0.00	0.00	0.01	0.334E-08
4	U 238	0.0000	4.200	4.213	-0.013	0.00	0.00	0.01	0.425E-08

DETECTOR CALIBRATION
Energy(MEV) = 4.075 + (0.0046)*Channel
Energy range (MeV): 4.075 TO 6.430
Efficiency = 0.0672 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	40568.0	100.000
Smoothed	40567.3	99.999
Composite fit	42784.3	105.463
Residuals	-2217.1	-5.465

Analyzed by: _____
MAX

Raw Data Dump for AEA Spectrum: SP:SD6026.SPC

1	0.	0.	0.	0.	0.	0.	2.	1.	1.	1.
11	4.	0.	4.	3.	5.	1.	1.	4.	3.	2.
21	3.	4.	2.	5.	5.	1.	5.	4.	3.	5.
31	4.	4.	4.	2.	3.	1.	3.	4.	3.	3.
41	5.	5.	1.	2.	3.	2.	3.	2.	3.	1.
51	4.	2.	4.	2.	5.	3.	7.	4.	5.	2.
61	2.	6.	8.	4.	6.	2.	3.	2.	2.	4.
71	1.	7.	5.	4.	5.	9.	5.	5.	2.	3.
81	5.	6.	4.	7.	5.	9.	2.	5.	3.	7.
91	2.	1.	5.	5.	4.	6.	3.	3.	7.	9.
101	5.	5.	3.	5.	7.	9.	4.	10.	11.	4.
111	4.	4.	5.	13.	9.	11.	8.	11.	7.	10.
121	3.	6.	6.	11.	6.	8.	9.	8.	7.	4.
131	5.	10.	12.	9.	13.	7.	8.	16.	13.	10.
141	11.	12.	10.	14.	15.	19.	15.	13.	16.	19.
151	15.	17.	19.	19.	14.	25.	18.	18.	16.	24.
161	15.	13.	25.	21.	18.	23.	17.	24.	27.	25.
171	20.	22.	24.	20.	25.	22.	17.	46.	36.	26.
181	38.	36.	37.	40.	33.	45.	43.	44.	57.	46.
191	36.	41.	58.	61.	60.	71.	70.	55.	71.	80.
201	94.	71.	91.	107.	74.	97.	123.	111.	133.	114.
211	154.	150.	145.	169.	182.	193.	189.	200.	214.	224.
221	270.	259.	292.	298.	304.	342.	360.	362.	411.	438.
231	463.	527.	563.	591.	631.	630.	667.	726.	759.	851.
241	856.	954.	943.	957.	1037.	1113.	1199.	1126.	1214.	1250.
251	1284.	1258.	1219.	1253.	1229.	1175.	1035.	1015.	964.	879.
261	734.	593.	448.	368.	248.	216.	169.	118.	98.	85.
271	63.	49.	44.	26.	26.	22.	19.	10.	12.	14.
281	6.	4.	4.	3.	3.	4.	5.	4.	4.	5.
291	5.	5.	7.	5.	3.	5.	6.	2.	9.	8.
301	7.	7.	7.	5.	6.	4.	4.	3.	2.	1.
311	2.	1.	4.	0.	1.	1.	1.	0.	0.	1.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
341	0.	1.	0.	0.	0.	1.	1.	1.	0.	0.
351	1.	2.	0.	0.	0.	0.	0.	2.	0.	3.
361	1.	0.	0.	0.	2.	0.	0.	0.	1.	0.
371	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.
421	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
431	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.
441	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
481	0.	1.	0.	0.	0.	2.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0								

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          SPECTRUM SD6026.SPC
1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..., ETC                    9382.2
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12.
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G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-949 SEG.COMP#11 AM
File ID: S03258.SPC

Counted on: 2/13/90 @ 1: 0
Detector/Geometry number: 3/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	69.9	45.7	294.281	294.281	16.000	8.685	8.000	0.000
2	1416.7	1464.9	248.325	248.325	32.000	25.605	16.000	4.657
3	2.4	3.3	101.979	101.979	152.000	2.000	76.000	0.200
4	0.0	0.1	27.155	27.155	0.000	0.200	0.000	0.200

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Th228	0.2115	5.430	5.432	-0.002	0.04	13.54	94.68	0.426E-04
2	Am243	0.7866	5.234	5.212	0.022	0.12	50.35	2272.65	0.102E-02
3		0.0019		4.509		0.01	0.12	0.61	0.274E-06
4		0.0000		4.150		0.00	0.00	0.00	0.106E-08

DETECTOR CALIBRATION

Energy(MEV) = 4.020 + (0.0048)*Channel
Energy range (MeV): 4.020 TO 6.477
Efficiency = 0.2014 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	31305.0	100.000
Smoothed	31295.7	99.970
Composite fit	32005.0	102.236
Residuals	-709.3	-2.266

Analyzed by: _____
MAX

Raw Data Dump for AEA Spectrum: SP:SD3950.SPC

1	0.	0.	0.	0.	0.	8.	10.	10.	11.	10.
11	11.	11.	18.	16.	6.	10.	10.	14.	7.	12.
21	16.	15.	9.	10.	17.	10.	16.	15.	9.	10.
31	9.	17.	16.	4.	11.	8.	10.	11.	16.	14.
41	17.	9.	11.	14.	14.	19.	23.	12.	11.	17.
51	18.	9.	12.	14.	20.	17.	16.	12.	18.	11
61	18.	17.	12.	15.	8.	20.	17.	11.	17.	14.
71	12.	20.	20.	21.	20.	17.	13.	18.	16.	25.
81	17.	22.	18.	14.	24.	15.	19.	20.	14.	21.
91	27.	25.	23.	20.	22.	15.	24.	22.	30.	29.
101	24.	23.	20.	23.	29.	17.	23.	19.	26.	18.
111	22.	24.	25.	23.	29.	22.	26.	18.	24.	33.
121	24.	33.	25.	30.	29.	28.	27.	24.	31.	23.
131	19.	29.	28.	36.	31.	30.	29.	33.	27.	27.
141	28.	29.	31.	41.	32.	44.	46.	42.	28.	49.
151	54.	34.	47.	33.	31.	38.	37.	50.	42.	51.
161	51.	47.	41.	45.	60.	37.	60.	43.	44.	38.
171	37.	40.	59.	48.	55.	59.	60.	65.	57.	60.
181	53.	59.	68.	65.	64.	60.	74.	56.	86.	84.
191	68.	75.	82.	82.	76.	93.	101.	86.	95.	102.
201	110.	109.	110.	144.	129.	131.	137.	140.	152.	151.
211	155.	170.	165.	181.	183.	201.	199.	213.	208.	236.
221	216.	270.	261.	292.	303.	324.	347.	335.	400.	403.
231	396.	472.	456.	515.	498.	565.	564.	588.	650.	672.
241	661.	696.	733.	764.	768.	747.	758.	762.	760.	739.
251	693.	664.	626.	613.	511.	472.	422.	360.	297.	263.
261	177.	187.	139.	101.	85.	61.	53.	35.	41.	26.
271	25.	18.	16.	19.	17.	18.	7.	16.	12.	14.
281	13.	16.	11.	11.	10.	16.	12.	12.	14.	7.
291	9.	15.	16.	16.	17.	10.	8.	17.	9.	9.
301	5.	7.	5.	9.	5.	1.	3.	2.	2.	3.
311	1.	1.	2.	3.	1.	1.	0.	0.	2.	0.
321	2.	0.	1.	1.	0.	1.	1.	1.	2.	0.
331	0.	1.	1.	4.	2.	0.	1.	1.	2.	1.
341	1.	2.	1.	1.	0.	1.	1.	1.	2.	1.
351	1.	1.	0.	0.	1.	1.	0.	0.	0.	0.
361	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
371	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	1.	0.	0.	1.	0.	0.	1.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	1.	0.	0.	0.	0.	2.	0.
431	0.	1.	0.	0.	0.	0.	0.	1.	0.	1.
441	1.	0.	0.	0.	1.	0.	1.	0.	0.	0.
451	0.	1.	2.	0.	0.	1.	0.	0.	0.	0.
461	0.	1.	1.	0.	1.	1.	1.	0.	2.	2.
471	1.	1.	0.	1.	0.	1.	0.	0.	0.	0.
481	1.	0.	2.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

```
          SPECTRUM SD3958.SPC
1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..., ETC                5540.0
 1
 1
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11
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31
31
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21
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.1
1
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281	25.	24.	19.	15.	27.	27.	32.	31.	21.	17.
291	39.	32.	29.	37.	36.	39.	41.	53.	48.	46.
301	44.	39.	46.	50.	38.	25.	19.	11.	15.	14.
311	13.	10.	3.	3.	0.	1.	1.	2.	1.	1.
321	1.	2.	4.	3.	4.	8.	2.	6.	5.	12.
331	15.	11.	19.	28.	19.	44.	58.	66.	61.	79.
341	111.	133.	223.	251.	317.	337.	410.	462.	517.	649.
351	696.	725.	856.	938.	951.	1047.	1069.	1106.	1083.	981.
361	942.	817.	655.	565.	445.	311.	234.	159.	99.	75.
371	48.	23.	21.	5.	6.	0.	2.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	1.	0.	2.	2.	1.	1.
421	3.	1.	1.	1.	0.	0.	1.	3.	0.	0.
431	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
451	0.	0.	0.	2.	2.	1.	0.	2.	0.	2.
461	7.	2.	5.	2.	6.	1.	5.	4.	8.	7.
471	4.	7.	7.	2.	2.	3.	5.	1.	2.	0.
481	2.	0.	0.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

G E N E R A L A L P H A E N E R G Y A N A L Y S I S

Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F950 AM
File ID: SD2724.SPC

Counted on: 2/12/90 @15: 0
Detector/Geometry number: 2/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	17.8	11.2	347.151	347.151	12.000	0.091	6.000	0.000
2	2259.9	2267.7	299.307	299.307	24.000	17.119	12.000	4.348
3	3066.1	3106.7	253.961	253.961	24.000	14.243	12.000	3.364

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Pu236	0.0265	5.756	5.742	0.014	0.00	3.83	19.94	0.898E-05
2	Pu238	0.4131	5.499	5.512	-0.013	0.08	59.70	423.25	0.191E-03
	Am241		5.480	5.512	-0.032				0.146E-03
3		0.5604		5.295		0.07	80.98	413.39	0.186E-03

DETECTOR CALIBRATION

Energy(MEV) = 4.076 + (0.0048)*Channel
Energy range (MeV): 4.076 TO 6.533
Efficiency = 0.1959 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	71370.0	100.000
Smoothed	71369.7	100.000
Composite fit	72254.9	101.240
Residuals	-885.3	-1.240

Analyzed by: _____
MAX

Raw Data Dump for AEA Spectrum: SP:SD2724.SPC

1	0.	0.	0.	0.	0.	0.	1.	0.	0.	3.
11	2.	1.	0.	0.	1.	0.	0.	1.	2.	0.
21	0.	0.	1.	0.	2.	0.	1.	1.	0.	2.
31	1.	1.	2.	0.	1.	0.	1.	2.	2.	1.
41	0.	0.	0.	0.	1.	1.	1.	1.	1.	1.
51	0.	0.	0.	3.	0.	1.	1.	1.	0.	2.
61	1.	0.	3.	0.	0.	0.	0.	0.	1.	1.
71	1.	3.	0.	1.	0.	0.	1.	1.	1.	3.
81	2.	1.	3.	2.	1.	3.	0.	2.	3.	1.
91	0.	3.	3.	4.	1.	3.	4.	3.	2.	2.
101	1.	0.	2.	2.	2.	5.	1.	2.	0.	0.
111	1.	0.	2.	0.	4.	0.	1.	2.	2.	0.
121	2.	4.	2.	0.	2.	1.	2.	0.	2.	4.
131	1.	0.	1.	4.	2.	3.	4.	3.	5.	4.
141	3.	4.	3.	5.	3.	2.	5.	6.	3.	5.
151	6.	5.	10.	10.	2.	4.	7.	7.	8.	7.
161	6.	9.	2.	1.	8.	6.	10.	7.	8.	11.
171	9.	10.	9.	12.	9.	20.	22.	10.	13.	17.
181	19.	17.	20.	14.	34.	24.	24.	21.	27.	31.
191	43.	42.	29.	45.	45.	46.	53.	58.	48.	65.
201	64.	60.	70.	83.	97.	82.	93.	116.	116.	107.
211	121.	147.	163.	150.	174.	187.	188.	193.	213.	215.
221	288.	298.	313.	329.	324.	372.	383.	403.	413.	443.
231	449.	479.	519.	562.	548.	572.	626.	662.	750.	843.
241	894.	933.	1006.	1146.	1214.	1338.	1373.	1513.	1536.	1619.
251	1686.	1740.	1708.	1741.	1678.	1583.	1410.	1245.	1020.	842.
261	701.	564.	308.	337.	309.	280.	270.	278.	227.	222.
271	211.	244.	256.	239.	264.	270.	296.	300.	339.	359.
281	435.	446.	466.	483.	567.	652.	671.	675.	733.	854.
291	934.	972.	1045.	1059.	1103.	1226.	1223.	1235.	1222.	1260.
301	1132.	1017.	891.	839.	693.	545.	470.	350.	298.	222.
311	171.	115.	93.	70.	50.	40.	21.	12.	8.	7.
321	3.	3.	0.	3.	0.	1.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	1.	2.	4.	2.	1.
341	1.	1.	2.	3.	1.	5.	1.	2.	1.	2.
351	2.	2.	1.	0.	0.	0.	1.	2.	0.	0.
361	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
371	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
381	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	1.	2.	1.	2.	0.	0.	0.	0.
431	1.	2.	0.	0.	1.	0.	1.	0.	0.	0.
441	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
461	2.	1.	0.	1.	0.	0.	0.	0.	2.	0.
471	0.	0.	1.	1.	1.	4.	1.	0.	1.	0.
481	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

```
          SPECTRUM SD2724.SPC
1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..., ETC                12207.0
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12.........................................................3...
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Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Beckman
PROCEDURE/REV	LA-348-104/A-0
TECHNOLOGIST	S. Lai
DATE	07-18-90
TEMPERATURE	N/A
STARTING TIME	11:30
ENDING TIME	15:30
CHEMIST	S.A. Catlow

Carbon 14 Analysis
Water Digestion
Third Leaching

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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	31B46/1.0 mL			N/A
Spike	31B46/1.0 mL	F0931/10 mL		N/A

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

Single Shell Tank
Calibration Record

Analyte:	C-14		
Procedure:	LA-508-121	Revision:	A-0
Instrument:	Liquid Scintillation Counter	Property Number:	WA77390
Technologist:	R. A. Jones	Payroll Number:	65801
Date:	July 18, 1990		

Calibration Standard ID: Packard 6008502 #2

Analyte Concentration: See Attached Calibration Sheets.

Type of Calibration:

Comments:

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

PRESET TIME: 10.00

ISR: 3 SCR: 1   25/232:11

MONITOR: Y POST CHAIN VIAL: 0 VOLUME: 1

CPM: 992.98

SIGMA: 0.10 2RD SUB: 0.00 BKG SCRIP: 0.00

SEP 1992 13:59

UNKNOWN REPLICATES: 1

1.00000

BACKGROUND QUENCH CURVE: ...

QUENCH LIMITS   LOW: 0.000   HIGH: 253.7

0.04	10.00	10.04	150.5	0.36 **	

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B: 0.0000000   C: 0.0000000   D: 0.000000000000

BACKGROUND QUENCH CURVE CORRELATION TABLE

		STANDARD CPM	CALCULATED CPM	PERCENT DIFF.	FLAG
	[illegible]	19.79	19.79	0.00	

LIMITS   LOW: 0.000   HIGH: 1000.
LIMITS   LOW: 0.010   HIGH: 253.7

				EL TIME	AVG H#	RCM: 2S	SRS
3	1	[illegible]	1.57	10.00	21.83 141.0	0.62 **	
					ISO1 DPM	:1059.327	
2	4	1	15.50	10.00	22.56 139.0	0.77 **	
					ISO1 DPM	:5.273040	
	5	1	[illegible]	10.00	12.30 145.0	0.51 **	
					ISO1 DPM	:37.120/9	

SAM	POS	CH	CPM	2SIGX	TIME	EL TIME	[illegible]	[illegible]	[illegible]
4	[illegible]	1	[illegible]	7.35	10.00	[illegible]	[illegible]	[illegible]	[illegible]
	1501	[illegible]	[illegible]				1501	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	1.61	10.00	[illegible]	[illegible]	[illegible]	[illegible]
	1501	[illegible]	[illegible]				1501	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	10.00	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]								
	1501	[illegible]	[illegible]				1501	[illegible]	[illegible]

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Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	N/A
Procedure/Rev	LA-378-103/A-2
Technologist	S. Cervantes
Date	2-23-90
Temperature	26 C
Starting Time	01:00; 2-20-90
Ending Time	11:00; 2-24-90
Chemist	S. A. Catlow

Iodine 129 Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
7		
8		
9		
10		
11		

	Description	Lab ID
12		
13		
14		
15		
16		
17		
18		
19		
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21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Bk# & Alqt. Vol.	Final Vol. of Std.
LMCS Check Std	124B44 / 1 mL			N/A
Spike	124B44/1 mL	F0931/ 1 mL		N/A

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

Single Shell Tank
Calibration Record

Analyte:	I-129		
Procedure:	LQ-508-003	Revision:	B-1
Instrument:	Jupiter Canberra	Property Number:	401934
Technologist:	J. L. Anderson	Payroll Number:	61413
Date:	January 9, 1989		

Calibration Standard ID: 104B16A:105B16A

Analyte Concentration: N/A

Type of Calibration: Efficiency

Comments:

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

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[illegible] ISOTOPE FILE

No.	Isotope	Half-life	KPC Value	Calc.Error
	Energy	Abs.Int.(%)		
1	1 [illegible]	[illegible]	---	[illegible]
	39.6	7.50		
2	[illegible]	[illegible]	---	[illegible]
	59.5	35.90		
3	[illegible]	[illegible]	---	[illegible]
	74.7	65.00		
4	89 125	[illegible]	---	[illegible]
	176.3	6.80		
5	[illegible]	[illegible]	---	[illegible]
	136.0	59.00		
	121.1	17.30		

Maximum Energy Error for Isotope Identification = 1.5 Kev

KPC values are corrected for decay.

Command-- ?

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AUTOMATIC ISOTOPE ANALYSIS 21-FEB-90 18:48:58

SAMPLE PARAMETERS

Spectrum Label:	F-927 SED.COMP113	
Sample Counting Date	21-FEB-90	18:47:50
Sample Collection Date	21-FEB-90	18:47:00
Decay Time	0. Days	0.016 Hrs.
Acq.Live Time	3000 Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Acq.Device	[illegible]
Search Range	25 - [illegible] keV
Max. % Error	50.0 %
Filter Width	[illegible]
[illegible] Sel.Factor	0.1
[illegible]	[illegible]
keV/Ch.	0.20
Zero Offset	[illegible]

Lineshape File Name: JIM -- HP SHP FILE [illegible]
Efficiency File Name: JEA01 -- HP EFF TABLE [illegible]
Isotope File Name: UIM01 -- HP DET. [illegible]

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**** PEAK SEARCH TABLE ****

No.	O.Energy (keV)	1.Energy (keV)	Net Cnts.	Bkgd.	% Err.	FWHM (keV) %	Eff.	
1	29.34	29.3	3379.	857.	[illegible]	1.375	[illegible]	
2	34.04	34.0	728.	857.	5.7	1.375	[illegible]	
3	39.3	39.2	584.	1054.	7.1	1.373	[illegible]	I 129
4	65.7	65.5	31.	111.	46.3	1.366	[illegible]	
5	74.2	74.0	56.	117.	27.5	1.367	[illegible]	Am 241
6	96.4	96.1	136.	214.	15.6	1.366	0.5832E+00	
7	120.5	120.1	510.	236.	[illegible]	1.366	[illegible]	SE 75
8	136.3	134.9	1729.	215.	[illegible]	[illegible]	[illegible]	SE 75

***** IDENTIFIED ISOTOPES *****

Nuclide / Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
I 129 ?	0.139E-03 +/- 0.966E-05		1.00			
39.6	0.139E-03	7.50	11.67	7.1	0.4	
Am 243 ?	0.124E-05 +/- 0.342E-06		1.00			
74.7	0.124E-05	66.00	1.12	27.5	0.7	
SE 75	0.517E-04 +/- 0.125E-05		1.00			
136.0	0.520E-04	59.00	34.40	2.7	[illegible]	
121.1	0.502E-04	17.30	10.37	5.2	[illegible]	

***** MDL TABLE *****

Nuclide / Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
AM 241			1.00			
59.5	<0.219E-05	35.90	< 0.98			
SB 125			1.00			
176.3	<0.178E-04	6.80	< 1.06			

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***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
29.3	67.56	2.0	65.5	0.61	46.3	98.1	2.72	15.8
34.0	14.56	5.7						

STOP --
E04500

AUTOMATIC ISOTOPE ANALYSIS 21-FEB-90 21:10:55

SAMPLE PARAMETERS

Spectrum Label:	F-929 SEG.COMP#14	
Sample Counting Date	21-FEB-90	19:45:20
Sample Collection Date	21-FEB-90	19:45:00
Decay Time	0. Days	0.00E Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Num.Group	1AB
Search Range	25 - 200 keV
Max. % Error	50.0 %
Filter Width	1.0 keV
Multiplet Sep.Factor	[illegible]
Max.Delta-E	[illegible] keV
keV/Ch.	[illegible]
Zero Offset	[illegible] keV

Lineshape File Name: JIM -- H2 SHP FILE 5/13/86
Efficiency File Name: WEH01 -- H2 EFF TABLE 5/13/86
Isotope File Name: WIH01 -- H-2 DET. ISOTOPE FILE

**** PEAK SEARCH TABLE ****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Bend.	% Err.	FWHM (keV)	Eff.	
1	31.7*	31.7	122.	351.	19.4	1.375	0.4322E+00	
2	59.3	59.2	33.	99.	40.7	1.368	0.5628E+00	Am 241
3	74.4	74.2	47.	135.	34.1	1.367	0.6146E+00	AM 243
4	96.4	96.1	153.	194.	13.9	1.366	0.5832E+00	
5	120.6	120.2	502.	197.	5.7	1.366	0.5374E+00	SE 75
6	135.3	134.9	1731.	269.	2.7	1.367	0.5050E+00	SE 75

***** IDENTIFIED ISOTOPES *****

Nuclide / Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
AM 241 ?	0.148E-05 +/- 0.603E-06		1.00			
59.5	0.148E-05	35.90	0.88	40.7	0.3	
AM 243 ?	0.104E-05 +/- 0.355E-06		1.00			
74.7	0.104E-05	66.00	0.94	34.1	0.5	
SE 75	0.516E-04 +/- 0.125E-05		1.00			
136.0	0.523E-04	59.00	34.53	2.7	1.1	
121.1	0.486E-04	17.30	10.04	5.7	0.4	

***** MDL TABLE *****

Nuclide / Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
I 129			1.00			
39.6	<0.124E-04	7.50	<	1.05		
SB 125			1.00			
176.3	<0.163E-04	6.80	<	1.09		

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
31.7	2.45	19.4	96.1	3.06	13.9			

STOP --
RG4500

AUTOMATIC ISOTOPE ANALYSIS 21-FEB-90 22:05:16

SAMPLE PARAMETERS

Spectrum Label:	F-929 SEG.COMP#15	
Sample Counting Date	21-FEB-90	21:12:27
Sample Collection Date	21-FEB-90	21:12:00
Decay Time	0. Days	0.007 Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 Gm	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Mem.Group	1AB
Search Range	25 - 20[illegible] keV
Max. % Error	50.[illegible] %
Filter Width	1.[illegible] keV
[illegible] Det.Factor	[illegible]
Max.Delta-E	[illegible] keV
keV/Ch.	0.20
Zero Offset	0.[illegible] keV

Lineshape File Name:	JIM	-- H2 SHP FILE 5/13/86
Efficiency File Name:	WEM01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIM01	-- H-2 DET. ISOTOPE FILE

***** PEAK SEARCH TABLE *****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Band.	% Err.	FWHM (keV)	Eff.	
1	31.9*	31.9	105.	399.	23.7	1.375	0.4335E+00	
2	59.1	59.0	31.	115.	46.7	1.369	0.5625E+00	AM 241
3	65.6	65.4	37.	89.	35.2	1.368	0.5[illegible]E+00	
4	96.5	96.2	126.	231.	17.6	1.366	0.5830E+00	
5	120.5	120.1	578.	211.	5.2	1.366	0.5376E+00	SE 75
6	135.4	135.0	1696.	228.	2.7	1.367	0.5048E+00	SE 75
7	142.9	142.5	35.	148.	46.4	1.368	0.4869E+00	

***** IDENTIFIED ISOTOPES *****

Nuclide / Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
AM 241 ?	0.137E-05 +/- 0.637E-06		1.00			
59.5	0.137E-05	35.90	0.61	46.7	0.5	
SE 75	0.521E-04 +/- 0.124E-05		1.00			
136.0	0.513E-04	59.00	33.92	2.7	1.0	
121.1	0.559E-04	17.30	11.55	5.2	1.0	

- -

***** MDL TABLE *****

Nuclide / Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
I 129			1.00			
39.6	<0.132E-04	7.50	<	1.12		
AM 243			1.00			
74.7	<0.134E-05	66.00	<	1.21		
SB 125			1.00			
176.3	<0.163E-04	6.80	<	0.97		

- -

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
31.9	2.09	23.7	96.2	2.32	17.6	142.5	0.67	46.4
85.4	0.74	25.2						

STOP --
BG4500

AUTOMATIC ISOTOPE ANALYSIS 22-FEB-90 00:51:12

SAMPLE PARAMETERS

Spectrum Label:	F-930 SEG.COMP#16	
Sample Counting Date	21-FEB-90	23:11:56
Sample Collection Date	21-FEB-90	23:11:00
Decay Time	0. Days	0.016 Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Mem.Group	1A6
Search Range	25 - 200 keV
Max. % Error	50.0 %
Filter Width	1.6 keV
Multiplet Det.Factor	0.1
Max.Deltam	1.[illegible] keV
keV/Ch.	0.20
Zero Offset	0.[illegible] keV

Lineshape File Name:	JIM	-- H2 SHP FILE 5/13/86
Efficiency File Name:	WEM01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIM01	-- H-2 DET. ISOTOPE FILE

***** PEAK SEARCH TABLE *****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Band.	% Err.	FWHM (keV)	Eff.	
1	32.0	32.0	124.	214.	17.3	1.375	0.4[illegible]E+00	
2	53.3	53.2	30.	82.	40.4	1.370	0.5583E+00	
3	66.6	66.4	28.	107.	49.5	1.368	0.5900E+00	
4	74.6	74.4	39.	136.	40.4	1.367	0.6151E+00	AM 243
5	96.4	96.1	147.	200.	14.7	1.366	0.5832E+00	
6	120.5	120.1	555.	211.	5.4	1.366	0.5376E+00	SE 75
7	135.4	135.0	1748.	244.	2.6	1.367	0.504[illegible]E+00	SE 75

***** IDENTIFIED ISOTOPES *****

Nuclide / Energy	UCI/GM	Decay Corr. Abundance(%)	Rate(CPM)	% Err	Delta-E	%MPC
AM 243 ?	0.857E-06 +/- 0.345E-06		1.00			
74.7	0.857E-06	66.00	0.77	40.4	0.3	
SE 75	0.530E-04 +/- 0.128E-05		1.00			
136.0	0.529E-04	59.00	24.99	3.1	1.0	
121.1	0.539E-04	17.30	11.11	5.4	1.0	

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***** MDL TABLE *****

Nuclide / Energy	UCI/GM	Decay Corr. Abundance(%)	Rate(CPM)	% Err	Delta-E	%MPC
I 129			1.00			
39.6	<0.112E-04	7.50	< 0.95			
AM 241			1.00			
59.5	<0.234E-05	35.90	< 1.05			
SB 125			1.00			
176.3	<0.167E-04	6.80	< 0.99			

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
32.0	2.47	17.3	66.4	0.55	49.5	96.1	2.94	14.7
53.2	0.61	40.4						

STOP
DG4500

SAMPLE PARAMETERS

Spectrum Label:	F-931 SEG.COMP#17	
Sample Counting Date	22-FEB-90	00:52:39
Sample Collection Date	22-FEB-90	00:52:00
Decay Time	0. Days	0.011 Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Mem.Group	1A8
Search Range	25 - 200 keV
Max. % Error	50.0 %
Filter Width	1.0 keV
Multiplet Det.Factor	0.1
Max.Delta-E	1.[illegible] keV
keV/Ch.	0.20
Zero Offset	0.00 keV

Lineshape File Name:	JIM	-- H2 SHP FILE 5/13/86
Efficiency File Name:	WEH01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIM01	-- H-2 DET. ISOTOPE FILE

***** PEAK SEARCH TABLE *****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Bkgd.	% Err.	FWHM (keV)	Eff.	
1	29.4*	29.4	4355.	850.	1.7	1.375	0.0000E+00	
2	34.0*	34.0	842.	850.	5.1	1.375	0.4492E+00	
3	39.4	39.3	660.	1066.	6.5	1.373	0.5067E+00	I 129
4	74.7	74.5	57.	145.	29.2	1.367	0.8154E+00	AM 243
5	96.2*	95.9	178.	366.	14.2	1.366	0.9835E+00	
6	120.6	120.2	580.	204.	5.2	1.366	0.9874E+00	SE 75
7	135.3	134.9	1785.	252.	2.6	1.367	0.9950E+00	SE 75

***** IDENTIFIED ISOTOPES *****

Nuclide Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
I 129 ?	0.156E-03 +/- 0.101E-04		1.00			
39.6	0.156E-03	7.50	13.19	6.5	0.3	
AM 243 ?	0.126E-05 +/- 0.368E-06		1.00			
74.7	0.126E-05	66.00	1.14	29.1	0.2	
SE 75	0.544E-04 +/- 0.127E-05		1.00			
136.0	0.540E-04	59.00	35.69	2.6	1.1	
121.1	0.562E-04	17.30	11.61	5.2	0.9	

***** ABL TABLE *****

Nuclide Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
AM 241			1.00			
59.5	<0.246E-05	35.90	< 1.11			
SB 125			1.00			
176.3	<0.177E-04	6.80	< 1.06			

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
29.4	87.09	1.7	34.0	16.84	5.1	95.9	3.57	14.2

STOP --
BG4500

SAMPLE PARAMETERS

Spectrum Label:	F-932 SEG.COMP#10	
Sample Counting Date	22-FEB-90	02:41:48
Sample Collection Date	22-FEB-90	02:41:00
Decay Time	0. Days	0.013 Hrs.
Acq.Live Time	3000. Sec.	
Acq.Clock Time	3003. Sec.	
Deadtime	0.1 %	
Sample Mass	1.000 GM	
Eff.Corr.Factor	1.000	

PEAK SEARCH PARAMETERS

Mem.Group	1AB
Search Range	25 - 200 keV
Max. % Error	50.0 %
Filter Width	1.6 keV
Multiplet Det.Factor	0.1
Max.Delta-E	1.5 keV
keV/Ch.	0.20
Zero Offset	0.30 keV

Lineshape File Name:	JIM	-- H2 SHP FILE 5/13/86
Efficiency File Name:	WEM01	-- H2 EFF TABLE 5/13/86
Isotope File Name:	WIM01	-- H-2 DET. ISOTOPE FILE

**** PEAK SEARCH TABLE ****

No.	O.Energy (keV)	T.Energy (keV)	Net Cnts.	Bgnd.	% Err.	FWHM (keV)	Eff.	
1	29.4*	29.4	2999.	812.	2.1	1.375	0.0000E+00	
2	34.0*	34.0	635.	812.	6.2	1.375	0.4492E+00	
3	39.3	39.2	485.	983.	8.1	1.373	0.5058E+00	I 129
4	74.9	74.7	65.	101.	22.6	1.367	0.6160E+00	AM 243
5	96.4	96.1	154.	199.	13.9	1.366	0.5832E+00	
6	120.5	120.1	444.	287.	6.8	1.366	0.5376E+00	SE 75
7	135.3	134.9	1703.	221.	2.7	1.367	0.5050E+00	SE 75
8	185.1	184.6	29.	104.	47.4	1.378	0.3507E+00	

***** IDENTIFIED ISOTOPES *****

Nuclide Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
I 129 ?	0.115E-03 +/- 0.932E-05		1.00			
39.6	0.115E-03	7.50	9.69	8.1	0.4	
AM 243 ?	0.144E-05 +/- 0.327E-06		1.00			
74.7	0.144E-05	66.00	1.30	22.6	0.0	
SE 75	0.500E-04 +/- 0.124E-05		1.00			
136.0	0.515E-04	59.00	34.06	2.7	1.1	
121.1	0.430E-04	17.30	8.59	6.8	1.0	

***** MDA TABLE *****

Nuclide Energy	UCI/GM	Decay Abundance(%)	Corr. Rate(CPM)	% Err	Delta-E	%MPC
AM 241			1.00			
59.5	<0.207E-05	35.90	< 0.93			
SB 125			1.00			
176.3	<0.174E-04	6.80	< 1.04			

***** UNIDENTIFIED PEAKS *****

Energy	Rate	% Err.	Energy	Rate	% Err.	Energy	Rate	% Err.
29.4	59.98	2.1	96.1	3.09	13.9	184.6	0.57	47.4
34.0	12.70	6.2						

STOP --
BG4500

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Tennelec
PROCEDURE/REV	LA-933-141/G-1
TECHNOLOGIST	R. H. Hale
DATE	03-02-90
TEMPERATURE	23 C
STARTING TIME	10:00
ENDING TIME	14:00
CHEMIST	S. A. Catlow

Neptunium Analysis

Water Digestion

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F1058
2	Reagent Blank	F0904
3	Sample Composite 5	F0905
4	Duplicate Composite 5	F0906
5	Sample Composite 6	F0929
6	Duplicate Composite 6	F0930
7	Sample Composite 8	F0953
8	Duplicate Composite 8	F0954
9	Spike Composite 13	F1081
10	Final LMCS Check Std	F1077
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	148833/100 uL			N/A
Spike	148833/100 uL	F0905/250 uL		N/A

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

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	E60044
PROCEDURE/REV	LA-503-156 / C-1
TECHNOLOGIST	R. D. Hale
DATE	02-08-90
TEMPERATURE	23 C
STARTING TIME	09:00; 02-07-90
ENDING TIME	15:00; 02-08-90
CHEMIST	S. A. Catlow

Plutonium Analysis

Water Digestion

	DESCRIPTION		LAB ID
1	Initial LMCS Check Std		F0903
2	Reagent Blank		F0946
3	Sample	Composite 5	F0899
4	Duplicate	Composite 5	F0900
5	Sample	Composite 5	F0905
6	Duplicate	Composite 5	F0906
7	Sample	Composite 6	F0923
8	Duplicate	Composite 6	F0924
9	Sample	Composite 6	F0929
10	Duplicate	Composite 6	F0930
11	Sample	Composite 8	F0947

	DESCRIPTION		LAB ID
12	Duplicate	Composite 8	F0948
13	Sample	Composite 8	F0953
14	Duplicate	Composite 8	F0954
15	Spike	Composite 8	F0949
16	Final LMCS Check Std		F0950
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	16B43/100 uL			N/A
Spike	16B43/100 uL	F0947/1 mL		N/A

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

AEA ENERGY CALIBRATION

	TECH/ SHIFT	DATE	BELL #1	BELL #2	BELL#3	BELL #4	BELL #5	BELL #6	BELL #7	BELL #8
Np-237	VR/D	2/3/90	83	151	151	152	155	156	out	153
Pu 239/240		2/3/90	111	229	229	230	232	233	of	232
Am-241/Pu238		2/3/90	137	301	301	301	303	303	service	303
Cm-243/Cm-244		2/3/90	161	367	368	368	369	369		370
Np-237	AJ/D	2/4/90	83	151	150	152	152	154	out	150
Pu-239/240		2/4/90	110	229	228	230	230	231	of	229
Am-241/Pu-238		2/4/90	136	300	300	300	301	301	service	300
Cm-243/Cm-244		2/4/90	160	367	366	367	367	367		368
Np-237	AJ/D	2/5/90	82	149	148	150	153	155	out	151
Pu-239/240		2/5/90	110	228	226	228	231	231	of	230
Am-241/Pu-238		2/5/90	135	229	298	299	301	302	service	301
Cm-243/Cm-244		2/5/90	159	365	365	366	368	367		368
Np-237	VR/D	2/7/90	82	149	149	150	153	154	out	151
Pu-239/240		2/7/90	110	227	227	228	230	231	of	230
Am-241/Pu-238		2/7/90	135	298	299	298	301	301	service	301
Cm-243/Cm-244		2/7/90	159	364	365	365	367	367		368
Np-237	VR/D	2/8/90	81	150	150	152	155	156	out	152
Pu-239/240		2/8/90	109	227	228	230	232	233	of	231
Am-241/Pu-238		2/8/90	135	298	299	300	303	303	service	302
Cm-243/Cm-244		2/8/90	158	365	365	366	369	368		370
Np-237	VR/D	2/9/90	81	149	149	150	152	153	out	151
Pu-239/240		2/9/90	109	227	228	228	230	230	of	230
Am-241/Pu-238		2/9/90	135	299	299	299	301	300	service	301
Cm-243/Cm-244		2/9/90	159	365	366	365	367	366		369
Np-237	AJ/C	2/10/90	82	149	148	151	153	155	out	151
Pu-239/240		2/10/90	110	227	227	229	231	232	of	230
Am-241/Pu-238		2/10/90	136	299	298	300	302	302	service	302
Cm-243/Cm-244		2/10/90	160	365	365	366	368	367		369

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F903 SEC/COMP/#13 PU
File ID: SD4709.SPC

Counted on: 2/ 9/90 @ 0: 0
Detector/Geometry number: 4/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	5.2	4.8	469.869	469.869	20.000	12.660	10.000	5.534
2	2145.9	2208.4	358.677	358.677	20.000	10.661	10.000	4.945
3	280.4	285.9	302.189	302.189	20.000	10.454	10.000	3.516
4	329.4	64.8	264.079	264.079	12.000	6.706	6.000	4.662
5	2612.8	2618.0	229.858	229.858	20.000	10.762	10.000	5.781

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0010		6.332		0.06	0.09	0.47	0.311E-06
2	Cm244	0.4328	5.796	5.789	0.007	0.05	39.74	198.99	0.896E-04
	Cm243		5.786	5.789	-0.003				0.123E-03
3	Pu238	0.0630	5.499	5.518	-0.019	0.05	5.79	40.26	0.181E-04
	Am241		5.480	5.518	-0.038				0.139E-04
4		0.0096		5.335		0.03	0.88	4.41	0.199E-05
5	Pu239	0.4935	5.143	5.170	-0.027	0.05	45.32	226.93	0.102E-03
	Pu240		5.144	5.170	-0.026				0.102E-03

DETECTOR CALIBRATION

Energy(MEV) = 4.067 + (0.0040)*Channel
Energy range (MeV): 4.067 TO 6.525
Efficiency = 0.1997 CPM/DPM

TOTAL COUNT DATA:

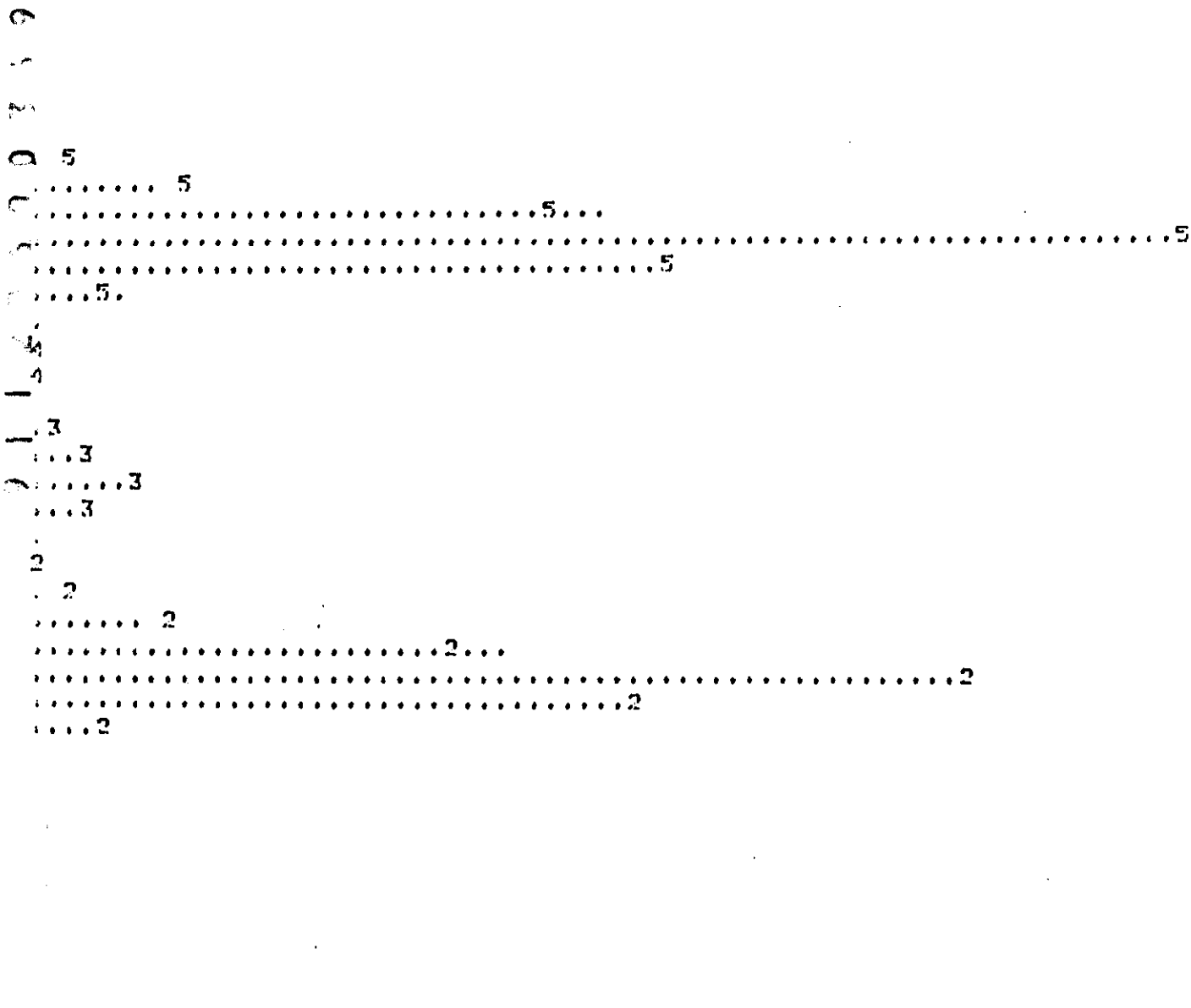
Item	Total	% Recovery
Raw spectrum	45919.0	100.000
Smoothed	45918.7	99.999
Composite fit	45910.5	99.982
Residuals	8.1	0.018

Analyzed by: _____
VR

SPECTRUM SD4709.SPC

1 LEGEND: RAW = ... MODELED PEAKS = 1,2,... ETC

P903-7581
9724.5



F903-7587

Raw Data Dump For AEA Spectrum: SP:SD4709.SPC

1	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
11	1.	1.	0.	0.	0.	1.	1.	1.	0.	2.
21	1.	0.	0.	1.	0.	0.	1.	0.	1.	0.
31	2.	0.	0.	0.	1.	1.	0.	1.	0.	1.
41	1.	1.	0.	0.	0.	2.	0.	2.	1.	0.
51	1.	1.	0.	0.	1.	0.	0.	1.	4.	0.
61	0.	1.	0.	1.	1.	0.	1.	0.	1.	1.
71	0.	1.	0.	0.	1.	0.	1.	1.	0.	0.
81	0.	0.	2.	1.	1.	1.	1.	0.	0.	1.
91	2.	1.	1.	1.	1.	0.	2.	2.	0.	1.
101	1.	0.	1.	1.	0.	1.	1.	0.	1.	1.
111	0.	3.	0.	0.	0.	0.	2.	2.	0.	1.
121	1.	0.	0.	1.	1.	0.	3.	0.	0.	0.
131	2.	0.	3.	0.	1.	3.	5.	2.	2.	0.
141	1.	1.	2.	4.	1.	5.	1.	4.	1.	1.
151	6.	4.	2.	1.	3.	2.	2.	7.	4.	3.
161	2.	1.	7.	4.	3.	7.	8.	2.	4.	4.
171	5.	10.	7.	8.	5.	7.	11.	11.	7.	6.
181	9.	9.	8.	12.	5.	6.	8.	9.	7.	11.
191	9.	7.	11.	13.	6.	8.	10.	12.	11.	11.
201	15.	22.	26.	29.	37.	37.	70.	47.	85.	97.
211	128.	136.	207.	238.	290.	347.	427.	535.	585.	700.
221	784.	890.	972.	1153.	1192.	1345.	1426.	1577.	1629.	1426.
231	1296.	1248.	1035.	797.	555.	407.	263.	132.	81.	59.
241	20.	15.	7.	8.	12.	8.	10.	8.	19.	24.
251	20.	21.	21.	30.	27.	27.	29.	36.	31.	35.
261	37.	35.	37.	40.	35.	41.	33.	28.	19.	15.
271	15.	9.	15.	7.	12.	8.	14.	14.	9.	27.
281	29.	25.	36.	39.	44.	36.	53.	55.	66.	74.
291	88.	80.	82.	100.	99.	139.	114.	139.	150.	170.
301	172.	150.	148.	143.	120.	106.	81.	46.	34.	25.
311	21.	9.	9.	4.	3.	5.	13.	6.	12.	18.
321	6.	14.	14.	8.	11.	18.	16.	10.	17.	14.
331	23.	32.	40.	44.	50.	49.	56.	87.	111.	142.
341	156.	223.	240.	320.	349.	455.	532.	592.	653.	754.
351	805.	890.	954.	999.	1084.	1256.	1320.	1250.	1184.	1191.
361	976.	851.	680.	466.	302.	176.	75.	43.	26.	11.
371	3.	0.	0.	1.	0.	0.	0.	1.	0.	1.
381	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
411	0.	1.	0.	0.	0.	0.	0.	3.	0.	2.
421	1.	0.	1.	0.	0.	1.	1.	1.	1.	0.
431	0.	0.	1.	0.	1.	0.	1.	0.	0.	0.
441	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
451	2.	1.	1.	0.	0.	0.	1.	0.	0.	1.
461	1.	1.	4.	1.	2.	2.	3.	5.	3.	3.
471	3.	0.	1.	3.	1.	3.	1.	0.	0.	0.
481	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F946 SEG/COMP/#8
File ID: SD2714.SPC

Counted on: 2/ 9/90 @ 0: 0
Detector/Geometry number: 2/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	4.2	4.2	468.114	468.114	20.000	16.828	14.000	13.274
2	1894.2	1914.8	357.234	357.234	20.000	12.011	10.000	5.995
3	83.9	85.9	299.394	299.394	20.000	14.183	10.000	2.399
4	57.9	57.7	262.857	262.857	20.000	7.005	10.000	2.100
5	21.9	23.3	227.770	227.770	20.000	6.104	10.000	2.418
6	4.0	2.6	172.563	172.563	20.000	59.890	10.000	4.825

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0021		6.275		0.08	0.08	0.37	0.166E-06
2	Pu236	0.8871	5.756	5.754	0.002	0.06	35.19	159.58	0.719E-04
3	Pu238	0.0686	5.499	5.482	0.017	0.07	2.72	16.80	0.757E-05
	Am241		5.480	5.482	-0.002				0.580E-05
4		0.0283		5.311		0.03	1.12	5.00	0.225E-05
5	Pu239	0.0096	5.143	5.146	-0.003	0.03	0.38	1.69	0.759E-06
	Pu240		5.144	5.146	-0.002				0.759E-06
6	Np237	0.0043	4.781	4.886	-0.105	0.28	0.17	0.88	0.395E-06

DETECTOR CALIBRATION

Energy(MEV) = 4.075 + (0.0047)*Channel
Energy range (MeV): 4.075 TO 6.482
Efficiency = 0.2250 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	19661.0	100.000
Smoothed	19661.0	100.000
Composite fit	19834.1	100.880
Residuals	-173.1	-0.880

Analyzed by: _____
VR

Raw Data Dump for AEA Spectrum: SP:SD2714.SPC

1	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
11	1.	0.	0.	1.	0.	0.	1.	0.	0.	0.
21	1.	0.	0.	2.	0.	0.	0.	1.	0.	0.
31	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.
51	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
61	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.
71	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
91	1.	1.	1.	0.	0.	0.	1.	0.	0.	0.
101	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
111	1.	0.	0.	0.	0.	0.	1.	2.	0.	0.
121	1.	0.	1.	1.	1.	0.	2.	0.	0.	1.
131	2.	1.	0.	1.	1.	0.	1.	0.	0.	1.
141	1.	1.	0.	1.	1.	1.	0.	2.	1.	1.
151	2.	0.	0.	2.	0.	1.	0.	1.	1.	0.
161	0.	1.	3.	1.	2.	0.	1.	1.	1.	4.
171	4.	4.	1.	1.	1.	1.	2.	1.	1.	0.
181	0.	3.	2.	2.	2.	0.	0.	2.	1.	2.
191	0.	2.	1.	0.	1.	3.	4.	4.	0.	2.
201	0.	3.	0.	2.	1.	0.	3.	4.	2.	5.
211	3.	4.	6.	3.	3.	3.	10.	6.	9.	15.
221	14.	13.	15.	13.	22.	8.	15.	15.	23.	10.
231	10.	5.	14.	12.	5.	3.	4.	5.	1.	7.
241	10.	8.	6.	5.	16.	11.	17.	14.	21.	12.
251	25.	25.	33.	24.	24.	38.	26.	25.	28.	40.
261	41.	52.	52.	33.	27.	26.	18.	19.	20.	22.
271	14.	10.	10.	18.	10.	17.	13.	17.	13.	18.
281	14.	27.	30.	28.	23.	24.	33.	35.	27.	36.
291	41.	34.	39.	40.	38.	51.	39.	42.	44.	48.
301	45.	48.	34.	25.	25.	24.	19.	7.	11.	8.
311	5.	6.	7.	5.	7.	6.	4.	5.	7.	15.
321	10.	6.	9.	21.	12.	12.	12.	17.	16.	18.
331	21.	44.	35.	38.	46.	56.	66.	101.	127.	133.
341	205.	250.	257.	334.	415.	511.	550.	597.	683.	687.
351	786.	904.	913.	1084.	1035.	1116.	1072.	1028.	939.	811.
361	684.	536.	405.	268.	192.	128.	66.	36.	16.	9.
371	5.	2.	2.	0.	0.	0.	0.	1.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	1.	0.	1.	1.	0.	2.
421	0.	0.	0.	0.	1.	1.	0.	0.	2.	0.
431	0.	2.	0.	0.	1.	1.	0.	1.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
461	0.	0.	1.	0.	1.	0.	1.	1.	2.	2.
471	1.	1.	3.	5.	0.	0.	4.	3.	3.	0.
481	2.	1.	2.	2.	3.	1.	0.	0.	1.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

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        SPECTRUM SD2714.SPC
1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,... ETC                        7179.2

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G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-929 SEG.COMP#15 PU
File ID: SD3070.SPC

Counted on: 2/10/90 @13: 0
Detector/Geometry number: 8/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	4.6	4.5	471.169	471.169	20.000	10.364	10.000	2.436
2	1357.3	1382.1	357.704	357.704	20.000	12.833	10.000	3.312
3	52.6	53.8	300.693	300.693	24.000	4.591	12.000	0.235
4	38.7	37.7	263.430	263.430	16.000	6.452	8.000	0.913
5	0.0	0.1	168.286	168.286	8.000	0.200	4.000	0.200
6	0.4	0.1	147.732	147.732	8.000	0.200	4.000	0.200
7	1.9	1.9	119.898	119.898	12.000	2.575	6.000	2.231
8	2.7	1.5	93.666	93.666	12.000	2.350	6.000	7.012
9	2.7	1.5	74.267	74.267	12.000	2.988	6.000	0.084
10	1.5	1.4	37.260	37.260	12.000	2.253	6.000	0.571

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0028		6.289		0.05	0.11	0.54	0.242E-06
2	Pu236	0.8589	5.756	5.755	0.001	0.06	33.55	169.23	0.762E-04
3	Pu238	0.1037	5.499	5.487	0.012	0.02	4.05	27.81	0.125E-04
	Am241		5.480	5.487	-0.007				0.959E-05
4		0.0311		5.312		0.03	1.21	6.00	0.270E-05
5		0.0000		4.865		0.00	0.00	0.00	0.106E-08
6	Np237	0.0000	4.781	4.769	0.012	0.00	0.00	0.00	0.127E-03
7	Np237	0.0005	4.640	4.638	0.002	0.01	0.02	1.45	0.653E-06
8		0.0003		4.514		0.01	0.01	0.05	0.246E-07
9	U 235	0.0023	4.396	4.423	-0.027	0.01	0.09	0.77	0.345E-06
10		0.0006		4.249		0.01	0.02	0.12	0.527E-07

DETECTOR CALIBRATION

Energy(MEV) = 4.074 + (0.0047)*Channel
Energy range (MeV): 4.074 TO 6.481
Efficiency = 0.2023 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	19328.0	100.000
Smoothed	19326.6	99.993
Composite fit	19532.5	101.058
Residuals	-206.1	-1.066

Analyzed by: _____
DM

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1 LEGEND:  RAW = ....  MODELED PEAKS = 1,2,..,  ETC                5170.9
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Raw Data Dump for AEA Spectrum: SP:SD8070.SPC

1	0.	0.	0.	0.	0.	0.	2.	2.	2.	0.
11	0.	0.	0.	2.	0.	0.	2.	1.	1.	1.
21	1.	1.	4.	1.	2.	3.	0.	2.	1.	2.
31	0.	3.	3.	1.	0.	3.	2.	3.	3.	1.
41	1.	1.	1.	0.	0.	0.	1.	0.	1.	1.
51	4.	3.	1.	3.	3.	1.	1.	0.	2.	3.
61	2.	0.	2.	1.	2.	1.	0.	0.	1.	1.
71	4.	1.	8.	2.	2.	1.	2.	1.	0.	0.
81	1.	2.	0.	1.	3.	0.	2.	0.	2.	3.
91	4.	3.	2.	2.	2.	1.	3.	2.	0.	1.
101	2.	2.	0.	2.	1.	2.	1.	3.	2.	4.
111	2.	2.	2.	2.	2.	3.	4.	5.	3.	3.
121	4.	3.	1.	0.	6.	2.	2.	2.	0.	3.
131	3.	2.	5.	2.	3.	1.	7.	4.	0.	2.
141	4.	2.	3.	2.	4.	3.	5.	5.	2.	3.
151	2.	2.	3.	3.	2.	1.	3.	0.	4.	3.
161	3.	3.	4.	2.	8.	6.	1.	9.	6.	3.
171	3.	3.	2.	2.	2.	3.	5.	4.	2.	4.
181	2.	6.	5.	3.	0.	4.	6.	6.	2.	3.
191	8.	7.	1.	7.	7.	4.	8.	5.	6.	5.
201	6.	9.	5.	6.	12.	8.	5.	12.	3.	8.
211	14.	11.	11.	12.	6.	7.	14.	15.	9.	15.
221	21.	15.	14.	18.	15.	23.	11.	16.	20.	20.
231	15.	23.	27.	20.	17.	13.	19.	16.	14.	15.
241	13.	24.	22.	16.	27.	20.	23.	17.	30.	22.
251	35.	31.	23.	30.	29.	34.	33.	33.	35.	45.
261	20.	43.	38.	45.	36.	38.	31.	20.	20.	27.
271	20.	16.	15.	14.	25.	18.	20.	14.	26.	18.
281	25.	22.	28.	34.	30.	26.	35.	30.	36.	29.
291	38.	38.	30.	33.	34.	33.	43.	44.	45.	34.
301	35.	43.	38.	40.	31.	34.	22.	16.	15.	14.
311	21.	21.	26.	23.	30.	30.	37.	37.	51.	53.
321	43.	57.	72.	83.	83.	98.	96.	110.	105.	134.
331	164.	139.	158.	184.	223.	227.	219.	225.	217.	255.
341	260.	273.	305.	308.	353.	412.	453.	488.	481.	543.
351	592.	654.	641.	669.	743.	723.	785.	723.	706.	664.
361	555.	493.	392.	291.	195.	153.	95.	43.	28.	12.
371	4.	2.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	1.	1.	0.	0.	0.	1.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	1.	0.	0.	0.	0.	1.	0.	0.	1.
421	2.	0.	1.	1.	0.	0.	0.	1.	0.	1.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	1.	1.	1.	1.	0.	1.	0.
451	0.	1.	1.	0.	1.	1.	2.	3.	0.	1.
461	2.	0.	3.	1.	0.	3.	2.	4.	1.	4.
471	2.	1.	5.	1.	1.	1.	1.	1.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-930 SEG.COMP#16 PU
File ID: SD2722.SPC

Counted on: 2/11/90 @11: 0
Detector/Geometry number: 2/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	10.7	10.9	465.867	465.867	28.000	12.109	14.000	17.934
2	2108.8	2137.1	355.964	355.964	20.000	12.307	10.000	6.045
3	84.2	86.7	298.911	298.911	20.000	14.831	10.000	3.022
4	9.8	9.9	263.982	263.982	16.000	1.394	8.000	0.392
5	53.2	54.2	227.576	227.576	20.000	10.918	10.000	5.398

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0042		6.266		0.06	0.18	0.89	0.401E-06
2	Pu236	0.9132	5.756	5.749	0.007	0.06	39.79	199.14	0.897E-04
3	Pu238	0.0568	5.499	5.481	0.018	0.07	2.47	16.86	0.759E-05
	Am241		5.480	5.481	-0.001				0.582E-05
4		0.0037		5.317		0.01	0.16	0.79	0.355E-06
5	Pu239	0.0221	5.143	5.146	-0.003	0.05	0.96	4.73	0.213E-05
	Pu240		5.144	5.146	-0.002				0.213E-05

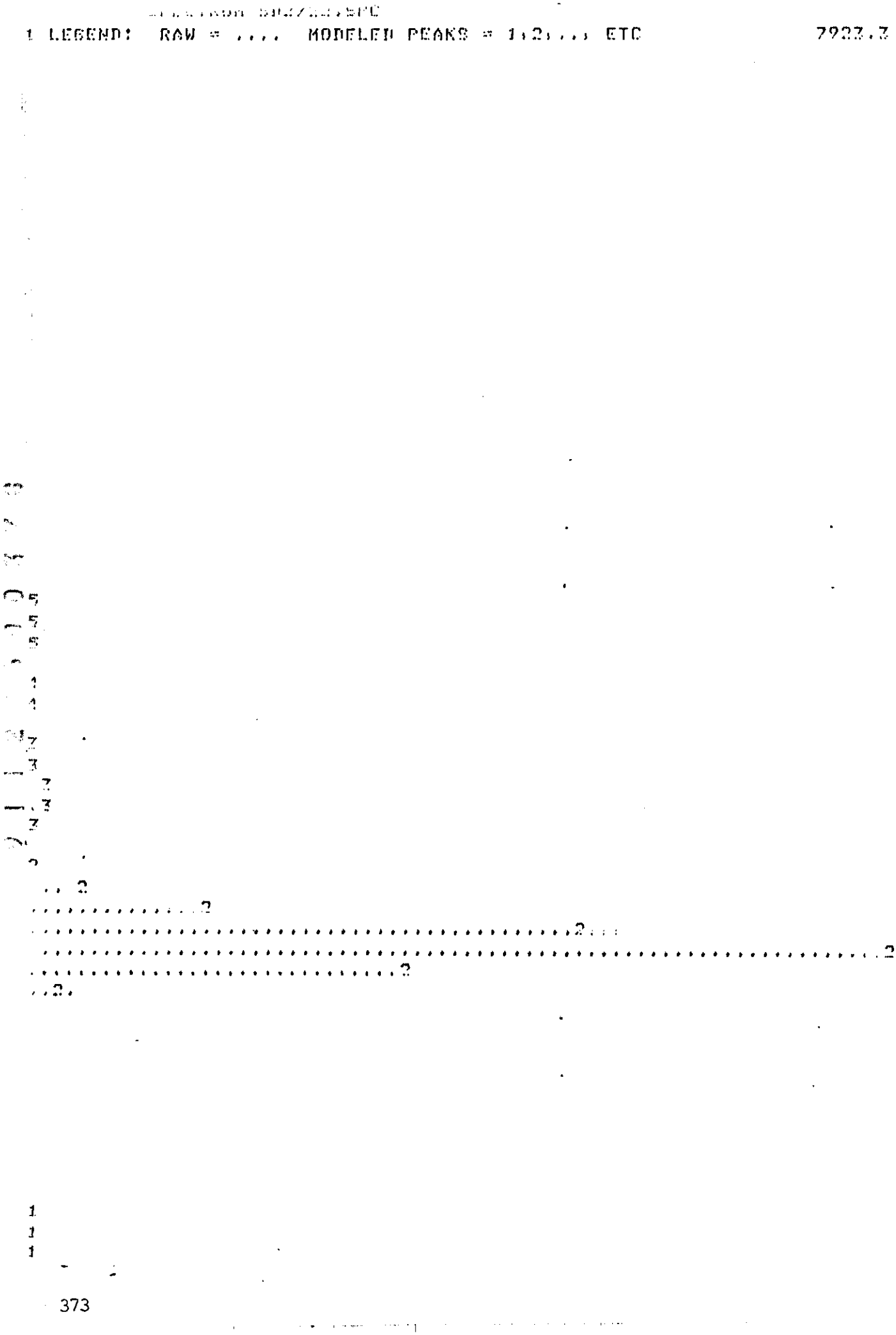
DETECTOR CALIBRATION

Energy(MEV) = 4.076 + (0.0047)*Channel
Energy range (MeV): 4.076 TO 6.482
Efficiency = 0.2039 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	21663.0	100.000
Smoothed	21663.0	100.000
Composite fit	21787.5	100.574
Residuals	-124.5	-0.574

Analyzed by: _____
DM


1 LEGEND: RAW = ... MODELED PEAKS = 1,2,..., ETC
7923.3

Raw Data Dump for AEA Spectrum: SP1SD2722.SPC

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
21	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
41	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
51	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.
61	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
81	0.	0.	1.	0.	0.	0.	2.	1.	0.	0.
91	2.	0.	0.	1.	0.	0.	1.	0.	0.	0.
101	0.	0.	2.	0.	0.	0.	1.	0.	0.	1.
111	0.	0.	0.	0.	1.	1.	0.	1.	0.	0.
121	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.
131	0.	0.	0.	0.	2.	3.	0.	0.	1.	0.
141	0.	2.	0.	0.	3.	1.	1.	2.	2.	1.
151	1.	0.	0.	1.	2.	0.	2.	4.	3.	0.
161	1.	2.	4.	0.	2.	1.	1.	0.	0.	1.
171	1.	1.	1.	0.	0.	2.	2.	0.	2.	0.
181	1.	2.	1.	3.	0.	0.	1.	2.	3.	2.
191	2.	1.	1.	0.	1.	0.	1.	1.	2.	4.
201	0.	1.	1.	1.	1.	1.	4.	3.	5.	5.
211	5.	3.	7.	9.	12.	8.	15.	20.	16.	19.
221	20.	34.	21.	39.	32.	27.	29.	31.	28.	29.
231	26.	17.	7.	11.	4.	5.	7.	5.	4.	4.
241	1.	2.	2.	7.	4.	2.	5.	1.	8.	5.
251	5.	2.	5.	13.	5.	10.	6.	9.	11.	6.
261	21.	11.	12.	12.	14.	11.	5.	8.	9.	5.
271	5.	4.	12.	12.	8.	6.	15.	17.	15.	21.
281	21.	19.	30.	29.	35.	36.	30.	24.	29.	31.
291	39.	37.	33.	42.	49.	43.	41.	49.	50.	43.
301	45.	37.	33.	26.	23.	20.	20.	13.	12.	9.
311	10.	10.	4.	8.	7.	7.	8.	6.	11.	15.
321	13.	16.	12.	16.	13.	13.	19.	18.	11.	32.
331	42.	49.	45.	55.	81.	110.	116.	147.	186.	239.
341	323.	313.	408.	502.	569.	627.	694.	754.	847.	943.
351	1008.	1174.	1099.	1200.	1187.	1163.	1130.	995.	900.	728.
361	601.	414.	288.	192.	100.	68.	52.	19.	11.	5.
371	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
391	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.
401	0.	0.	2.	0.	1.	2.	0.	0.	0.	1.
411	1.	1.	0.	0.	2.	0.	1.	2.	2.	3.
421	1.	0.	1.	2.	0.	0.	1.	1.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
441	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
451	0.	2.	1.	0.	3.	1.	5.	2.	5.	1.
461	8.	6.	11.	4.	6.	5.	4.	6.	3.	7.
471	4.	1.	1.	3.	0.	0.	0.	1.	0.	0.
481	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

400

G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F-949 SEG.COMP#11 PU
File ID: 903954.SPC

Counted on: 2/11/90 0111 0
Detector/Geometry number: 3/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	10.4	10.0	471.543	471.543	20.000	13.382	10.000	6.489
2	1898.2	1910.1	359.114	359.114	20.000	13.459	10.000	7.396
3	85.1	87.0	301.260	301.260	20.000	13.453	10.000	2.603
4	50.6	52.5	264.610	264.610	20.000	8.169	10.000	1.755
5	149.1	151.5	229.417	229.417	20.000	10.611	10.000	7.113

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1		0.0045		6.283		0.06	0.19	0.96	0.430E-06
2	Pu236	0.8469	5.756	5.744	0.012	0.06	35.86	181.69	0.818E-04
3	Th228	0.0593	5.430	5.466	-0.036	0.06	2.51	17.54	0.790E-05
	Am241		5.480	5.466	0.014				0.597E-05
4		0.0305		5.290		0.04	1.29	6.41	0.289E-05
5		0.0588		5.121		0.05	2.49	12.35	0.556E-05

DETECTOR CALIBRATION

Energy(MEV) = 4.020 + (0.0048)*Channel
Energy range (MeV): 4.020 TO 6.477
Efficiency = 0.2014 CPM/DPM

TOTAL COUNT DATA:

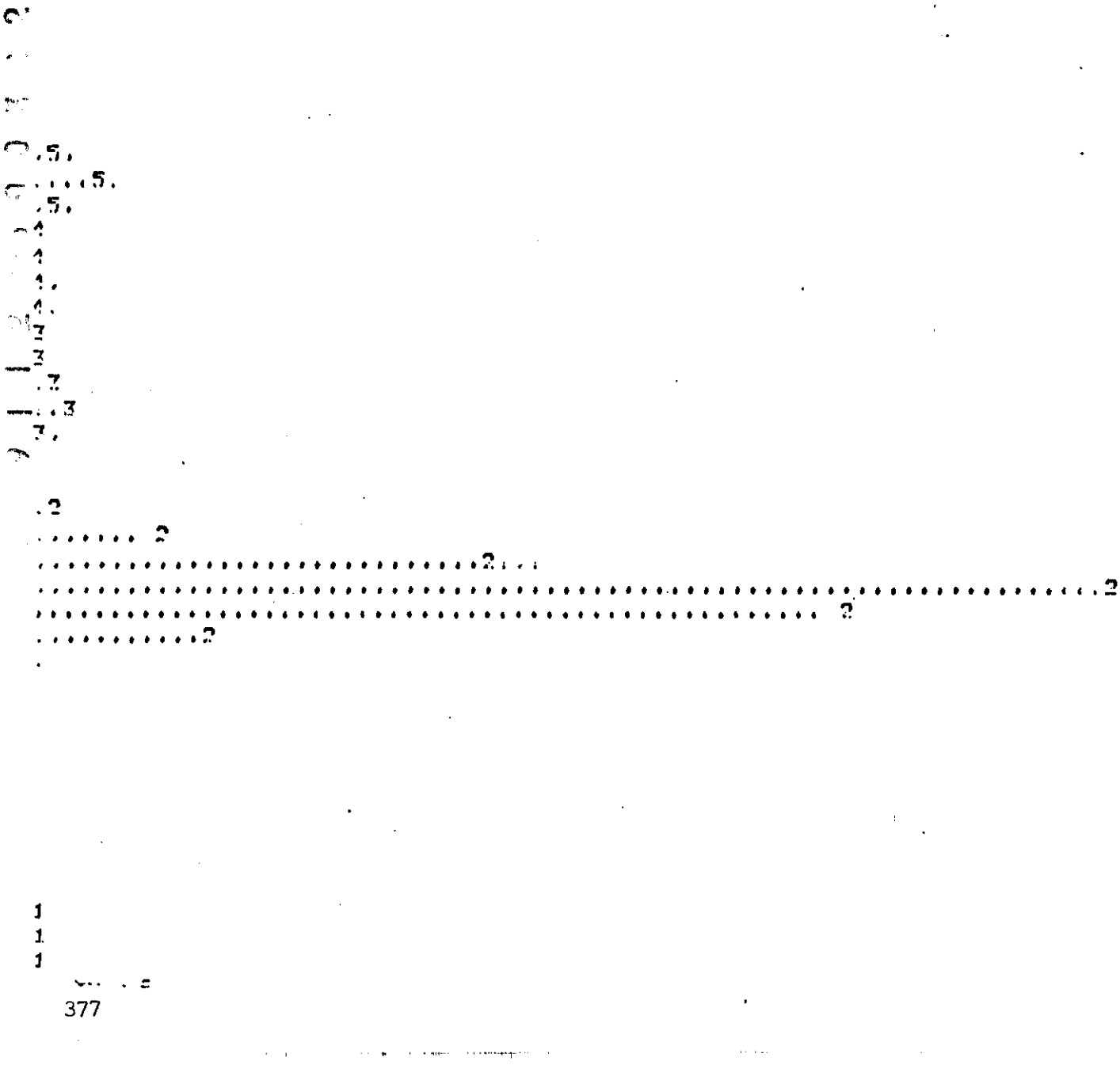
Item	Total	% Recovery
Raw spectrum	21109.0	100.000
Smoothed	21107.7	99.994
Composite fit	21170.5	100.291
Residuals	-62.9	-0.298

Analyzed by: _____
DM

Raw Data Dump for AEA Spectrum: SP:SD3954.SPC

1	0.	0.	0.	0.	0.	1.	1.	1.	1.	1.
11	0.	0.	0.	0.	0.	2.	3.	2.	0.	2.
21	0.	0.	0.	1.	0.	0.	2.	0.	0.	0.
31	0.	0.	0.	0.	1.	0.	1.	0.	1.	0.
41	0.	0.	2.	0.	0.	1.	1.	0.	1.	1.
51	0.	0.	0.	1.	0.	1.	0.	0.	1.	0.
61	0.	1.	0.	0.	0.	0.	0.	1.	2.	0.
71	0.	0.	0.	0.	1.	1.	1.	1.	0.	1.
81	1.	1.	0.	0.	2.	0.	1.	1.	0.	0.
91	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
101	1.	0.	1.	0.	0.	0.	1.	0.	1.	1.
111	1.	0.	1.	1.	0.	1.	1.	1.	0.	1.
121	3.	1.	0.	2.	2.	0.	1.	3.	0.	0.
131	0.	1.	0.	0.	1.	2.	1.	0.	2.	1.
141	2.	1.	1.	0.	1.	3.	3.	2.	0.	1.
151	2.	2.	3.	1.	2.	1.	2.	1.	0.	1.
161	3.	3.	1.	0.	2.	1.	0.	0.	0.	2.
171	1.	3.	0.	2.	2.	0.	1.	0.	3.	0.
181	5.	0.	0.	2.	3.	0.	1.	0.	2.	1.
191	4.	0.	1.	1.	0.	0.	0.	3.	1.	2.
201	2.	5.	3.	1.	1.	2.	1.	5.	0.	5.
211	1.	6.	8.	14.	18.	24.	26.	33.	34.	41.
221	53.	59.	70.	87.	77.	77.	100.	79.	96.	86.
231	80.	69.	58.	42.	43.	28.	20.	17.	6.	10.
241	7.	5.	7.	6.	12.	12.	9.	15.	14.	10.
251	21.	28.	16.	22.	19.	25.	30.	26.	26.	29.
261	32.	46.	31.	38.	32.	25.	30.	30.	25.	24.
271	19.	11.	13.	9.	10.	8.	13.	7.	11.	9.
281	25.	24.	19.	15.	27.	27.	32.	31.	21.	17.
291	39.	33.	29.	37.	36.	39.	41.	53.	48.	46.
301	44.	39.	46.	50.	38.	25.	19.	11.	15.	14.
311	13.	10.	3.	3.	0.	1.	1.	2.	1.	1.
321	1.	2.	4.	3.	4.	8.	2.	6.	5.	12.
331	15.	11.	19.	28.	19.	44.	58.	66.	61.	79.
341	111.	133.	223.	251.	317.	337.	410.	462.	517.	649.
351	696.	725.	836.	938.	951.	1047.	1069.	1106.	1083.	981.
361	942.	817.	655.	565.	445.	311.	234.	159.	99.	75.
371	48.	23.	21.	5.	6.	0.	2.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	1.	0.	2.	2.	1.	1.
421	3.	1.	1.	1.	0.	0.	1.	3.	0.	0.
431	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
451	0.	0.	0.	2.	2.	1.	0.	2.	0.	2.
461	7.	2.	5.	2.	6.	1.	5.	4.	8.	7.
471	4.	7.	7.	2.	2.	3.	5.	1.	2.	0.
481	2.	0.	0.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

LEGEND: RAW = ... MODELED PEAKS = 1,2,... ETC 6956.3



G E N E R A L A L P H A E N E R G Y A N A L Y S I S
Rev. 1.10

DATA REDUCTION REPORT

SAMPLE
F950 SEG/COMP/#12 PU
File ID: SD3946.SPC

Counted on: 2/ 9/90 @ 0: 0
Detector/Geometry number: 3/ 1
Count time: 30000. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	1946.0	1958.5	357.840	357.840	24.000	14.662	12.000	8.261
2	245.9	249.9	300.354	300.354	24.000	12.967	12.000	4.179
3	321.6	69.1	262.412	262.412	12.000	5.250	6.000	6.220
4	2343.9	2333.2	228.108	228.108	24.000	13.601	12.000	8.431
5	5.2	8.2	150.480	150.480	80.000	2.000	40.000	0.200
6	1.6	0.9	126.257	126.257	8.000	0.382	4.000	0.057

PEAK RESULTS

Peak ID	Isotope	AEA Fract.	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	d/m	Activity uCi/ea
1	Pu236	0.4328	5.756	5.738	0.018	0.07	37.89	191.98	0.865E-04
2	Th228	0.0625	5.430	5.462	-0.032	0.06	5.48	38.29	0.172E-04
	Am241		5.480	5.462	0.018				0.130E-04
3		0.0009		5.279		0.03	0.78	3.85	0.173E-05
4		0.4919		5.115		0.07	43.06	213.81	0.963E-04
5		0.0037		4.742		0.01	0.32	1.59	0.715E-06
6	Np237	0.0003	4.640	4.626	0.014	0.00	0.02	1.85	0.835E-06

DETECTOR CALIBRATION

Energy(MEV) = 4.020 + (0.0048)*Channel
Energy range (MeV): 4.020 TO 6.477
Efficiency = 0.2014 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	43612.0	100.000
Smoothed	43611.1	99.998
Composite fit	43772.9	100.369
Residuals	-161.8	-0.371

Analyzed by: _____
VR

Raw Data Dump for AEA Spectrum: SP:SD3946.SPC

1	0.	0.	0.	0.	0.	0.	2.	3.	1.	0.
11	2.	0.	1.	2.	1.	1.	1.	1.	0.	0.
21	1.	1.	2.	0.	0.	1.	1.	1.	1.	0.
31	1.	0.	1.	2.	1.	0.	0.	0.	0.	0.
41	0.	1.	2.	2.	0.	0.	1.	2.	1.	1.
51	0.	2.	0.	1.	1.	1.	0.	2.	1.	0.
61	0.	0.	1.	0.	1.	0.	2.	3.	1.	0.
71	0.	2.	1.	2.	1.	0.	0.	0.	1.	1.
81	1.	0.	1.	0.	1.	2.	0.	1.	0.	0.
91	2.	0.	0.	2.	0.	1.	1.	1.	2.	0.
101	2.	2.	2.	0.	1.	1.	2.	2.	1.	2.
111	2.	1.	3.	0.	3.	7.	1.	1.	2.	0.
121	2.	2.	3.	2.	3.	4.	5.	0.	1.	2.
131	3.	0.	1.	0.	0.	1.	0.	3.	4.	1.
141	1.	4.	7.	0.	5.	0.	2.	0.	3.	4.
151	4.	3.	2.	1.	3.	0.	2.	0.	1.	2.
161	2.	4.	1.	1.	3.	1.	1.	3.	0.	1.
171	6.	4.	4.	2.	6.	4.	2.	2.	1.	1.
181	0.	2.	4.	2.	1.	3.	0.	5.	4.	4.
191	4.	4.	7.	5.	2.	7.	7.	6.	9.	7.
201	16.	21.	23.	23.	42.	47.	66.	72.	112.	136.
211	164.	186.	224.	334.	394.	473.	562.	603.	726.	841.
221	902.	1109.	1134.	1198.	1312.	1294.	1379.	1310.	1233.	1074.
231	1017.	829.	709.	489.	402.	304.	204.	145.	82.	68.
241	36.	21.	16.	9.	13.	13.	16.	11.	18.	23.
251	23.	16.	20.	26.	25.	22.	16.	36.	35.	35.
261	27.	36.	30.	22.	29.	28.	21.	26.	22.	14.
271	12.	10.	4.	11.	10.	12.	14.	15.	24.	23.
281	38.	40.	34.	42.	43.	44.	69.	55.	73.	88.
291	86.	88.	107.	91.	121.	125.	131.	146.	126.	148.
301	123.	141.	115.	88.	73.	57.	41.	37.	24.	29.
311	12.	8.	7.	3.	2.	5.	3.	3.	5.	2.
321	6.	5.	1.	4.	6.	5.	4.	4.	8.	6.
331	24.	15.	24.	34.	31.	52.	68.	104.	118.	139.
341	169.	210.	290.	338.	347.	489.	518.	610.	674.	760.
351	844.	914.	957.	1047.	1099.	1043.	1095.	1059.	992.	922.
361	826.	722.	560.	460.	351.	230.	183.	130.	85.	44.
371	30.	14.	14.	6.	1.	2.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	2.	0.	2.	0.	0.	0.	0.	0.
431	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.
461	0.	1.	1.	1.	1.	0.	0.	1.	1.	1.
471	3.	2.	1.	0.	1.	1.	2.	4.	1.	1.
481	0.	0.	0.	0.	0.	1.	2.	1.	2.	0.
491	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
511	0.	0.								

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1 LEGEND: RAW = ....  MODELED PEAKS = 1,2,..., ETC                    8821.5

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Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Tennelec
PROCEDURE/REV	LA-220-101
TECHNOLOGIST	S. Lai
DATE	06-11-90
TEMPERATURE	N/A
STARTING TIME	09:30
ENDING TIME	13:00
CHEMIST	S. A. Catlow

Strontium 89/90 Analysis
Water Digestion
Detectors 10, 11 and 12.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
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21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT. VOL.	FINAL VOL. OF STD.
LMCS Check Std	18B46 / 1 mL			N/A
Spike	18B46 / 1 mL	F0929/ 1 mL		N/A

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

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	Tennelec
Procedure/Rev	LA-220-101 / C-0
Technologist	R. Hale
Date	06-25-90
Temperature	24 C
Starting Time	09:00
Ending Time	12:45
Chemist	S. A. Catlow

Stronium 89/90 Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std	F1053
2	Reagent Blank	F1054
3	Sample Composite 6	F0929
4	Sample Composite 12	F1055
5	Duplicate Composite 12	F1056
6	Spike Composite 12	F1057
7	Final LMCS Check Std	F1058
8		
9		
10		
11		

	Description	Lab ID
12		
13		
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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	18B46 /1.0 mL			N/A
Spike	18B46 / 1.0 mL	F1055 / 1.0 mL		N/A

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

Single Shell Tank
Calibration Record

Analyte:	Stronium		
Procedure:	LQ-508-002	Revision:	A-2
Instrument:	Detector #10	Property Number:	WA38316
Technologist:	R. A. Jones	Payroll Number:	
Date:	5-21-89		

Calibration Standard ID: 48B16G; 48B16J; 48B16L

Analyte Concentration: 36760; 58980; 112700 cpm.

Type of Calibration: Efficiency

Comments:

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

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

DETECTOR No. 10

TIME ZERO DATE (HD): 13977

RADIONUCLIDE: SrY-90
HALF LIFE: 10590
COUNT TIME: 5
CPM BKG: 22

DATE COUNTED (HD): 16309

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.
48B16T	1	05/21/89		84795	84166	84768	83389
48B16U	1	05/21/89		107308	108714	109687	109090
48B16TV	1	05/21/89		208878	200713	210979	211700
48B16G	2	05/21/89		62088	62802	61690	63053
48B16J	2	05/21/89		102092	101782	101676	101546
48B16L	2	05/21/89		192834	198242	197051	195835
	5						
	5						
	5						

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
48B16T	1"	40910	16834	1.16	19610	0.4793
48B16U	1"	54640	21718	1.16	25299	0.4630
48B16TV	1"	104000	41592	1.16	48450	0.4659

AVERAGE, 1" = 0.4694 +/- @95% 0.0171 3.64 % ON 05/21/89

STANDARD ID		STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
48B16G	2"	36760	12460	1.16	14514	0.3948
48B16J	2"	58980	20333	1.16	23686	0.4016
48B16L	2"	112700	39176	1.16	45636	0.4049

AVERAGE, 2" = 0.4005 +/- @95% 0.0101 2.52 % ON 05/21/89

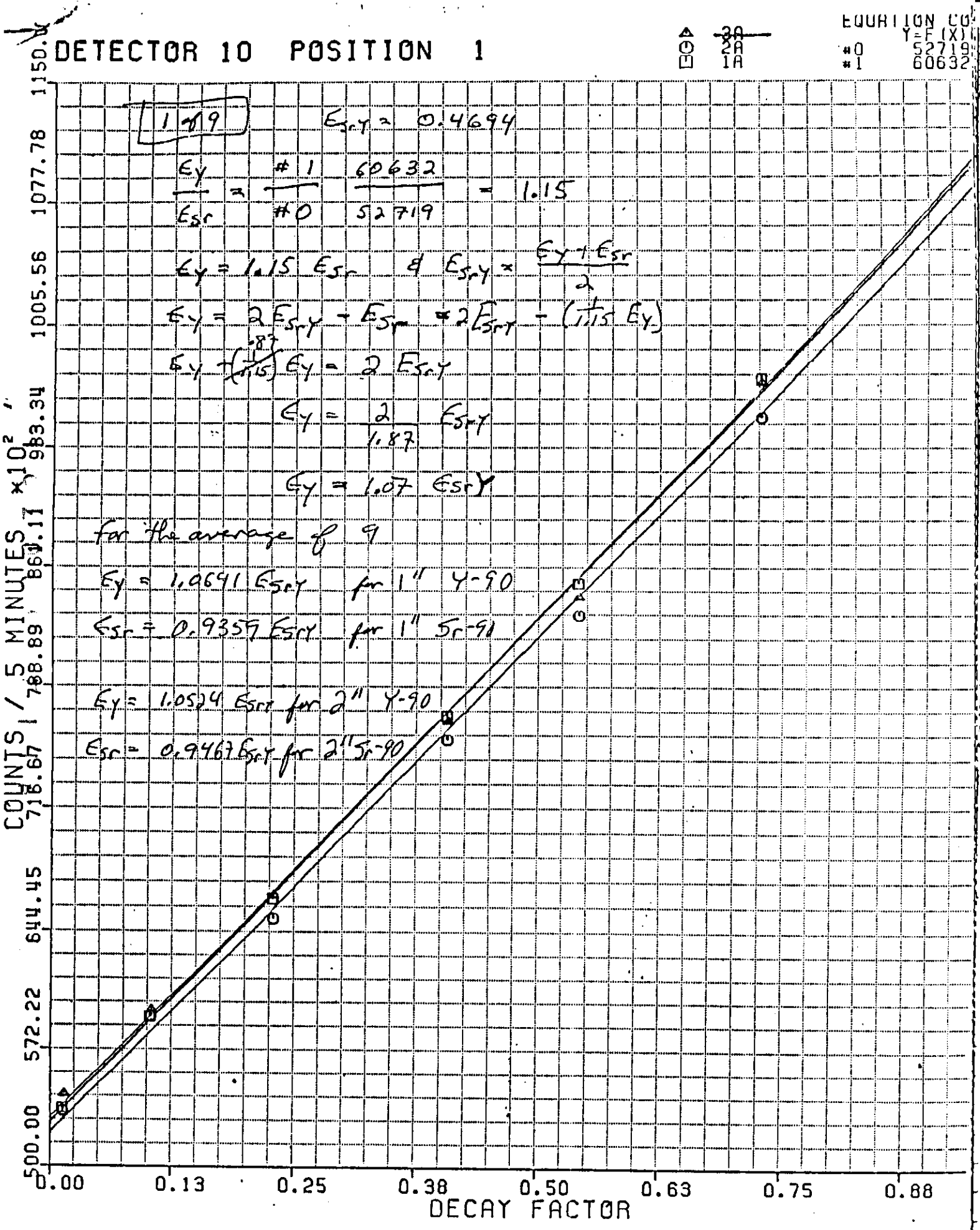
STANDARD ID		STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
36B40A6	5"	0	0	1.16	0	ERR
36B40B6	5"	0	0	1.16	0	ERR
36B40C5	5"	0	0	1.16	0	ERR

AVERAGE, 5" = ERR +/- @95% ERR ERR % ON 05/21/89

NEW EFFS FOR DET 10 SrY-90 1" = 0.4694 2" = 0.4005

5" = ERR

Procedure LQ-508-005 "Calibration of Beta Detectors for Sr-90 And Y-90" is used to determine ^{90}Sr & ^{90}Y efficiencies from the above calibration using an equilibrium mixture of ^{90}SrY.



1 of 9

$E_{SrY} = 0.4694$

$$\frac{E_Y}{E_{Sr}} = \frac{\#1}{\#0} \quad \frac{60632}{52719} = 1.15$$

$$E_Y = 1.15\, E_{Sr} \quad \& \quad E_{SrY} = \frac{E_Y + E_{Sr}}{2}$$

$$E_Y = 2E_{SrY} - E_{Sr} = 2E_{SrY} - \left(\frac{1}{1.15} E_Y\right)$$

$$E_Y + \left(\frac{1}{1.15}\right) E_Y = 2\, E_{SrY}$$

$$E_Y = \frac{2}{1.87} E_{SrY}$$

$$E_Y = 1.07\, E_{SrY}$$

for the average of 9

$E_Y = 1.0641\, E_{SrY}$ for 1" Y-90

$E_{Sr} = 0.9359\, E_{SrY}$ for 1" Sr-90

$E_Y = 1.0524\, E_{SrY}$ for 2" Y-90

$E_{Sr} = 0.9467\, E_{SrY}$ for 2" Sr-90

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Beckman
PROCEDURE/REV	LA-438-101
TECHNOLOGIST	S. A. Cervantes
DATE	02-08-90
TEMPERATURE	26 C
STARTING TIME	8:00; 2-02-90
ENDING TIME	16:30; 02-02-90
CHEMIST	S. A. Catlow

Technetium 99

Water Digestion

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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	148B39 /250 uL			20 mL
Spike Composite 5	148B39 /250 uL	F0931/ 1 mL		20 mL

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

Single Shell Tank
Calibration Record

Analyte:	TC-99		
Procedure:	LA-508-121	Revision:	A-0
Instrument:	Beckman Liquid Scintillator	Property Number:	WA77390
Technologist:	R. A. Jones	Payroll Number:	65801
Date:	September 19, 1988		

Calibration Standard ID: Packard 6008502 #2

Analyte Concentration: See Attached Calibration Sheets.

Type of Calibration: Quench Curve

Comments: Quench Curve

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

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[illegible] STANDARDS FOR [illegible]

[illegible]	[illegible]	[illegible]	[illegible]
73.67	[illegible]	[illegible]	[illegible]
10[illegible].7	[illegible]	[illegible]	[illegible]
12[illegible].0	94.[illegible]	[illegible]	[illegible]
14[illegible]	[illegible]	[illegible]	[illegible]
17[illegible].3	[illegible]	20[illegible].7	[illegible]

[illegible] STANDARD [illegible] [illegible]
[illegible] CURVE(Y) [illegible] [illegible] CURVE [illegible]

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Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Beckman
PROCEDURE/REV	LA-218-113/ A-1
TECHNOLOGIST	M. Lavarias
DATE	04-02-90
TEMPERATURE	100 C
STARTING TIME	3-26-90
ENDING TIME	3-29-90
CHEMIST	S. A. Catlow

Tritium Analysis

Water Digestion

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
7	Initial LMCS Check Std	F0951
8	Reagent Blank	F0952
9	Sample Composite 8	F0953
10	Duplicate Composite 8	F0954
11	Spike Composite 8	F0955

	DESCRIPTION	LAB ID
12	Final LMCS Check Std	F0956
13	Initial LMCS Check Std	F1053
14	Reagent Blank	F1054
15	Sample Composite 12	F1055
16	Duplicate Composite 12	F1056
17	Spike Composite 12	F1057
18	Final LMCS Check Std	F1058
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	140B44 /1.0 mL			20 mL
Spike	140B44/1.0 mL	F0931 /1.0 mL		20 mL

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

Single Shell Tank
Calibration Record

ANALYTE:	H-3		
PROCEDURE:	LA-508-121	REVISION:	A-0
INSTRUMENT:	Liquid Scintillation Counter	PROPERTY NUMBER:	WA77390
TECHNOLOGIST:	R. A. Jones	PAYROLL NUMBER:	65801
DATE:	September 20, 1988		

CALIBRATION STANDARD ID: Beckman

ANALYTE CONCENTRATION: (See Attached)

TYPE OF CALIBRATION:

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

-20-81
RAfones

USER: 1 ID:H-3 TRITIUM PRESET TIME: 10.00 MON 19 SEP 1988 14:37
SAMPLE REPEAT: 1 CYCLE REPEAT: 1 SCR:N RS232:N
H#: 3 AQC:Y QCF:N RCM:Y 2 PHASE MONITOR:Y POST CHK:N VIAL:G VOLUME:1
RCM-TIME: 0.10 INT:999.95
CHANNEL 1-LL: 0 UL: 400 2SIGMA: 0.10 BKG SUB: 0.00 BKG 2SIG: 0.00 LSR: 0

SINGLE LABEL DPM
UNKNOWN ID:H-3 TRITIUM UNKNOWN REPLICATES: 1
UNKNOWN NORM FACTOR ISO1:Q 1.00000
UNKNOWN UNITS ISO1:DPM
UNKNOWN HALF LIFE CORRECTION:N
INDIVIDUAL UNKNOWN NORM FACTORS:N BACKGROUND QUENCH CURVES:Y
STANDARD ID:PACKARD 6008501 #54
HALF LIFE(DAYS) ISO1: 4503.000
STANDARD DPM ISO1: 260100.0

To = 6-12-86

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
B1	**- 1	1	28.10	11.93	10.00	11.04	55.0	0.61		
	H#: 55. 55. 55									

BACKGROUND QUENCH CURVES: CONSTANT

CHANNEL 1
QUENCH CURVE COEFFICIENTS
A: 28.10000 B:0.00000000 C:0.00000000 D:0.00000000000

BACKGROUND QUENCH CURVE CORRELATION TABLE

BKG	H#	MEASURED CPM.	CALCULATED CPM.	PERCENT DIFF.	FLAG
1	55.0	28.10	28.10	0.00	

BACKGROUND QUENCH LIMITS LOW:0.000 HIGH:1000.
TOTAL QUENCH LIMITS LOW:0.000 HIGH:1000.

	SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
A	S1	**- 3	1	148243.70	0.16	10.00	22.72	-5.0	0.00		
		H#: -5, -5, -5									
		ISO1 %EFF CH1:64.75									
B	S2	**- 4	1	142518.20	0.17	10.00	34.25	13.3	0.00		
		H#: 13, 14, 13									
		ISO1 %EFF CH1:62.25									
C	S3	**- 5	1	127749.40	0.18	10.00	45.75	43.3	0.00		
		H#: 43, 44, 43									
		ISO1 %EFF CH1:55.80									

9-20-88 [illegible]

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
S4	**- 6	1	111143.00	0.19	10.00	57.17	76.0	0.00		
	H#: 76, 76, 76									
	ISO1 %EFF CH1:46.54									
S5	**- 7	1	95303.30	0.20	10.00	68.56	105.3	0.00		
	H#: 105, 106, 105									
	ISO1 %EFF CH1:41.62									
S6	**- 8	1	77574.80	0.23	10.00	79.88	135.3	0.00		
	H#: 135, 136, 135									
	ISO1 %EFF CH1:33.88									
S7	**- 9	1	57990.70	0.26	10.00	91.13	173.0	0.00		
	H#: 173, 172, 174									
	ISO1 %EFF CH1:25.32									

POWERFAIL RECOVERY MON 19 SEP 1988 16:16

S8	**-10	1	41786.70	0.31	10.00	109.66	207.3	0.00		
	H#: 207, 207, 208									
	ISO1 %EFF CH1:18.24									
S9	**-11	1	34400.70	0.34	10.00	120.86	221.7	0.01		
	H#: 223, 220, 222									
	ISO1 %EFF CH1:15.02									
S10	**-12	1	23670.80	0.41	10.00	132.04	252.0	0.01		
	H#: 252, 253, 251									
	ISO1 %EFF CH1:10.33									

ISOTOPE 1 QUENCH STANDARDS

STANDARD	H#	%EFF CH1
1	-5.00	64.75
2	13.33	62.25
3	43.33	55.80
4	76.00	48.54
5	105.3	41.62
6	135.3	33.88
7	173.0	25.32
8	207.3	18.24
9	221.7	15.02
10	252.0	10.33

QUENCH LIMITS LOW:0.000 HIGH:252.0

```
USER: 1 ID:H-3 TRITIUM  PRESET TIME: 10.00            FRI 30 MAR 1990 18:27
SAMPLE REPEAT: 1 CYCLE REPEAT: 1 SCR:N   RS232:N
H#: 3 AQC:Y QCF:N RCM:Y 2 PHASE MONITOR:Y POST CHK:N VIAL:B VOLUME:1
RCM-TIME:  0.10 INT:999.95
CHANNEL 1-LL:  0 UL: 400 2SIGMA: 0.10 BKG SUB:   0.00 BKG 2SIG:  0.00 LSR:   0

SINGLE LABEL DPM  SET UP ON  19 SEP 1988  16:50

UNKNOWN ID:H-3  TRITIUM            UNKNOWN REPLICATES: 1
UNKNOWN NORM FACTOR  ISO1:Q 1.00000
UNKNOWN UNITS        ISO1:DPM
UNKNOWN HALF LIFE CORRECTION:N
INDIVIDUAL UNKNOWN NORM FACTORS:N    BACKGROUND QUENCH CURVES:Y
STANDARD ID:PACKARD 6008501 #54   QUENCH LIMITS   LOW:0.000    HIGH:252.0
HALF LIFE(DAYS)  ISO1:  4503.000
STANDARD DPM     ISO1:  260100.0


SAM  POS  CH     CPM    2SIG%  TIME   EL TIME AVG H#       RCM%  2P        ERR

B1  **- 1  1     15.40 16.12  10.00    10.99  78.7         0.42
    H#:  78,  79,  79


BACKGROUND QUENCH CURVES: CONSTANT


CHANNEL 1
QUENCH CURVE COEFFICIENTS
A:  15.40000      B:0.00000000      C:0.00000000      D:0.00000000000

                BACKGROUND QUENCH CURVE CORRELATION TABLE

                          MEASURED     CALCULATED      PERCENT
  BKG          H#          CPM.          CPM.          DIFF.      FLAG
  ---        -----       --------     ----------      -------     ----
   1         78.7         15.40         15.40          0.00


BACKGROUND QUENCH LIMITS   LOW:0.000    HIGH:1000.
     TOTAL QUENCH LIMITS   LOW:0.000    HIGH:252.0


SAM  POS  CH     CPM    2SIG%  TIME   EL TIME AVG H#       RCM%  2P        ERR

  1 **- 3  1     782.70  2.26  10.00    22.37  80.7         0.05
    H#:  80,  81,  81
F927   ISO1 %EFF CH1:47.49                          ISO1 DPM  :1615.560

  2 **- 4  1     14.40 16.67  10.00    33.50  75.7         0.69
    H#:  75,  76,  76
F928   ISO1 %EFF CH1:48.62                          ISO1 DPM  :0.000000
```

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
16	**- 6	1	17.20	15.25	10.00	189.53	79.7	0.25		
	H#: 79, 80, 80									
F1054	ISO1 %EFF CH1:47.72							ISO1 DPM	:3.772058	
17	**- 7	1	39.30	10.09	10.00	200.66	79.3	0.49		
	H#: 79, 79, 80									
F1055	ISO1 %EFF CH1:47.80							ISO1 DPM	:50.00574	
18	**- 8	1	41.60	9.81	10.00	211.80	75.7	0.35		
	H#: 75, 76, 76									
F1056	ISO1 %EFF CH1:48.62							ISO1 DPM	:53.89141	
19	**- 9	1	41.00	9.88	10.00	222.94	79.3	0.25		
	H#: 79, 80, 79									
F1056	ISO1 %EFF CH1:47.80							ISO1 DPM	:53.56292	
20	**-10	1	368.10	3.30	10.00	234.08	81.0	0.20		
	H#: 81, 81, 81									
F1057	ISO1 %EFF CH1:47.42							ISO1 DPM	:743.8165	
21	**-11	1	755.00	2.30	10.00	245.21	79.3	0.04		
	H#: 78, 80, 80									
F1058	ISO1 %EFF CH1:47.80							ISO1 DPM	:1547.466	

SAM	POS	CH	CPM	2SIG%	TIME	EL TIME	AVG H#	RCM%	2P	ERR
3	**- 5	1	35.30	10.64	10.00	44.62	79.7	0.24		
	H#: 80, 79, 80									
F929	ISO1 %EFF CH1:47.72							ISO1 DPM	:41.70151	
4	**- 6	1	33.40	10.94	10.00	55.77	80.0	0.37		
	H#: 80, 80, 80									
F930	ISO1 %EFF CH1:47.65							ISO1 DPM	:37.77954	
5	**- 7	1	33.00	11.01	10.00	66.87	79.0	0.26		
	H#: 79, 79, 79									
F930	ISO1 %EFF CH1:47.87							ISO1 DPM	:36.76596	
6	**- 8	1	414.70	3.11	10.00	78.00	81.3	0.27		
	H#: 81, 82, 81									
F931	ISO1 %EFF CH1:47.34							ISO1 DPM	:843.4232	
7	**- 9	1	750.10	2.31	10.00	89.17	79.3	0.09		
	H#: 79, 79, 80									
F932	ISO1 %EFF CH1:47.80							ISO1 DPM	:1537.190	
8	**-10	1	759.20	2.30	10.00	100.30	79.0	0.05		
	H#: 79, 79, 79									
F951	ISO1 %EFF CH1:47.87							ISO1 DPM	:1553.788	
9	**-11	1	14.60	16.55	10.00	111.45	78.7	0.38		
	H#: 78, 79, 79									
F952	ISO1 %EFF CH1:47.95							ISO1 DPM	:0.000000	
10	**-12	1	16.40	15.62	10.00	122.59	79.0	0.20		
	H#: 79, 79, 79									
F953	ISO1 %EFF CH1:47.87							ISO1 DPM	:2.088997	
11	**- 1	1	13.70	17.09	10.00	133.79	79.7	0.39		
	H#: 79, 80, 80									
F954	ISO1 %EFF CH1:47.72							ISO1 DPM	:0.000000	
12	**- 2	1	19.40	14.36	10.00	144.93	79.0	0.98		
	H#: 79, 79, 79									
F954	ISO1 %EFF CH1:47.87							ISO1 DPM	:8.335989	
13	**- 3	1	418.90	3.09	10.00	156.08	82.7	0.20		
	H#: 82, 83, 83									
F955	ISO1 %EFF CH1:47.04							ISO1 DPM	:857.7924	
14	**- 4	1	770.20	2.28	10.00	167.21	79.7	0.04		
	H#: 79, 80, 80									
F956	ISO1 %EFF CH1:47.72							ISO1 DPM	:1581.740	
15	**- 5	1	777.90	2.27	10.00	178.37	79.7	0.05		
	H#: 79, 80, 80									
F1053	ISO1 %EFF CH1:47.72							ISO1 DPM	:1597.885	

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Perkin - Elmer
PROCEDURE/REV	LA-355-131/A-2
TECHNOLOGIST	J. A. Hopkins
DATE	3-16-90
TEMPERATURE	70 C
STARTING TIME	09:00
ENDING TIME	10:00
CHEMIST	R. K. Fuller

Arsenic Analysis by Atomic Absorption

Water Digestion

Manual Cold Vapor Technique

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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	58C11BR/35 uL			35 mL
Spike	58C11BR/35 uL	F0931/1 mL		35 mL

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

Single Shell Tank
Calibration Record

Analyte:	As		
Procedure:	LA-355-131	Revision:	A-2
Instrument:	Perkin - Elmer AA	Property Number:	WA77479
Technologist:	J. A. Hopkins	Payroll Number:	6A543
Date:	03-16-90		

Calibration Standard ID: 38C9-B

Analyte Concentration: 1.00 ppm

Type of Calibration: Linear Regression

Dilution	Concentration	Instrument Reading Unit=
0	0	2
25 uL	25 ng	30
50 uL	50 ng	54.5
75 uL	75 ng	80

Comments:

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

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Perkin-Elmer AA
PROCEDURE/REV	LA-365-102/A-2
TECHNOLOGIST	J. Hopkins
DATE	03-09-90
TEMPERATURE	70 F
STARTING TIME	13:00
ENDING TIME	14:00
CHEMIST	R. K. Fuller

Mercury Analysis by Atomic Absorption

Manual Cold Vapor Technique

Water Digestion

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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	58C11BQ/25 uL			25 mL
Spike	58C11BQ/25 uL	F0931/1.5 mL		25 mL

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

Single Shell Tank
Calibration Record

Analyte: HG	
Procedure: LA-325-102	Revision: A-1
Instrument: Perkin - Elmer	Property Number: WA77479
Technologist: J. A. Hopkins	Payroll Number: 6A543
Date: 3-09-90	

Calibration Standard ID: 102C3W

Analyte Concentration: 100 ppm

Type of Calibration: Linear Regression

Dilution	Concentration	Instrument Reading Units=
0	0	6
10 uL	10 mg	36
20 uL	20 mg	72
40 uL	40 mg	146

Comments:

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

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	Perkin - Elmer
Procedure/Rev	LA-365-131/A-3
Technologist	S. Reil
Date	04-04-90
Temperature	70 F
Starting Time	14:10
Ending Time	14:45
Chemist	R. K. Fuller

Selenium Analysis

Water Digestion

	Description	Lab ID
1	Initial LMCS Check Std	F0927
2	Reagent Blank	F0928
3	Sample Composite 6	F0929
4	Duplicate Composite 6	F0930
5	Spike Composite 6	F0931
6	Final LMCS Check Std	F0932
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	58C11BU/35 uL			35 mL
Spike Composite 5	58C11BU/35 uL	F0931/1 mL		35 mL

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

Single Shell Tank
Calibration Record

ANALYTE:	Se		
PROCEDURE:	LA-365-131	REVISION:	A-3
INSTRUMENT:	Perkin - Elmer AA	PROPERTY NUMBER:	WA77479
TECHNOLOGIST:	S. Riel	PAYROLL NUMBER:	6C280
DATE:	April 4, 1990		

CALIBRATION STANDARD ID: 102C3Z

ANALYTE CONCENTRATION: 1001 ppm

TYPE OF CALIBRATION: Linear Regression

Dilution	Concentration	Instrument Reading Units= millimeters
0	0	5.0
25 uL	25 ng	41.0
50 uL	50 ng	71.0
75 uL	75 ng	110.0

COMMENTS:

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

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	WB39939
Procedure/Rev	LA-505-151/A-0
Technologist	J. A. White
Date	July 9, 1990
Temperature	N/A
Starting Time	13:02
Ending Time	15:08
Chemist	S. A. Jones

Core 6 Composite
Water Digestion
Second ICP batch ran this date.

	Description	Lab ID
1	LMCS Check Std	N/A
2	Reageant Blank	F0904
3	Sample Composite 5	F0905
4	Duplicate Composite 5	F0906
5	Spike Composite 5	F0907
6	Sample Composite 6	F0929
7	Duplicate Composite 6	F0930
8	Sample Composite 7	F0983
9	Duplicate Composite 7	F0984
10	Sample Composite 15	F1031
11	Duplicate Composite 15	F1032

	Description	Lab ID
12	Sample Composite 12	F1055
13	Duplicate Composite 12	F1056
14	LMCS Check Std	N/A
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	78C11T / 1.0 mL	87B38B /1.0 mL	77C11R /1.0mL	1.0 mL
Spike	78C11T/ 1.0 mL	87B38B/1.0 mL	77C11R /1.0mL	
Spike (Continued)	F0907/ .5 mL			13.5 mL

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

ICP Results RAW ICP DATA SUMMARY

Date Analyzed:	JULY 9, 1990	Reagent Blank	F904
Procedure:	LA-505-151/A-0	Core 6 Composite	F929
Analyst:	J. A. WHITE	Duplicate of Core 6 Composite	F930
Digestion	Acid Digestion	Spike of Core 5 Composite F905	F907
Procedure:	LA-505-159/A-0		

	Standard Recovery %	Acid Digestion Standard Recovery %	Reagent Blank ppm	Sample ug/g	Sample Duplicate ug/g	Spike Recovery %	Acid Digestion Standard Recovery %	Standard Recovery %
Aluminum	101.94%	not	0.62 LT	3823.95	2694.93	125.25%	Not	102.50%
Antimony	103.10%	analyzed	-0.25 LT	48.90 LT	-32.54 LT	102.82%	Analyzed	103.33%
Arsenic	217.12% #	NA	0.26 LT	15.27 LT	9.95 LT	109.67%	NA	218.18% #
Barium	108.49%	NA	0.04 LT	3.69 LT	3.98 LT	108.73%	NA	106.68%
Beryllium	107.33%	NA	0.01 LT	0.60 LT	0.30 LT	108.07%	NA	106.33%
Bismuth	108.88%	NA	0.27 LT	4.19 LT	-31.54 LT	110.20%	NA	128.00% #
Boron	103.83%	NA	2.40	289.22	389.25	103.11%	NA	103.08%
Cadmium	102.99%	NA	0.02 LT	1.10 LT	-0.40 LT	101.38%	NA	103.17%
Calcium	104.32%	NA	1.04	300.40	83.68	103.30%	NA	102.78%
Cerium	96.87%	NA	1.06 LT	66.77 LT	-28.26 LT	92.94%	NA	99.00%
Chromium	90.82%	NA	0.03 LT	379.24	297.81	90.91%	NA	90.53%
Cobalt	104.45%	NA	-0.31 LT	-15.27 LT	-15.22 LT	99.33%	NA	104.74%
Copper	104.12%	NA	0.08 LT	9.38 LT	13.83 LT	106.09%	NA	102.75%
Europium	96.18%	NA	0.02 LT	0.60 LT	-1.59 LT	95.07%	NA	96.20%
Iron	106.43%	NA	0.22 LT	47.01	103.28	106.52%	NA	106.33%
Lanthanum	93.88%	NA	0.06 LT	-7.98 LT	-3.98 LT	93.61%	NA	98.40%
Lead	102.18%	NA	0.40 LT	52.59 LT	26.27 LT	104.70%	NA	121.40% #
Lithium	102.50%	NA	0.06 LT	3.39 LT	-0.40 LT	100.77%	NA	101.12%
Magnesium	107.64%	NA	0.45	622.75	2121.69	124.83%	NA	107.44%
Manganese	103.54%	NA	0.01 LT	2.00 LT	2.49 LT	101.90%	NA	102.93%
Mercury	104.05%	NA	0.77	41.42	38.21	100.76%	NA	104.93%
Molybdenum	98.32%	NA	0.03 LT	4.09 LT	-1.19 LT	99.61%	NA	98.41%
Neodymium	95.33%	NA	-0.21 LT	-86.73 LT	-154.63 LT	85.46%	NA	93.97%
Nickel	102.34%	NA	-0.01 LT	0.20 LT	5.47 LT	101.03%	NA	102.75%
Phosphorous	111.86% #	NA	-0.27 LT	23692.61	19728.36	NOT CALC.	NA	114.28% #
Potassium	104.45%	NA	2.24 LT	316.37 LT	143.38 LT	100.02%	NA	106.83%
Samarium	99.10%	NA	1.56 LT	94.81 LT	-50.15 LT	90.31%	NA	0.00% #
Selenium	99.48%	NA	0.30 LT	135.53 LT	116.12 LT	110.85%	NA	100.23%
Silicon	89.64% #	NA	3.00	1718.86	2144.18	67.11%	NA	90.05%
Silver	103.78%	NA	0.08 LT	4.29 LT	-4.28 LT	101.89%	NA	107.60%
Sodium	101.90%	NA	4.10	102854.29	78376.12	NOT CALC.	NA	101.79%
Strontium	104.58%	NA	0.02 LT	1.40 LT	0.40 LT	102.87%	NA	103.14%
Sulfur	101.58%	NA	0.05 LT	411.28	421.39	94.22%	NA	102.49%
Tantalum	96.99%	NA	0.09 LT	9.58 LT	-15.42 LT	97.02%	NA	97.63%
Thallium	99.91%	NA	1.51	-21.06 LT	684.28	129.31%	NA	99.80%
Thorium	103.93%	NA	0.77	63.87	-46.67 LT	103.61%	NA	113.48% #
Tin	102.44%	NA	0.06 LT	15.47 LT	21.89 LT	104.85%	NA	102.92%
Titanium	101.96%	NA	0.03 LT	3.89 LT	3.08 LT	102.98%	NA	101.79%
Tungsten	72.75% #	NA	0.03 LT	63.17 LT	36.92 LT	74.30%	NA	73.05% #
Uranium	101.61%	NA	6.47 LT	395.01 LT	-477.31 LT	110.00%	NA	0.00% #
Vanadium	99.65%	NA	0.01 LT	-3.69 LT	-1.59 LT	101.98%	NA	98.23%
Zinc	103.98%	NA	0.21	26.15	48.96	103.43%	NA	103.54%
Zirconium	96.87%	NA	0.16 LT	12.48 LT	-0.20 LT	97.83%	NA	96.70%
Dilution Factor			21.00	21.00	21.00			

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

ICP Results

RAW ICP DATA

Date Analyzed: JULY 9, 1990
Procedure: LA-505-151/A-0
Analyst: J. A. WHITE
Digestion Procedure: Acid Digestion LA-505-159/A-0

Reagent Blank F904
Core 6 Composite F929
Duplicate of Core 6 Composite F930
Spike of Core 5 Composite F905 F907

	SST-1	SST-2	Starting LMCS Instrument Standard ppm	Standard Recovery %	LMCS Acid Digestion Standard ppm	Acid Digestion Standard Recovery %	Reagent Blank ppm	Digestion Weight Volume Sample Dilution Three ppm
Aluminum			10.19	101.94%		not	0.62 LT	
Antimony	10.31			103.10%		analyzed	-0.25 LT	
Arsenic			21.71	217.12% #		NA	0.26 LT	
Barium	10.85			108.49%		NA	0.04 LT	
Beryllium			4.29	107.33%		NA	0.01 LT	
Bismuth		5.44		108.88%		NA	0.27 LT	
Boron	10.38			103.83%		NA	2.40	
Cadmium	10.30			102.99%		NA	0.02 LT	
Calcium	10.43			104.32%		NA	1.04	
Cerium	9.69			96.87%		NA	1.06 LT	
Chromium	9.08			90.82%		NA	0.03 LT	
Cobalt	10.45			104.45%		NA	-0.31 LT	
Copper	10.41			104.12%		NA	0.08 LT	
Europium		4.81		96.18%		NA	0.02 LT	
Iron	10.64			106.43%		NA	0.22 LT	
Lanthanum		4.69		93.88%		NA	0.06 LT	
Lead		5.11		102.18%		NA	0.40 LT	
Lithium	10.25			102.50%		NA	0.06 LT	
Magnesium	10.76			107.64%		NA	0.45	
Manganese	10.35			103.54%		NA	0.01 LT	
Mercury			10.41	104.05%		NA	0.77	
Molybdenum			9.83	98.32%		NA	0.03 LT	
Neodymium	9.53			95.33%		NA	-0.21 LT	
Nickel	10.23			102.34%		NA	-0.01 LT	
Phosphorous			11.19	111.86% #		NA	-0.27 LT	
Potassium	10.45			104.45%		NA	2.24 LT	
Samarium		4.96		99.10%		NA	1.56 LT	
Selenium			19.90	99.48%		NA	0.30 LT	
Silicon			8.96	89.64% #		NA	3.00	
Silver		5.19		103.78%		NA	0.08 LT	
Sodium	10.19			101.90%		NA	4.10	
Strontium	10.46			104.58%		NA	0.02 LT	
Sulfur			20.32	101.58%		NA	0.05 LT	
Tantalum			9.70	96.99%		NA	0.09 LT	
Thallium			19.98	99.91%		NA	1.51	
Thorium		25.98		103.93%		NA	0.77	
Tin	5.12			102.44%		NA	0.06 LT	
Titanium			10.20	101.96%		NA	0.03 LT	
Tungsten			7.28	72.75% #		NA	0.03 LT	
Uranium		25.40		101.61%		NA	6.47 LT	
Vanadium			3.99	99.65%		NA	0.01 LT	
Zinc	10.40			103.98%		NA	0.21	
Zirconium			9.69	96.87%		NA	0.16 LT	
Dilution Factor	1.00	1.00	1.00				21.00	1.00

	0.01002 g/mL 1.00 g 100.00 mL Sample Dilution Two ppm	Sample Dilution One ppm	Digestion Weight 1.01 g Volume 100.00 mL Sample Duplicate Dilution Three ppm	Sample Duplicate Dilution Two ppm	Sample Duplicate Dilution One ppm	Digestion Weight 1.01 g Volume 100.00 mL Spike of Sample Dilution Three ppm	Spike of Sample Dilution Two ppm	Spike of Sample Dilution One ppm
Aluminum		38.32			27.08			68.62
Antimony		0.49 LT			-0.33 LT			21.74
Arsenic		0.15 LT			0.10 LT			44.04
Barium		0.04 LT			0.04 LT			21.80
Beryllium		0.01 LT			0.00 LT			8.65
Bismuth		0.04 LT			-0.32 LT			11.76
Boron		2.90			3.91			27.33
Cadmium		0.01 LT			0.00 LT			20.29
Calcium		3.01			0.84			21.29
Cerium		0.67 LT			-0.28 LT			20.00
Chromium		3.80			2.99			26.30
Cobalt		-0.15 LT			-0.15 LT			19.71
Copper		0.09 LT			0.14 LT			21.34
Europium		0.01 LT			-0.02 LT			9.54
Iron		0.47			1.04			21.60
Lanthanum		-0.08 LT			-0.04 LT			9.55
Lead		0.53 LT			0.26 LT			11.69
Lithium		0.03 LT			0.00 LT			20.22
Magnesium		6.24			21.32			25.89
Manganese		0.02 LT			0.03 LT			20.40
Mercury		0.42			0.38			20.82
Molybdenum		0.04 LT			-0.01 LT			20.01
Neodymium		-0.87 LT			-1.55 LT			17.80
Nickel		0.00 LT			0.06 LT			20.30
Phosphorous		237.40			198.27			193.09
Potassium		3.17 LT			1.44 LT			24.50
Samarium		0.95 LT			-0.50 LT			10.98
Selenium		1.36 LT			1.17 LT			46.91
Silicon		17.22			21.55			64.49
Silver		0.04 LT			-0.04 LT			10.29
Sodium		1030.60			787.68			1217.16
Strontium		0.01 LT			0.00 LT			20.60
Sulfur		4.12			4.24			55.81
Tantalum		0.10 LT			-0.16 LT			19.68
Thallium		-0.21 LT			6.88			51.13
Thorium		0.64			-0.47 LT			53.08
Tin		0.16 LT			0.22 LT			10.69
Titanium		0.04 LT			0.03 LT			20.69
Tungsten		0.63 LT			0.37 LT			16.26
Uranium		3.96 LT			-4.80 LT			66.46
Vanadium		-0.04 LT			-0.02 LT			8.17
Zinc		0.26			0.49			20.88
Zirconium		0.13 LT			0.00 LT			19.82
Dilution Factor	1.00	21.00	1.00	1.00	21.00	1.00	1.00	27.00

	Spike Recovery %	Standard LMCS Acid Digestion ppm	Acid Digestion Standard Recovery %	SST-1	SST-2	Ending LMCS Standard ppm SST-3	Standard Recovery %		Spike Standard LMCS ppm added
Aluminum	125.25%		Not			10.25	102.50%		10.00
Antimony	102.82%		Analyzed	10.33			103.33%		10.00
Arsenic	109.67%		NA			21.82	218.18%	#	20.00
Barium	108.73%		NA	10.67			106.68%		10.00
Beryllium	108.07%		NA			4.25	106.33%		4.00
Bismuth	110.20%		NA		6.40		128.00%	#	5.00
Boron	103.11%		NA	10.31			103.08%		10.00
Cadmium	101.38%		NA	10.32			103.17%		10.00
Calcium	103.30%		NA	10.28			102.78%		10.00
Cerium	92.94%		NA	9.90			99.00%		10.00
Chromium	90.91%		NA	9.05			90.53%		10.00
Cobalt	99.33%		NA	10.47			104.74%		10.00
Copper	106.09%		NA	10.28			102.75%		10.00
Europium	95.07%		NA		4.81		96.20%		5.00
Iron	106.52%		NA	10.63			106.33%		10.00
Lanthanum	93.61%		NA		4.92		98.40%		5.00
Lead	104.70%		NA		6.07		121.40%	#	5.00
Lithium	100.77%		NA	10.11			101.12%		10.00
Magnesium	124.83%		NA	10.74			107.44%		10.00
Manganese	101.90%		NA	10.29			102.93%		10.00
Mercury	100.76%		NA			10.49	104.93%		10.00
Molybdenum	99.61%		NA			9.84	98.41%		10.00
Neodymium	85.46%		NA	9.40			93.97%		10.00
Nickel	101.03%		NA	10.28			102.75%		10.00
Phosphorous	NOT CALC.		NA			11.43	114.28%	#	10.00
Potassium	100.02%		NA	10.68			106.83%		10.00
Samarium	90.31%		NA				0.00%	#	5.00
Selenium	110.85%		NA			20.05	100.23%		20.00
Silicon	67.11%		NA			9.01	90.05%		10.00
Silver	101.89%		NA		5.38		107.60%		5.00
Sodium	NOT CALC.		NA	10.18			101.79%		10.00
Strontium	102.87%		NA	10.31			103.14%		10.00
Sulfur	94.22%		NA			20.50	102.49%		20.00
Tantalum	97.02%		NA			9.76	97.63%		10.00
Thallium	129.31%		NA			19.96	99.80%		20.00
Thorium	103.61%		NA		28.37		113.48%	#	25.00
Tin	104.85%		NA	5.15			102.92%		5.00
Titanium	102.98%		NA			10.18	101.79%		10.00
Tungsten	74.30%		NA			7.31	73.05%	#	10.00
Uranium	110.00%		NA				0.00%	#	25.00
Vanadium	101.98%		NA			3.93	98.23%		4.00
Zinc	103.43%		NA	10.35			103.54%		10.00
Zirconium	97.83%		NA			9.67	96.70%		10.00
Dilution Factor				1.00	1.00	1.00			

	Spike Standard ID Book # 78C11T 87B38B 77C11R	SST-1	SST-2	LMCS Standards Values ppm SST-3	LMCS Standard IDs Book # 78C11T 87B38B 77C11R	ACID DIGESTION LMCS STANDARD VALUES ppm in Sample	ACID DIGEST. LMCS IDs Book # Not Analyzed
Aluminum				10.00		100.00	
Antimony		10.00					
Arsenic				10.00			
Barium		10.00				100.00	
Beryllium				4.00			
Bismuth			5.00			100.00	
Boron		10.00				100.00	
Cadmium		10.00				100.00	
Calcium		10.00				100.00	
Cerium		10.00				100.00	
Chromium		10.00				100.90	
Cobalt		10.00				100.00	
Copper		10.00				100.00	
Europium			5.00				
Iron		10.00				100.00	
Lanthanum			5.00			100.00	
Lead			5.00			100.00	
Lithium		10.00				100.00	
Magnesium		10.00				100.00	
Manganese		10.00				100.00	
Mercury				10.00			
Molybdenum				10.00		99.80	
Neodymium		10.00				100.00	
Nickel		10.00				100.00	
Phosphorous				10.00		100.00	
Potassium		10.00				100.00	
Samarium			5.00				
Selenium				20.00			
Silicon				10.00		100.00	
Silver			5.00				
Sodium		10.00				100.00	
Strontium		10.00				100.00	
Sulfur				20.00			
Tantalum				10.00		99.50	
Thallium				20.00			
Thorium			25.00				
Tin		5.00				100.00	
Titanium				10.00		100.10	
Tungsten				10.00			
Uranium			25.00				
Vanadium				4.00			
Zinc		10.00				100.00	
Zirconium				10.00		99.80	
Dilution Factor						10.00	

ICP Calibration Report

Procedure: LA-505-151 Revision: A-0
Instrument: WB39939
Technologist: J.A. White
Date: July 9, 1990 Time: 13:02
(Second ICP batch ran this date.)

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 - July 9, 1990 - Second Run

Sample name : SST0
Programme : SST 09-Jul-90 13:02:18

NAME	MV INT	RSD	BCOR
AL	2.09	0.29	0.00000
SB	0.37	0.71	0.00000
AS	1.26	0.65	0.00000
BA	5.38	0.44	0.00000
BE	0.70	0.30	0.00000
BI	4.51	0.57	0.00000
B	5.47	0.61	0.00000
CD	2.87	0.82	0.00000
CA	0.57	0.57	0.00000
CE	6.89	0.41	0.00000
CR	2.20	1.24	0.00000
CO	0.21	0.28	0.00000
CU	3.61	0.42	0.00000
EU	5.24	0.47	0.00000
FE	1.79	1.30	0.00000
LA	0.45	0.47	0.00000
PB	0.28	0.21	0.00000
LI	5.08	0.37	0.00000
MG	0.50	0.40	0.00000
MN	0.89	0.68	0.00000
HG	2.89	0.09	0.00000
MO	1.94	0.55	0.00000
ND	11.08	0.15	0.00000
NI	3.97	1.05	0.00000
P	1.49	1.87	0.00000
K	4.20	0.47	0.00000
SM	6.52	0.38	0.00000
SE	2.06	0.46	0.00000
SI	4.05	0.51	0.00000
AG	5.43	0.53	0.00000
NA	8.06	0.34	0.00000
SR	4.61	0.36	0.00000
S	0.86	0.68	0.00000
TA	4.58	0.52	0.00000
TL	4.59	0.40	0.00000
TH	1.44	0.22	0.00000
SN	1.73	0.49	0.00000
TI	4.39	0.53	0.00000
W	3.39	0.89	0.00000
U	6.88	0.45	0.00000
V1	4.42	0.54	0.00000
ZN	2.94	1.03	0.00000
ZR	5.62	0.32	0.00000

Sample name : SST1
Programme : SST 09-Jul-90 13:06:11

NAME	MV INT	RSD	BCOR
LI	478.79	1.23	0.00000
K	15.13	0.65	0.00000
NA	82.35	1.13	0.00000

ICP Calibration - July 9, 1990 - Second Run

Sample name : SST2
Programme : SST 09-Jul-90 13:08:29

NAME	MV INT	RSD	BCOR
BA	329.62	0.60	0.00000
BE	502.26	0.51	0.00000
CD	402.15	0.52	0.00000
CA	461.12	0.55	0.00000
CR	109.38	0.21	0.00000
CO	1.12	2.01	0.00000
CU	106.37	0.49	0.00000
FE	117.78	0.39	0.00000
MG	531.13	0.62	0.00000
MN	303.40	0.47	0.00000
NI	184.24	0.47	0.00000
AG	146.54	0.37	0.00000
SR	619.02	0.64	0.00000
V1	141.42	0.45	0.00000
ZN	768.00	0.47	0.00000

Sample name : SST3
Programme : SST 09-Jul-90 13:11:46

NAME	MV INT	RSD	BCOR
AL	21.94	0.74	0.00000
B	702.34	1.08	0.00000
HG	585.91	0.66	0.00000
MO	359.48	0.92	0.00000
P	49.78	2.77	0.00000
SI	99.03	0.11	0.00000
S	44.00	0.94	0.00000
TA	171.88	0.79	0.00000
TI	512.89	1.00	0.00000
W	177.07	0.95	0.00000
ZR	193.71	0.92	0.00000

Sample name : SST4
Programme : SST 09-Jul-90 13:14:40

NAME	MV INT	RSD	BCOR
SB	2.52	0.77	0.00000
AS	37.93	0.57	0.00000
BI	37.65	0.42	0.00000
PB	1.61	0.35	0.00000
SE	17.65	0.61	0.00000
TL	13.72	0.32	0.00000
TH	5.55	0.40	0.00000
SN	98.61	0.61	0.00000
U	9.18	0.24	0.00000

Sample name : SST5
Programme : SST 09-Jul-90 13:17:03

NAME	MV INT	RSD	BCOR
CE	20.71	0.21	0.00000
EU	447.23	0.52	0.00000

ICP Calibration - July 9, 1990 - Second Run

Sample name : SST5
Programme : SST 09-Jul-90 13:17:03

NAME	MV INT	RSD	BCOR
CE	20.71	0.21	0.00000
EU	447.33	0.52	0.00000
LA	7.46	0.41	0.00000
ND	49.10	0.30	0.00000
SM	16.24	0.14	0.00000

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.9899	23.042	-0.527633E+01	0.251893E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	2.0947	0.0000	0.0000	-0.000	-0.000		CRV1
SST3	0	21.944	50.000	50.000	50.000	0.0000	0.0000	CRV1

Programme name : SST Channel name : SR1 Polynomial type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.3553	2.6418	-0.436508E+01	0.116713E+02		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.3740	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	2.5160	25.000	25.000	25.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.2008	39.826	-0.861842E+00	0.681837E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.2640	0.0000	0.0000	0.0000	0.0000		CRV1
SST4	0	37.930	25.000	25.000	25.000	0.0000	0.0000	CRV1

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.1075	346.10	-0.331624E+00	0.616822E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.3763	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	329.62	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.6609	527.37	-0.277398E-01	0.398751E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.6957	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	502.26	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.2848	39.529	-0.340283E+01	0.754451E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.5103	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	37.647	25.000	25.000	25.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.2000	737.46	-0.392735E+00	0.717499E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.2000	737.46	-0.392735E+00	0.717499E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.4737	0.0000	0.0000	-0.000	-0.000		CRV1
SST3	0	702.34	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.7256	422.26	-0.143707E+00	0.500895E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	2.8690	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	402.15	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.5383	484.18	-0.246081E-01	0.434260E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.5667	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	461.12	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	6.5445	21.741	-0.997225E+01	0.144756E+01		

Name	Number	Int.	Conc	True	Calc	Conc	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	6.5445	21.741	-0.997225E+01	0.144756E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	6.8890	0.0000	0.0000	0.0000	0.0000		CRV1
SST5	0	20.705	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.0922	114.85	-0.410982E+00	0.186612E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	2.2023	0.0000	0.0000	-0.000	-0.000		CRV1
SST2	0	109.38	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.1973	1.1770	-0.454745E+01	0.218978E+02		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.2077	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	1.1210	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.4248	111.69	-0.701619E+00	0.194624E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.4248	111.69	-0.701619E+00	0.194624E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	3.6050	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	106.37	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.9818	469.70	-0.237238E+00	0.452398E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.2440	0.0000	0.0000	0.0000	0.0000		CRV1
SST5	0	447.33	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.6999	123.67	-0.308518E+00	0.172421E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.7893	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	117.78	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4231	7.8323	-0.126984E+01	0.285144E+01		

Name	Number	Int.	Conc	True	Calc	Conc	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4231	7.8323	-0.126984E+01	0.285144E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.4453	0.0000	0.0000	0.0000	0.0000		CRV1
SST5	0	7.4593	20.000	20.000	20.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.2663	1.6884	-0.527868E+01	0.188300E+02		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.2803	0.0000	0.0000	0.0000	0.0000		CRV1
SST4	0	1.6080	25.000	25.000	25.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.8292	502.73	-0.536550E+00	0.105551E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.0833	0.0000	0.0000	-0.000	-0.000		CRV1
SST1	0	478.79	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4750	557.69	-0.188454E-01	0.376908E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.4750	557.69	-0.188454E-01	0.376908E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.5000	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	531.13	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8468	318.57	-0.589288E-01	0.661131E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.8913	0.0000	0.0000	0.0000	0.0000		CRV1
SGT2	0	303.40	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.7420	615.20	-0.247532E+00	0.857600E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SSI0	0	2.8863	0.0000	0.0000	-0.000	-0.000		CRV1
SST3	0	585.91	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.8446	377.45	-0.271535E+00	0.139847E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.8446	377.45	-0.271535E+00	0.139847E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.9417	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	359.48	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	10.525	51.550	-0.582872E+01	0.526090E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	11.079	0.0000	0.0000	-0.000	-0.000		CRV1
SST5	0	49.096	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.7715	193.45	-0.440450E+00	0.110944E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	3.9700	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	184.24	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.4193	52.271	-0.154698E+01	0.103546E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.4193	52.271	-0.154698E+01	0.103546E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.4940	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	49.782	50.000	50.000	50.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.9913	15.888	-0.192187E+02	0.457443E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.2013	0.0000	0.0000	0.0000	0.0000		CRV1
SST1	0	15.132	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	6.1899	17.052	-0.134008E+02	0.205670E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	6.5157	0.0000	0.0000	-0.000	-0.000		CRV1
SST5	0	16.240	20.000	20.000	20.000	0.0000	0.0001	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.9538	18.537	-0.329636E+01	0.160277E+01		

Name	Number	Int.	Conc	True	Calc	Conc	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.9538	18.537	-0.329636E+01	0.160277E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	2.0567	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	17.655	25.000	25.000	25.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.8440	103.98	-0.212999E+01	0.526401E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.0463	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	99.031	50.000	50.000	50.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.1541	153.86	-0.768949E+00	0.141733E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.4253	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	146.54	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	7.6614	86.465	-0.542834E+01	0.673101E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	7.6614	86.465	-0.542834E+01	0.673101E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	8.0647	0.0000	0.0000	0.0000	0.0000		CRV1
SST1	0	82.348	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.3779	649.98	-0.150007E+00	0.325512E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.6083	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	619.02	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8148	46.202	-0.993943E+00	0.115889E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	0.8577	0.0000	0.0000	-0.000	-0.000		CRV1
SST3	0	44.002	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.3532	180.48	-0.136950E+01	0.298865E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.3532	180.48	-0.136950E+01	0.298865E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.5823	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	171.88	50.000	50.000	50.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.3570	14.408	-0.125511E+02	0.273663E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.5863	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	13.722	25.000	25.000	25.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.3715	5.8240	-0.879641E+01	0.609310E+01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.4437	0.0000	0.0000	0.0000	0.0000		CRV1
SST4	0	5.5467	25.000	25.000	25.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.6438	103.54	-0.446507E+00	0.258047E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.6438	103.54	-0.446507E+00	0.258047E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	1.7303	0.0000	0.0000	0.0000	0.0000		CRV1
SST4	0	98.612	25.000	25.000	25.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.1661	538.53	-0.431203E+00	0.983285E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.3853	0.0000	0.0000	-0.000	-0.000		CRV1
SST3	0	512.89	50.000	50.000	50.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.2186	185.93	-0.975334E+00	0.287879E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	3.3880	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	177.07	50.000	50.000	50.000	-0.000	-0.000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	6.5385	9.6404	-0.748554E+02	0.108759E+02		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	6.5385	9.6404	-0.748554E+02	0.108759E+02		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	6.8827	0.0000	0.0000	-0.000	-0.000		CRV1
SST4	0	9.1813	25.000	25.000	25.000	0.0001	0.0003	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	4.2025	148.49	-0.645810E+00	0.145990E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	4.4237	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	141.42	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.7883	806.40	-0.767256E-01	0.261416E-01		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	2.9350	0.0000	0.0000	0.0000	0.0000		CRV1
SST2	0	768.00	20.000	20.000	20.000	0.0000	0.0000	CRV1

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.3380	203.40	-0.149368E+01	0.265826E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve

ICP Calibration - July 9, 1990 - Second Run

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	5.3380	203.40	-0.149368E+01	0.265826E+00		

Name	Number	Int. (X)	Conc (Y)	True (Y)	Calc Conc	Conc Error	% Error	Curve
SST0	0	5.6190	0.0000	0.0000	0.0000	0.0000		CRV1
SST3	0	193.71	50.000	50.000	50.000	-0.000	-0.000	CRV1

Sample name : HNO3
Programme : SST 09-Jul-90 13:28:40

NAME	MV INT	CONCEN	RSD
Al	2.11	0.037	51.63
Sb	0.37	0.008	312.24
As	1.28	0.010	45.40
Ba	5.42	0.003	52.70
Be	0.70	0.000	109.96
Bi	4.57	0.043	47.97
B	5.54	0.005	74.98
Cd	2.89	0.001	74.52
Ca	0.57	0.000	12.37
Ce	6.96	0.105	43.90
Cr	2.22	0.004	107.79
Co	0.20	-0.058	0.00
Cu	3.64	0.007	58.03
Eu	5.28	0.002	67.49
Fe	1.80	0.002	127.58
La	0.45	0.006	104.08
Pb	0.28	-0.056	-50.92
Li	5.14	0.006	42.02
Mg	0.50	0.000	45.83
Mn	0.89	0.000	135.28
Hg	4.41	0.130	0.67
Mo	1.96	0.002	81.34
Nd	11.15	0.040	98.36
Ni	4.01	0.005	43.58
P	1.49	-0.007	-75.60
K	4.25	0.213	39.34
Sm	6.58	0.130	40.35
Se	2.06	0.008	94.51
Si	4.08	0.019	59.67
Ag	5.48	0.008	50.34
Na	8.13	0.046	60.35
Sr	4.64	0.001	58.86
S	0.86	0.000	900.12
Ta	4.62	0.012	52.10
Tl	4.62	0.100	60.74
Th	1.45	0.067	42.96
Sn	1.77	0.009	51.59
Ti	4.42	0.004	58.15
W	3.43	0.011	91.81
U	6.94	0.660	51.24
V	4.45	0.004	81.48
Zn	2.94	0.000	357.89
Zr	5.67	0.012	48.95

ICP Analysis - July 9, 1990 LMCS Check Standard

Sample name : 78C11T
Sample code 1 : SST1
Sample code 2 : DIRECT
Programme : SST 09-Jul-90 13:33:33

NAME	MV INT	CONCEN	RSD
Al	2.16	0.165	16.43
Sb	1.26	10.310	1.13
As	1.36	0.064	7.72
Ba	181.36	10.849	1.36
Be	0.73	0.001	22.19
Bi	4.74	0.175	7.99
B	150.18	10.383	1.15
Cd	208.49	10.299	1.52
Ca	240.78	10.432	1.34
Ce	13.58	9.687	1.50
Cr	50.87	9.082	1.31
Co	0.68	10.445	1.75
Cu	57.10	10.412	1.23
Eu	5.78	0.024	3.23
Fe	63.52	10.643	1.45
La	0.48	0.105	4.72
Pb	0.29	0.107	30.57
Li	102.19	10.250	1.17
Mg	286.08	10.764	1.35
Mn	157.51	10.354	1.43
Hg	4.38	0.128	6.75
Mo	2.08	0.019	13.86
Nd	29.20	9.533	2.01
Ni	96.22	10.234	1.14
P	1.61	0.121	1.48
K	6.48	10.445	1.54
Sm	6.57	0.110	40.61
Se	3.76	2.725	2.50
Si	4.19	0.074	10.51
Ag	5.54	0.016	20.02
Na	23.20	10.190	1.29
Sr	325.89	10.458	1.33
S	1.07	0.246	4.01
Ta	4.72	0.040	13.44
Tl	4.81	0.605	5.53
Th	1.50	0.372	13.94
Sn	21.58	5.122	1.77
Ti	4.43	0.005	22.39
W	4.39	0.287	2.96
U	7.33	4.909	6.00
V	4.47	0.007	12.06
Zn	400.68	10.398	1.34
Zr	5.73	0.029	18.05

ICP Analysis - July 9, 1990 LMCS Check Standard

Sample name : 87B38B
Sample code 1 : SSI2
Sample code 2 : 1-10
Programme : SSI 09-Jul-90 13:38:06

NAME	MV INT	CONCEN	DILCOR	RSD
Al	2.19	0.228	2.503	6.91
Sb	0.37	0.008	0.086	229.13
As	1.30	0.024	0.265	37.37
Ba	5.41	0.002	0.021	11.38
Be	0.70	0.000	0.001	155.89
Bi	5.17	0.495	5.444	1.48
B	5.86	0.028	0.306	49.59
Cd	2.92	0.003	0.030	14.61
Ca	0.94	0.016	0.178	1.53
Ce	6.90	0.011	0.122	169.73
Cr	2.26	0.012	0.127	12.67
Co	0.20	-0.058	-0.642	0.00
Cu	3.67	0.013	0.146	7.22
Eu	14.91	0.437	4.809	0.40
Fe	1.88	0.015	0.164	38.83
La	0.60	0.427	4.694	0.00
Pb	0.31	0.464	5.109	7.03
Li	5.10	0.002	0.020	54.66
Mg	5.56	0.191	2.100	0.20
Mn	0.91	0.001	0.014	10.77
Hg	4.18	0.111	1.220	2.26
Mo	1.95	0.002	0.019	84.41
Nd	11.02	-0.029	-0.322	-90.42
Ni	3.99	0.003	0.028	76.18
P	1.50	0.011	0.118	175.89
K	4.21	0.027	0.302	142.69
Sm	6.73	0.450	4.955	6.17
Se	2.06	-0.001	-0.012	-1522.2
Si	4.16	0.059	0.647	4.10
Ag	8.75	0.472	5.189	0.39
Na	8.09	0.014	0.151	88.66
Sr	4.65	0.001	0.016	6.41
S	0.87	0.015	0.161	98.08
Ta	4.61	0.008	0.088	42.26
Tl	4.66	0.195	2.147	36.16
Th	1.83	2.362	25.983	0.98
Sn	1.78	0.012	0.132	6.43
Ti	4.42	0.003	0.032	33.72
W	3.41	0.005	0.059	152.68
U	7.09	2.309	25.402	7.25
V	4.48	0.008	0.084	38.67
Zn	3.22	0.007	0.082	7.59
Zr	5.65	0.008	0.090	14.70

Dilution factor : 11.0000

LOW ON
STD 87B38-B
1-10 Dil

ICP Analysis - July 9, 1990 LMCS Check Standard

Sample name : 77C11R
Sample code 1 : SSST3
Sample code 2 : DIRECT
Programme : SST 09-Jul-90 13:43:07

NAME	MV INT	CONCEN	RSD
Al	6.14	10.154	0.12
Sb	0.40	0.358	9.96
As	33.11	21.712	0.35
Ba	5.58	0.012	8.12
Be	108.37	4.293	0.24
Bi	4.82	0.236	2.25
B	6.69	0.087	0.77
Cd	3.00	0.007	3.79
Ca	0.76	0.008	0.79
Ce	7.00	0.163	23.17
Cr	2.33	0.023	6.97
Co	0.21	-0.029	-43.30
Cu	3.73	0.024	9.83
Eu	5.33	0.004	17.61
Fe	2.12	0.057	4.09
La	0.45	0.011	38.19
Pb	0.28	0.088	21.43
Li	5.19	0.011	13.45
Mg	0.57	0.003	0.84
Mn	1.02	0.009	5.38
Hg	124.21	10.405	6.25
Mo	72.25	9.832	0.31
Nd	11.14	0.034	31.01
Ni	5.24	0.141	1.69
P	12.30	11.186	0.50
K	4.31	0.494	6.02
Sm	6.63	0.228	22.15
Se	14.47	19.895	0.56
Si	21.08	8.964	0.18
Ag	5.94	0.073	3.00
Na	8.33	0.180	12.65
Sr	4.69	0.003	18.62
S	18.39	20.315	0.39
Ta	37.04	9.699	0.32
Tl	11.89	19.982	0.85
Th	1.49	0.286	6.84
Sn	2.09	0.093	5.90
Ti	108.08	10.196	0.52
W	28.66	7.275	0.17
U	7.08	2.186	9.73
V	31.73	3.986	0.57
Zn	3.37	0.011	1.41
Zr	42.06	9.687	0.53

ICP Analysis - July 9, 1990 Reagent Blank

Sample name : F904
Sample code 1 : BLANK
Sample code 2 : 500-10
Sample code 3 : H2ODIG
Programme : SST 09-Jul-90 13:50:30

NAME	MV INT	CONCEN	DILCOR	RSD
Al	2.11	0.029	0.617	35.69
Sb	0.37	-0.012	-0.245	-360.56
As	1.28	0.012	0.258	69.61
Ba	5.40	0.002	0.035	40.80
Be	0.70	0.000	0.007	26.02
Bi	4.53	0.013	0.269	205.83
B	7.07	0.114	2.399	1.99
Cd	2.89	0.001	0.024	90.37
Ca	1.71	0.049	1.039	0.22
Ce	6.92	0.051	1.064	51.67
Cr	3.21	0.002	0.034	195.83
Co	0.21	-0.015	-0.307	0.00
Cu	3.62	0.004	0.079	52.83
Eu	5.26	0.001	0.017	83.85
Fe	1.85	0.011	0.221	14.13
La	0.43	0.003	0.060	57.73
Pb	0.28	0.019	0.395	152.75
Li	5.11	0.003	0.063	43.85
Mg	1.07	0.021	0.451	0.10
Mn	0.90	0.001	0.012	92.31
Hg	3.31	0.026	0.766	11.22
Mo	1.95	0.001	0.026	61.19
Nd	11.06	-0.010	-0.214	-62.92
Ni	3.97	-0.000	-0.005	-1427.1
P	1.48	-0.013	-0.268	-100.73
K	4.22	0.107	2.241	32.73
Sm	6.55	0.074	1.555	53.09
Se	2.07	0.014	0.303	158.69
Si	4.32	0.143	2.999	3.30
Ag	5.45	0.004	0.079	71.25
Na	8.36	0.195	4.104	5.98
Sr	4.64	0.001	0.019	39.82
S	0.86	0.002	0.049	480.48
Ta	4.60	0.004	0.092	171.54
Tl	4.61	0.072	1.513	83.58
Th	1.45	0.037	0.768	19.24
Sn	1.74	0.003	0.058	67.60
Ti	4.40	0.002	0.034	69.20
W	3.39	0.001	0.026	244.57
U	6.91	0.308	6.470	66.13
V	4.43	0.000	0.006	1805.27
Zn	3.31	0.010	0.207	1.22
Zr	5.65	0.008	0.162	45.61

Dilution factor : 21.0000

ICP Analysis - July 9, 1990 Core 5 Composite - Water Digestion

Sample name : F905
Sample code 1 : SAMPLE
Sample code 2 : 500-10
Sample code 3 : H2ODIG
Programme : SST 09-Jul-90 13:55:18

NAME	MV INT	CONCEN	DILCOR	RSD
Al	2.89	2.012	42.248	0.83
Sb	0.38	0.054	1.144	61.86
As	1.28	0.008	0.162	53.19
Ba	5.42	0.002	0.051	58.71
Be	0.70	0.000	0.006	57.73
Bi	4.56	0.034	0.718	74.03
B	9.79	0.310	6.500	0.21
Cd	2.89	0.001	0.018	163.81
Ca	1.24	0.029	0.610	0.54
Ce	6.93	0.065	1.368	61.14
Cr	4.21	0.375	7.874	0.73
Co	0.21	-0.007	-0.153	-173.20
Cu	3.63	0.006	0.117	47.49
Eu	5.28	0.001	0.031	74.75
Fe	1.87	0.014	0.285	37.13
La	0.45	0.009	0.180	107.15
Pb	0.28	0.056	1.186	19.25
Li	5.11	0.003	0.061	70.37
Mg	1.63	0.043	0.898	0.42
Mn	0.90	0.001	0.016	92.71
Hg	3.25	0.031	0.647	5.21
Mo	1.97	0.004	0.089	21.62
Nd	11.14	0.033	0.689	60.08
Ni	4.01	0.004	0.091	54.81
P	10.61	9.438	198.20	0.47
K	4.25	0.207	4.355	25.57
Sm	6.56	0.090	1.886	55.36
Se	2.13	0.119	2.491	17.16
Si	8.53	2.358	49.513	0.23
Ag	5.46	0.005	0.100	55.49
Na	96.34	)59.417	)1247.8	0.44
Sr	4.64	0.001	0.023	41.36
S	1.58	0.837	17.571	1.78
Ta	4.62	0.013	0.264	29.58
Tl	4.58	-0.027	-0.575	-61.10
Th	1.45	0.059	1.237	93.87
Sn	1.77	0.009	0.199	91.76
Ti	4.43	0.004	0.089	33.73
W	3.61	0.064	1.352	7.28
U	6.93	0.529	11.114	61.39
V	4.43	0.000	0.007	894.73
Zn	3.27	0.009	0.184	4.97
Zr	5.66	0.012	0.246	45.62

Dilution factor : 21.0000

ICP Analysis - July 9, 1990 Duplicate Core 5 Composite

Sample name : F906
Sample code 1 : DUP
Sample code 2 : 500-10
Sample code 3 : H2ODIG
Programme : SSI 09-Jul-90 14:00:11

NAME	MV INT	CONCEN	DILCOR	RSD
Al	3.06	2.425	50.923	0.96
Sb	0.38	0.027	0.572	65.47
As	1.27	0.006	0.124	75.08
Ba	5.40	0.001	0.030	21.45
Be	0.69	-0.000	-0.001	-503.29
Bi	4.54	0.023	0.481	89.21
B	6.79	0.094	1.979	5.58
Cd	2.89	0.001	0.021	48.06
Ca	1.05	0.021	0.442	0.72
Ce	6.92	0.039	0.821	7.41
Cr	4.81	0.486	10.206	1.15
Co	0.21	0.000	0.000	
Cu	3.62	0.004	0.076	45.56
Dy	5.26	0.001	0.016	49.11
Fe	1.84	0.009	0.189	36.32
La	0.45	0.000	0.000	2762000
Pb	0.28	0.013	0.264	150.00
Li	5.10	0.003	0.038	18.54
Mg	4.57	0.153	3.218	0.38
Mn	0.89	0.000	0.001	983.74
Hg	3.19	0.026	0.542	12.89
Mo	1.95	0.002	0.036	82.29
Nd	11.03	-0.028	-0.597	-161.12
Ni	4.00	0.003	0.068	15.80
P	4.21	2.815	59.109	2.36
K	4.23	0.151	3.170	16.69
Sm	6.54	0.051	1.080	33.31
Se	2.14	0.126	2.648	8.27
Si	4.85	0.422	8.869	1.20
Ag	5.44	0.003	0.056	45.77
Na	79.70	48.221	1012.6	0.40
Sr	4.63	0.001	0.012	19.51
S	1.24	0.443	9.313	0.80
Ta	4.59	0.002	0.038	141.75
Tl	4.58	-0.006	-0.134	-413.09
Th	1.45	0.030	0.640	11.55
Sn	1.76	0.007	0.155	63.46
Ti	4.40	0.001	0.024	45.35
W	3.73	0.098	2.062	7.54
U	6.91	0.261	5.481	25.12
V	4.42	-0.001	-0.021	-296.35
Zn	3.31	0.010	0.204	0.95
Zr	5.64	0.005	0.114	47.26

Dilution factor : 21.0000

ICP Analysis - July 9, 1990 Spike of Core 5 Composite

Sample name : F907
Sample code 1 : SPIKE
Sample code 2 : 500-10
Sample code 3 : H2ODIG
Programme : SST 09-Jul-90 14:04:27

NAME	MV INT	CONCEN	DILCOR	%SD
Al	3.10	2.542	53.374	1.23
Sb	0.44	0.805	16.912	0.00
As	3.66	1.631	34.250	1.77
Ba	18.19	0.790	16.594	1.45
Be	8.73	0.320	6.729	0.31
Bi	5.09	0.436	9.147	2.80
B	19.58	1.012	21.253	1.29
Cd	17.88	0.752	15.784	1.52
Ca	18.72	0.788	16.538	1.69
Ce	7.40	0.741	15.554	4.89
Cr	7.42	0.974	20.458	1.52
Co	0.24	0.730	15.328	0.00
Cu	7.67	0.790	16.596	1.25
Eu	13.05	0.353	7.419	1.12
Fe	6.43	0.800	16.799	1.16
La	0.57	0.354	7.425	1.23
Pb	0.30	0.433	9.095	2.51
Li	12.18	0.749	15.725	1.30
Mg	25.94	0.959	20.139	1.65
Mn	13.32	0.755	15.864	1.59
Hg	11.88	0.771	16.193	1.20
Mo	7.24	0.741	15.567	1.96
Nd	12.33	0.659	13.847	3.34
Ni	10.75	0.752	15.789	0.79
P	8.40	7.151	150.18	1.55
K	4.40	0.907	19.052	8.59
Sm	6.71	0.407	8.537	14.42
Se	3.14	1.737	36.485	0.77
Si	8.58	2.388	50.158	1.30
Ag	8.11	0.381	8.005	0.67
Na	75.04	45.080	946.68	1.65
Sr	28.04	0.763	16.021	1.66
S	2.64	2.067	43.409	2.02
Ta	7.02	0.729	15.303	0.51
Tl	5.28	1.894	39.769	16.93
Th	1.77	1.966	41.287	0.78
Sn	3.26	0.396	8.315	2.27
Ti	12.18	0.766	16.091	1.33
W	5.48	0.602	12.643	0.71
U	7.11	2.462	51.692	11.95
V	6.50	0.302	6.351	1.16
Zn	32.51	0.773	16.237	1.50
Zr	8.38	0.734	15.415	0.86

Dilution factor : 21.0000

Should have been ~~26~~ 27 dj

ICP Analysis - July 9, 1990 Core 6 Composite - Water Digestion

Sample name : F929
Sample code 1 : SAMPLE
Sample code 2 : 500-10
Sample code 3 : H2ODIG
Programme : SSI 09-Jul-90 14:10:34

NAME	MV INT	CONCEN	DILCOR	RSD
Al	2.82	1.825	38.316	0.24
Sb	0.38	0.023	0.490	100.00
As	1.27	0.007	0.153	27.06
Ba	5.40	0.003	0.037	41.81
Be	0.70	0.000	0.001	229.14
Bi	4.51	0.002	0.042	1073.62
B	7.40	0.138	2.898	1.31
Cd	2.88	0.001	0.011	232.60
Ca	3.87	0.143	3.010	0.25
Ce	6.91	0.032	0.669	65.55
Cr	3.17	0.181	3.800	1.43
Co	0.21	-0.007	-0.153	-173.20
Cu	3.63	0.004	0.094	41.47
Eu	5.25	0.000	0.006	246.60
Fe	1.92	0.022	0.471	10.21
La	0.44	-0.004	-0.080	-129.91
Pb	0.28	0.025	0.527	156.12
Li	5.10	0.002	0.034	88.06
Mg	8.38	0.297	6.240	0.12
Mn	0.91	0.001	0.020	60.15
Hg	3.13	0.020	0.415	22.07
Mo	1.96	0.002	0.041	14.87
Nd	11.00	-0.041	-0.869	-29.00
Ni	3.97	0.000	0.002	5493.35
P	12.41	11.305	237.40	2.12
K	4.23	0.151	3.170	25.23
Sm	6.54	0.045	0.950	97.11
Se	2.10	0.065	1.358	14.88
Si	5.60	0.820	17.223	0.70
Ag	5.44	0.002	0.043	173.34
Na	80.98	49.077	1030.6	0.04
Sr	4.63	0.001	0.014	38.20
S	1.03	0.196	4.121	6.81
Ta	4.60	0.005	0.096	101.32
Tl	4.58	-0.010	-0.211	-873.46
Th	1.45	0.030	0.640	83.27
Sn	1.76	0.007	0.155	87.14
Ti	4.40	0.002	0.039	88.44
W	3.49	0.030	0.633	25.32
U	6.90	0.188	3.958	115.85
V	4.41	-0.002	-0.037	-89.11
Zn	3.41	0.012	0.262	1.40
Zr	5.64	0.006	0.125	83.80

Dilution factor : 21.0000

ICP Analysis - July 9, 1990 Duplicate Core 6 Composite

Sample name : F930
Sample code 1 : DUP
Sample code 2 : 500-10
Sample code 3 : H20DIB
Programme : SST 09-Jul-90 14:14:51

NAME	MV INT	CONCEN	DILCOR	RSD
Al	2.61	1.290	27.084	0.11
Sb	0.37	-0.016	-0.327	-188.75
As	1.27	0.005	0.100	149.15
Ba	5.41	0.002	0.040	41.98
Be	0.70	0.000	0.003	231.95
Bi	4.49	-0.015	-0.317	-22.54
B	8.07	0.186	3.912	1.96
Cd	2.87	-0.000	-0.004	-717.19
Ca	1.49	0.040	0.841	1.09
Ce	6.88	-0.014	-0.284	-150.51
Cr	2.97	0.143	2.993	0.92
Co	0.21	-0.007	-0.153	-173.20
Cu	3.64	0.007	0.139	16.38
Eu	5.23	-0.001	-0.016	-107.99
Fe	2.08	0.049	1.038	4.56
La	0.44	-0.002	-0.040	-86.60
Pb	0.28	0.013	0.264	0.00
Li	5.08	-0.000	-0.004	-682.27
Mg	27.44	1.015	21.323	1.06
Mn	0.91	0.001	0.025	42.73
Hg	3.10	0.018	0.384	18.28
Mo	1.94	-0.001	-0.012	-101.03
Nd	10.94	-0.074	-1.554	-66.20
Ni	3.99	0.003	0.055	79.31
P	10.61	9.441	198.27	1.74
K	4.22	0.069	1.441	40.73
Sm	6.50	-0.024	-0.504	-166.85
Se	2.09	0.056	1.167	24.19
Si	6.00	1.026	21.549	0.64
Ag	5.41	-0.002	-0.043	-62.01
Na	63.79	37.509	787.68	1.06
Sr	4.61	0.000	0.004	150.79
S	1.03	0.202	4.235	9.78
Ta	4.56	-0.007	-0.155	-79.06
Tl	4.71	0.327	6.877	181.95
Th	1.44	-0.022	-0.469	-178.84
Sn	1.77	0.010	0.220	21.30
Ti	4.40	0.001	0.031	91.00
W	3.45	0.018	0.371	20.77
U	6.86	-0.228	-4.797	-100.02
V	4.42	-0.001	-0.016	-703.20
Zn	3.83	0.023	0.492	1.29
Zr	5.62	-0.000	-0.002	-3301.2

Dilution factor : 21.0000

ICP Analysis - July 9, 1990 Acid Blank

Sample name : HNO3
Programme : SST 09-Jul-90 14:48:48

NAME	MV INT	CONCEN	RSD
Al	2.16	0.170	10.40
Sb	0.39	0.132	18.37
As	1.32	0.035	12.68
Ba	5.56	0.011	13.18
Be	0.72	0.001	16.21
Bi	4.70	0.142	20.05
B	5.59	0.008	9.57
Cd	2.97	0.005	19.67
Ca	0.58	0.000	8.83
Ce	7.14	0.361	10.63
Cr	3.27	0.012	31.27
Co	0.21	0.022	57.74
Cu	3.73	0.025	11.92
Eu	5.43	0.008	14.10
Fe	1.84	0.009	21.10
La	0.46	0.030	18.75
Pb	0.29	0.138	20.83
Li	5.25	0.017	13.47
Mg	0.51	0.000	5.41
Mn	0.91	0.001	33.61
Hg	3.25	0.031	11.49
Mo	2.00	0.008	20.93
Nd	11.42	0.181	17.71
Ni	4.11	0.015	28.51
P	1.53	0.036	42.03
K	4.33	0.569	7.25
Sm	6.75	0.476	11.62
Se	2.11	0.090	16.93
Si	4.20	0.081	10.38
Ag	5.61	0.027	8.00
Na	8.31	0.168	10.73
Sr	4.74	0.004	12.22
S	0.86	0.003	157.53
Ta	4.75	0.049	21.83
Tl	4.74	0.414	13.35
Th	1.49	0.274	16.68
Sn	1.80	0.018	10.53
Ti	4.54	0.015	12.35
W	3.49	0.030	15.02
U	7.12	2.621	10.60
V	4.57	0.022	0.67
Zn	3.01	0.002	14.74
Zr	5.79	0.044	12.09

ICP Analysis - July 9, 1990 LMCS Check Standard

Sample name : 78C11T
Sample code 1 : SSTI
Sample code 2 : DIRECT
Programme : SST 09-Jul-90 14:57:41

NAME	MV INT	CONCEN	RSD
Al	2.22	0.320	6.32
Sb	1.26	10.333	1.14
As	1.40	0.090	7.74
Ba	178.32	10.668	1.49
Be	0.75	0.002	2.78
Bi	4.90	0.292	9.10
B	149.14	10.308	1.68
Cd	208.83	10.317	1.42
Ca	237.26	10.278	1.58
Ce	13.73	9.900	0.96
Cr	50.71	9.053	1.56
Co	0.69	10.474	1.09
Cu	56.40	10.275	1.46
Eu	5.94	0.032	2.16
Fe	63.46	10.633	1.66
La	0.49	0.128	4.63
Pb	0.29	0.239	7.89
Li	100.89	10.112	1.56
Mg	285.56	10.744	1.36
Mn	156.58	10.293	1.50
Hg	3.31	0.036	8.65
Mo	2.16	0.031	10.57
Nd	28.94	9.397	3.57
Ni	96.58	10.275	1.44
P	1.64	0.148	11.64
K	6.54	10.683	1.55
Sm	6.78	0.549	7.50
Se	3.79	2.783	3.44
Si	4.31	0.141	4.37
Ag	5.70	0.039	6.43
Na	23.19	10.179	1.47
Sr	321.45	10.314	1.41
S	1.09	0.265	2.67
Ta	4.88	0.088	1.67
Tl	4.96	1.030	3.82
Th	1.54	0.611	4.34
Sn	21.67	5.146	1.41
Ti	4.58	0.019	7.62
W	4.50	0.319	3.57
U	7.56	7.323	2.63
V	4.63	0.030	8.70
Zn	399.00	10.354	1.33
Zr	5.88	0.069	4.68

ICP Analysis - July 9, 1990 LMCS Check Standard

Sample name : 87B38B
Sample code 1 : SST2 x11DF
Sample code 2 : 1-10
Programme : SST 09-Jul-90 15:02:21

NAME	MV INT	CONCEN	RSD	
Al	2.24	0.370	0.79	
Sb	0.38	0.113	15.80	
As	1.33	0.044	27.03	
Ba	5.55	0.011	10.44	
Be	0.72	0.001	6.64	
Bi	5.28	0.582	3.89	6.40
B	6.01	0.039	17.96	
Cd	2.99	0.006	9.63	
Ca	0.94	0.016	3.28	
Ce	7.10	0.308	10.89	
Cr	2.33	0.023	8.53	
Co	0.21	0.044	28.87	
Cu	3.78	0.034	4.17	
Eu	14.91	0.437	1.51	4.81
Fe	1.93	0.024	12.76	
La	0.60	0.447	1.69	4.92
Pb	0.31	0.552	7.10	6.07
Li	5.24	0.016	10.94	
Mg	5.58	0.191	1.77	
Mn	0.93	0.003	24.46	
Hg	3.34	0.039	4.48	
Mo	2.03	0.010	14.89	
Nd	11.39	0.162	17.18	
Ni	4.12	0.017	14.06	
P	1.53	0.037	78.32	
K	4.29	0.418	18.53	
Sm	6.92	0.841	5.46	~~9.25~~ High RSD
Se	2.11	0.088	21.87	
Si	4.28	0.123	3.58	
Ag	8.88	0.489	0.87	5.38
Na	8.31	0.165	15.47	
Sr	4.76	0.005	5.01	
S	0.89	0.038	16.36	
Ta	4.74	0.048	14.19	
Tl	4.81	0.613	4.22	
Th	1.87	2.579	0.71	28.37
Sn	1.81	0.020	28.87	
Ti	4.55	0.016	8.61	
W	3.51	0.035	6.45	
U	7.29	4.445	4.35	48.90
V	4.60	0.026	6.70	
Zn	3.31	0.010	5.98	
Zr	5.78	0.042	9.51	

ICP Analysis - July 9, 1990 LMCS Check Standard

Sample name : 77C11R
Sample code 1 : SST3
Sample code 2 : DIRECT
Programme : SST 09-Jul-90 15:07:56

NAME	MV INT	CONCEN	RSD
Al	6.16	10.250	0.95
Sb	0.41	0.385	8.02
As	33.26	21.818	1.31
Ba	5.70	0.020	3.53
Be	107.36	4.253	0.51
Bi	4.95	0.331	8.58
B	6.75	0.092	2.42
Cd	3.05	0.009	12.86
Ca	0.77	0.009	0.74
Ce	7.16	0.388	7.82
Cr	2.37	0.032	16.23
Co	0.21	0.051	0.00
Cu	3.80	0.038	3.95
Eu	5.44	0.009	14.18
Fe	2.16	0.064	6.36
La	0.46	0.033	0.00
Pb	0.29	0.157	6.93
Li	5.30	0.023	4.70
Mg	0.58	0.003	10.44
Mn	1.03	0.009	0.42
Hg	125.24	10.493	1.03
Mo	72.31	9.841	1.17
Nd	11.47	0.203	29.02
Ni	5.30	0.148	1.04
P	12.53	11.428	1.75
K	4.37	0.794	5.18
Sm	6.77	0.520	5.49
Se	14.56	20.045	0.80
Si	21.15	9.005	0.76
Ag	6.05	0.088	1.30
Na	8.49	0.285	7.87
Sr	4.78	0.006	6.76
S	18.55	20.498	1.00
Ta	37.25	9.763	0.93
Tl	11.88	19.960	1.45
Th	1.52	0.453	3.56
Sn	2.14	0.105	6.06
Ti	107.91	10.179	1.17
W	28.76	7.305	0.78
U	7.23	3.778	3.96
V	31.34	3.929	0.82
Zn	3.42	0.013	6.17
Zr	42.00	9.670	1.13

ACID DIGESTION TEST RESULTS

Single Shell Tank Project

Acid Digestion
Units For Samples Are Wet Weight

Tank: 241-U-110
Core: 6
Segment: F0917
Customer ID: Core 6 Composite

	Check Standard	Blank	Sample	Duplicate Sample	Spike Of Sample	Check Standard
Laboratory ID:	N/A	F0311	F0935	F0936	F0306	N/A
Acid Digestion	N/A	N/A	9.51 g/L	11.6 g/L	9.93 g/L	N/A
Laboratory ID:	F0933	F0934	F0935	F0936	F0937	F1011
Arsenic	102.60%	<5.00E-03 ppm	6.63E-01 ug/g	1.90E-01 ug/g	79.76%	103.40%
Laboratory ID:	F0933	F1060	F0935	F0936	F0937	F0938
Mercury	100.80%	1.15E-04 mg	1.67 ug/g	1.34 ug/g	92.42%	90.40%
Laboratory ID:	F0933	F0934	F0935	F0936	F0937	F0938
Selenium	96.40%	8.62E-03 ppm	9.04E-01 ug/g	<4.31 ug/g	80.70%	85.00%

ICP Results DATA SUMMARY

Date Analyzed:	March 31.1990		
Procedure:	LA-505-151/A-0	Digested Acid Standard:	F0479
Analyst:	J. A. White	Reagent Blank:	F0487
Digestion	Acid Digestion	Core 6 Composite	F0935
Procedure:	LA-505-159/A-0	Duplicate: Core 6 Comp.	F0936
		Spike of Sample F0487	F0482
		Digested Acid Sample:	F0483

	Instrument Starting LMCS Standard %	Acid Digest. LMCS Standard %	Reagent BLANK ppm	Wet Weight Sample ug/g	Wet Weight Sample Duplicate ug/g	Spike Recovery %	LMCS ACID Digestion %	Closing LMCS Standard %
Aluminum	106.89%		0.17	107879	94696	NOT CALC.	88.04%	104.70%
Arsenic	105.48%		0.02 LT	262	106			104.67%
Barium	99.54%		0.00 LT	299	32	135.89%	81.31%	97.34%
Beryllium	98.55%		0.00	7	2			96.92%
Bismuth	106.10%	100.08%	0.35	27539	12586	NOT CALC.		104.56%
Boron	101.92%	87.77%	0.16	119	47	-45.79%		98.99%
Cadmium	103.35%	90.21%	0.01	34	7 LT	40.63%		100.59%
Calcium	102.80%	91.28%	0.08	748	419	37.09%		100.45%
Cerium	101.33%		0.07 LT	1715	284 LT	-52.79%	77.25%	98.41%
Chromium	100.28%		0.00 LT	868	377	145.81%	78.74%	97.79%
Copper	100.98%	88.42%	0.01 LT	140	47	24.07%		98.57%
Europium	101.23%		0.00 LT	27	4 LT			100.04%
Iron	102.65%		0.05	16785	9013	NOT CALC.	82.27%	100.40%
Lanthanum	96.47%	84.28%	0.09	147	23 LT	20.59%		95.23%
Lead	103.03%	97.96%	0.16	1252	466	246.48%		101.95%
Lithium	98.78%		0.01	51	3 LT	141.46%	81.06%	96.27%
Magnesium	104.28%	91.03%	0.02	2630	735	-42.04%		101.51%
Manganese	102.18%		0.02	4849	2811	NOT CALC.	81.24%	99.60%
Mercury	96.81%		0.02	428	959			97.59%
Molybdenum	101.70%	96.89%	0.01	95	36	48.19%		100.47%
Neodymium	95.03%		-0.09 LT	896	-82 LT	381.28%	74.65%	93.62%
Nickel	103.50%		0.02 LT	222	96	160.17%	80.69%	100.84%
Phosphorous	94.76%	94.46%	0.13	35475	12888	148.31%		97.21%
Potassium	102.77%	92.02%	0.12 LT	1934	83 LT	-82.24%		100.29%
Samarium	103.81%		0.06 LT	1578	220 LT			102.40%
Selenium	102.21%		0.10	1428	673			100.70%
Silver	104.62%	72.18%	0.01 LT	126	24 LT	23.41%		103.40%
Sodium	99.99%	90.36%	0.27	146087	69937	NOT CALC.		97.44%
Strontium	101.61%	89.46%	0.00	639	356	45.91%		99.25%
Sulfur	98.43%		0.17	639	290			97.91%
Tantalum	94.36%		0.02 LT	350	67 LT	12.90%	79.69%	93.70%
Thallium	103.48%		0.08	8236	850			102.19%
Thorium	106.80%		0.06	4171	1486			105.32%
Tin	108.40%		0.06	213	93	181.10%	83.10%	105.29%
Titanium	103.28%		0.06	132	50	148.07%	82.46%	100.95%
Uranium	109.55%		0.27 LT	17899	6825			107.79%
Vanadium	100.11%		0.00 LT	122	45			98.77%
Zinc	102.09%	87.80%	0.13	215	84	35.82%		99.21%
Zirconium	103.64%		0.01 LT	278	63	187.34%	83.90%	101.52%

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

SINGLE SHELL TANK PROJECT

ACID DIGESTION
Laboratory Digestions

Tank: 241-U-110
Core: 6
Segment: F0917
Customer ID: Core 6 Composite

	Check Standard	Blank	Sample	Duplicate Sample	Spike of Sample	Check Standard
Laboratory ID:	N/A	F0311	F0935	F0936	F0306	N/A
Acid Digestion	N/A	N/A	9.51 g/L	11.6 g/L	9.93 g/L	N/A
Laboratory ID:	F0933	F0934	F0935	F0936	F0937	F1011
Arsenic	102.60%	<5.00E-03 ppm	6.30E-03 ppm	2.20E-03 ppm	79.76%	103.40%
Laboratory ID:	F0933	F1060	F0935	F0936	F0937	F0938
Mercury	100.80%	1.15E-04 mg	1.59E-02 ppm	1.56E-02 ppm	92.42%	90.40%
Laboratory ID:	F0933	F0934	F0935	F0936	F0937	F0938
Selenium	96.40%	8.62E-03 ppm	8.60E-03 ppm	<5.00E-02 ppm	80.70%	85.00%

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	N/A
PROCEDURE/REV	LA-505-159/A-1
TECHNOLOGIST	D. M. Southwick
DATE	02-08-90
TEMPERATURE	72 C
STARTING TIME	07:50
ENDING TIME	14:00
CHEMIST	S. A. Jones

Acid Digestion

Note:

Sample is not spiked prior to digestion.

This procedure provides a sample to be spiked later with the appropiate element.

	DESCRIPTION		LAB ID
1	Reagent Blank	89-050	F0311
2	Sample	89-050	F0304
3	Duplicate	89-050	F0305
4	Spike	89-050	F0306
5	Sample	Composite 6	F0935
6	Duplicate	Composite 6	F0936
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.
Spike	104C15B/5 mL	103C15D/5mL		50 mL
Note				

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

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	Perkin/Elmer AA
Procedure/Rev	LA-355-131/A-2
Technologist	J. Hopkins
Date	3-15-90
Temperature	70 F
Starting Time	13:00
Ending Time	14:00
Chemist	R. K. Fuller

Arsenic Analysis

Acid Digestion

	Description	Lab ID
1	Initial LMCS Check Std	F0933
2	Reagent Blank Composite 6	F0934
3	Sample Composite 6	F0935
4	Duplicate Composite 6	F0936
5	Spike Composite 6	F0937
6	LMCS Check Std	F1011
7	Reagent Blank Composite 14	F1012
8	Sample Composite 14	F1013
9	Duplicate Composite 14	F1014
10	Sample Composite 15	F1037
11	Duplicate Composite 15	F1038

	Description	Lab ID
12	LMCS Check Std	F1059
13	Sample Composite 12	F1061
14	Duplicate Composite 12	F1062
15	Spike Composite 12	F1063
16	LMCS Check Std	F1083
17	Sample Composite 13	F1085
18	Duplicate Composite 13	F1086
19	Spike Composite 13	F1087
20	Final LMCS Check Std	F1088
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Bk# & Alqt. Vol.	Final Vol. of Std.
LMCS Check Std	58C11BR/35 uL			35 mL
Spike	58C11BR/35 uL	F0935 / 2.0 mL		35 mL

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

Single Shell Tank
Calibration Record

Analyte:	As		
Procedure:	LA-355-131	Revision:	A-2
Instrument:	Perkin - Elmer AA	Property Number:	WA77479
Technologist:	J. A. Hopkins	Payroll Number:	6A543
Date:	03-15-90		

Calibration Standard ID: 38C9-B

Analyte Concentration: 1.00 ppm

Type of Calibration: Linear Regression

Dilution	Concentration	Instrument Reading Unit=
0	0	2
25 uL	25 ng	52
50 uL	50 ng	104
75 uL	75 ng	143

Comments:

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

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Perkin Elmer AA
PROCEDURE/REV	LA-325-102/A-1
TECHNOLOGIST	J. Hopkins
DATE	02-27-90
TEMPERATURE	70 F
STARTING TIME	13:00
ENDING TIME	14:00
CHEMIST	R. K. Fuller

Mercury Analysis

Acid Digestion

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F1059
2	Reagent Blank	F1060
3	Sample Composite 12	F1061
4	Duplicate Composite 12	F1062
5	Spike Composite 12	F1063
6	LMCS Check Std	F1064
7	LMCS Check Std	F1083
8	Sample Composite 13	F1085
9	Duplicate Composite 13	F1086
10	Spike Composite 13	F1087
11	LMCS Check Std	F1088

	DESCRIPTION	LAB ID
12	LMCS Check Std	F1077
13	Sample Composite 13	F1079
14	Duplicate Composite 13	F1080
15	LMCS Check Std	F1082
16	LMCS Check Std	F0933
17	Sample Composite 6	F0935
18	Duplicate Composite 6	F0936
19	Spike Composite 6	F0937
20	Final LMCS Check Std	F0938
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT. VOL.	FINAL VOL. OF STD.
LMCS Check Std	58C11BP/25uL			25 mL
Spike	58C11BP/20uL	F0935/250 uL		25 mL

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

Single Shell Tank
Calibration Record

Analyte:	HG		
Procedure:	LA-325-102	Revision:	A-1
Instrument:	Perkin - Elmer AA	Property Number:	WA77479
Technologist:	J. A. Hopkins	Payroll Number:	6A543
Date:	2-27-90		

Calibration Standard ID: 102C3W

Analyte Concentration: 100 ppm

Type of Calibration: Least Square

Dilution	Concentration	Instrument Reading Units=
0	0	8
10 uL	10 ng	53
20 uL	20 ng	95
40 uL	40 ng	181

Comments:

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

Analytical Batch

LAB SEGMENT SERIAL #:F0917

CUSTOMER ID:Core 6 Composite

INSTRUMENT	Perkin Elmer AA
PROCEDURE/REV	LA-362-131/A-3
TECHNOLOGIST	S. Riel
DATE	3-29-90
TEMPERATURE	70 F
STARTING TIME	13:30
ENDING TIME	14:00
CHEMIST	R. K. Fuller

Selenium Analysis

Acid Digestion

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0933
2	Reagent Blank	F0934
3	Sample Composite 6	F0935
4	Duplicate Composite 6	F0936
5	Spike Composite 6	F0937
6	Final LMCS Check Std	F0938
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	58C11BU/35 uL			35 mL
Spike	58C11BU/35 uL	F0935/100 uL		35 mL

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

Single Shell Tank
Calibration Record

ANALYTE:	SE		
PROCEDURE:	LA-365-131	REVISION:	A-3
INSTRUMENT:	Perkin Elmer AA	PROPERTY NUMBER:	WA77479
TECHNOLOGIST:	Steven Riel	PAYROLL NUMBER:	6C280
DATE:	March 29, 1990		

CALIBRATION STANDARD ID: 102C3Z

ANALYTE CONCENTRATION: 1.00ppm

TYPE OF CALIBRATION: Linear Regression

Dilution	Concentration	Instrument Reading Unit = Millimeters
0	0	3.5
25 uL	25 nG	24.5
50 uL	50 nG	47.0
75 uL	75 nG	68.5

COMMENTS:

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

Analytical Batch

Lab Segment Serial #:F0917

Customer ID:Core 6 Composite

Instrument	ICP
Procedure/Rev	LA-505-151
Technologist	J. A. White
Date	3-31-90
Temperature	N/A
Starting Time	07:48
Ending Time	14:15
Chemist	S. A. Jones

ICP

ICP Analysis of Core 6 Composite.

Sample analysed after Acid Digestion.

	Description	Lab ID
1	LMCS Check Std	N/A
2	Digested Std	F0479
3	Reagent Blank	F0487
4	Sample 89-072	F0480
5	Duplicate 89-072	F0481
6	Spike 89-072	F0482
7	Digested Std	F0843
8	LMCS Std	N/A
9	Sample Core 6 Composite	F0935
10	Duplicate Core 6 Composite	F0936
11	Sample Core 5 Composite	F0911

	Description	Lab ID
12	Duplicate Core 5 Composite	F0912
13	LMCS Check Std	N/A
14	Sample 89-083	F0744
15	Duplicate 89-083	F0745
16	Sample 89-084	F0768
17	Duplicate 89-084	F0769
18	Acid Digest Std	F0771
19	LMCS Check Std	N/A
20		
21		
22		

Standard Type	Primary Book # & Aliquot Vol.	Second Book # & Aliquot Vol.	Third Bk# & Alqt. Vol.	Final Vol. of Std.
LMCS Check Std	78C11F/1.0 mL	82B38C/1.0 mL	77C11F/1.0 mL	11.00 mL
Digested LMCS (1)	81C11A/5.0 mL			50.00 mL
Digested LMCS (2)	82C11A/5.0 mL			50.00 mL
Spike	103C15C/5 mL	10415D/5 mL	89-072/.3935 g	50.00 mL

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

ICP Results RAW DATA SUMMARY

Date Analyzed:	March 31.1990		
Procedure:	LA-505-151/A-0	Digested Acid Standard:	F0479
Analyst:	J. A. White	Reagent Blank:	F0487
Digestion	Acid Digestion	Core 6 Composite	F0935
Procedure:	LA-505-159/A-0	Duplicate: Core 6 Comp.	F0936
		Spike of Sample F0487	F0482
		Digested Acid Sample:	F0483

	Instrument Starting LMCS Standard %	Acid Digest. LMCS Standard %	Reagent BLANK ppm	Wet Weight Sample ug/g	Wet Weight Sample Duplicate ug/g	Spike Recovery %	LMCS ACID Digestion %	Closing LMCS Standard %
Aluminum	106.89%		0.17	107879	94696	NOT CALC.	88.04%	104.70%
Antimony	110.63% #		0.24	1345	500			106.97%
Arsenic	105.48%		0.02 LT	262	106			104.67%
Barium	99.54%		0.00 LT	299	32	135.89%	81.31%	97.34%
Beryllium	98.55%		0.00	7	2			96.92%
Bismuth	106.10%	100.08%	0.35	27539	12586	NOT CALC.		104.56%
Boron	101.92%	87.77%	0.16	119	47	-45.79%		98.99%
Cadmium	103.35%	90.21%	0.01	34	7 LT	40.63%		100.59%
Calcium	102.80%	91.28%	0.08	748	419	37.09%		100.45%
Cerium	101.33%		0.07 LT	1715	284 LT	-52.79%	77.25%	98.41%
Chromium	100.28%		0.00 LT	868	377	145.81%	78.74%	97.79%
Cobalt	87.77% #		0.04	452	49 LT	265.91%	69.56%	77.48% #
Copper	100.98%	88.42%	0.01 LT	140	47	24.07%		98.57%
Europium	101.23%		0.00 LT	27	4 LT			100.04%
Iron	102.65%		0.05	16785	9013	NOT CALC.	82.27%	100.40%
Lanthanum	96.47%	84.28%	0.09	147	23 LT	20.59%		95.23%
Lead	103.03%	97.96%	0.16	1252	466	246.48%		101.95%
Lithium	98.78%		0.01	51	3 LT	141.46%	81.06%	96.27%
Magnesium	104.28%	91.03%	0.02	2630	735	-42.04%		101.51%
Manganese	102.18%		0.02	4849	2811	NOT CALC.	81.24%	99.60%
Mercury	96.81%		0.02	428	959			97.59%
Molybdenum	101.70%	96.89%	0.01	95	36	48.19%		100.47%
Neodymium	95.03%		-0.09 LT	896	-82 LT	381.28%	74.65%	93.62%
Nickel	103.50%		0.02 LT	222	96	160.17%	80.69%	100.84%
Phosphorous	94.76%	94.46%	0.13	35475	12888	148.31%		97.21%
Potassium	102.77%	92.02%	0.12 LT	1934	83 LT	-82.24%		100.29%
Samarium	103.81%		0.06 LT	1578	220 LT			102.40%
Selenium	102.21%		0.10	1428	673			100.70%
Silicon	85.22% #	56.97%	0.21	10355	3780	-186.81%		82.94% #
Silver	104.62%	72.18%	0.01 LT	126	24 LT	23.41%		103.40%
Sodium	99.99%	90.36%	0.27	146087	69937	NOT CALC.		97.44%
Strontium	101.61%	89.46%	0.00	639	356	45.91%		99.25%
Sulfur	98.43%		0.17	639	290			97.91%
Tantalum	94.36%		0.02 LT	350	67 LT	12.90%	79.69%	93.70%
Thallium	103.48%		0.08	8236	850			102.19%
Thorium	106.80%		0.06	4171	1486			105.32%
Tin	108.40%		0.06	213	93	181.10%	83.10%	105.29%
Titanium	103.28%		0.06	132	50	148.07%	82.46%	100.95%
Tungsten	84.98% #		0.04 LT	408	181			84.76% #
Uranium	109.55%		0.27 LT	17899	6825			107.79%
Vanadium	100.11%		0.00 LT	122	45			98.77%
Zinc	102.09%	87.80%	0.13	215	84	35.82%		99.21%
Zirconium	103.64%		0.01 LT	278	63	187.34%	83.90%	101.52%

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

ICP Results

RAW DATA REPORT

Date Analyzed:	March 31.1990	Acid Digested LMCS Standard	F0479
Procedure:	LA-505-151/A-0	Reagent Blank	F0487
Analyst:	J. A. White	Core 6 Composite	F0935
Digestion	Acid Digestion	Duplicate of Core 6 Composite	F0936
Procedure:	LA-505-159/A-0	Spike of 89-072	F0482
		Acid Digested LMCS Standard	F0483

Digestion Weight	0.00951
Volume	0.4753
Sample	50.00

	SST-1	SST-2	SST-3	Starting LMCS Standard Instrument Standard ppm	Recovery %		LMCS Acid Digestion Standard ppm	Acid Digestion Standard Recovery %	Reagent Blank ppm	Sample Dilution Three ppm	Sample Dilution Two ppm
Aluminum				53.44	106.89%				0.17		1025.50
Antimony	11.06				110.63%	#			0.24		39.41
Arsenic				52.74	105.48%				0.02 LT		6.57
Barium	9.95				99.54%				0.00 LT		2.84
Beryllium				9.86	98.55%				0.00		0.23
Bismuth		53.16			106.10%		10.01	100.08%	0.35		261.79
Boron	10.19				101.92%		8.78	87.77%	0.16		8.04
Cadmium	10.34				103.35%		9.02	90.21%	0.01		1.00
Calcium	10.28				102.80%		9.13	91.28%	0.08		7.11
Cerium	10.13				101.33%				0.07 LT		54.50
Chromium	10.03				100.28%				0.00 LT		8.25
Cobalt	8.78				87.77%	#			0.04		14.69
Copper	10.10				100.98%		8.84	88.42%	0.01 LT		3.57
Europium		10.12			101.23%				0.00 LT		0.87
Iron	10.27				102.65%				0.05		159.56
Lanthanum		48.33			96.47%		8.43	84.28%	0.09		4.26
Lead		51.62			103.03%		9.80	97.96%	0.16		26.63
Lithium	9.88				98.78%				0.01		1.68
Magnesium	10.43				104.28%		9.10	91.03%	0.02		25.00
Manganese	10.22				102.18%				0.02		46.09
Mercury				24.20	96.81%				0.02		4.07
Molybdenum				50.85	101.70%		9.69	96.89%	0.01		2.52
Neodymium	9.50				95.03%				-0.09 LT		29.63
Nickel	10.35				103.50%				0.02 LT		4.52
Phosphorous				47.38	94.76%		9.45	94.46%	0.13		337.23
Potassium	25.69				102.77%		9.20	92.02%	0.12 LT		64.01
Samarium		10.38			103.81%				0.06 LT		52.53
Selenium				51.11	102.21%				0.10		31.57
Silicon				42.61	85.22%	#	5.70	56.97%	0.21		98.43
Silver		10.46			104.62%		7.22	72.18%	0.01 LT		3.91
Sodium	25.00				99.99%		9.04	90.36%	0.27		1388.70
Strontium	10.16				101.61%		8.95	89.46%	0.00		6.08
Sulfur				49.21	98.43%				0.17		10.60
Tantalum				47.18	94.36%				0.02 LT		10.71
Thallium				51.74	103.48%				0.08		78.29
Thorium		53.51			106.80%				0.06		39.65
Tin	54.20				108.40%				0.06		5.42
Titanium				51.64	103.28%				0.06		2.83
Tungsten				21.25	84.98%	#			0.04 LT		9.88
Uranium		54.89			109.55%				0.27 LT		394.34
Vanadium				10.01	100.11%				0.00 LT		3.61
Zinc	10.21				102.09%		8.78	87.80%	0.13		2.04
Zirconium				51.82	103.64%				0.01 LT		7.01
Dilution Factor	1.00	1.00	1.00				10.00		1.00	1.00	101.00

g/mL		Digestion	0.01159 g/mL		Digestion	0.00787 g/mL			
g		Weight	0.5797 g		Weight	0.3935 g			
mL		Volume	50.00 mL		Volume	50.00			
	Sample Dilution One ppm	Sample Duplicate Dilution Three ppm	Sample Duplicate Dilution Two ppm	Sample Duplicate Dilution One ppm	Spike of Sample Dilution Three ppm	Spike of Sample Dilution Two ppm	Spike of Sample Dilution One ppm	Spike Recovery %	Standard LMCS Acid Digestion ppm
Aluminum	1050.60		1097.90	1138.40		421.18	366.06	NOT CALC.	8.80
Antimony	12.79		25.47	5.80		39.89	4.20		
Arsenic	2.49		3.60	1.23		5.81	1.03		
Barium	0.79		0.91	0.38		14.20	11.84	135.89%	8.13
Beryllium	0.06		0.11	0.02		0.18	0.02		
Bismuth	238.67		145.92	131.45		78.01	40.75	NOT CALC.	
Boron	1.13		2.72	0.54		5.87	3.04	-45.79%	
Cadmium	0.32		0.42	0.08 LT		4.28	2.84	40.63%	
Calcium	6.05		4.85	4.09		7.58	6.54	37.09%	
Cerium	16.30		22.85	3.30 LT		58.97	4.73	-52.79%	7.73
Chromium	7.38		3.81	4.37		20.83	17.25	145.81%	7.87
Cobalt	4.30		6.53	0.57 LT		30.47	10.41	265.91%	6.96
Copper	1.33		1.66	0.55		6.50	3.29	24.07%	
Europium	0.25		0.33	0.05 LT		0.91	0.06 LT		
Iron	158.30		104.50	104.61		76.17	5.20	NOT CALC.	8.23
Lanthanum	1.40		1.82	0.26 LT		7.71	3.08	20.59%	
Lead	11.91		21.97	5.40		29.96	6.65	246.48%	
Lithium	0.49		0.76	0.03 LT		14.45	11.83	141.46%	8.11
Magnesium	6.64		8.52	4.66		4.89	4.13	-42.04%	
Manganese	46.08		32.60	32.48		68.16	58.65	NOT CALC.	8.12
Mercury	3.59		11.11	2.57		5.97	0.51		
Molybdenum	0.90		1.10	0.42		2.72	2.98	48.19%	
Neodymium	8.52		2.27	-0.95 LT		42.04	44.36	381.28%	7.47
Nickel	2.11		2.50	1.11		17.86	12.36	160.17%	8.07
Phosphorous	338.97		149.42	138.45		31.82	16.00	148.31%	
Potassium	18.38		19.49	0.97 LT		69.67	4.05 LT	-82.24%	
Samarium	15.00		21.02	2.55 LT		54.36	1.59 LT		
Selenium	13.57		19.61	7.80		32.07	10.02		
Silicon	52.61		43.83	37.10		26.16	11.16	-186.81%	
Silver	1.20		1.61	0.28 LT		7.19	3.12	23.41%	
Sodium	1376.60		810.85	814.30		448.44	388.06	NOT CALC.	
Strontium	5.63		4.13	3.94		8.73	7.37	45.91%	
Sulfur	6.08		5.16	3.37		11.00	5.67		
Tantalum	3.33		4.49	0.78 LT		13.21	3.30	12.90%	7.93
Thallium	23.87		27.42	9.86		69.83	8.51		
Thorium	11.53		17.22	2.54		40.73	1.90		
Tin	2.02		3.15	1.08		19.22	12.28	181.10%	8.31
Titanium	1.26		1.36	0.58		15.29	12.09	148.07%	8.25
Tungsten	3.88		5.58	2.10		8.15	0.86		
Uranium	170.15		188.42	79.13		392.78	68.61		
Vanadium	1.16		1.57	0.53		2.76	0.37 LT		
Zinc	1.58		1.40	0.98		4.40	3.27	35.82%	
Zirconium	2.65		2.81	0.73		20.74	12.72	187.34%	8.37
Dilution Factor	21.00	1.00	101.00	21.00	1.00	101.00	21.00		10.00

	Acid Digestion Standard Recovery %	SST-1	SST-2	Ending LMCS Standard SST-3	Standard Recovery %		Spike Standard LMCS ppm added	Spike Standard ID Book # 5.0 mL 103C15C + 5.0 mL 104C15D	SST-1	SST-2
Aluminum	88.04%			52.35	104.70%		10.00			
Antimony		10.70			106.97%				10.00	
Arsenic				52.33	104.67%					
Barium	81.31%	9.73			97.34%		10.00		10.00	
Beryllium				9.69	96.92%					
Bismuth			52.38		104.56%		10.00			50.10
Boron		9.90			98.99%		10.00		10.00	
Cadmium		10.06			100.59%		10.00		10.00	
Calcium		10.05			100.45%		10.00		10.00	
Cerium	77.25%	9.84			98.41%		10.00		10.00	
Chromium	78.74%	9.78			97.79%		10.00		10.00	
Cobalt	69.56%	7.75			77.48%	#	10.00		10.00	
Copper		9.86			98.57%		10.00		10.00	
Europium			10.00		100.04%					10.00
Iron	82.27%	10.04			100.40%		10.00		10.00	
Lanthanum			47.71		95.23%		10.00			50.10
Lead			51.08		101.95%		10.00			50.10
Lithium	81.06%	9.63			96.27%		10.00		10.00	
Magnesium		10.15			101.51%		10.00		10.00	
Manganese	81.24%	9.96			99.60%		10.00		10.00	
Mercury				24.40	97.59%					
Molybdenum				50.24	100.47%		10.00			
Neodymium	74.65%	9.36			93.62%		10.00		10.00	
Nickel	80.69%	10.08			100.84%		10.00		10.00	
Phosphorous				48.60	97.21%		10.00			
Potassium		25.07			100.29%		10.00		25.00	
Samarium			10.24		102.40%					10.00
Selenium				50.35	100.70%					
Silicon				41.47	82.94%	#	10.00			
Silver			10.34		103.40%		10.00			10.00
Sodium		24.36			97.44%		10.00		25.00	
Strontium		9.93			99.25%		10.00		10.00	
Sulfur				48.95	97.91%					
Tantalum	79.69%			46.85	93.70%		9.95			
Thallium				51.10	102.19%					
Thorium			52.76		105.32%					50.10
Tin	83.10%	52.64			105.29%		10.00		50.00	
Titanium	82.46%			50.48	100.95%		10.00			
Tungsten				21.19	84.76%	#				
Uranium			54.01		107.79%					50.10
Vanadium				9.88	98.77%					
Zinc		9.92			99.21%		10.00		10.00	
Zirconium	83.90%			50.76	101.52%		9.98			
Dilution Factor		1.00	1.00	1.00			1.00			

	LMCS Standards Values ppm SST-3	LMCS Standard IDs Book # 78C11F 82B38C 77C11F	ACID DIGESTION LMCS STANDARD VALUES ppm in Sample	ACID DIGEST. LMCS IDs Book # 81C11A 82C11A
Aluminum	50.00		100.00	
Antimony				
Arsenic	50.00			
Barium			100.00	
Beryllium	10.00			
Bismuth			100.00	
Boron			100.00	
Cadmium			100.00	
Calcium			100.00	
Cerium			100.00	
Chromium			100.90	
Cobalt			100.00	
Copper			100.00	
Europium				
Iron			100.00	
Lanthanum			100.00	
Lead			100.00	
Lithium			100.00	
Magnesium			100.00	
Manganese			100.00	
Mercury	25.00			
Molybdenum	50.00		99.80	
Neodymium			100.00	
Nickel			100.00	
Phosphorous	50.00		100.00	
Potassium			100.00	
Samarium				
Selenium	50.00			
Silicon	50.00		100.00	
Silver			100.00	
Sodium			100.00	
Strontium			100.00	
Sulfur	50.00			
Tantalum	50.00		99.50	
Thallium	50.00			
Thorium				
Tin			100.00	
Titanium	50.00		100.10	
Tungsten	25.00			
Uranium				
Vanadium	10.00			
Zinc			100.00	
Zirconium	50.00		99.80	
Dilution Factor			10.00	

31-Mar-90 07:48:34

Condition		Value	Min	/	Max
VACUUM	=	37.21	7.000	/	50.00
SPTEMP	=	38.60	37.00	/	39.00
MAINS	=	233.2	220.0	/	247.0
-1000V	=	-1005	-1010	/	-990
CTEMP	=	24.20	19.00	/	35.00
+5V	=	5.160	4.750	/	5.250
+12V	=	12.15	11.70	/	12.30
-12V	=	-12.2	-12.3	/	-11.7
+24V	=	23.16	22.50	/	26.50
-100V	=	-100	-101	/	-99.0
+5VSQ	=	5.150	4.750	/	5.250
+15VSQ	=	15.14	14.70	/	15.30
-15VSQ	=	-15.2	-15.3	/	-14.7

Position Calibration in Progress

	SLIT POS'N	PM	ALPHA SLIT	BETA SLIT	ALPHA LAMBDA1	BETA LAMBDA1	ALPHA LAMBDA2	BETA LAMBDA2
Previous data :								
INSTR	0.00000	587.348	1.00106	-0.6934	1.00008	-0.0604	0.00000	0.00000
Current data :								
INSTR	0.00000	587.206	1.00105	-0.6533	1.00009	-0.0612	0.00000	0.00000

START THE PLASMA NOW, PLEASE.31-Mar-90 07:56:28

Sample name : SST0
Programme : SST 31-Mar-90 08:31:46

NAME	MV INT	RSD
AL	1.27	1.34
SB	0.34	1.04
AS	0.76	1.42
BA	2.12	1.06
BE	0.52	0.29
BI	2.76	1.84
B	2.67	1.44
CD	1.66	1.67
CA	0.36	1.12
CE	2.96	1.21
CR	0.93	5.89
CO	0.19	0.60
CU	1.82	1.03
EU	2.27	1.13
FE	1.05	0.53
LA	0.28	1.07
PB	0.24	0.24
LI	2.32	1.24
MG	0.32	0.91
MN	0.58	1.89
HG	2.94	0.14
MO	1.30	0.12
ND	3.21	1.97
NI	2.41	1.25
P	0.79	2.31
K	1.98	0.99
SM	2.81	1.19
SE	1.23	1.50
SI	2.03	1.09
AG	8.13	1.28
NA	2.95	1.37
SR	2.31	0.87
S	0.54	1.42
TA	2.26	0.91
TL	2.37	0.49
TH	0.69	0.96
SN	0.93	0.54
TI	2.28	0.98
W	0.97	1.89
U	2.80	1.20
VI	2.69	1.00
ZN	2.06	0.71
ZR	3.11	0.78

Sample name : SST1
Programme : SST 31-Mar-90 08:36:20

NAME	MV INT	RSD
LI	649.65	0.82
K	15.37	0.45
NA	75.00	0.49

Sample name : SST2
Programme : SST 31-Mar-90 08:38:24

NAME	MV INT	RSD
BA	398.40	0.46
BE	618.01	0.42
CD	343.84	1.26
CA	575.15	0.46
CR	79.83	3.81
CO	1.43	1.88
CU	131.69	0.46
FE	166.89	1.17
MG	514.80	1.06
MN	350.10	0.78
NI	184.74	1.10
AG	559.91	0.50
SR	697.07	0.66
V1	237.54	0.48
ZN	669.67	0.89

Sample name : SST3
Programme : SST 31-Mar-90 08:41:31

NAME	MV INT	RSD
AL	25.08	1.54
B	867.34	1.93
HG	703.22	2.73
MO	325.72	2.49
P	55.38	2.45
SI	95.90	2.50
S	43.64	2.41
TA	131.18	2.66
TI	592.48	1.71
W	74.93	2.41
ZR	190.94	1.72

Sample name : SST4
Programme : SST 31-Mar-90 08:44:53

NAME	MV INT	RSD
SB	7.34	0.19
AS	136.47	0.63
BI	116.23	0.63
PB	5.29	0.79
SE	54.98	1.16
TL	54.92	0.81
TH	19.46	0.27
SN	230.98	0.98
U	13.57	0.08

Sample name : SST5
Programme : SST 31-Mar-90 08:48:47

NAME	MV INT	RSD
CE	16.52	0.51
EU	654.69	0.67
LA	7.71	0.57
ND	18.61	0.32

```
SM          15.72      0.52


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

Curve    Min Int Max Int                    Curve Coefficients
                                  C0            C1            C2            C3

CRV1     1.2081  26.334  -0.267060E+01  0.210008E+01


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

Curve    Min Int Max Int                    Curve Coefficients
                                  C0            C1            C2            C3

CRV1     0.3217  7.7112  -0.483441E+01  0.142748E+02


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

Curve    Min Int Max Int                    Curve Coefficients
                                  C0            C1            C2            C3

CRV1     0.7220  143.29  -0.560038E+00  0.736892E+00


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

Curve    Min Int Max Int                    Curve Coefficients
                                  C0            C1            C2            C3

CRV1     2.0184  418.32  -0.107232E+00  0.504699E-01


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

Curve    Min Int Max Int                    Curve Coefficients
                                  C0            C1            C2            C3

CRV1     0.4975  648.91  -0.169612E-01  0.323893E-01


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

Curve    Min Int Max Int                    Curve Coefficients
                                  C0            C1            C2            C3
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CRV1    2.6217  122.04  -0.243213E+01  0.881313E+00


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    2.5403  910.71  -0.154626E+00  0.578258E-01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    1.5770  361.03  -0.970258E-01  0.584493E-01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    0.3442  603.91  -0.126076E-01  0.347956E-01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    2.8164  17.344  -0.437482E+01  0.147565E+01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    0.8826  83.827  -0.235470E+00  0.253466E+00


Programme name : SST     Channel name : CO      Polynomial type : CC
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CRV1    0.1821  1.5005  -0.309806E+01  0.161638E+02


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    1.7293  138.27  -0.280337E+00  0.154003E+00


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    2.1575  687.43  -0.696175E-01  0.306550E-01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    0.9937  175.23  -0.126143E+00  0.120596E+00


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    0.2701  8.0906  -0.766294E+00  0.269505E+01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    0.2255  5.5584  -0.469378E+01  0.197772E+02


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3
```

CRV1 2.2011 682.13 -0.178964E+00 0.772397E-01

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.3005	540.54	-0.122972E-01	0.388743E-01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.5542	367.60	-0.333797E-01	0.572223E-01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.7886	738.38	-0.209582E+00	0.713996E-01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.2385	342.00	-0.200928E+00	0.154125E+00		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	3.0466	19.544	-0.416322E+01	0.129817E+01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.7480	58.149	-0.721094E+00	0.915860E+00		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.8845	16.139	-0.740930E+01	0.373515E+01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.6723	16.507	-0.435854E+01	0.154943E+01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.1682	57.724	-0.228795E+01	0.186063E+01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	1.9241	100.69	-0.107879E+01	0.532650E+00		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	7.7257	587.91	-0.294766E+00	0.362462E-01		

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CRV1    7.7257  587.91  -0.294766E+00  0.362463E-01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    2.8073  78.746  -0.205090E+01  0.694043E+00


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    2.1970  731.93  -0.665745E-01  0.287869E-01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    0.5114  44.770  -0.639361E+00  0.118767E+01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    2.1451  137.74  -0.875728E+00  0.387833E+00


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3

CRV1    2.2490  57.661  -0.450506E+01  0.190301E+01


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

Curve   Min Int Max Int                    Curve Coefficients
                              C0            C1            C2            C3
```

CRV1 0.6596 20.432 -0.370028E+01 F482 Both Dif

Programme name : SST Channel nam al type : CC

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.8879	242.52	-0.406305E+00	0.434706E+00		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.1666	622.10	-0.193213E+00	0.847176E-01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	0.9240	78.673	-0.657616E+00	0.676096E+00		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.6568	14.250	-0.259567E+02	0.928132E+01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.5514	249.41	-0.228713E+00	0.851605E-01		

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3

CRV1	1.9545	703.16	-0.616323E-01	0.299574E-01

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

Curve	Min Int	Max Int	Curve Coefficients C0	C1	C2	C3
CRV1	2.9580	200.48	-0.828879E+00	0.266207E+00		

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 All samples must have been collected using a sampling plan that addresses the considerations discussed in Chapter Nine of this manual.

6.2 All samples must be preserved with zinc acetate. Use 4 drops of 2 N zinc acetate soution per 100 mL sample. Fill the bottle completely and stopper with a minimum of aeration. The treated sample is relatively stable and can be held for several days. If high concentrations of sulfide are expected to be in the sample, continue adding zinc acetate until all the sulfide has precipitated out.

7.0 PROCEDURE

7.1 Pretreatment to remove interfering substances:

7.1.1 This procedure will eliminate interferences due to sulfite, thiosulfate, iodide, and many other soluble substances (but not ferrocyanide) by producing a precipitate that may include ZnS.

7.1.2 Put about 0.75 mL (15 drops) 2 N zinc acetate solution into a 500-mL glass bottle, fill with preserved sample (see Paragraph 6.2), and add enough NaOH to produce a pH above 9.

7.1.3 Vary the volume of reagents added according to the sample so that the resulting precipitate is not excessively bulky and settles rapidly.

7.1.4 Stopper with no air bubbles under the stopper and mix by rotating back and forth vigorously about a transverse axis.

7.1.5 Let the precipitate settle for 30 min. The treated sample is relatively stable and can be held for several hours. However, if much iron is present, oxidation may be fairly rapid.

7.1.6 Filter the precipitate through glass fiber filter paper and continue at once with titration.

7.2 Titration of the supernatant:

7.2.1 Measure from a buret into a 500-mL flask an amount of iodine solution estimated to be in excess over the amount of sulfide present.

7.2.2 Add Type II water to bring the volume to about 20 mL.

7.2.3 Add 2-mL 6 N HCl.

5.4 Nitrate-wash solution (5,000 mg NO_3^-/L): Prepare a nitrate-wash solution by transferring approximately 8.2 g of potassium nitrate (KNO_3) into a 1-liter volumetric flask and diluting to volume with Type II water.

5.5 Carbon dioxide (CO_2): Gas, 99.9% purity.

5.6 Oxygen (O_2): 99.9% purity.

5.7 Nitrogen (N_2): Prepurified.

5.8 Acetic acid in water (70%): Dilute 7 volumes of glacial acetic acid with 3 volumes of Type II water.

5.9 Trichlorophenol solution, stock (1 uL = 10 ug Cl^-): Prepare a stock solution by accurately weighing accurately 1.856 g of trichlorophenol into a 100-mL volumetric flask. Dilute to volume with methanol.

5.10 Trichlorophenol solution, calibration (1 uL = 500 ng Cl^-): Dilute 5 mL of the trichlorophenol stock solution to 100 mL with methanol.

5.11 Trichlorophenol standard, instrument calibration: First, nitrate-wash a single column packed with 40 mg of activated carbon, as instructed for sample analysis, and then inject the column with 10 uL of the calibration solution.

5.12 Trichlorophenol standard, adsorption efficiency (100 ug Cl^-/liter): Prepare an adsorption-efficiency standard by injecting 10 uL of stock solution into 1 liter of Type II water.

5.13 Blank standard: The methanol used to prepare the calibration standard should be used as the blank standard.

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 This method requires that all samples be run in duplicate.

6.2 All samples must have been collected using a sampling plan that addresses the considerations discussed in Chapter Nine of this manual.

6.3 All samples should be collected in bottles with Teflon septa (e.g., Pierce #12722 or equivalent) and be protected from light. If this is not possible, use amber glass 250-mL bottles fitted with Teflon-lined caps. Foil may be substituted for Teflon if the sample is not corrosive. Samples must be preserved by acidification to pH <2 with sulfuric acid, stored at 4°C, and protected against loss of volatiles by eliminating headspace in the container. The container must be washed and muffled at 400°C before use, to minimize contamination.

6.4 All glassware must be dried prior to use according to the method discussed in Paragraph 3.1.1.

Nitric Acid Blank

Sample name : HNO3
Programme : SST 31-Mar-90 09:02:23

NAME	MV INT	CONCEN	RSD
Al	1.44	0.358	6.32
Sb	0.37	0.400	16.88
As	0.85	0.065	14.89
Ba	2.45	0.017	8.90
Be	0.59	0.002	7.62
Bi	3.15	0.341	9.87
B	3.65	0.056	7.96
Cd	1.87	0.013	6.67
Ca	0.39	0.001	12.69
Ce	3.43	0.692	9.55
Cr	0.96	0.008	41.21
Co	0.20	0.210	11.75
Cu	2.07	0.039	8.09
Eu	2.63	0.011	10.43
Fe	1.17	0.015	13.98
La	0.30	0.055	7.51
Pb	0.25	0.303	7.53
Li	2.63	0.024	9.36
Mg	0.34	0.001	9.92
Mn	0.64	0.003	1.04
Hg	4.40	0.105	11.77
Mo	1.45	0.023	7.19
Nd	3.58	0.483	12.56
Ni	2.76	0.039	10.89
P	0.93	0.131	13.35
K	2.22	0.872	7.44
Sm	3.26	0.685	9.49
Se	1.38	0.280	9.85
Si	2.30	0.146	8.86
Ag	9.47	0.048	8.92
Na	3.39	0.300	9.87
Sr	2.59	0.008	8.68
S	0.59	0.063	9.62
Ta	2.59	0.129	13.45
Tl	2.76	0.742	20.40
Th	0.79	0.489	9.51
Sn	1.04	0.046	9.48
Ti	2.57	0.025	8.12
W	1.12	0.098	7.69
U	3.24	4.096	9.36
V	3.03	0.029	16.60
Zn	2.31	0.007	3.91
Zr	3.42	0.082	7.94

LMCS Check Standard #78C11F

Sample name : 78C11F
Sample code 1 : SST1
Programme : SST 31-Mar-90 09:07:01

NAME	MV INT	CONCEN	RSD
Al	1.46	0.390	7.47
Sb	1.06	10.226	0.14
As	0.93	0.128	6.97
Ba	193.29	9.648	1.71
Be	0.58	0.002	12.30
Bi	3.24	0.420	13.55
B	173.42	9.673	1.37
Cd	164.69	9.529	1.02
Ca	286.26	9.948	1.59
Ce	9.46	9.582	1.08
Cr	38.02	9.402	0.84
Co	0.72	8.578	0.58
Cu	65.12	9.748	1.50
Eu	3.26	0.030	3.72
Fe	81.78	9.736	1.04
La	0.32	0.097	1.60
Pb	0.25	0.323	14.14
Li	128.03	9.710	1.76
Mg	253.81	9.854	1.13
Mn	168.93	9.633	0.97
Hg	3.41	0.034	29.74
Mo	1.48	0.027	17.73
Nd	10.09	8.930	0.47
Ni	90.19	9.628	0.78
P	0.96	0.155	2.39
K	8.54	24.491	1.01
Sm	3.02	0.325	25.14
Se	3.36	3.971	1.47
Si	2.27	0.130	13.41
Ag	0.91	0.028	20.14
Na	37.88	24.242	1.53
Sr	342.78	9.801	1.70
S	0.77	0.277	1.93
Ta	2.49	0.091	12.09
Tl	2.75	0.719	15.08
Th	0.79	0.517	7.87
Sn	115.27	49.704	0.98
Ti	2.45	0.014	18.19
W	1.32	0.235	2.67
U	3.43	5.869	7.57
V	2.90	0.018	12.28
Zn	322.13	9.588	0.94
Zr	3.32	0.055	16.97

LMCS Check Standard #82B38C

Sample name : 82B38C
Sample code 1 : SST2
Programme : SST 31-Mar-90 09:11:44

NAME	MV INT	CONCEN	RSD
Al	3.31	4.283	0.99
Sb	0.38	0.600	11.25
As	2.56	1.325	1.56
Ba	2.56	0.022	8.01
Be	0.57	0.002	9.89
Bi	61.13	51.442	0.28
B	6.36	0.208	15.86
Cd	1.89	0.013	12.22
Ca	0.93	0.020	0.10
Ce	3.48	0.765	9.65
Cr	1.28	0.089	3.41
Co	0.19	0.022	75.00
Cu	3.32	0.231	2.17
Eu	321.38	9.782	0.89
Fe	1.54	0.060	6.99
La	17.61	)46.687	0.52
Pb	3.77	50.010	0.87
Li	2.43	0.009	22.62
Mg	0.55	0.009	1.78
Mn	0.78	0.011	5.54
Hg	3.65	0.051	25.91
Mo	1.46	0.024	8.83
Nd	3.87	0.865	9.37
Ni	2.79	0.042	10.27
P	1.17	0.350	4.61
K	2.03	0.174	61.56
Sm	9.31	10.065	0.41
Se	1.45	0.401	5.87
Si	3.20	0.626	2.77
Ag	288.58	10.165	0.46
Na	3.13	0.124	30.21
Sr	2.65	0.010	9.36
S	0.68	0.164	10.17
Ta	2.83	0.221	6.17
Tl	5.58	6.106	0.30
Th	10.40	51.728	0.46
Sn	1.17	0.101	1.32
Ti	2.94	0.056	5.62
W	1.06	0.060	41.82
U	8.53	53.235	0.28
V	5.54	0.243	0.61
Zn	2.52	0.014	9.47
Zr	3.67	0.149	6.42

LMCS Check Standard #77C11F

Sample name : 77C11F
Sample code 1 : SST3
Programme : SST 31-Mar-90 09:16:32

NAME	MV INT	CONCEN	RSD
Al	25.50	50.890	0.20
Sb	0.45	1.575	8.65
As	71.68	52.264	1.43
Ba	2.75	0.031	7.74
Be	294.27	9.514	0.53
Bi	4.24	1.301	1.27
B	5.57	0.167	5.91
Cd	2.17	0.030	1.61
Ca	0.94	0.020	0.56
Ce	3.43	0.687	14.95
Cr	1.12	0.048	9.12
Co	0.21	0.242	20.37
Cu	2.37	0.084	7.14
Eu	2.66	0.012	19.85
Fe	1.54	0.059	5.61
La	0.30	0.049	22.71
Pb	0.26	0.488	8.11
Li	2.62	0.023	18.58
Mg	0.48	0.006	2.18
Mn	0.92	0.019	3.88
Hg	350.66	24.827	1.51
Mo	326.53	50.126	0.66
Nd	3.58	0.485	11.90
Ni	6.98	0.501	2.64
P	57.10	51.574	1.58
K	2.21	0.829	13.37
Sm	3.29	0.736	14.22
Se	28.35	50.463	1.05
Si	79.28	41.148	1.10
Ag	17.64	0.345	2.25
Na	3.61	0.453	9.52
Sr	2.68	0.011	11.35
S	42.23	49.519	1.02
Ta	123.64	47.075	1.01
Tl	28.58	49.876	0.57
Th	0.94	1.318	6.57
Sn	1.57	0.274	1.75
Ti	581.22	49.046	0.25
W	32.13	21.066	1.27
U	4.65	17.177	4.76
V	115.91	9.643	0.95
Zn	3.61	0.047	2.19
Zr	188.19	49.270	0.32

Acid Digested LMCS Standard, F0979

Sample name : ~~PAR7~~
Sample code 1 : ~~REAGENT~~
Sample code 2 : ~~BLANK~~ ICP-B
Sample code 3 : ~~DIRECT~~ Digested STD
Programme : SST 31-Mar-90 09:21:55

NAME	MV INT	CONCEN	RSD
Al	1.55	0.585	10.06
Sb	0.37	0.457	9.02
As	1.24	0.355	3.98
Ba	2.50	0.019	12.39
Be	0.60	0.002	8.29
Bi	14.12	10.008	0.91
B	154.46	8.777	1.14
Cd	156.00	9.021	1.06
Ca	262.68	9.128	0.99
Ce	3.39	0.626	15.93
Cr	1.04	0.027	11.80
Co	0.20	0.178	13.89
Cu	59.24	8.842	1.03
Eu	2.56	0.009	16.79
Fe	1.63	0.070	7.41
La	3.41	8.428	0.84
Pb	0.73	9.796	1.46
Li	2.59	0.021	16.29
Mg	234.49	9.103	0.47
Mn	1.07	0.028	2.88
Hg	3.44	0.036	6.03
Mo	64.17	9.689	0.81
Nd	3.70	0.635	11.18
Ni	2.78	0.041	14.82
P	11.10	9.446	4.11
K	4.45	9.202	0.43
Sm	3.12	0.474	20.95
Se	1.40	0.320	15.01
Si	12.72	5.697	2.13
Ag	207.26	7.218	0.65
Na	15.97	9.036	0.52
Sr	313.06	8.946	0.96
S	0.80	0.308	2.51
Ta	2.55	0.112	13.77
Tl	2.72	0.664	10.42
Th	0.78	0.432	16.07
Sn	1.42	0.213	5.24
Ti	3.13	0.072	4.45
W	1.34	0.246	5.04
U	3.18	3.536	17.34
V	3.01	0.028	16.09
Zn	295.15	8.780	0.31
Zr	3.33	0.058	20.65

Reagent Blank, F0487

Sample name : F487
Sample code 1 : BLANK
Sample code 2 : 89072
Sample code 3 : DIRECT
Programme : SST 31-Mar-90 09:27:38

NAME	MV INT	CONCEN	RSD
Al	1.35	0.167	10.32
Sb	0.36	0.238	12.49
As	0.78	0.015	57.74
Ba	2.19	0.003	20.16
Be	0.55	0.001	15.95
Bi	3.15	0.348	7.78
B	5.43	0.159	6.29
Cd	1.81	0.009	7.51
Ca	2.77	0.084	0.50
Ce	3.01	0.068	39.39
Cr	0.93	0.001	53.91
Co	0.19	0.043	57.28
Cu	1.91	0.014	15.11
Eu	2.29	0.001	68.88
Fe	1.46	0.050	2.43
La	0.32	0.093	164.90
Pb	0.25	0.158	26.02
Li	2.41	0.007	11.76
Mg	0.81	0.019	0.31
Mn	0.87	0.016	2.35
Hg	3.21	0.020	9.52
Mo	1.35	0.008	43.01
Nd	3.13	-0.094	-41.11
Ni	2.55	0.015	20.42
P	0.93	0.128	11.72
K	2.02	0.121	42.97
Sm	2.85	0.059	54.76
Se	1.28	0.102	14.90
Si	2.42	0.213	9.40
Ag	8.32	0.007	47.07
Na	3.34	0.270	2.68
Sr	2.41	0.003	13.93
S	0.68	0.173	4.58
Ta	2.32	0.024	2.49
Tl	2.41	0.078	42.97
Th	0.71	0.064	38.49
Sn	1.07	0.057	10.29
Ti	2.97	0.058	1.85
W	1.03	0.038	7.22
U	2.83	0.272	70.94
V	2.73	0.004	62.20
Zn	6.43	0.131	0.16
Zr	3.15	0.009	39.30

Sample 89-072, F0480

Sample name : F480
Sample code 1 : SAMPLE
Sample code 2 : 100-10
Sample code 3 : 89072
Programme : SST 31-Mar-90 09:33:11

NAME	MV INT	CONCEN	DILCOR	RSD
Al	2.95	3.515	355.00	1.81
Sb	0.36	0.238	24.029	28.35
As	0.81	0.040	3.994	25.30
Ba	2.48	0.018	1.825	9.78
Be	0.57	0.001	0.140	7.53
Bi	3.48	0.636	64.267	5.77
B	4.27	0.092	9.327	5.39
Cd	1.80	0.008	0.842	8.18
Ca	1.71	0.047	4.741	0.31
Ce	3.21	0.355	35.820	19.15
Cr	1.23	0.076	7.654	6.27
Co	0.20	0.108	10.884	17.32
Cu	2.00	0.027	2.758	12.47
Eu	2.46	0.006	0.587	20.83
Fe	6.46	0.653	65.956	0.34
La	0.29	0.023	2.359	30.53
Pb	0.24	0.112	11.319	0.00
Li	2.46	0.011	1.139	22.63
Mg	3.15	0.110	11.139	0.56
Mn	9.61	0.517	52.169	0.33
Hg	4.91	0.141	14.238	21.82
Mo	1.39	0.013	1.266	34.16
Nd	3.34	0.177	17.919	45.40
Ni	2.73	0.035	3.579	14.64
P	1.02	0.215	21.707	6.66
K	2.10	0.442	44.641	23.56
Sm	3.04	0.351	35.419	21.23
Se	1.34	0.203	20.484	12.99
Si	2.70	0.362	36.547	4.35
Ag	8.84	0.026	2.586	20.10
Na	8.88	4.112	415.33	0.77
Sr	4.06	0.050	5.070	1.55
S	0.62	0.094	9.476	11.35
Ta	2.45	0.074	7.443	20.99
Tl	2.63	0.506	51.062	16.57
Th	0.75	0.270	27.272	17.21
Sn	1.02	0.036	3.673	18.68
Ti	2.46	0.015	1.517	19.74
W	1.06	0.062	6.214	17.53
U	3.08	2.636	266.22	17.09
V	2.94	0.021	2.145	12.16
Zn	2.45	0.012	1.174	9.00
Zr	3.30	0.051	5.117	18.41

Dilution factor : 101.000

Sample 89-072 Duplicate, F0481

Sample name : F481
Sample code 1 : DUPSAM
Sample code 2 : 100-10
Sample code 3 : 89072
Programme : SST 31-Mar-90 09:43:18

NAME	MV INT	CONCEN	DILCOR	RSD
Al	3.06	3.765	380.31	0.47
Sb	0.36	0.233	23.549	12.24
As	0.80	0.029	2.903	4.44
Ba	2.26	0.007	0.683	15.68
Be	0.56	0.001	0.103	11.51
Bi	3.40	0.564	56.938	5.38
B	3.16	0.028	2.836	12.40
Cd	1.72	0.003	0.350	9.28
Ca	1.52	0.040	4.056	0.35
Ce	3.06	0.146	14.755	27.78
Cr	1.18	0.064	6.502	1.36
Co	0.20	0.097	9.795	41.94
Cu	1.90	0.013	1.281	14.08
Eu	2.35	0.002	0.236	25.07
Fe	6.48	0.655	66.151	0.41
La	0.29	0.013	1.361	30.55
Pb	0.25	0.158	15.980	31.46
Li	2.35	0.003	0.289	55.45
Mg	0.66	0.013	1.360	0.17
Mn	10.10	0.545	55.017	0.20
Hg	4.44	0.107	10.831	24.39
Mo	1.35	0.007	0.680	24.05
Nd	3.17	-0.043	-4.327	-37.85
Ni	2.66	0.027	2.733	10.34
P	1.02	0.210	21.183	18.60
K	2.02	0.123	12.449	26.48
Sm	2.90	0.134	13.510	31.28
Se	1.29	0.112	11.275	8.39
Si	2.47	0.239	24.137	2.48
Ag	8.42	0.010	1.036	25.07
Na	9.32	4.420	446.46	0.39
Sr	4.09	0.051	5.169	0.55
S	0.61	0.082	8.237	3.85
Ta	2.34	0.033	3.264	9.32
Tl	2.52	0.296	29.856	24.90
Th	0.72	0.115	11.662	23.98
Sn	0.97	0.017	1.712	18.19
Ti	2.37	0.008	0.764	22.97
W	1.02	0.035	3.551	17.45
U	2.95	1.411	142.49	15.49
V	2.83	0.012	1.250	17.56
Zn	2.31	0.008	0.766	7.42
Zr	3.21	0.025	2.536	17.06

Dilution factor : 101.000

Sample 89-072 Duplicate, F0481

Sample name : F481
Sample code 1 : 500-10
Sample code 2 : DUPSAM
Sample code 3 : 89072
Programme : SST 31-Mar-90 09:48:33

NAME	MV INT	CONCEN	DILCOR	RSD
Al	9.47	17.224	361.71	0.52
Sb	0.35	0.167	3.497	13.09
As	0.79	0.024	0.495	40.63
Ba	2.51	0.019	0.404	12.36
Be	0.55	0.001	0.017	42.74
Bi	5.06	2.024	42.500	2.38
B	3.10	0.025	0.521	21.16
Cd	1.71	0.003	0.063	30.33
Ca	5.04	0.163	3.415	0.70
Ce	3.02	0.079	1.663	127.44
Cr	2.29	0.346	7.262	1.95
Co	0.19	0.011	0.226	229.13
Cu	1.95	0.020	0.429	24.85
Eu	2.31	0.001	0.026	144.06
Fe	26.09	3.020	63.413	0.36
La	0.29	0.013	0.283	80.83
Pb	0.24	0.066	1.384	17.32
Li	2.31	-0.001	-0.013	-617.37
Mg	1.75	0.056	1.172	0.44
Mn	44.75	2.527	53.072	0.34
Hg	4.07	0.081	1.701	20.49
Mo	1.36	0.008	0.169	44.44
Nd	3.15	-0.069	-1.454	-159.46
Ni	2.98	0.062	1.308	12.15
P	1.43	0.588	12.354	6.91
K	1.99	0.032	0.680	455.80
Sm	2.86	0.067	1.399	145.68
Se	1.37	0.264	5.535	16.54
Si	3.49	0.782	16.421	3.11
Ag	8.37	0.008	0.177	83.30
Na	32.64	20.601	432.63	0.67
Sr	10.42	0.233	4.899	0.34
S	0.76	0.266	5.578	3.82
Ta	2.31	0.021	0.437	89.78
Tl	2.58	0.410	8.605	38.25
Th	0.71	0.069	1.455	85.77
Sn	0.99	0.026	0.536	34.15
Ti	2.39	0.009	0.188	40.07
W	1.04	0.044	0.928	33.86
U	3.14	3.308	67.373	17.94
V	2.91	0.020	0.410	20.30
Zn	2.75	0.021	0.438	5.06
Zr	3.30	0.048	1.017	23.70

Dilution factor : 21.0000

Spike of Sample 89-072, F0482

Sample name : F482
Sample code 1 : 100-10
Sample code 2 : SPIKE
Sample code 3 : 89072
Programme : SST 31-Mar-90 09:57:14

NAME	MV INT	CONCEN	DILCOR	RSD
Al	3.26	4.170	421.18	1.14
Sb	0.37	0.395	39.889	4.17
As	0.04	0.057	5.805	0.00
Ba	4.91	0.141	14.200	0.33
Be	0.58	0.002	0.184	11.64
Bi	3.64	0.772	78.005	3.98
B	3.68	0.058	5.872	1.27
Cd	2.38	0.042	4.276	1.05
Ca	2.52	0.075	7.578	0.51
Ce	3.36	0.584	58.971	1.39
Cr	1.74	0.206	20.830	1.54
Co	0.21	0.302	30.474	3.09
Cu	2.24	0.064	6.502	0.73
Eu	2.57	0.009	0.912	1.60
Fe	7.30	0.754	76.167	0.76
La	0.31	0.076	7.712	4.08
Pb	0.25	0.297	29.962	10.18
Li	4.17	0.143	14.445	0.41
Mg	1.56	0.048	4.891	0.49
Mn	12.38	0.675	68.159	0.73
Hg	3.76	0.059	5.969	12.03
Mo	1.64	0.052	5.272	1.78
Nd	3.53	0.416	42.044	11.98
Ni	4.02	0.177	17.860	1.82
P	1.13	0.315	31.821	1.75
K	2.17	0.690	69.665	2.56
Sm	3.16	0.538	54.355	1.59
Se	1.40	0.318	32.072	3.53
Si	2.51	0.259	26.164	1.44
Ag	10.10	0.071	7.190	2.61
Na	9.35	4.440	448.44	0.43
Sr	5.31	0.086	8.728	0.29
S	0.63	0.109	10.996	8.66
Ta	2.60	0.131	13.214	4.32
Tl	2.73	0.691	69.834	18.77
Th	0.77	0.403	40.728	0.00
Sn	1.37	0.190	19.216	1.65
Ti	4.07	0.151	15.293	0.51
W	1.09	0.081	8.149	9.52
U	3.22	3.889	392.78	1.31
V	3.01	0.027	2.758	15.11
Zn	3.51	0.044	4.395	1.01
Zr	3.89	0.205	20.739	0.22

Dilution factor : 101.000

Spike of Sample 89-072, F0482

Sample name : F482
Sample code 1 : 500-10
Sample code 2 : SPIKE
Sample code 3 : 89072
Programme : SST 31-Mar-90 10:03:05

NAME	MV INT	CONCEN	DILCOR	RSD
Al	9.57	17.431	366.06	0.75
Sb	0.35	0.200	4.197	22.96
As	0.83	0.049	1.026	7.74
Ba	13.30	0.564	11.839	0.43
Be	0.56	0.001	0.023	13.90
Bi	4.96	1.941	40.754	1.27
B	5.17	0.145	3.035	2.42
Cd	3.98	0.135	2.843	1.67
Ca	9.31	0.311	6.536	0.39
Ce	3.12	0.225	4.731	20.68
Cr	4.17	0.821	17.251	0.79
Co	0.22	0.496	10.409	6.79
Cu	2.84	0.157	3.290	1.76
Eu	2.36	0.003	0.059	24.12
Fe	26.79	3.105	65.199	0.33
La	0.34	0.146	3.075	1.06
Pb	0.25	0.316	6.645	7.22
Li	9.61	0.563	11.831	0.24
Mg	5.37	0.197	4.129	0.80
Mn	49.39	2.793	58.645	0.51
Hg	3.28	0.024	0.510	3.83
Mo	2.22	0.142	2.981	0.98
Nd	4.83	2.113	44.364	136.07
Ni	7.78	0.589	12.359	1.52
P	1.62	0.762	16.002	3.16
K	3.04	0.193	4.053	31.53
Sm	3.86	0.076	1.594	58.87
Se	1.49	0.477	10.016	4.60
Si	3.02	0.531	11.156	1.88
Ag	12.23	0.148	3.116	2.23
Na	29.58	18.479	388.06	0.41
Sr	14.50	0.351	7.369	0.51
S	0.77	0.270	5.670	3.99
Ta	2.66	0.157	3.296	5.67
Tl	2.58	0.405	8.512	21.03
Th	0.71	0.091	1.903	32.40
Sn	2.38	0.585	12.284	2.78
Ti	9.08	0.576	12.091	1.09
W	1.03	0.041	0.861	8.13
U	3.15	3.267	68.607	8.32
V	2.89	0.018	0.374	1.38
Zn	7.26	0.156	3.274	0.54
Zr	5.39	0.606	12.724	1.22

Dilution factor : 21.0000

Acid Digested LMCS Check Standard

Sample name : ICP2B
Sample code 1 : DIGEST
Sample code 2 : DIRECT
Sample code 3 : 89072
Programme : SST 31-Mar-90 10:08:11

NAME	MV INT	CONCEN	RSD
Al	5.46	8.804	3.01
Sb	0.36	0.266	29.50
As	1.10	0.254	3.10
Ba	163.24	8.131	1.45
Be	0.63	0.003	12.32
Bi	3.27	0.448	16.94
B	3.38	0.041	13.12
Cd	1.95	0.017	1.21
Ca	9.14	0.306	1.74
Ce	8.20	7.725	4.45
Cr	31.99	7.874	3.17
Co	0.62	6.956	5.71
Cu	1.94	0.018	44.11
Eu	3.02	0.023	11.86
Fe	69.27	8.227	2.83
La	0.31	0.057	24.05
Pb	0.25	0.158	31.46
Li	107.26	8.106	1.54
Mg	2.19	0.073	3.25
Mn	142.55	8.124	2.83
Hg	3.22	0.020	5.99
Mo	1.52	0.033	16.07
Nd	8.96	7.465	1.44
Ni	75.97	8.069	3.54
P	1.00	0.194	19.87
K	1.99	0.034	657.59
Sm	2.86	0.075	202.98
Se	2.99	3.273	4.66
Si	3.11	0.578	7.39
Ag	9.71	0.057	19.17
Na	3.35	0.272	24.59
Sr	2.49	0.005	34.85
S	0.74	0.235	9.11
Ta	22.70	7.929	4.62
Tl	2.77	0.768	17.25
Th	0.77	0.393	27.55
Sn	20.05	8.310	4.73
Ti	99.62	8.246	2.28
W	1.07	0.067	31.08
U	3.38	5.420	17.82
V	2.93	0.021	27.16
Zn	3.86	0.054	4.01
Zr	34.56	8.373	2.59

Nitric Acid Blank

Sample name : HNO3
Programme : SST 31-Mar-90 10:12:36

NAME	MV INT	CONCEN	RSD
Al	1.38	0.227	4.30
Sb	0.36	0.314	13.12
As	0.81	0.040	14.90
Ba	2.32	0.010	3.79
Be	0.57	0.001	2.51
Bi	3.06	0.266	5.43
B	3.00	0.019	6.04
Cd	1.80	0.008	8.83
Ca	0.38	0.001	5.36
Ce	3.26	0.441	3.58
Cr	0.92	-0.002	-198.70
Co	0.20	0.167	9.68
Cu	1.98	0.025	3.06
Dy	2.50	0.007	2.46
Fe	1.15	0.013	5.81
La	0.30	0.037	14.63
Pb	0.25	0.171	0.00
Li	2.51	0.015	2.85
Mg	0.34	0.001	10.17
Mn	0.62	0.002	16.04
Hg	3.04	0.008	45.67
Mo	1.39	0.014	2.77
Nd	4.61	1.825	156.22
Ni	2.68	0.029	5.00
P	0.93	0.133	16.93
K	2.12	0.524	6.80
Sm	3.09	0.436	3.65
Se	1.33	0.189	15.02
Si	3.31	0.099	4.50
Ag	8.98	0.031	4.97
Na	3.20	0.170	3.19
Sr	2.49	0.005	3.54
S	0.58	0.046	19.58
Ta	2.47	0.084	11.41
Tl	2.66	0.553	4.17
Th	0.76	0.332	4.90
Sn	1.02	0.039	1.92
Ti	2.47	0.016	4.81
W	1.07	0.063	9.28
U	3.07	2.549	3.65
V	2.96	0.024	13.91
Zn	2.25	0.006	11.51
Zr	3.31	0.053	4.33

LMCS Check Standard #78C11F

Sample name : 78C11F
Sample code 1 : SST1
Programme : SST 31-Mar-90 10:16:39

NAME	MV INT	CONCEN	RSD
Al	1.51	0.493	10.46
Sb	1.11	11.063	1.20
As	0.97	0.155	6.74
Ba	199.34	9.954	0.69
Be	0.61	0.003	11.35
Bi	3.27	0.453	14.62
B	178.94	10.192	0.64
Cd	178.48	10.335	2.22
Ca	295.80	10.280	0.77
Ce	9.83	10.133	1.99
Cr	40.49	10.028	1.46
Co	0.73	8.777	2.50
Cu	67.39	10.098	0.69
Eu	3.40	0.035	4.28
Fe	86.17	10.265	1.51
La	0.33	0.115	6.20
Pb	0.26	0.363	8.33
Li	130.20	9.878	0.27
Mg	268.57	10.428	1.63
Mn	179.15	10.218	1.44
Hg	3.32	0.028	19.89
Mo	1.54	0.037	13.13
Nd	10.50	9.503	1.12
Ni	96.77	10.350	1.88
P	1.00	0.199	14.13
K	8.86	25.692	1.06
Sm	3.15	0.520	17.60
Se	3.58	4.366	1.68
Si	2.35	0.171	12.28
Ag	9.31	0.043	14.45
Na	38.97	24.998	0.90
Sr	355.29	10.161	0.84
S	0.82	0.329	6.38
Ta	2.61	0.136	14.32
Tl	2.88	0.984	12.87
Th	0.82	0.673	8.83
Sn	125.60	54.193	2.35
Ti	2.53	0.021	15.34
W	1.40	0.288	8.76
U	3.58	7.261	7.98
V	3.01	0.028	24.23
Zn	342.85	10.209	1.62
Zr	3.41	0.079	13.71

~~Starting stds~~ ~~for~~

~~Stds used~~ for ending stds F911, F912

LMCS Check Standard #82B38C

Sample name : 82B38C
Sample code 1 : SST2
Programme : SST 31-Mar-90 10:20:55

NAME	MV INT	CONCEN	RSD
Al	3.38	4.428	0.14
Sb	0.39	0.720	3.01
As	2.62	1.370	0.50
Ba	2.55	0.021	1.30
Be	0.57	0.002	6.47
Bi	63.07	53.156	0.29
B	5.27	0.150	10.48
Cd	1.87	0.012	4.50
Ca	0.95	0.021	0.17
Ce	3.46	0.732	1.41
Cr	1.28	0.088	2.89
Co	0.20	0.070	23.08
Cu	3.33	0.233	0.23
Eu	332.48	10.123	0.16
Fe	1.59	0.065	6.20
La	18.22	>48.331	0.16
Pb	2.85	51.618	0.24
Li	2.41	0.007	19.97
Mg	0.56	0.009	0.83
Mn	0.78	0.011	3.03
Hg	3.49	0.040	3.38
Mo	1.47	0.026	10.88
Nd	3.82	0.802	7.20
Ni	2.76	0.039	11.30
P	1.19	0.365	2.69
K	2.01	0.090	21.14
Sm	9.51	10.381	0.13
Se	1.44	0.397	4.87
Si	3.22	0.635	0.34
Ag	296.78	10.462	0.37
Na	3.09	0.093	9.48
Sr	2.64	0.010	2.27
S	0.67	0.158	3.04
Ta	2.83	0.222	1.83
Tl	5.72	6.374	1.69
Th	10.73	53.508	0.07
Sn	1.19	0.111	3.05
Ti	2.95	0.057	0.67
W	1.08	0.070	4.76
U	8.71	54.887	0.16
V	5.65	0.252	0.37
Zn	2.56	0.015	3.51
Zr	3.68	0.150	1.07

LMCS Check Standard #77C11F

Sample name : 77C11F
Sample code 1 : SST3
Programme : SST 31-Mar-90 10:25:16

NAME	MV INT	CONCEN	RSD
Al	26.72	153.443	0.73
Sb	0.44	1.408	11.88
As	72.33	52.741	1.99
Ba	2.53	0.020	12.73
Be	304.80	9.855	0.74
Bi	3.99	1.087	3.98
B	5.07	0.138	10.87
Cd	2.02	0.021	6.66
Ca	0.96	0.021	1.09
Ce	3.10	0.194	55.22
Cr	1.04	0.029	26.43
Co	0.20	0.108	17.32
Cu	2.20	0.059	10.57
Eu	2.40	0.004	46.94
Fe	1.43	0.047	4.02
La	0.29	0.014	47.19
Pb	0.26	0.349	5.66
Li	2.37	0.004	94.73
Mg	0.46	0.006	3.84
Mn	0.90	0.018	3.40
Hg	341.91	24.203	2.40
Mo	331.23	50.850	1.36
Nd	3.24	0.044	207.49
Ni	6.74	0.474	3.75
P	52.52	47.379	4.36
K	2.02	0.138	103.21
Sm	2.96	0.235	45.30
Se	28.70	51.106	1.07
Si	82.03	42.612	3.11
Ag	17.03	0.323	3.17
Na	3.28	0.224	22.29
Sr	2.50	0.005	24.27
S	41.98	49.214	1.48
Ta	123.91	47.179	1.44
Tl	29.56	51.742	0.30
Th	0.89	1.018	9.40
Sn	1.51	0.251	5.21
Ti	611.81	51.638	1.02
W	32.40	21.245	2.32
U	4.46	15.450	7.26
V	120.24	10.011	0.89
Zn	3.42	0.041	3.79
Zr	197.78	51.822	1.12

Core 6 Composite, F0935

Sample name : F935
Sample code 1 : 100-10
Sample code 2 : SAMPLE
Sample code 3 : 000006
Programme : SST 31-Mar-90 10:30:28

NAME	MV INT	CONCEN	DILCOR	RSD
Al	6.11	10.154	1025.5	0.41
Sb	0.37	0.390	39.408	3.66
As	0.85	0.065	6.574	20.39
Ba	2.68	0.028	2.843	8.33
Be	0.59	0.002	0.226	5.49
Bi	5.70	2.592	261.79	2.54
B	4.05	0.080	8.044	2.17
Cd	1.03	0.010	1.002	25.84
Ca	2.39	0.070	7.110	0.87
Ce	3.33	0.540	54.499	19.34
Cr	1.25	0.082	8.252	2.98
Co	0.20	0.145	14.693	16.97
Cu	2.05	0.035	3.567	15.49
Eu	2.55	0.009	0.866	20.28
Fe	14.15	1.580	159.56	0.30
La	0.30	0.042	4.264	22.11
Pb	0.25	0.264	26.633	11.46
Li	2.53	0.017	1.682	17.57
Mg	6.68	0.248	25.004	0.17
Mn	8.56	0.456	46.087	0.13
Hg	3.50	0.040	4.072	31.40
Mo	1.47	0.025	2.522	11.22
Nd	3.43	0.293	29.632	25.83
Ni	2.82	0.045	4.524	9.80
P	4.43	3.339	337.23	3.00
K	2.15	0.634	64.007	22.13
Sm	3.15	0.520	52.529	20.63
Se	1.40	0.313	31.571	16.41
Si	3.86	0.975	98.432	4.59
Ag	9.20	0.039	3.912	18.48
Na	22.77	13.749	1388.7	0.67
Sr	4.40	0.060	6.077	1.25
S	0.63	0.105	10.596	15.20
Ta	2.53	0.106	10.707	11.71
Tl	2.77	0.775	78.291	6.92
Th	0.77	0.393	39.651	18.36
Sn	1.06	0.054	5.415	19.88
Ti	2.61	0.028	2.832	13.90
W	1.12	0.098	9.879	2.88
U	3.22	3.904	394.34	16.00
V	3.11	0.036	3.613	18.47
Zn	2.73	0.020	2.043	4.54
Zr	3.37	0.069	7.009	16.92

Dilution factor : 101.000

Core 6 Composite, F0935

Sample name : F935
Sample code 1 : 500-10
Sample code 2 : SAMPLE
Sample code 3 : 000006
Programme : SST 31-Mar-90 10:35:24

NAME	MV INT	CONCEN	DILCOR	RSD
Al	25.09	50.030	1050.6	0.56
Sb	0.38	0.609	12.790	1.35
As	0.92	0.119	2.491	2.15
Ba	2.87	0.037	0.785	1.96
Be	0.62	0.003	0.062	6.10
Bi	15.66	11.365	238.67	0.23
B	3.61	0.054	1.132	5.33
Cd	1.92	0.015	0.324	17.39
Ca	8.64	0.288	6.051	0.35
Ce	3.49	0.776	16.300	3.09
Cr	2.32	0.351	7.379	1.17
Co	0.20	0.205	4.300	12.06
Cu	2.23	0.064	1.334	3.03
Eu	2.66	0.012	0.253	4.58
Fe	63.55	7.538	158.30	0.46
La	0.31	0.066	1.396	4.05
Pb	0.27	0.567	11.906	3.49
Li	2.62	0.023	0.487	3.51
Mg	8.45	0.316	6.636	0.58
Mn	38.93	2.194	46.082	0.34
Hg	5.33	0.171	3.585	7.04
Mo	1.58	0.043	0.901	6.23
Nd	3.52	0.405	8.515	8.83
Ni	3.33	0.100	2.109	1.23
P	18.41	16.141	338.97	2.65
K	3.22	0.875	18.381	5.60
Sm	3.27	0.714	15.000	2.92
Se	1.58	0.646	13.571	5.21
Si	6.73	2.505	52.606	2.41
Ag	9.71	0.057	1.200	3.76
Na	97.40	)65.552	)1376.6	0.43
Sr	11.63	0.268	5.630	0.45
S	0.78	0.289	6.077	4.62
Ta	2.67	0.159	3.331	5.54
Tl	2.96	1.137	23.871	8.89
Th	0.80	0.549	11.527	2.97
Sn	1.16	0.096	2.024	3.39
Ti	2.99	0.060	1.255	0.83
W	1.25	0.185	3.876	5.29
U	3.67	8.103	170.15	1.78
V	3.33	0.055	1.157	10.98
Zn	4.56	0.075	1.575	0.52
Zr	3.59	0.126	2.646	1.90

Dilution factor : 21.0000

Duplicate Core 6 Composite, F0936

Sample name : F936
Sample code 1 : 100-10
Sample code 2 : DUPSAM
Sample code 3 : 000006
Programme : SST 31-Mar-90 10:40:42

NAME	MV INT	CONCEN	DILCOR	RSD
Al	6.45	10.871	1097.9	0.68
Sb	0.36	0.252	25.471	11.78
As	0.81	0.036	3.597	3.16
Ba	2.30	0.009	0.912	6.28
Be	0.56	0.001	0.108	32.40
Bi	4.40	1.445	145.92	1.89
B	3.14	0.027	2.724	10.68
Cd	1.73	0.004	0.423	15.43
Ca	1.74	0.048	4.854	0.54
Ce	3.12	0.226	22.853	11.43
Cr	1.08	0.038	3.806	5.22
Co	0.20	0.065	6.530	14.43
Cu	1.93	0.016	1.659	6.15
Eu	2.38	0.003	0.329	11.30
Fe	9.63	1.035	104.50	0.04
La	0.29	0.018	1.815	30.00
Pb	0.25	0.218	21.972	5.25
Li	2.41	0.007	0.757	42.12
Mg	2.49	0.084	8.520	0.61
Mn	6.22	0.323	32.596	0.75
Hg	4.48	0.110	11.113	8.38
Mo	1.37	0.011	1.100	6.69
Nd	3.22	0.023	2.273	121.09
Ni	2.64	0.025	2.500	6.44
P	2.40	1.479	149.42	3.64
K	2.04	0.193	19.491	17.46
Sm	2.95	0.208	21.022	11.94
Se	1.83	0.194	19.607	7.49
Si	2.84	0.434	43.837	1.93
Ag	8.57	0.016	1.612	9.54
Na	14.52	8.028	810.85	0.22
Sr	3.73	0.041	4.128	0.94
S	0.58	0.051	5.158	9.40
Ta	2.37	0.044	4.492	21.72
Tl	2.51	0.271	27.421	9.17
Th	0.73	0.171	17.224	17.77
Sn	1.01	0.031	3.147	3.22
Ti	2.44	0.013	1.355	7.03
W	1.05	0.055	5.577	17.84
U	3.00	1.866	188.42	8.21
V	2.87	0.016	1.574	22.87
Zn	2.52	0.014	1.396	3.36
Zr	3.22	0.028	2.814	10.57

Dilution factor : 101.000

Duplicate Core 6 Composite, F0936

Sample name : F936
Sample code 1 : 500-10
Sample code 2 : DUPSAM
Sample code 3 : 000006
Programme : SST 31-Mar-90 10:45:13

NAME	MV INT	CONCEN	DILCOR	RSD
Al	27.09	)54.210	)1138.4	1.17
Sb	0.36	0.276	5.796	5.17
As	0.84	0.059	1.233	10.68
Ba	2.48	0.018	0.376	7.64
Be	0.56	0.001	0.023	18.00
Bi	9.86	6.259	131.45	0.51
B	3.12	0.026	0.544	7.26
Cd	1.73	0.004	0.082	22.59
Ca	5.96	0.195	4.088	0.97
Ce	3.07	0.157	3.295	44.32
Cr	1.75	0.208	4.370	1.90
Co	0.19	0.027	0.566	91.65
Cu	1.99	0.026	0.550	14.18
Eu	2.34	0.002	0.045	55.84
Fe	42.35	4.981	104.61	0.67
La	0.29	0.013	0.264	21.43
Pb	0.25	0.257	5.399	11.75
Li	2.33	0.001	0.029	206.92
Mg	6.02	0.222	4.656	0.37
Mn	27.61	1.547	32.483	0.44
Hg	4.65	0.122	2.567	7.24
Mo	1.43	0.020	0.420	5.79
Nd	3.17	-0.045	-0.954	-199.61
Ni	2.89	0.053	1.110	6.83
P	7.99	6.593	138.45	3.91
K	2.00	0.046	0.967	235.56
Sm	2.89	0.121	2.549	59.50
Se	1.43	0.372	7.802	6.80
Si	5.34	1.766	37.095	2.63
Ag	8.50	0.013	0.278	38.14
Na	58.83	38.776	814.30	0.86
Sr	8.83	0.188	3.941	0.62
S	0.67	0.160	3.367	8.77
Ta	2.35	0.037	0.779	41.34
Tl	2.61	0.469	9.858	23.96
Th	0.72	0.121	2.537	52.01
Sn	1.05	0.052	1.083	6.38
Ti	2.60	0.027	0.576	7.25
W	1.12	0.100	2.097	13.68
U	3.30	3.768	79.133	10.47
V	2.98	0.025	0.526	15.24
Zn	3.61	0.046	0.976	2.51
Zr	3.24	0.035	0.727	17.07

Dilution factor : 21.0000

Nitric Acid Blank

Sample name : HNO3
Programme : SST 31-Mar-90 11:10:47

NAME	MV INT	CONCEN	RSD
Al	1.43	0.330	6.64
Sb	0.36	0.347	4.11
As	0.85	0.063	10.46
Ba	2.42	0.015	6.48
Be	0.59	0.002	4.37
Bi	3.18	0.374	6.56
B	3.11	0.025	10.07
Cd	1.85	0.011	2.81
Ca	0.38	0.000	16.01
Ce	3.39	0.635	5.74
Cr	0.95	0.006	46.22
Co	0.20	0.205	9.12
Cu	2.03	0.033	6.83
Eu	2.61	0.010	5.19
Fe	1.19	0.017	8.30
La	0.30	0.048	11.32
Pb	0.25	0.283	10.66
Li	2.57	0.020	8.17
Mg	0.34	0.001	7.64
Mn	0.63	0.003	10.99
Hg	3.47	0.038	12.63
Mo	1.45	0.023	9.84
Nd	3.48	0.355	16.26
Ni	2.77	0.040	4.69
P	0.95	0.153	1.51
K	2.19	0.782	7.04
Sm	3.22	0.630	6.38
Se	1.38	0.271	5.84
Si	2.29	0.140	4.91
Ag	9.37	0.045	5.49
Na	3.33	0.259	7.13
Sr	2.56	0.007	5.76
S	0.58	0.053	28.14
Ta	2.58	0.124	4.25
Tl	2.79	0.801	6.66
Th	0.78	0.464	7.65
Sn	1.06	0.052	6.95
Ti	2.56	0.023	6.42
W	1.12	0.098	1.38
U	3.20	3.743	6.46
V	3.08	0.034	5.23
Zn	2.29	0.007	6.50
Zr	3.40	0.077	6.23

LMCS Check Standard #78C11F

Sample name : 78C11F
Sample code 1 : SST1
Programme : SST 31-Mar-90 11:14:56

NAME	MV INT	CONCEN	RSD
Al	1.50	0.482	7.67
Sb	1.09	10.697	0.35
As	0.96	0.146	3.91
Ba	195.00	9.734	0.30
Be	0.60	0.002	11.40
Bi	3.26	0.442	13.69
B	173.85	9.899	0.18
Cd	173.75	10.059	1.16
Ca	289.04	10.045	0.15
Ce	9.63	9.841	1.26
Cr	39.51	9.779	0.49
Co	0.67	7.748	0.83
Cu	65.82	9.857	0.25
Eu	3.37	0.034	3.18
Fe	84.30	10.040	0.37
La	0.32	0.109	5.73
Pb	0.26	0.369	5.36
Li	126.95	9.627	0.61
Mg	261.45	10.151	0.69
Mn	174.63	9.960	0.38
Hg	3.38	0.031	19.39
Mo	1.52	0.034	11.32
Nd	10.42	9.362	1.98
Ni	94.34	10.084	0.47
P	0.99	0.190	5.29
K	8.70	25.072	0.28
Sm	3.12	0.482	17.49
Se	3.52	4.253	0.26
Si	2.33	0.163	10.10
Ag	9.24	0.040	15.11
Na	38.05	24.360	0.05
Sr	347.08	9.925	0.10
S	0.80	0.310	3.85
Ta	2.60	0.132	12.93
Tl	2.84	0.905	13.74
Th	0.81	0.625	9.11
Sn	122.04	52.644	1.22
Ti	2.52	0.020	14.72
W	1.39	0.284	3.21
U	3.54	6.902	6.56
V	3.03	0.030	8.41
Zn	333.22	9.921	0.72
Zr	3.39	0.074	13.27

LMCS Check Standard #82B38C

Sample name : 82B38C
Sample code 1 : SST2
Programme : SST 31-Mar-90 11:19:04

NAME	MV INT	CONCEN	RSD
Al	3.35	4.363	0.44
Sb	0.39	0.685	1.20
As	2.59	1.346	0.66
Ba	2.53	0.020	3.53
Be	0.57	0.001	9.83
Bi	62.20	52.383	0.24
B	5.08	0.139	21.61
Cd	1.84	0.011	8.64
Ca	0.94	0.020	0.10
Ce	3.43	0.691	4.41
Cr	1.27	0.085	2.57
Co	0.19	0.038	42.86
Cu	3.30	0.227	1.19
Eu	328.60	10.004	0.03
Fe	1.54	0.059	4.72
La	17.99	>47.711	0.07
Pb	2.82	51.078	0.67
Li	2.40	0.006	48.78
Mg	0.55	0.009	1.06
Mn	0.78	0.011	5.49
Hg	3.50	0.040	8.61
Mo	1.45	0.023	7.18
Nd	3.73	0.746	1.57
Ni	2.77	0.039	8.47
P	1.20	0.375	3.46
K	2.00	0.065	66.54
Sm	9.42	10.240	0.19
Se	1.44	0.390	7.39
Si	3.19	0.623	1.26
Ag	293.40	10.340	0.14
Na	3.06	0.076	15.65
Sr	2.63	0.009	4.56
S	0.66	0.149	1.59
Ta	2.83	0.222	4.53
Tl	5.63	6.211	0.80
Th	10.60	52.763	0.08
Sn	1.17	0.101	3.24
Ti	2.92	0.054	1.76
W	1.05	0.053	10.20
U	8.62	54.005	0.17
V	5.59	0.248	0.60
Zn	2.51	0.014	0.79
Zr	3.65	0.144	2.89

LMCS Check Standard #77C11F

Sample name : 77C11F
Sample code 1 : SST3
Programme : SST 31-Mar-90 11:23:00

NAME	MV INT	CONCEN	RSD
Al	26.20	52.351	0.35
Sb	0.44	1.442	12.73
As	71.78	53.333	2.17
Ba	2.61	0.024	13.23
Be	299.75	9.692	0.28
Bi	4.10	1.183	1.02
B	4.97	0.133	11.00
Cd	2.07	0.024	11.45
Ca	0.95	0.020	1.03
Ce	3.22	0.373	35.18
Cr	1.06	0.033	25.53
Co	0.20	0.124	32.83
Cu	2.25	0.066	12.00
Eu	2.49	0.007	32.13
Fe	1.49	0.053	11.02
La	0.30	0.029	40.86
Pb	0.25	0.343	12.01
Li	2.45	0.010	43.59
Mg	0.47	0.006	4.65
Mn	0.90	0.018	6.53
Hg	344.63	24.397	3.26
Mo	327.24	50.235	1.70
Nd	3.37	0.208	70.90
Ni	6.82	0.483	4.49
P	53.86	48.604	7.57
K	2.07	0.339	51.31
Sm	3.08	0.418	31.03
Se	28.29	50.350	1.73
Si	79.88	41.470	2.07
Ag	17.36	0.334	2.71
Na	3.39	0.302	19.01
Sr	2.57	0.007	21.65
S	41.76	48.954	2.74
Ta	123.05	46.848	1.84
Tl	29.22	51.095	1.22
Th	0.91	1.133	8.93
Sn	1.53	0.260	6.45
Ti	598.10	50.476	0.85
W	32.32	21.194	2.81
U	4.57	16.416	7.28
V	118.67	9.877	1.20
Zn	3.45	0.042	4.13
Zr	193.79	50.761	1.17

APPENDIX A
ANALYTICAL ANALYSIS CARDS

Undigested Sample Results

9 1 1 2 5 0 0 5 0 6

Physical Properties

Serial No.	Sample Point	Date	Time Issued	Priority
F 917.-5000	SEG.COMP#3	1-24-90	8:37	26

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

Sample Size: ?

Customer ID: 000006

Remarks, Calculations, Results:

A. JAR ID# 253
B. JAR TARE WT. 220.30
C. JAR TOTAL WT.
D. C-B= 110 grams
E. EST. VOL./LENGTH
F. VISUAL REMARKS

WHC N 3134 pg 21

Comp. of Core # 6

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A297 KJP FHS 61300 6B090				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 1/22/90 | Time Completed: | Lab Unit Mgr: [signature]

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

Serial	Sample Point	Date	Time Issued	Priority
F 917.-1831	SEG.COMP#3	1-24-90	8:37	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
DSC	LA-514-112	EXOTHERMS	E21D1	0

Sample Size: ?

Customer ID: 00006

Remarks, Calculations, Results: see attached (2)

Bottle 296
8.87 Mg
dry, hard, dark brown; pulverized

event	begin	peak	end	cal/gm(+ [illegible])
H_2O/NPH loss	<50°	107	155	>492.8
decomp/wt loss	223°	325°	370°	+62.9
decomp/wt loss	380°	433°	470°	+7.1
decomp/wt loss	470°	>500°	>500°	←

sample did not fuse.

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[illegible]				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 3/13/90 | Time Completed: | Lab Unit Mgr: [signature] 9M4

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 917.-5002	SEG.COMP#3	1-24-90	8:38	26

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

Sample Size: ?

Customer ID: 000006

Remarks, Calculations, Results:

PARTICLE SIZE DISTRIBUTION

analysis unnecessary

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[signature]				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: | Time Completed: | Lab Unit Mgr: [signature]

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

Serial No	Sample Point	Date	Time Issued	Priority
F 917.-5003	SEG.COMP#3	1-24-90	8:38	26

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

Sample Size: ?

Customer ID: 000006

Remarks, Calculations, Results:

[redacted]

Homogenization Complete

Jar # 253

WHC N 3134 pg 21

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A297 61300 6B090				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 1/22/90 | Time Completed: | Lab Unit Mgr: [signature]

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

9 1 1 [illegible] 0 5 0 7

Physical Properties

Serial No.	Sample Point	Date	Time Issued	Priority
F 917.-5080	SEG.COMP#3	1-24-90	8:38	26

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

Sample Size	Customer ID
?	000006

Remarks, Calculations, Results: see attached (1)

Bottle 296
5.86 mg
dry, hard, dark brown; pulverized

event	begin	peak	end	% of sample
H_2O/NPH loss	< 40°	104°	135°	19.0
decomp/wt loss (endothermic)	227°	307°	349°	4.5
decomp./endotherm.	349	> 500°	> 500°	—
total @ 500°	—	—	—	28.8

sample did not fuse

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
[illegible] 54168				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.	
3/13/90		[illegible]	[illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 917,-5001	SEG.COMP#3	1-24-90	8:38	26

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

Sample Size	Customer ID
?	000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE # 315 10.00 gr.

Sent to PNL

WHC N 3134 pg 21

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
61300 68090				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.

54-8800-081 (R-10-83)

9 1 1 2 [illegible] 1 0 [illegible] 0 9

pH Analysis of Solid Sample

Serial No.	Sample Point	Date	Time Issued	Priority
F 892.-5315	SEG.COMP#2	1-24-90	8: 4	26

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

Sample Size: ?

Customer ID: 000005

Remarks, Calculations, Results:

REAGENT BLANK H_2O

5.59

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R E Burnett
Mary Francy	Hrs	Hrs	Hrs	Hrs

Date: 1-26-90 | Time Completed: | Lab Unit Mgr: [signature] | DMS

54-8600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 891.-5515	SEG.COMP#1	1-24-90	8: 3	26

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

Sample Size: ?

Customer ID: Std

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
pH FOUND 10.09
STD ID 72C11
SAMPLE TEMP 23.2

100.9%
DMS

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R E Burnett
Mary Francy	Hrs	Hrs	Hrs	Hrs

Date: 1-26-90 | Time Completed: | Lab Unit Mgr: [signature] | DMS

54-8600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 918.-5115	SEG.COMP#4	1-24-90	8:38	26

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

Sample Size: ? 2.411g / 2.411 ml

Customer ID: 000006

Remarks, Calculations, Results:

pH 12.97
SAMPLE TEMP 23.5

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R E Burnett
Mary Francy	Hrs	Hrs	Hrs	Hrs

Date: 1-26-90 | Time Completed: | Lab Unit Mgr: [signature] | DMS

54-8600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 917.-5015	SEG.COMP#3	1-24-90	8:38	26

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

Sample Size: ? 2.751g / 2.751 ml

Customer ID: 000006

Remarks, Calculations, Results:

pH 12.91
SAMPLE TEMP 23.4

vial # 296 8.51g

WHC N 313 - 4

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R E Burnett
Mary Francy	Hrs	Hrs	Hrs	Hrs

Date: 1-26-90 | Time Completed: | Lab Unit Mgr: [signature] | DMS

54-8600-061 (R-10-83)

9 1 1 2 [illegible] 0 [illegible] 1 0

pH Analysis of Solid Sample

Serial No.	Sample Point	Date	Time Issued	Priority
F 896.-5515	SEG.COMP#6	1-24-90	8: 4	26

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

Sample Size	Customer ID
?	000005

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
pH FOUND 10.04
STD ID 72811
SAMPLE TEMP 23.6

100.4%
DMS

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

Date	Time Completed	Lab Unit Mgr	
1-26-90		[illegible]	DMS

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

Percent Water Analysis

Serial No.	Sample Point	Date	Time Issued	Priority
F 920.-5510	SEG.COMP#6	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H2O	LA-564-101	% RECOVERY	WB75L	0

Sample Size: ?

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 11C11AH

1 22.3040 G. 22.6777 56.37
2 21.3111 T. 21.2928
5 21.9082 W1 21.8966
21.9000 W2 21.8900

~~43.85~~ 96.2%
56.75%
~~42.77~~ 58.98
~~43.63~~ %/2

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 918.-5110	SEG.COMP#4	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H2O	LA-564-101	%	WB75L	0

Sample Size: ?

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

G. 21.9269
T. 21.2350
W1 21.6800
W2 21.6620

~~61.43~~%
38.6%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 917.-5010	SEG.COMP#3	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H2O	LA-564-101	%	WB75L	0

Sample Size: ?

Customer ID: 000006

Remarks, Calculations, Results:

#316 3.96g

G. 22.1367
T. 21.5079
W1 21.9141
W2 21.9177 WACN3134

~~64.60~~%
35.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 891.-5510	SEG.COMP#1	1-24-90	8: 3	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
% H2O	LA-564-101	% RECOVERY	WB75L	0

Sample Size: ?

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 11C11AH

1 23.2606 G. 22.9496 56.49
2 21.8685 T. 21.5659
22.4758 W1 22.1679
22.4635 W2 22.1536

56.38
56.4%
58.98
95.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6BS98/RH				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

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

Mercury Analysis on Undigested Sample

Serial No.	Sample Point	Date	Time Issued	Priority
F 916.-5397	SEG.COMP#2	1-24-90	8:37	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	PPM	E21D1	0

Sample Size: ? ~~.000g~~ mm 1ml
Customer ID: #6

Remarks, Calculations, Results:
REAGENT BLANK
peak Hgt = 3mm <10ng
10.52/1000ml = <1.05E-2ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
60823				RK Fuller 7-27-90
Hrs	Hrs	Hrs	Hrs	Hrs
Lulane Myers				

Date: 7-13-90 | Time Completed: | Lab Unit Mgr: Ted M. Paul | Lyme Smith

84-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 915.-5597	SEG.COMP#1	1-24-90	8:37	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	% RECOVERY	E21D1	0

Sample Size: ? .025ml
Customer ID: #6

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID SBCH-CD
~~peak Hgt = 59~~ mm
peak Hgt = 66mm
35.93/25ml = 1.44ppm/1.25 = 115.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Lulane Myers	Lulane Myers			RK Fuller 7-27-90
Hrs	Hrs	Hrs	Hrs	Hrs
60823	60823			

Date: 7-13-90 | Time Completed: 7-16-90 | Lab Unit Mgr: Ted M. Paul | Lyme Smith

84-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 918.-5197	SEG.COMP#4	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	PPM	E21D1	0

Sample Size: .0455g in 25ml used 2ml DF = 12.5
~~? .0455g 2ml 10ml~~
Customer ID: #6

Remarks, Calculations, Results:
DUPLICATE SAMPLE
peak Hgt .0455g Direct = 15mm
peak Hgt 2ml ~~10ml~~ mm = 36.5mm
(17.79/45.5)(12.5) = 4.89 ~~ppm~~ ug/g

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Lulane Myers				RK Fuller 7-27-90
Hrs	Hrs	Hrs	Hrs	Hrs
60823				

Date: 7-16-90 | Time Completed: | Lab Unit Mgr: Ted M. Paul | Lyme Smith

84-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 917.-5097	SEG.COMP#3	1-24-90	8:37	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	PPM	E21D1	0

Sample Size: .0524g in 25ml used 2ml DF = 12.5
? ~~.0524g 2ml 10ml~~ mm
Customer ID: #6

Remarks, Calculations, Results:
peak Hgt = 19mm (2ml ~~10ml~~ mm)
peak Hgt .0524g direct = 95mm (20ml)
(10.73/52.4)(12.5) = 2.55 ~~ppm~~ ug/g

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Lulane Myers				RK Fuller 7-27-90
Hrs	Hrs	Hrs	Hrs	Hrs
60823				

Date: 7-16-90 | Time Completed: | Lab Unit Mgr: Ted M. Paul | Lyme Smith

84-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 920.-5597	SEG.COMP#6	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
Hg	LA-325-102	% RECOVERY	E21D1	0

Sample Size: ? .025ml

Customer ID: #10

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 58C11-CD
peak Hgt = 62.5mm

33.77/25ml = 1.35/1.25 = 108.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Helene Hayes				RK Fuller 7-27-90
Hrs 60873	Hrs	Hrs	Hrs	Hrs

Date: 7-16-90 | Time Completed: | Lab Unit Mgr: Ted M. Pool | Dyane Southard

84-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 919.-5297	SEG.COMP#5	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
Hg	LA-325-102	% RECOVERY	E21D1	0

Sample Size: ? ~~.0455g~~ .0455g in 25ml used 2ml DF 12.5 ~~2ml 10ml~~ + .015ml 58C11-CD

Customer ID: #10

Remarks, Calculations, Results:

SPIKE SAMPLE F91B
SPIKE ID 58C11-CD
SPIKE VOLUME .015ml
peak Hgt = 61.5mm

$$\frac{33.16 - \left[17.99\left(\frac{.0455}{.0524}\right)\right]}{15}$$

1.18ppm/1.25 = 94.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Helene Hayes				RK Fuller 7-27-90
Hrs 60873	Hrs	Hrs	Hrs	Hrs

Date: 7-16-90 | Time Completed: | Lab Unit Mgr: Ted M. Pool | Dyane Southard

84-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 916.-5378	SEG.COMP#2	1-24-90	8:37	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	G/L	WB75L	0

Sample Size: ?

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

ABS .013

<.5 mg CN

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				

Date	Time Completed	Lab Unit Mgr
2-9-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 915.-5578	SEG.COMP#1	1-24-90	8:37	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	% RECOVERY	WB75L	0

Sample Size: ? 100-10-1 mL

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE

LMCS ID 75C/B 900 µm

ABS .688

95.688

$$\frac{[(.688-.013)-.01682]\,100}{.076317\ \ 1000} = 862.4^{-1}\ \cancel{\ } \quad \frac{862.4}{900.00}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				

Date	Time Completed	Lab Unit Mgr
2-9-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 918.-5178	SEG.COMP#4	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	G/L	WB75L	0

Sample Size: ? 3.8059 g

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

ABS .019

$$\frac{(.019-.013)-.016827}{.076317} = .299$$

$$\frac{.5}{3.80599} = 1.314^{-1}\ \text{mg/g} < 1.5^{-1}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				

Date	Time Completed	Lab Unit Mgr
2-9-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 917.-5078	SEG.COMP#3	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CN	LA-695-101	G/L	WB75L	0

Sample Size: ? 4.1378 g

Customer ID: 000006

Remarks, Calculations, Results:

401 2.89 ABS ~~.688~~ .020

297 3.01

$$\frac{(.020-.013)-.01682}{.076317} = -.3187 \quad \frac{.5}{4.1378} = <1.21\ \text{mg/g}$$

WHC N 7134

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohen				

Date	Time Completed	Lab Unit Mgr
2-9-90		

54-6600-081 (R-10-83)

Cyanide Analysis on Undigested Sample

Serial No.	Sample Point	Date	Time Issued	Priority
F 920.-5578	SEG.COMP#6	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
CN	LA-695-101	% RECOVERY	WB75L	0

Sample Size: ? 100-10-1mL

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 75C11B 900 ppm 98.8%

ABS .675

$$\frac{[(.675-.013)-.016827]}{(.076317)(1000)} \times 100 = 8.895^{-1}\,mg \times 1000 =$$

889.5/900

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
2-9-90				

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 919.-5278	SEG.COMP#5	1-24-90	8:38	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
CN	LA-695-101	% RECOVERY	WB75L	0

Sample Size: ? 4.0419g

Customer ID:

Remarks, Calculations, Results:

SPIKED SAMPLE
SPIKE NO. 75C11B
SPIKE VOL. 100-10-1ML

ABS .680

$$\frac{(.680-.013)-.016827}{.076317} = \frac{8.96}{9.97} \times 100 = 89.9\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr		
2-9-90				

54-6600-081 (R-10-83)

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KOH Fusion Analysis

Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6000	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
FUSION	LA-549-141	G/L	WB75L	0

Sample Size	Customer ID
?	000006

Remarks, Calculations, Results:
GRAMS SAMPLE .5720
VOLUME ON
COMPLETION 200 mL

2.86^{-3} g/ml

WHC [illegible]

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-25-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6100	SEG.COMP#10	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
FUSION	LA-549-141	G/L	WB75L	0

Sample Size	Customer ID
?	000006

Remarks, Calculations, Results:
DUPLICATE ANALYSIS
GRAMS SAMPLE .4762
VOLUME ON
COMPLETION 200 mL

2.38^{-3} g/ml

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-25-90		[signature]	DMS

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

9 1 1 2 0 5 1 0 5 1 9

Total Alpha Analysis on the Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 897.-6520	SEG.COMP#7	1-24-90	8: 5	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10mL

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 102B44

89.6%

8.978 -3 uci/l

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

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 922.-6320	SEG.COMP#8	1-24-90	8:39	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

< 8.520 -1 uci/l

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

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6120	SEG.COMP#10	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

< 1.130 uci/l

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

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 926.-6520	SEG.COMP#12	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10mL [redacted]

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 102B44

89.1%

8.925 -3 uci/l

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

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

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

12/2

405/10 - .3

460/10 -

Alpha Calculation by VR on 01-26-1990 at 18:30:10
Det #12 2 -inch mount Alpha eff. : .2155
Sample size : 10 mL Dilution : 1

Mount # 1

405/10 - 0.3 = 8.4028E-03 uCi/L alpha

Mount # 2

460/10 - 0.3 = 9.5525E-03 uCi/L alpha

F 897.-6520

12 2" 1-26-90 VR

3/10 - .3

5/10 -

F0924-6120

Alpha Calculation by VR on 01-26-1990 at 21:38:16
Det #12 2 -inch mount Alpha eff. : .2155
Sample size : 1 mL Dilution : 1010

Mount # 1

3/10 - 0.3 < 8.5326E-01 uCi/L alpha

Mount # 2

5/10 - 0.3 < 1.4075E+00 uCi/L alpha

12/2

1/10

1/10

Alpha Calculation by MAI on 01-26-1990 at 14:59:21
Det #12 2 -inch mount Alpha eff. : .2155
Sample size : .1 mL Dilution : 101

Mount # 1

1/10 - 0.3 < 8.5200E-01 uCi/L alpha

Mount # 2

1/10 - 0.3 < 8.5200E-01 uCi/L alpha

F 922.-6320

12 2" 1-26-90 VR

409/10 - .3

451/10 -

F0926-6520

Alpha Calculation by VR on 01-26-1990 at 18:23:22
Det #12 2 -inch mount Alpha eff. : .2155
Sample size : 10 mL Dilution : 1

Mount # 1

409/10 - 0.3 = 8.4864E-03 uCi/L alpha

Mount # 2

451/10 - 0.3 = 9.3644E-03 uCi/L alpha

9 1 1 2 [illegible] 0 5 [illegible] 1

Total Alpha Analysis on the Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6025	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	0

Sample Size	Customer ID
? /00-10-/00	000006

Remarks, Calculations, Results:

<1.270 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 BS98/RB				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[illegible]	DMS

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

12 2" 1-26-90 VR

$\frac{4}{10}$ - .3

$\frac{5}{10}$ -

F0923-6025

Alpha Calculation by VR on 01-26-1990 at 21:46:46
Det #12 2 -inch mount Alpha eff. : .2155
Sample size : 1 mL Dilution : 1010

Mount # 1

$\frac{4}{10}$ - 0.3 < 1.1327E+00 uCi/L alpha

Mount # 2

$\frac{5}{10}$ - 0.3 < 1.4075E+00 uCi/L alpha

9 1 1 2 [illegible] 0 [illegible] 3

Total Alpha Analysis on the Fusion Dissloution

Serial No.	Sample Point	Date	Time Issued	Priority
F 926.-6525	SEG.COMP#12	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 10mL	

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 102B44

·93.3%

1.292 -1 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[illegible]	DMS

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 926.-6520	SEG.COMP#12	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 10mL [redacted]	

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 102B44

89.1%

8.925 -3 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[illegible]	DMS

54-6600-081 (R-10-83)

12 2" 1-26-90 VR

$\frac{9303}{10}$ _ 9

$\frac{9061}{10}$ _

Beta Calculation by VR on 01-26-1990 at 18:29:20
Det #12 2 -inch mount Beta eff. : .317
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{9303}{10}$ - 9.0 = 1.3091E-01 uCi/L beta

Mount # 2

$\frac{9061}{10}$ - 9.0 = 1.2748E-01 uCi/L beta

12 2" 1-26-90 VR

$\frac{409}{10}$ _ .3

$\frac{451}{10}$ _

Beta Calculation by VR on 01-26-1990 at 18:28:22
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{409}{10}$ - 0.3 = 8.4864E-03 uCi/L alpha

Mount # 2

$\frac{451}{10}$ - 0.3 = 9.3644E-03 uCi/L alpha

Total Beta Analysis on the Fusion Dissolution

Serial No	Sample Point	Date	Time Issued	Priority
F 922.-6325	SEG.COMP#8	1-24-90	8:39	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

<3.25 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				GVE
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 897.-6525	SEG.COMP#7	1-24-90	8: 5	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10 mL

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 102B44

98.2%

1.359 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				GVE
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6125	SEG.COMP#10	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

2.799 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				GVE
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 926.-6525	SEG.COMP#12	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	WB75L	0

Sample Size: ? 10 mL

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 102B44

93.3%

1.292 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				GVE
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

54-6600-061 (R-10-83)

12/2 1-26-91

91/10

82/10

Beta Calculation by MAX on 01-26-1990 at 14:59:19
Det #12 2 -inch mount Beta eff. : .317
Sample size : .1 mL Dilution : 101

Mount # 1

91
---------- - 9.0 (3.3294E+00 uCi/L beta
10

Mount # 2

82
---------- - 9.0 (3.1724E+00 uCi/L beta
10

F 922.-6325

12/2 1-26-91

9864/10 - 9

9441/10 -

Beta Calculation by VR on 01-26-1990 at 18:30:08
Det #12 2 -inch mount Beta eff. : .317
Sample size : 10 mL Dilution : 1

Mount # 1

9864
---------- - 9.0 = 1.3889E-01 uCi/L beta
10

Mount # 2

9441
---------- - 9.0 = 1.3288E-01 uCi/L beta
10

F 897.-6525

12 2" 1-26-90 VR

19684/10 - 9

19502/10 -

F024-6125

Beta Calculation by VR on 01-26-1990 at 21:38:13
Det #12 2 -inch mount Beta eff. : .317
Sample size : 1 mL Dilution : 1010

Mount # 1

19684
---------- - 9.0 = 2.8121E+03 uCi/L beta
10

Mount # 2

19502
---------- - 9.0 = 2.7860E+03 uCi/L beta
10

2 2" 1-26-90 VR

9303/10 - 9

9061/10 -

F0926-6525

Beta Calculation by VR on 01-26-1990 at 18:29:20
Det #12 2 -inch mount Beta eff. : .317
Sample size : 10 mL Dilution : 1

Mount # 1

9303
---------- - 9.0 = 1.3091E-01 uCi/L beta
10

Mount # 2

9061
---------- - 9.0 = 1.2748E-01 uCi/L beta
10

9 1 1 2 [illegible] 0 [illegible] 7

Total Beta Analysis on the Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6020	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	0

Sample Size	Customer ID
? 100-10-100	000006

Remarks, Calculations, Results:

2.318 ^{3} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB598/KH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.	
1-26-90		[signature]	OMS

54-6600-081 (R-10-83)

Total Beta Analysis on the Fusion Dissolution

12 2" 1-26-90 VR

$\frac{16500}{10} - 9$

$\frac{15981}{10} -$

D.F. 1.01E-3

F0923-6020

Beta Calculation by VR on 01-26-1990 at 21:46:44
Det #12 2 -inch mount Beta eff. : .317
Sample size : 1 mL Dilution : 1010

Mount # 1

$$\frac{16500}{10} - 9.0 = 2.3551E+03 \text{ uCi/L beta}$$

Mount # 2

$$\frac{15981}{10} - 9.0 = 2.2807E+03 \text{ uCi/L beta}$$

Gamma Energy Analysis of the Fusion Dissolution

2872

Serial No.	Sample Point	Date	Time Issued	Priority
F 922.-6330	SEG.COMP#8	1-24-90	8:39	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 1mL

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

<5.22-2 uci/l Cs137

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[illegible]	DMS

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

1669

Serial No.	Sample Point	Date	Time Issued	Priority
F 897.-6530	SEG.COMP#7	1-24-90	8: 5	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? 500>

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 89844

2.24'/2.2255' Co60 100.7%

3.75'/3.813' Cs137 98.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[illegible]	DMS

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

3989

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6130	SEG.COMP#10	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 50>

Customer ID: 000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE 6.05 uci/l Cs137

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[illegible]	DMS

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

~~4077~~ 4006

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6030	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 50>

Customer ID: 000006

Remarks, Calculations, Results:
5.90' uci/l Cs137

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[illegible]	DMS

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

9 1 1 2 0 5 1 0

Gamma Energy Analysis of the Fusion Dissolution

2873

Serial No.	Sample Point	Date	Time Issued	Priority
F 926.-6530	SEG.COMP#12	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 500λ	

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 89844

2.32' vial Co 60 104.9%

3.95' vial Cs137 103.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GK
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		CJW	DMS

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

1671

Serial No.	Sample Point	Date	Time Issued	Priority
F 925.-6230	SEG.COMP#11	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
GEA	LA-548-121	% RECOVERY	WB75L	C

Sample Size	Customer ID
? 50λ	

Remarks, Calculations, Results:

SPIKE SAMPLE F923 (over)
SPIKE ID 89844
SPIKE VOLUME 500

~~97.6%~~ 97.56%

~~431 - 59 = 3.72~~

$2.16^{-2} - 3.0^{-3} = 1.86^{-2} \times 1000 \times 2 = 3.72 / 3.81$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GK
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		CJW	DMS

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

8-15-90

$$\frac{(431)(.05) - (59)(.05)}{(.5)(38.13)} \times 100 = \frac{(21.55) - (2.95)}{19.065}$$

$$= .9754 \times 100 = 97.54\%$$

F 925.-6230

Serial No.	Sample Point	Date	Time Issued	Priority
F 922.-6340	SEG.COMP#8	1-24-90	8:39	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	G/L	WB75L	0

Sample Size: ? (0.050ml)

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK spk ID = 54B38 spk Vol = 0.100ml

0.00 <.02
0.285

$$\frac{\left(\frac{5.5}{5.6}\right)(<0.02)(5.62\times10^{-4})(.1)}{\left[0.285-\frac{5.5}{5.6}(<0.02)\right](0.05)} = \cancel{<4.01\times10^{-5}}\ <8.32\ \text{Eg/l}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr
~~8-7-90~~ 1-26-90		[signature] Kathy Thondike

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 897.-6540	SEG.COMP#7	1-24-90	8: 5	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	% RECOVERY	WB75L	0

Sample Size: ? (0.100 + 10ml)(0.100ml)

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE spk ID 54B38 spk Vol. 0.100ml
LMCS ID 58B38

0.140
0.425

$$\frac{\left(\frac{5.5}{5.6}\right)(0.14)(5.62\times10^{-4})(.1)(101)}{\left[.425-\frac{5.5}{5.6}(.14)\right](.1)} = \frac{2.71\times10^{-2}}{2.99\times10^{-2}}\quad 90.8\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr
~~8-7-90~~ 1-26-90		[signature] Kathy Thondike

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6140	SEG.COMP#10	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	G/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID: 000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE 5.62-4 54B38 100%

.075
.340

$$\frac{(.075)(5.62^{-4})(.1)(1010)\ \text{cpe}}{.265} = 1.61^{-2}\ \text{cpe/l}$$

over

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/KH				cpe
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6040	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	G/L	WB75L	0

Sample Size: ? 100-10-100

Customer ID: 000006

Remarks, Calculations, Results: 5.62-4 54B38 100%

.065
.340

$$\frac{(.065)(5.62^{-4})(.1)(1010)\ \text{cpe}}{.275} = 1.34^{-2}\ \text{cpe/l}$$

over

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/KH				cpe
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

(over)

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

9 1 1 2 5 0 5 3 3

Uranium Analysis of the Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 926.-6540	SEG.COMP#12	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	% RECOVERY	WB75L	0

Sample Size: ? (0.100ml+10ml)(0.100ml)

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE spk. ID 54B38 spk Vol 0.100ml

LMCS ID 58B38

0.140

0.425

$$\frac{\left(\frac{5.5}{5.6}\right)(0.14)(5.62\times10^{-4})(.1)(101)}{\left[0.425-\frac{5.5}{5.6}(0.14)\right](.1)} = \frac{2.71\times10^{-2}}{2.99\times10^{-2}}$$

90.1%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
[signature]				

Date	Time Completed	Lab Unit Mgr
~~8-7-90~~ 1-26-90 [signature]		[signature]

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 925.-6240	SEG.COMP#11	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
U	LA-925-106	% RECOVERY	WB75L	0

Sample Size: ? 100-10-100

Customer ID:

Remarks, Calculations, Results:

SPIKE SAMPLE F899

SPIKE ID 58B38

SPIKE VOLUME 100-10-100

$$\frac{4.81\times10^{-2}-1.42\times10^{-2}}{2.99\times10^{-2}}$$

~~HS 86~~ 113.2% /6

.210 $(.210)(5.62^{-4})(.1)(1010) = \cancel{4.97^{-2}}$

.450 $\left(\frac{5.8}{5.1}\right)(55) = (.21)$

$3.55^{-2}/2.99^{-2} =$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RA				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-26-90		[signature]	DMS

54-8800-061 (R-10-83)

$$\frac{(.075)(5.62\times10^{-4})(.1)(1010)}{\left(\frac{5.7}{5.6}\right)(.34) - .075} = 1.57\times10^{-2}$$

9-1-90

$$\cancel{\frac{(.065)(9.9^{-4})(5.616^{-2})\ \text{cal}}{\left[(.34)\left(\frac{5.7}{5.6}\right) - (.065)\right]}} = 1.31^{-2}\ \text{cal}$$

$$\frac{(.065)(5.62\times10^{-4})(.1)(1010)}{\left(\frac{5.7}{5.6}\right)(.34) - .065} \quad 1.31\times10^{-2}$$

F924.-6140

F 923.-6040

ICP Analysis of the Fusion Dissolution

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: 089076

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	Time Completed	Lab Unit Mgr
4-30-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 575.-8550	SEGMENT-P	12- 1-89	11:37	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	WB75L	0

Sample Size: ?

Customer ID: 089076

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID_____

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
Janice White				[signature]

Date	Time Completed	Lab Unit Mgr
4-30-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 578.-8250	SEGMENT-S	12- 1-89	11:37	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? 100-10 & 500-10

Customer ID: 089076

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID_____
SPIKE VOLUME_____

complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283			[signature]	
Hrs	Hrs	Hrs	Hrs	Hrs
Janice White				

Date	Time Completed	Lab Unit Mgr
4-30-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 576.-8050	SEGMENT-Q	12- 1-89	11:37	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? 100-10 & 500-10

Customer ID: 089076

Remarks, Calculations, Results:

complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283			[signature]	
Hrs	Hrs	Hrs	Hrs	Hrs
Janice White				

Date	Time Completed	Lab Unit Mgr
4-30-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6050	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? 100-10 & 500-10

Customer ID: 000006

Remarks, Calculations, Results:

complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J White				
Date	Time Completed	Lab Unit Mgr		
4-30-90		[signature]		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 579.-8550	SEGMENT-T	12- 1-89	11:37	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	WB75L	0

Sample Size: ?

Customer ID: 089076

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID_____

complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283			[signature]	
Hrs	Hrs	Hrs	Hrs	Hrs
Janice White			Kathy Thomsen	
Date	Time Completed	Lab Unit Mgr		
4-30-90		[signature]		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6150	SEG.COMP#10	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? 100-10 & 500-10

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

complete

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J White				
Date	Time Completed	Lab Unit Mgr		
4-30-90		[signature]		

54-8800-081 (R-10-83)

*m 3946 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 950.-6581	SEG.COMP#12	1-30-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ?100-10-100 50λ [redacted] Ru spike 10843-B

Customer ID: 000008

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID ~~100~~ 16843
"AEA-480 MIN"
ATTACH PRINT OUT

1.0312 / 9.7329' 105.9%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				gw
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

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

*n 2714 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 946.-6381	SEG.COMP#8	1-30-90	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Rerun
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ?1ml + 50λ [redacted] Am spike 10843-B

Customer ID: 000008

Remarks, Calculations, Results:
REAGENT BLANK
1200 CON HNO_3

<7.29^{-3}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				gw
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

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

4.2 6020

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6181	SEG.COMP#10	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ?250λ + 50λ [redacted] Ru spike 10843-A

Customer ID: 000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE
380λ HNO_3, CON
"AEA-480 MIN"
ATTACH PRINT OUT

7.64^{-1} neil

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				gw
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

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

*4 4709/ 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 903.-7581	SEG.COMP#13	1-24-90	8: 8	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ?100-10-100 50λ 10843-B

Customer ID: [redacted]

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 16843
"AEA-480 MIN"
ATTACH PRINT OUT

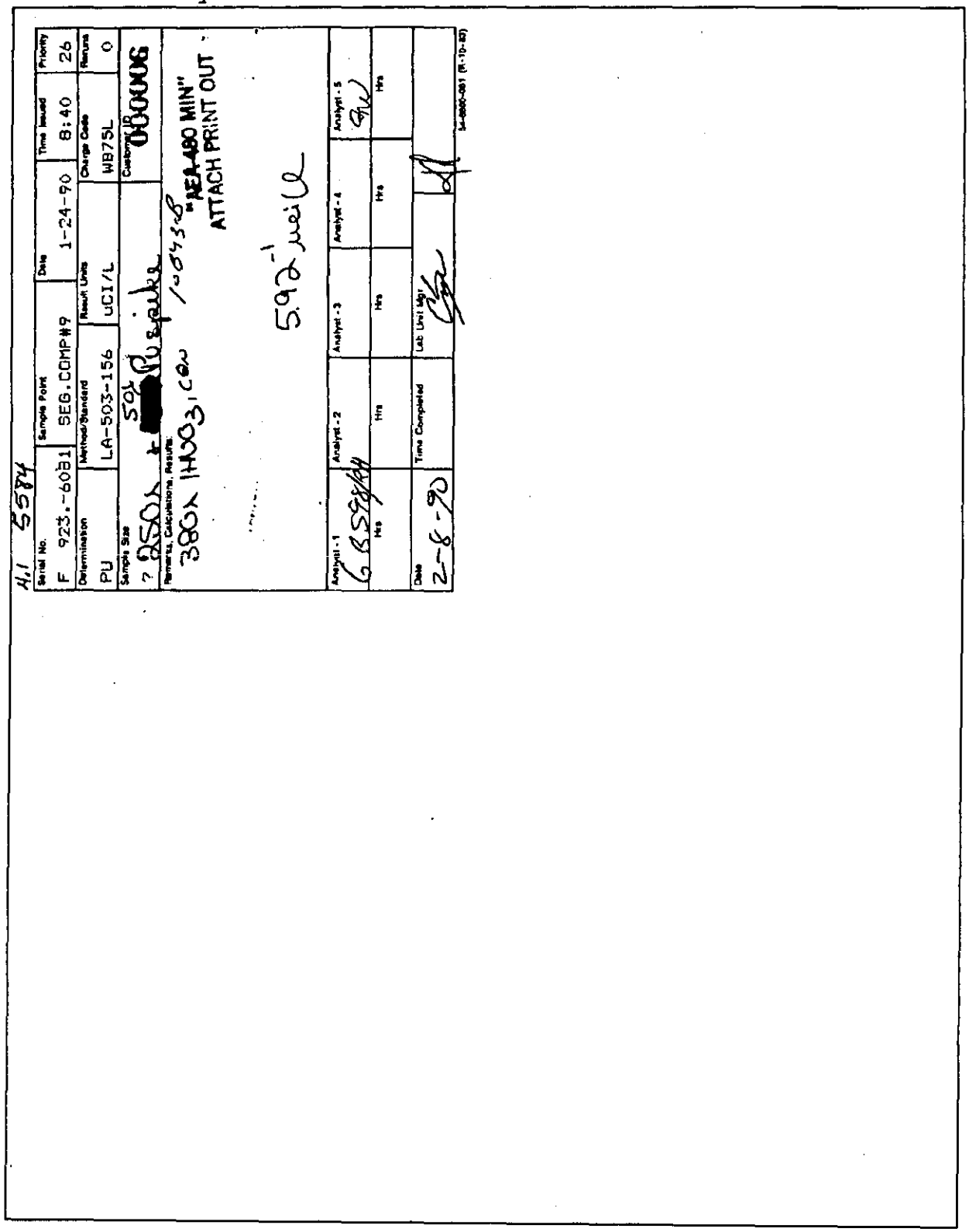
109.5%

1.0662 / 9.7329'

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 8598/RH				gw
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		

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



4.1 5584

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6081	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	uCI/L	WB75L	0

Sample Size	Customer ID
? 250x + 50% [redacted] Puspike	000006

Remarks, Calculations, Results:

380x HNO_3, CON 10843-B

"AEA-480 MIN"
ATTACH PRINT OUT

5.92 $^{-1}$ uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-8-90		[signature]	[signature]

54-6600-061 (R-10-83)

Americium-241 Analysis of the Fusion Dissolution

5 5632 8 hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6082	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1ml RH 250 & 100λ 9B43 — Customer ID: 00006

Remarks, Calculations, Results: 380λ Con HNO_3

"AEA-480 MIN" ATTACH PRINT OUT

2.56^{-1} µci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-22-90		[illegible]	[illegible]

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

3.3 3959

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6182	SEG.COMP#10	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: 250λ [redacted] & 100λ 9B43 — Customer ID: 000006

Remarks, Calculations, Results: DUPLICATE SAMPLE 380λ HNO_3

"AEA-480 MIN" ATTACH PRINT OUT

3.54^{-1} µci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-12-90		[illegible]	[illegible]

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

3.3 3956

Serial No.	Sample Point	Date	Time Issued	Priority
F 946.-6382	SEG.COMP#8	1-30-90	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1ml & 100λ Am spike 9B43 — Customer ID: 000008

Remarks, Calculations, Results: REAGENT BLANK 1200 Con HNO_3

"AEA-480 MIN" ATTACH PRINT OUT

$<1.50^{-2}$ µci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-12-90		[illegible]	[illegible]

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

3.2 2726

Serial No.	Sample Point	Date	Time Issued	Priority
F 897.-6582	SEG.COMP#7	1-24-90	8: 5	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 100-10-1000 — Customer ID:

Remarks, Calculations, Results: SPIKE 9B43 100λ LMCS CHECK SAMPLE LMCS ID 16B43

"AEA-480 MIN" ATTACH PRINT OUT

1.592' / 1.0712'

101.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-12-90		[illegible]	[illegible]

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

9 1 1 2 0 0 5 1 0

Americium-241 Analysis of the Fusion Dissolution

2724

Serial No.	Sample Point	Date	Time Issued	Priority
F 950.-6582	SEG.COMP#12	1-30-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 100-10-1000 + 100 spike 9543

Customer: 000008

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 16843

"AEA-480 MIN"
ATTACH PRINT OUT

1.663' / 1.5712'

105.880

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-12-90		[illegible]	KP

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

Neptunium-237 Analysis of the Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 898.-6383	SEG.COMP#8	1-24-90	8: 5	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	uCI/L	WB75L	0

Sample Size: ?250L mT 5mL

Customer ID: 000005

Remarks, Calculations, Results:

REAGENT BLANK

<1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 3-12-90 | Time Completed: | Lab Unit Mgr:

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 897.-6583	SEG.COMP#7	1-24-90	8: 5	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	% RECOVERY	WB75L	0

Sample Size: ? 100L m T 500

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 148633

1.031² / 1.2811² 80.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 3-12-90 | Time Completed: | Lab Unit Mgr:

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6183	SEG.COMP#10	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	uCI/L	WB75L	0

Sample Size: ?250L mT 500L

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

<1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 3-12-90 | Time Completed: | Lab Unit Mgr:

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6083	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	uCI/L	WB75L	0

Sample Size: ?250L mT 500L

Customer ID: 000006

Remarks, Calculations, Results:

<1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 3-12-90 | Time Completed: | Lab Unit Mgr:

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 980.-6583	SEG.COMP#12	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	% RECOVERY	WB75L	0

Sample Size: ? 100 λ MT500

Customer ID: 000007

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 148033

8.104 / 1.2811 = 63.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 859 RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-12-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 979.-6283	SEG.COMP#11	2- 7-90	10:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	% RECOVERY	WB75L	0

Sample Size: ? 250 MT500

Customer ID: 000007

Remarks, Calculations, Results:
SPIKED SAMPLE 500 100 λ 148033
F 947

9.125 / 1.2811 E2 = 71.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 859 RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-12-90		

54-6600-081 (R-10-83)

3-4

Serial No.	Sample Point	Date	Time Issued	Priority
F 922.-6384 (322)	SEG.COMP#8	1-24-90	8:39	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 100λ spike

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

<2.44^-2 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C916				
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date: 2-14-90 | Time Completed: | Lab Unit Mgr: | RM 8

54-6600-081 (R-10-83)

1-2

Serial No.	Sample Point	Date	Time Issued	Priority
F 921.-6584	SEG.COMP#7	1-24-90	8:39	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 250λ + 100λ spike 49839

Customer ID: STD

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID
ST

3.6 ~~[illegible]~~/l / 3.6166

99.9% RM 8

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C916				
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date: 2-14-90 | Time Completed: | Lab Unit Mgr: | RM 8

54-6600-081 (R-10-83)

7-8

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6184	SEG.COMP#10	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 500λ + 100λ spike 49839

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

<5.07^-2 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C916				
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date: 2-14-90 | Time Completed: | Lab Unit Mgr: | RM 8

54-6600-081 (R-10-83)

5-6

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6084	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 500λ + 100λ Tc spike 49839

Customer ID: 000006

Remarks, Calculations, Results:

<4.78^-2 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C916				
Hrs: Sue Lai	Hrs	Hrs	Hrs	Hrs

Date: 2-14-90 | Time Completed: | Lab Unit Mgr: | RM 8

54-6600-081 (R-10-83)

9-10

Serial No.	Sample Point	Date	Time Issued	Priority
F 925.-6284	SEG.COMP#11	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 500λ & 250λ std + 100λ spike

Customer ID:

Remarks, Calculations, Results:

SPIKED SAMPLE 49B39

1.929 − 5.07⁻² = 1.88 x 2 = 3.76 / 3.6166

104%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C916				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs
Sue Lai				

Date	Time Completed	Lab Unit Mgr	
2-14-90			DMS

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

11-12

Serial No.	Sample Point	Date	Time Issued	Priority
F 926.-6584	SEG.COMP#12	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 250λ + 100λ spike

Customer ID: STD

Remarks, Calculations, Results:

LMCS CHECK SAMPLE 49B39

LMCS ID_____

STD: 148B39

3.48 ivi/l / 3.6166

96.3% DMS

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C916				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs
Sue Lai				

Date	Time Completed	Lab Unit Mgr	
2-14-90		[illegible]	DMS

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

6232

Serial No.	Sample Point	Date	Time Issued	Priority
F 922.-6385	SEG.COMP#8	1-24-90	8:39	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	uCI/L	WB75L	2

Sample Size: ? 1ml
Customer ID: 000006

Remarks, Calculations, Results:
REAGENT BLANK

RERUN

G. 2.7415
T. 2.7262
NO. 0153
.0305

$\frac{(<7.52E^{-6})(1000)(1)}{.5016} = <1.50E^{-2}$ uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	D. Anticia		S.A. Catto	
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr	
7-9-90		Karl N. Pool	Dejane Southard

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

6231

Serial No.	Sample Point	Date	Time Issued	Priority
F 921.-6585	SEG.COMP#7	1-24-90	8:39	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I-129	LA-378-103	% RECOVERY	WB75L	2

Sample Size: ? 1ml
Customer ID: 000006

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 35846

98.0%

RERUN

G. 2.7565
T. 2.7419
N. 0.0196
.0305

$\frac{(2.90E^{-4})(1000)(1)}{.4787} = 6.058E^{-1}$ uci/l = 6.18E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	D. Anticia		S.A. Catto	
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale			Dejane Southard	

Date	Time Completed	Lab Unit Mgr	
7-9-90		Karl N. Pool	Dejane Southard

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

6234

Serial No.	Sample Point	Date	Time Issued	Priority
F 924.-6185	SEG.COMP#10	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	uCI/L	WB75L	2

Sample Size: ? 1ml
Customer ID: 000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE

RERUN

G. 2.7334
T. 2.7201
N. 0.0133
.0305

$\frac{(8.46E^{-6})(1000)(1)}{.4361} = <1.94E^{-2}$ uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	[illegible]		S.A. Catto	
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr	
7-9-90		Karl N. Pool	Dejane Southard

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

6233

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6085	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	uCI/L	WB75L	2

Sample Size: ? 1ml
Customer ID: 000006

Remarks, Calculations, Results:

RERUN

G. 2.7221
T. 2.7094
N. 0.0127
.0305

$\frac{(<7.66E^{-6})(1000)(1)}{.4164} = <1.84E^{-2}$ uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	[illegible]		S.A. Catto	
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr	
7-9-90		Karl N. Pool	Dejane Southard

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

9 1 1 2 0 0 5 1 6

Iodine-129 Analysis of the Fusion Dissolution

6237

Serial No.	Sample Point	Date	Time Issued	Priority
F 1075.-6285	SEG.COMP#11	2-16-90	8: 9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	% RECOVERY	E21D1	0

Sample Size: ? 1ml + 1ml std + HCl

Customer ID: 000013

Remarks, Calculations, Results: SPIKED SAMPLE F923

89.8%

G. 2.7557
T. 2.7402
N. 0.0155
.0305

$\frac{(282E^{-4})(1000)(1)}{.5082} = 5.549E^{-1}$ weight

6.1816E-1 weight

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	[illegible]		[illegible]	
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr.	
7-9-90		[illegible]	[illegible]

54-8600-061 (R-10-83)

6238

Serial No.	Sample Point	Date	Time Issued	Priority
F 1076.-6585	SEG.COMP#12	2-16-90	8: 9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I-129	LA-378-103	% RECOVERY	E21D1	0

Sample Size: ? 1ml

Customer ID: 000013

Remarks, Calculations, Results: LMCS CHECK SAMPLE
LMCS ID 38046

95.7%

G. 2.7635
T. 2.7470
N. 0.0165
.0305

$\frac{(3.20E^{-4})(1000)(1)}{.541} = 5.915E^{-1}$ weight

6.18E-1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	[illegible]		[illegible]	
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date	Time Completed	Lab Unit Mgr.	
7-9-90		[illegible]	[illegible]

54-8600-061 (R-10-83)

Strontium-90 Analysis of the Fusion Dissolution

Serial No.	Sample Point	Date	Time Issued	Priority
F 921.-6586	SEG.COMP#7	1-24-90	8:39	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	WB75L	0

Sample Size: ? 1ml + 1ml Sr carrier

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 106 B44

101.2%

	1		2
	8.0769	G	8.0097
	7.9846	T	7.9144
	0.0921	N	0.0953
	.921		.953

Sep date: 2-21-90
Sep Time: 1530

1.403 / 1.3861

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-21-90		[illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 922.-6386	SEG.COMP#8	1-24-90	8:40	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 1ml Sr carrier

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

	1		2
	8.0399	G	7.9976
	7.9457	T	7.9079
	0.0942	N	0.0897
	.942		.897

Sep date: 2-21-90
Sep Time: 1530

$< 6.29^{-3}$ uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-21-90		[illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 925.-6286	SEG.COMP#11	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	WB75L	0

Sample Size: ? 50λ + 1ml Sr std + 1ml carrier

Customer ID:

Remarks, Calculations, Results:

SPIKED SAMPLE F923

106 B44 - Std spk

~~7.72²~~ 8.63² ~~7.72²~~ ~~9.077~~

1 65.5% 2

	1		2
	8.1434	G	8.0914
	8.0491	T	7.9957
	0.0963	N	0.0957
	.963		.957

Sep date: 2-21-90
Sep Time: 1530

~~1.3861~~ 65.5%

uci/ca = 862.5 - 7.717² = 9.08 uci/ca = .908 / 1.3861

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-21-90		[illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 926.-6586	SEG.COMP#12	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	WB75L	0

Sample Size: ? 1ml + 1ml Sr carrier

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 106 B44

102.1%

1.415 / 1.3861

	1		2
	8.0110	G	8.0726
	7.9188	T	7.9828
	0.0922	N	0.0898
	.922		.898

Sep date: 2-21-90
Sep Time: 1530

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-21-90		[illegible]

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

10/2 2-21-90 @ 2100 DM F0921-6586 ΔT=5.50

① 11958/10 -27

② 12132/10

Sr Calculation by DM on 02-21-1990 at 21:30:49
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 5.5 hrs

11958/10 - 27.0 = 1.3046E+00 uCi/L strontium 1.416 .929

Mount # 2 Decay time = 5.5 hrs

12132/10 - 27.0 = 1.3241E+00 uCi/L strontium 1.389 .953

10/2 2-21-90 @ 1930 DM F0922-6386 ΔT=4.00

310/10 -27

281/10

Sr Calculation by DM on 02-21-1990 at 21:29:36
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 4 hrs

310/10 - 27.0 = 4.5379E-03 uCi/L strontium 4.82^{-3} .942

Mount # 2 Decay time = 4 hrs

281/10 - 27.0 = 5.6419E-03 uCi/L strontium 6.29^{-3} .897

10/2 2-21-90 @ 1915 DM F0925-6286 ΔT= 3.75

① 180792/5 -27 .05

② 183520/5

Sr Calculation by DM on 02-21-1990 at 21:28:47
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : .05 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 3.75 hrs

180792/5 - 27.0 = 8.2207E+02 uCi/L strontium 8.59^{2} .957

Mount # 2 Decay time = 3.75 hrs

183520/5 - 27.0 = 8.3449E+02 uCi/L strontium 8.66^{2} .963

10/2 2-21-90 @ 1955 DM F0926-6586 ΔT= 4.42

① 11816/10 -27

② 11527/10

Sr Calculation by DM on 02-21-1990 at 21:30:12
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 4.42 hrs

11816/10 - 27.0 = 1.3039E+00 uCi/L strontium 1.414 .922

Mount # 2 Decay time = 4.42 hrs

11527/10 - 27.0 = 1.2712E+00 uCi/L strontium 1.416 .898

9 1 1 2 0 0 3 1 9

Strontium-90 Analysis of the Fusion Dissolution

Serial No	Sample Point	Date	Time Issued	Priority
F 924.-6186	SEG.COMP#10	1-24-90	8:41	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	0

Sample Size: ? 50 ℓ + 1ml Sr carrier

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

	1		2
	8.0259	G	8.1255
	7.9269	T	8.0322
	0.0990	N	0.0933
	.990		.933

Sep date: 2-21-90
Sep Time: 1530

8.85 ² weill

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-21-90		[illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 923.-6086	SEG.COMP#9	1-24-90	8:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	0

Sample Size: ? 50 ℓ + 1ml Sr carrier

Customer ID: 000006

Remarks, Calculations, Results:

7.72 ² weill

	1		2
	7.9669	G	8.0462
	7.8746	T	7.9583
	0.0923	N	0.0879
	.923		.879

Sep date: 2-21-90
Sep Time: 1530

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-21-90		[illegible]

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

12/2 2-21-90 @ 1920 DM F0924-6186 ΔT = 3.83

① 209470/5 - 8 .05 1 1

② 208394/5

Sr Calculation by DM on 02-21-1990 at 21:17:23
Det #12 2 -inch mount Sr eff : .4233 Y eff : .4719

Sample size : .05 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 3.83 hrs

209470 / 5 - 8.0 = 8.5286E+02 uCi/L strontium 8.615² / .99

Mount # 2 Decay time = 3.83 hrs

208394 / 5 - 8.0 = 8.4847E+02 uCi/L strontium 9.09² / .933

12/2 2-21-90 @ 1935 DM F0923-6086 ΔT = 4.08

① 172376/5 - 8 .05 1 1

② 169988/5

Sr Calculation by DM on 02-21-1990 at 21:18:07
Det #12 2 -inch mount Sr eff : .4233 Y eff : .4719

Sample size : .05 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 4.08 hrs

172376 / 5 - 8.0 = 6.9986E+02 uCi/L strontium 7.582² / .923

Mount # 2 Decay time = 4.08 hrs

169988 / 5 - 8.0 = 6.9017E+02 uCi/L strontium 7.852² / .879

Water Digestion Analysis

9 1 1 2 [illegible] 0 5 [illegible] 2

Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7000	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	WB75L	0

Sample Size	Customer ID
?	000006

Remarks, Calculations, Results:

GRAMS SAMPLE .6875 #302 3.18 gr
VOLUME ON
COMPLETION 100 ml
~~insufficient sample~~

6.875^{-3} g/ml

WAEN 313-4 DF 1.45^{2}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	~~Analyst - 5~~ Chemist
80518 J.K.				[signature] 94171
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-29-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7200	SEG.COMP#17	1-24-90	8:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	% RECOVERY	WB75L	0

Sample Size	Customer ID
?	

Remarks, Calculations, Results:

SPIKED ANALYSIS
GRAMS SAMPLE .6131
VOLUME ON
COMPLETION 100 ml
VOLUME SPIKE
SPIKE ID

6.13^{-3} g/ml

DF 1.63^{2}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	~~Analyst - 5~~ Chemist
80518 J.K.				[signature] 94171
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-29-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7100	SEG.COMP#16	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	WB75L	0

Sample Size	Customer ID
?	000006

Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE .7170
VOLUME ON
COMPLETION 100 ml

7.17^{-3} g/ml

DF 1.395^{2}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	~~Analyst - 5~~ Chemist
80518 J.K.				[signature] 94171
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-29-90		[signature]	DMS

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

Water Digestion - 3rd Leach

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7100	SEG.COMP#16	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	E21D1	1

Sample Size: ? 1.0052 g

Customer ID: Comp-2 #6 - 386

Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE 1.0052 g
VOLUME ON
COMPLETION 100 ml

1.005 E^{-2} g/ml

1.005 E^{1} g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
5-29-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7000	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	G/L	E21D1	1

Sample Size: ? 1.0015 g

Customer ID: Comp-2 #6 - 386

Remarks, Calculations, Results:

GRAMS SAMPLE 1.0015 g
VOLUME ON
COMPLETION 100 ml

1.002 E^{-2} g/ml

1.002 E^{1} g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
5-29-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7200	SEG.COMP#17	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H2O-DGST	LA-504-101	% RECOVERY	E21D1	1

Sample Size: ? 1.0079 g

Customer ID: Comp-2 #6 - 386

Remarks, Calculations, Results:

SPIKED ANALYSIS
GRAMS SAMPLE 1.0079 g
VOLUME ON
COMPLETION 100 ml
VOLUME SPIKE
SPIKE ID

1.008 E^{-2} g/ml

1.008 E^{1} g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
5-29-90		

54-6600-081 (R-10-83)

9 1 1 [illegible] 0 [illegible] 4

pH Analysis of the Water Digestion

Serial No	Sample Point	Date	Time Issued	Priority
F 930.-7114	SEG.COMP#16	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	LA-211-102	NONE	WB75L	0

Sample Size: ? 1ml

Customer ID: 000006

Remarks, Calculations, Results:
pH 10.98
SAMPLE TEMP 22.0

100

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R E Bennett
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DMS

54-6800-051 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 908.-7514	SEG.COMP#18	1-24-90	8:13	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	LA-211-102	% RECOVERY	WB75L	0

Sample Size: ? 1ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
pH FOUND 10.10
STD ID 92C11
SAMPLE TEMP 21.9

KT

101.0%

10.10/10.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R E Bennett
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DMS

54-6800-051 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 904.-7314	SEG.COMP#14	1-24-90	8: 8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	LA-211-102	% RECOVERY	WB75L	0

Sample Size: ? 1ml

Customer ID: 000005

Remarks, Calculations, Results:
Blank
21.9°C

5.94

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R E Bennett
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DMS

54-6800-051 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7014	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	LA-211-102	NONE	WB75L	0

Sample Size: ? 1ml

Customer ID: 000006

Remarks, Calculations, Results:
21.9°C

10.34

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R E Bennett
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DMS

54-6800-051 (R-10-83)

9 1 1 2 1 5 1 0 5 1 5

pH Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 903.-7514	SEG.COMP#13	1-24-90	8: 7	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PH	LA-211-102	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 1ml	000005 72C11

Remarks, Calculations, Results:

LMCS

21.9°C

101.1%

10.11/10.00

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R E Brandt
Mary Strang	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[illegible]	Ens

54-8600-081 (R-19-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 907.-7271	SEG.COMP#17	1-24-90	8:12	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
F	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 0.1mL - 10mL

Customer ID: CORE Comp. 5

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 35 CG-67
SPIKE VOLUME .300/5mL

$$\frac{\left(\frac{5.3mL}{5.0mL}\right)(3.60e+000ppm) - \left(\frac{10.7g/L}{9.39g/L}\right)(4.07e-001ppm)}{\left(\frac{.3mL}{5.3mL}\right)(47ppm)(61)} \times 100\% = 125.5\%$$

~~141.1%~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date 2/20/90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7571	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
F	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 6C11A1

7.18' ppm / 7.20' = 99.7%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date 2/20/90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7071	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
F	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

4.15' ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date 2/20/90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7171	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
F	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

3.87' ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date 2/20/90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

9 1 1 2 [illegible] 0 5 [illegible] 7

Ion Chromatographic Analysis of the Water Digestion - Fluoride

Serial No.	Sample Point	Date	Time Issued	Priority
F 903.-7571	SEG.COMP#13	1-24-90	8: 8	26

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 UC11AI

4.85 ppm / 72.0 = 95.1%
Dmg

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				[signature] 94171
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 904.-7371	SEG.COMP#14	1-24-90	8: 8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
F	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 000005

Remarks, Calculations, Results:

REAGENT BLANK

<.1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				[signature] 94171
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 907.-7272	SEG.COMP#17	1-24-90	8:12	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 0.1mL - 10mL

Customer ID: CORE COMP 5

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 35C9-67
SPIKE VOLUME .300/5mL

$$\left[\frac{\left(\frac{5.3mL}{5.0mL}\right)\left(3.295e+000\ ppm\right)}{\left(\frac{.3mL}{5.3mL}\right)\left(60ppm\right)\left(101\right)}\right] \times 100\% = 101.82\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90 | Time Completed: | Lab Unit Mgr:

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7572	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 60IHI

103.5%

9.01 ppm / 87.0 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90 | Time Completed: | Lab Unit Mgr:

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7172	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

< 10.1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90 | Time Completed: | Lab Unit Mgr:

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7072	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

< 10.1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90 | Time Completed: | Lab Unit Mgr:

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 903.-7572	SEG.COMP#13	1-24-90	8: 8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? PO-10

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID ECIIAI

8.60 ppm / 87.0 = 98.9%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/MW				894171
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 904.-7372	SEG.COMP#14	1-24-90	8: 9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CL	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 000005

Remarks, Calculations, Results:

REAGENT BLANK

1.776-1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
68107/MW				894171
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7073	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

2.66 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90 | Time Completed | Lab Unit Mgr

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7173	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

3.77 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90 | Time Completed | Lab Unit Mgr

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 903.-7573	SEG.COMP#13	1-24-90	8: 8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 6C11A1

7.22 ppm / 7.22 = 100.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90 | Time Completed | Lab Unit Mgr

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 904.-7373	SEG.COMP#14	1-24-90	8: 9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 000005

Remarks, Calculations, Results:

REAGENT BLANK

7.51 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90 | Time Completed | Lab Unit Mgr

54-6600-081 (R-10-83)

Ion Chromatographic Analysis of the Water Digestion - Nitrate

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7573	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 6C11HT

$7.28^2 \text{ ppm} / 7.22^2 = 100.8\%$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				[signature] 4471
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90

Time Completed:

Lab Unit Mgr: [signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 907.-7273	SEG.COMP#17	1-24-90	8:12	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO3	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 0.1mL - 10mL

Customer ID: Core Comp 5

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 35C9-67
SPIKE VOLUME .300/5mL

$$\frac{\left(\frac{5.3\text{mL}}{5.0\text{mL}}\right)(3.19e03\text{ ppm}) - (3.14e02\text{ ppm})\left(\frac{10.7\text{ g/L}}{9.3\text{ g/L}}\right)}{\frac{(.3\text{mL})(48\text{ ppm})}{5.3\text{mL}}(101)} \times 100\% = 109.83\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				[signature]
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/20/90

Time Completed:

Lab Unit Mgr: [signature] Kathy Momdeke

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 907.-7274	SEG.COMP#17	1-24-90	8:12	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 0.1mL - 10mL

Customer ID: CORE COMP 5

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 35C9-67
SPIKE VOLUME .500/5mL

$$\frac{\left(\frac{5.3mL}{50mL}\right)(2.904e+003 ppm)}{\left(\frac{.3mL}{5.3mL}\right)(492 ppm)(101)} \times 100\% = 112.83\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		

54-6600-051 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7574	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 6C11H1

7.45? ppm / 7.22? = 103.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		

54-6600-051 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7074	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

2.19? 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
2/20/90		

54-6600-051 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7174	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

2.75? 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
2/20/90		

54-6600-051 (R-10-83)

9 1 1 2 [illegible] 0 5 [illegible] 3

Ion Chromatographic Analysis of the Water Digestion - Phosphate

Serial No.	Sample Point	Date	Time Issued	Priority
F 903.-7574	SEG.COMP#13	1-24-90	8: 8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 6C/1H1

7.57 2 / ppm = 722 104.0% DM 8

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5 Chemical
6B107/NEW				[illegible] 94171
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		[illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 904.-7374	SEG.COMP#14	1-24-90	8: 9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PO4	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 000005

Remarks, Calculations, Results:

REAGENT BLANK

~~< 10 ppm~~ < 1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5 Chemical
6B107/NEW				[illegible] 94171
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		[illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7075	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

<101 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/6/90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7575	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 6C1A2

92.3%

6.91 ppm / 7.49.0

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/6/90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 904.-7375	SEG.COMP#14	1-24-90	8: 9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	PPM	WB75L	0

Sample Size: ? Direct

Customer ID: 000005

Remarks, Calculations, Results:

REAGENT BLANK

<101 ppm

< 1 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/6/90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7175	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	PPM	WB75L	0

Sample Size: ? 100-10

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

<101 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date: 2/6/90 | Time Completed | Lab Unit Mgr

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 907.-7275	SEG.COMP#17	1-24-90	8:12	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 100-10

Customer ID: 000005

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 3509-67
SPIKE VOLUME 300/5ml

2740

2.743 - ~~101~~ = ~~2639~~ / 2756 = ~~95.8%~~ 99.4%

(over)

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 903.-7575	SEG.COMP#13	1-24-90	8:8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SO4	LA-533-105	% RECOVERY	WB75L	0

Sample Size: ? 100-10

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 6C1A1

93.3%

6.988 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB107/NEW				
Hrs .5	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2/20/90		

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

Ion Chromatographic Analysis of the Water Digestion - Sulfate

F 907.-7275

$$\frac{\left(\frac{5.3\ ml}{5.0\ ml}\right) 2.743\ E03}{\frac{.3\ ml}{5.3\ ml}\left(482\ ppm\right)(141)} \times 100 = 105.5\%$$

9 1 1 2 [illegible] 0 0 5 [illegible] 7

Total Organic Carbon Analysis of the Water Digestion - 1st Leach

Serial No	Sample Point	Date	Time Issued	Priority
F 930.-7126	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	0

Sample Size: ? 200

Customer ID: 000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE

4.50 g/l 3

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Burnett
Hrs: Ed Cohn	Hrs	Hrs	Hrs	Hrs

Date: 1-29-90 | Time Completed: | Lab Unit Mgr: [signature] Kathy Hornsbee

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7526	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	0

Sample Size: ? 200uL - 2ml - 200uL

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 70C11B

2.904/3.00 96.8%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Burnett
Hrs: Ed Cohn	Hrs	Hrs	Hrs	Hrs

Date: 1-29-90 | Time Completed: | Lab Unit Mgr: [signature] Kathy Hornsbee

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

Serial No	Sample Point	Date	Time Issued	Priority
F 928.-7326	SEG.COMP#14	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	0

Sample Size: ? 200uL

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

5.3 µg/min (5.3 µg)

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Burnett
Hrs: Ed Cohn	Hrs	Hrs	Hrs	Hrs

Date: 1-29-90 | Time Completed: | Lab Unit Mgr: [signature] Kathy Hornsbee

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7526	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	0

Sample Size: ? 200uL - 2ml - 200uL

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 70C11B

2.892/3.00 96.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Burnett
Hrs: Ed Cohn	Hrs	Hrs	Hrs	Hrs

Date: 1-29-90 | Time Completed: | Lab Unit Mgr: [signature] Kathy Hornsbee

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

9 1 1 2 5 0 0 5 3 8

Total Organic Carbon Analysis of the Water Digestion - 1st Leach

Serial No	Sample Point	Date	Time Issued	Priority
F 931.-7226	SEG.COMP#17	1-24-90	8:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 200uL	

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 70C11
SPIKE VOLUME 200uL

~~131 #4~~ ~~125.7 - 13~~ R & D ~~149.9~~ ~~x100 = 83%~~ (OVER)

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R & Brandt
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohn				

Date	Time Completed	Lab Unit Mgr
1-29-90		[signature] Kathy Thompson

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7026	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	0

Sample Size	Customer ID
? 200uL	000006

Remarks, Calculations, Results:

6.50^{-3} g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R & Brandt
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohn				

Date	Time Completed	Lab Unit Mgr
1-29-90		[signature] Kathy Thompson

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

Total Organic Carbon Analysis of the Water Digestion - 1st Leach

F0931.-7226

$$\%\,Recovery = \frac{(131.0-5.3)-(6.6-5.3)}{149.9} \times 100$$

$$= 82.97\%$$ % Blank

$$149.9 = \frac{(149 \times 0.2)}{0.5} \times 0.2 = Spike$$

9 1 1 2 [illegible] 0 [illegible] 0

Total Organic Carbon Analysis on the Water Digestion - 3rd Leach

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7326	SEG.COMP#14	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	1

Sample Size: ? 200uL

Customer ID: 000006

Remarks, Calculations, Results:
REAGENT BLANK

6.994E^{-1} ug/min

4.9 ug

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Bennett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohn				

Date: 6-6-90 | Time Completed: | Lab Unit Mgr: [signature] Kathy [signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7526	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	1

Sample Size: ? 200uL-2mL-200uL

Customer ID: 000006

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 70C11D

2.887/3.000

96.2%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Bennett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohn				

Date: 6-6-90 | Time Completed: | Lab Unit Mgr: [signature] Kathy [signature]

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

00028

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7126	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	1

Sample Size: ? 1mL+100uL .5M H_2SO_4-200uL

Customer ID: 000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE

<5.5E^{-3} g/l ~~1.096E^{-3} g/l~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Bennett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohn				

Date: 6-6-90 | Time Completed: | Lab Unit Mgr: [signature] Kathy [signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7026	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	G/L	WB75L	1

Sample Size: ? 1mL+100uL .5M H_2SO_4-200uL

Customer ID: 000006

Remarks, Calculations, Results:

< 5.50E^{-3} g/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Bennett
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohn				

Date: 6-6-90 | Time Completed: | Lab Unit Mgr: [signature] Kathy [signature]

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7226	SEG.COMP#17	1-24-90	8:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	1

Sample Size	Customer ID
? 200uL+100uL 5mH2SO4 -200uL	0000006

Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 80C11
SPIKE VOLUME 200uL

~~(120.3 - 4.9) - (5.8 - 4.9) x100 = 96.2%~~
~~119.9~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				
Date	Time Completed	Lab Unit Mgr		
6-6-90				

EA-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7526	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TOC	LA-344-105	% RECOVERY	WB75L	1

Sample Size	Customer ID
? 200uL-2mL-200uL	0000006

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 70C11D

2.909/3.00

96.97%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cole				
Date	Time Completed	Lab Unit Mgr		
6-6-90				

EA-6600-061 (R-10-83)

9 1 1 2 [illegible] 0 5 7 2

Total Organic Carbon Analysis on the Water Digestion Third Leach

FO931.-7226

$$\% \text{ Recovery} = \frac{(120.3-4.9)-(5.0-4.9)}{119.9} \times 100$$

$$= 96.16\%$$

R E Brunett

$$\text{Spike} = \frac{(1499 \times 0.2)}{0.5} \times 0.2 = 119.9$$

Ammonia Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7028	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	M	WB75L	0

Sample Size: ? 1 ml 0.0971 M HCl

Customer ID: 000006

Remarks, Calculations, Results:

Blk: 33
Sample: 34

<6.41 -3 m
<115 R & B
<6.52 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R & Brandt
Mary Francy	Hrs	Hrs	Hrs	Hrs

Date: 2-1-90 | Time Completed: | Lab Unit Mgr: [signature]

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7528	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	% RECOVERY	WB75L	0

Sample Size: ? 250 λ 0.0971 M HCl

Customer ID: Std

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID ~~4C110G~~ @ 4C110G

97.8% Blk: 33
Std: 159

4.89 -2 m / 5.00 -2

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R & Brandt
Mary Francy	Hrs	Hrs	Hrs	Hrs

Date: 2-1-90 | Time Completed: | Lab Unit Mgr: [signature]

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7128	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	M	WB75L	0

Sample Size: ? 1 ml 0.0971 M HCl

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Blk: 33
Sample: 33

<6.41 -3 m
<115
<6.52 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R & Brandt
Mary Francy	Hrs	Hrs	Hrs	Hrs

Date: 2-1-90 | Time Completed: | Lab Unit Mgr: [signature]

54-6600-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7328	SEG.COMP#14	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	M	WB75L	0

Sample Size: ? 1 ml 0.0971 M HCl

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

Blk: 33
Impl: 31

<6.41 -3 m
<115 R & B
<6.52 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R & Brandt
Mary Francy	Hrs	Hrs	Hrs	Hrs

Date: 2-1-90 | Time Completed: | Lab Unit Mgr: [signature]

54-6600-061 (R-10-83)

Ammonia Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7228	SEG.COMP#17	1-24-90	8:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	% RECOVERY	WB75L	0

Sample Size: ? 1 ml 0.0971 M HCl Customer ID:

Remarks, Calculations, Results:

SPIKED SAMPLE
4C110D 250λ

Blk: 33
Sample: 151

4.58 -2 / 5.00 -2 91.6%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
LC269				R E Burnett
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date: 2-1-90 Time Completed: Lab Unit Mgr: [signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7528	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NH3	LA-634-102	% RECOVERY	WB75L	0

Sample Size: ? 250λ 0.0971 M HCl Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID ~~4C40B~~ 4C110C

Blk: 33
Std: 156

95.6%

4.78 -2 m / 5.00 -2

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
LC269				R E Burnett
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date: 2-1-90 Time Completed: Lab Unit Mgr: [signature]

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

Carbonate Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7327	SEG.COMP#14	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	G/L	WB75L	0

Sample Size: ? 200uL

Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

4.6 mg

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Bennett
Hrs: Ed Cohn	Hrs	Hrs	Hrs	Hrs

Date: 2-6-90 | Time Completed: | Lab Unit Mgr: [signature] KH

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7127	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	G/L	WB75L	0

Sample Size: ? 200uL

Customer ID: 000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE

~~21.5~~ ppm

2.14973 -2 g/L

~~2.1497~~ -5 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Bennett
Hrs: Ed Cohn	Hrs	Hrs	Hrs	Hrs

Date: 2-6-90 | Time Completed: | Lab Unit Mgr: [signature] KH

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7027	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	G/L	WB75L	0

Sample Size: ? 200uL

Customer ID: 000006

Remarks, Calculations, Results:

~~2.25~~ -5 ppm KH

.0225 g/L

~~.0225~~ g/L

~~2.25~~ ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Bennett
Hrs: Ed Cohn	Hrs	Hrs	Hrs	Hrs

Date: 2-6-90 | Time Completed: | Lab Unit Mgr: [signature] KH

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7527	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	% RECOVERY	WB75L	0

Sample Size: ? 50uL

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 69C11C

104.5% KH

2.09 -1 / 2.00 -1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Bennett
Hrs: Ed Cohn	Hrs	Hrs	Hrs	Hrs

Date: 2-6-90 | Time Completed: | Lab Unit Mgr: [signature] KH

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

Carbonate Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7527	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 50uL	

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 69C11C

104.2%

2.083⁻¹ / 2.00⁻¹

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Brandt
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohn				

Date	Time Completed	Lab Unit Mgr
2-6-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7227	SEG.COMP#17	1-24-90	8:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
CO3	LA-622-102	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 200uL	

Remarks, Calculations, Results:

SPIKED SAMPLE
SPIKE NO. 69C11C
SPIKE VOL. 100uL

Drop
~~167.5 - 4.5~~ R E B.
~~x100~~
~~100~~ ~~101.9%~~
(OVER)

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80028				R E Brandt
Hrs	Hrs	Hrs	Hrs	Hrs
Ed Cohn				

Date	Time Completed	Lab Unit Mgr
2-6-90		[signature]

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

Carbonate Analysis of the Water Digestion

FO931.-7227

$$\% \text{ Recovery} = \frac{(172.1-4.6)-(9.1-4.6)}{160} \times 100$$

$$= 101.88\%$$ R & Brandt

$$\text{Spike} = \left(\frac{2400 \times 0.1}{0.3}\right) \times 0.2 = 160$$

Nitrite Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7379	SEG.COMP#14	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	M	WB75L	0

Sample Size: ? 1ml

Customer ID: [illegible]

Remarks, Calculations, Results:

REAGENT BLANK

$< 7.8^{-6}$ m

$< 3.59^{-1}$ ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269 Mary Franz				R. Fuller 2-6-90
	Hrs	Hrs	Hrs	Hrs

Date: 1-30-90 | Time Completed: | Lab Unit Mgr: [illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7579	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	% RECOVERY	WB75L	0

Sample Size: ? 100-10-50

Customer ID: [illegible]

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 8C11AT

1.095

4.927^{-1} m / 5.02^{-1} 98.1%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269 Mary Franz				R. Fuller 2-6-90
	Hrs	Hrs	Hrs	Hrs

Date: 1-30-90 | Time Completed: | Lab Unit Mgr: [illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7179	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	M	WB75L	0

Sample Size: ? 100λ

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

8.37' ppm

.820 1.82^{-3} m

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269 Mary Franz				R. Fuller 2-6-90
	Hrs	Hrs	Hrs	Hrs

Date: 1-30-90 | Time Completed: | Lab Unit Mgr: [illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7079	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	M	WB75L	0

Sample Size: ? 100λ

Customer ID: 000006

Remarks, Calculations, Results:

~~1.581 - .573 = 1.008~~

.573 ~~1.26^{-3} m~~ 1.26^{-3} m

5.80' ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269 Mary Franz				R. Fuller 2-6-90
	Hrs	Hrs	Hrs	Hrs

Date: 1-30-90 | Time Completed: | Lab Unit Mgr: [illegible]

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

9 1 1 2 [illegible] 0 5 7 9

Nitrite Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7579	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100-10-50	Std

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 8C11AF

98.2%

1.096

4.932^{-1} / 5.02^{-1}

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R. Fuller 2-6-90
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
1-30-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7279	SEG.COMP#17	1-24-90	8:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NO2	LA-645-001	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100λ	

Remarks, Calculations, Results:

SPIKED SAMPLE
100-10-50 8C11AF

90.2%

4.527^{-1} / 5.02^{-1}

1.581 - .573 = 1.008

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				R. Fuller 2-6-90
Mary Franz	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
1-30-90		[signature]

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

Total Alpha Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7025	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
AT	LA-508-101	uCI/L	WB75L	0

Sample Size: ? 50λ

Customer ID: 000006

Remarks, Calculations, Results:

<4.52^{-2} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 205.-6520	SEGMENT-J	11-17-89	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Rerune
AT	LA-548-101	% RECOVERY	WB75L	0

Sample Size: ? 10mL

Customer ID: 089046

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 102B44

100.8%

1.01^{-2} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 201.-6520	SEGMENT-F	11-17-89	10:35	19

Determination	Method/Standard	Result Units	Charge Code	Rerune
AT	LA-548-101	% RECOVERY	WB75L	0

Sample Size: ? 10mL

Customer ID: 089046

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 102B44

97.3%

9.75^{-3} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 216.-6320	SEGMENT-U	11-17-89	10:38	18

Determination	Method/Standard	Result Units	Charge Code	Rerune
AT	LA-548-101	uCI/L	WB75L	0

Sample Size: ?

Customer ID: 089046

Remarks, Calculations, Results:

REAGENT BLANK

9.96^{-7} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DMS

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

Total Alpha Analysis of the Water Digestion

14/2

Alpha Calculation by VR on 02-07-1990 at 03:04:56
Sample size : 1 mL Dilution : 1

Mount # 1

$\frac{2}{5}$ - 0.2 < 1.6464E-06 uCi/ea alpha

Mount # 2

$\frac{1}{5}$ - 0.2 < 9.9584E-07 uCi/ea alpha

$\frac{2}{\cancel{10}5}$ - .2

$\frac{1}{\cancel{10}5}$

F 216.-6320

14/2

Alpha Calculation by VR on 02-07-1990 at 03:03:56
Bet #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{466}{10}$ - 0.2 = 9.9009E-03 uCi/L alpha

Mount # 2

$\frac{452}{10}$ - 0.2 = 9.6022E-03 uCi/L alpha

$\frac{466}{10}$ - .2

$\frac{452}{10}$

F 201.-6520

FO929.-7025

14/2

Alpha Calculation by VR on 02-07-1990 at 06:20:12
Bet #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{452}{10}$ - 0.2 = 9.6022E-03 uCi/L alpha

Mount # 2

$\frac{500}{10}$ - 0.2 = 1.0626E-02 uCi/L alpha

$\frac{452}{10}$ - .2

$\frac{500}{10}$

F 205.-6520

14/2

Alpha Calculation by VR on 02-07-1990 at 03:02:14
Bet #14 2 -inch mount Alpha eff. : .2111
Sample size : 1 mL Dilution : 20

Mount # 1

$\frac{2}{5}$ - 0.2 < 3.2928E-02 uCi/L alpha

Mount # 2

$\frac{3}{5}$ - 0.2 < 4.5237E-02 uCi/L alpha

$\frac{2}{\cancel{10}5}$ - .2

$\frac{3}{\cancel{10}5}$

Total Alpha Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7525	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	F215C	0

Sample Size	Customer ID
10 ML	

Remarks, Calculations, Results:
LMCS CHECK SAMPLE [redacted]
LMCS ID 102B44

93.3%

$9.346^{-3} / 1.0021^{-2}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Frazy	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		[illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 956.-7525	SEG.COMP#18	1-30-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	% RECOVERY	F215C	0

Sample Size	Customer ID
10 ML	

Remarks, Calculations, Results:
LMCS CHECK SAMPLE [redacted]
LMCS ID 102B44

103.8%

$1.04^{-2} / 1.0021^{-2}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Frazy	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		[illegible]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7120	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AT	LA-508-101	uCI/L	WB75L	1

Sample Size	Customer ID
? 50 L	000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE [redacted]

$<2.63^{-2}$ uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				[illegible]
Mary Frazy	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		[illegible]

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

Total Alpha Analysis of the Water Digestion

14/2

FO930.-7120

$\frac{3}{10} - .7$

$\frac{5}{10}$

Alpha Calculation by DM on 02-08-1990 at 14:37:38
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : .05 mL Dilution : 1

Mount # 1

$\frac{3}{10} - 0.7 < 2.6308E-02$ uCi/L alpha

Mount # 2

$\frac{5}{10} - 0.7 < 2.6308E-02$ uCi/L alpha

14/2

$\frac{446}{10} - .7$

$\frac{444}{10}$

Alpha Calculation by DM on 02-08-1990 at 14:36:27
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{446}{10} - 0.7 = 9.3675E-03$ uCi/L alpha

Mount # 2

$\frac{444}{10} - 0.7 = 9.3248E-03$ uCi/L alpha

14/2

$\frac{510}{10} - .7$

$\frac{475}{10}$

Alpha Calculation by EMB on 02-08-1990 at 17:04:43
Det #14 2 -inch mount Alpha eff. : .2111
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{510}{10} - 0.7 = 1.0733E-02$ uCi/L alpha

Mount # 2

$\frac{475}{10} - 0.7 = 9.9863E-03$ uCi/L alpha

Total Beta Analysis of the Water Digestion

7 & 8

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7020	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-506-101	uCI/L	WB75L	0

Sample Size: ? 50 L

Customer ID: 000006

Remarks, Calculations, Results: ~~Count on any detector but 18 K7~~ ~~Please count on 13, 14 or 15~~

3.63 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GC
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DM 8

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

~~3 & 4~~ 1-2

Serial No.	Sample Point	Date	Time Issued	Priority
F 205.-6525	SEGMENT-J	11-17-89	10:36	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-548-101	% RECOVERY	WB75L	0

Sample Size: ? 10 mL

Customer ID: 089046

Remarks, Calculations, Results: [redacted]

LMCS CHECK SAMPLE
LMCS ID 102B44

106.6%

1.47 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GC
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DM 8

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

~~1 & 2~~ VR 3-4

Serial No.	Sample Point	Date	Time Issued	Priority
F 201.-6525	SEGMENT-F	11-17-89	10:35	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-548-101	% RECOVERY	WB75L	0

Sample Size: ? 10 mL

Customer ID: 089046

Remarks, Calculations, Results: ~~Please count on 13, 14 or 15~~

LMCS CHECK SAMPLE
LMCS ID 102B44

105.1%

1.45 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GC
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DM 8

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

9 & 10

Serial No.	Sample Point	Date	Time Issued	Priority
F 216.-6325	SEGMENT-U	11-17-89	10:38	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-548-101	uCI/L	WB75L	0

Sample Size: ?

Customer ID: 089046

Remarks, Calculations, Results: ~~Please count on 13, 14 or 15~~

REAGENT BLANK

2.97 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GBS98/RH				GC
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
2-6-90		[signature]	DM 8

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

Total Beta Analysis of the Water Digestion

14/2

115/~~10~~5 - 5

115/~~10~~5 - 5

Beta Calculation by VR on 02-07-1990 at 03:04:54
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 1 ea Dilution : 1

Mount # 1

115
---------- - 5.0 = 2.9657E-05 uCi/ea beta
5

Mount # 2

115
---------- - 5.0 = 2.9657E-05 uCi/ea beta
5

F 216.-6325

14/2

10 ml

8784/10 - 5

8936/10

Beta Calculation by VR on 02-07-1990 at 03:03:54
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

8784
---------- - 5.0 = 1.4390E-01 uCi/L beta
10

Mount # 2

8936
---------- - 5.0 = 1.4640E-01 uCi/L beta
10

F 201.-6525

14/2

10 ml

9102/10 - 5

8902/10 -

Beta Calculation by VR on 02-07-1990 at 06:20:10
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

9102
---------- - 5.0 = 1.4914E-01 uCi/L beta
10

Mount # 2

8902
---------- - 5.0 = 1.4584E-01 uCi/L beta
10

F 205.-6525

14/2

FO929.-7020

55.050

5655/~~10~~5 - 5

5417/~~10~~5 - 5

Beta Calculation by VR on 02-07-1990 at 03:02:12
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 1 mL Dilution : 20

Mount # 1

5655
---------- - 5.0 = 3.7104E+01 uCi/L beta
5

Mount # 2

5417
---------- - 5.0 = 3.5535E+01 uCi/L beta
5

Total Beta Analysis of the Water Digestion

7-8

Serial No.	Sample Point	Date	Time Issued	Priority
F 956.-7520	SEG.COMP#18	1-30-90	10:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	F215C	0

Sample Size	Customer ID
10 ML	

Remarks, Calculations, Results:
LMCS CHECK SAMPLE [redacted]
LMCS ID 102B44

KT

~~1.0~~ KT 1.40^{-1} / 1.3777^{-1} 101.6%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				Gre
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		[signature]

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

1-2

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7520	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	% RECOVERY	F215C	0

Sample Size	Customer ID
10 ML	

Remarks, Calculations, Results:
LMCS CHECK SAMPLE [redacted]
LMCS ID 102B44

KT

1.385^{-1} / 1.3777^{-1} 100.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				Gre
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		[signature]

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

3-4

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7125	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TB	LA-508-101	uCI/L	WB75L	1

Sample Size	Customer ID
? 50λ	000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE [redacted]

1.04^{2} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C269				Gre
Mary Fraley	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-8-90		[signature]

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

Fo930-7125

14/2

$\frac{32455}{10} - 26$

$\frac{31169}{10}$

Beta Calculation by DM on 02-08-1990 at 14:37:36
Det #14 2 -inch mount Beta eff. : .2734
Sample size : .05 mL Dilution : 1

Mount # 1

$\frac{32455}{10} - 26.0 = 1.0609E+02$ uCi/L beta

Mount # 2

$\frac{31169}{10} - 26.0 = 1.0185E+02$ uCi/L beta

14/2

$\frac{8729}{10} - 26$

$\frac{8600}{10}$

Beta Calculation by DM on 02-08-1990 at 14:36:25
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{8729}{10} - 26.0 = 1.3953E-01$ uCi/L beta

Mount # 2

$\frac{8600}{10} - 26.0 = 1.3741E-01$ uCi/L beta

14/2

$\frac{8711}{10} - 26$

$\frac{8857}{10}$

Beta Calculation by EMB on 02-08-1990 at 17:04:41
Det #14 2 -inch mount Beta eff. : .2734
Sample size : 10 mL Dilution : 1

Mount # 1

$\frac{8711}{10} - 26.0 = 1.3924E-01$ uCi/L beta

Mount # 2

$\frac{8851}{10} - 26.0 = 1.4154E-01$ uCi/L beta

Gamma Engery Analysis of the Water Digestion

2909

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7330	SEG.COMP#14	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 22mL 1mL Li .001 1

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

Cs137 < 5.14-2 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725				GW
Hrs Shirley Cornwell	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-31-90		[signature]	[signature]

54-6600-081 (R-10-83)

3025

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7530	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? ~~25x~~ 500λ Li .001 2

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 89844

Cs137 3.96'/3.8078' 104.0%

Co60 2.14'/2.2081' 96.9%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725 S.C.				GW
Hrs Shirley Cornwell	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-31-90		[signature]	[signature]

54-6600-081 (R-10-83)

4036

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7130	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 100λ Li .001 10

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Cs137 4.97' uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725				GW
Hrs Shirley Cornwell	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-31-90		[signature]	[signature]

54-6600-081 (R-10-83)

1723

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7030	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	uCI/L	WB75L	0

Sample Size: ? 100λ Li .001 10

Customer ID: 000006

Remarks, Calculations, Results:

Cs137 3.13' uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725				GW
Hrs Shirley Cornwell	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-31-90		[signature]	[signature]

54-6600-081 (R-10-83)

9 1 1 2 0 0 5 9

Gamma Engery Analysis of the Water Digestion

3026

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7530	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? ~~0.5X~~ 500λ Li 001/2

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 89B44

Cs137 3.92' vol/c / 3.8078' 103.0%

Co60 2.33' vol / 2.2081' 105.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725				GW
Hrs Shirley Cornutes	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-31-90		[signature]	[signature]

54-5600-061 (R-10-83)

2910

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7230	SEG.COMP#17	1-24-90	8:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
GEA	LA-548-121	% RECOVERY	WB75L	0

Sample Size: ? 100λ + 500λ spike 89B44

Customer ID:

Remarks, Calculations, Results:
SPIKED SAMPLE Li 001/10
~~R929~~ F0929

105.4%

23.2 - 3.13 = 20.07 X 2. = 40.14 / 38.078

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725				GW
Hrs Shirley Cornutes	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
1-31-90		[signature]	[signature]

54-5600-061 (R-10-83)

3.3 3956

Serial No.	Sample Point	Date	Time Issued	Priority
F 946.-6382	SEG.COMP#8	1-30-90	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1ml + 100x Am spike — Customer ID: 000008

Remarks, Calculations, Results: REAGENT BLANK 9343
1200 Con HNO_3
"AEA-480 MIN" ATTACH PRINT OUT
$<1.50^{-2}$ mill

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

Date	Time Completed	Lab Unit Mgr
2-12-90		

54-8800-081 (R-10-83)

2.2 2724

Serial No.	Sample Point	Date	Time Issued	Priority
F 950.-6582	SEG.COMP#12	1-30-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 100-10-1000 + 100x spike — Customer ID: 000008

Remarks, Calculations, Results: LMCS CHECK SAMPLE 9543
LMCS ID 16643
"AEA-480 MIN" ATTACH PRINT OUT
1.6663 / 1.5712
105.8%

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

Date	Time Completed	Lab Unit Mgr
2-12-90		

54-8800-081 (R-10-83)

4.4 8076

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7082	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: [redacted] 1ML + 100x Am spike — Customer ID: 000006

Remarks, Calculations, Results: [redacted] Con HNO_3 1200
"AEA-480 MIN" ATTACH PRINT OUT
$<1.83^{-2}$ mill

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

Date	Time Completed	Lab Unit Mgr
2-12-90		

54-8800-081 (R-10-83)

4.2 6026

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7182	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	uCI/L	WB75L	0

Sample Size: [redacted] 1ml + 100x Am spike — Customer ID: 000006

Remarks, Calculations, Results: DUPLICATE SAMPLE
1200 Con HNO_3
"AEA-480 MIN" ATTACH PRINT OUT
$<1.78^{-2}$ mill

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

Date	Time Completed	Lab Unit Mgr
2-12-90		

54-8800-081 (R-10-83)

Americium-241 Analysis of the Water Digestion

32 2726

Series No.	Sample Point	Date	Time Issued	Priority
F 897.-6582	SEG.COMP#7	1-24-90	8: 5	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AM	LA-503-156	% RECOVERY	WB75L	0

Sample Size	Customer ID
? 100-10-1000	

Remarks, Calculations, Results: SPIKE 91593 100g

LMCS CHECK SAMPLE
LMCS ID 16873

"AEA-480 MIN"
ATTACH PRINT OUT

1.592' / 1.5712'

101.3%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/KH				GW
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
2-12-90		

54-6600-081 (R-10-83)

3.4 4714

Serial No.	Sample Point	Date	Time Issued	Priority
F 947.-6081	SEG.COMP#9	1-30-90	10:39	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1ml + 50λ [redacted] Pu spike 10843-B

Customer ID: 000008

Remarks, Calculations, Results: [redacted]

890λ HNO_3

"AEA-480 MIN" ATTACH PRINT OUT

1.45^{-2} uci/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
2-8-90		

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

3.3 3954

Serial No.	Sample Point	Date	Time Issued	Priority
F 947.-6081	SEG.COMP#11	1-30-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 1ml + 100-10-100 Pu spiked

Customer ID: 000008

Remarks, Calculations, Results: SPIKED SAMPLE [redacted] Pu spike 10843-B

890λ HNO_3 F294 / F947

"AEA-480 MIN" ATTACH PRINT OUT

no spike recovery

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
2-8-90		

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

2714 8hrs.

Serial No.	Sample Point	Date	Time Issued	Priority
F 946.-6081	SEG.COMP#8	1-30-90	10:38	19

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	uCI/L	WB75L	0

Sample Size: ? 1ml + 50λ [redacted] Am spike 10843-B

Customer ID: 000008

Remarks, Calculations, Results: REAGENT BLANK 1200 con HNO_3

$<7.29^{-3}$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
2-8-90		

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

4709 8hrs

Serial No.	Sample Point	Date	Time Issued	Priority
F 903.-7581	SEG.COMP#13	1-24-90	8: 8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size: ? 100-10-100

Customer ID:

Remarks, Calculations, Results: LMCS CHECK SAMPLE LMCS ID 16543 50λ 10843 B

"AEA-480 MIN" ATTACH PRINT OUT

1.066^{2} / 9.7329' 109.5%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6 B598/RH				
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr.
2-8-90		

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

Plutonium Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7181	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	UCI/L	WB75L	0

Sample Size 1mL [redacted] Customer ID 000006

Remarks, Calculations, Results: [redacted] Pu spike 10843-3 DUPLICATE SAMPLE [redacted] H1003, Con -1200 "AEA-480 MIN" ATTACH PRINT OUT

<.1678-3 mrem/L

Analyst-1: 6 BS 98/98 Analyst-2: Analyst-3: Analyst-4: Analyst-5: Hrs: Time Completed: Lab Unit Mgr: Date: 2-8-90

54-8600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7081	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	UCI/L	WB75L	0

Sample Size 1mL [redacted] Customer ID 000006

Remarks, Calculations, Results: [redacted] Pu spike 10843-2 Con H1003 1200 "AEA-480 MIN" ATTACH PRINT OUT

<.1014-2 mrem/L

Analyst-1: 6 BS 98/98 Analyst-2: Analyst-3: Analyst-4: Analyst-5: Hrs: Time Completed: Lab Unit Mgr: Date: 2-8-90

54-8600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-6581	SEG.COMP#12	1-30-90	10:40	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
PU	LA-503-156	% RECOVERY	WB75L	0

Sample Size ?100-10-100 Customer ID 000008

Remarks, Calculations, Results: [redacted] Pu spike 10843-8 LMCS CHECK SAMPLE LMCS ID ~~100~~-16843 "AEA-480 MIN" ATTACH PRINT OUT

1.0312 9.7329 105.9010

Analyst-1: 6 BS 98/98 Analyst-2: Analyst-3: Analyst-4: Analyst-5: Hrs: Time Completed: Lab Unit Mgr: Date: 2-8-90

54-8600-081 (R-10-83)

Carbon-14 Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7288	SEG.COMP#17	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
C14	LA-348-104	% RECOVERY	WB75L	0

Sample Size: ? 10 ml + 1 ml STD

Customer ID:

Remarks, Calculations, Results:
STD: 31.846
comp-2
(167.123 − 59.1206)(1000) / 2.0026 = 7.26E-1 ml / 8.8916E-1 = 81.6%

Analyst-1: Sue Lai
Analyst-2:
Analyst-3:
Analyst-4:
Hrs: 6.0916
Time Completed:
Lab Unit Mgr:
Date: 7-18-90

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7088	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
C14	LA-348-104	uCI/L	WB75L	0

Sample Size: ? 10 ml

Customer ID: 000006

Remarks, Calculations, Results:
comp-2
(59.1206)(1000) / (2.0026)(10) = 2.06E-3 uCi/L

Analyst-1: Sue Lai
Analyst-2:
Analyst-3:
Analyst-4:
Analyst-5:
Hrs: 6.0916
Time Completed:
Lab Unit Mgr:
Date: 7-18-90

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7588	SEG.COMP#18	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
C14	LA-348-104	% RECOVERY	WB75L	0

Sample Size: ? 1 ml

Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 31.846
comp
(11935.913)(1000) / 2.0026 = 8.72E-1 / 8.8916E-1 = 98.1%

Analyst-1: Sue Lai
Analyst-2:
Analyst-3:
Analyst-4:
Analyst-5:
Hrs: 6.0916
Time Completed:
Lab Unit Mgr:
Date: 7-18-90

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7188	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Rerun
C14	LA-348-104	uCI/L	WB75L	0

Sample Size: ? 10 ml

Customer ID: 000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE
comp-2
(38.2325)(1000) / (2.0026)(10) = 1.72E-3 uCi/L

Analyst-1: Lc 916
Analyst-2:
Analyst-3:
Analyst-4:
Analyst-5:
Hrs: 6.0916
Time Completed:
Lab Unit Mgr:
Date: 7-11-90

9 1 1 2 [illegible] 0 [illegible] 5

Carbon-14 Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7588	SEG.COMP#13	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C14	LA-348-104	% RECOVERY	WB75L	0

Sample Size: ? 1 ml

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 31846

~~Comp-2~~ 15 mL

$$\frac{(1859.323)(1000)}{2.22E6} = 8.37E-1 \Big/ 8.8916E-1 = 94.1\%$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai			[signature]	
Hrs 6C916	Hrs	Hrs	Hrs [signature]	Hrs

Date	Time Completed	Lab Unit Mgr
7-18-90		[signature] [signature]

54-8800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7388	SEG.COMP#14	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
C14	LA-348-104	uCI/L	WB75L	0

Sample Size: ? 10 ml

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

Comp-2

$$\frac{(25)(1000)}{(2.22E6)(10)} = < 1.13E-3 \text{ uCi/l}$$

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
Sue Lai			[signature]	
Hrs 6C916	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
7-18-90		[signature] [signature]

54-8800-061 (R-10-83)

A4958

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7285	SEG.COMP#17	1-24-90	8:47	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
I129	LA-378-103	% RECOVERY	WB75L	0

Sample Size: ? 1ml + 1ml STD (124844) spike
Customer ID:

Remarks, Calculations, Results:
SPIKED SAMPLE

$\frac{(.156^{-3})(1000)}{.2885} = 5.41^{-1}$ / 5.8524 n.

g. 2.1363
t. 2.1275
n. .0088
.2885

92.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/LC				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 2-21-90 | Time Completed: | Lab Unit Mgr:

54-8800-081 (R-10-83)

A4959

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7585	SEG.COMP#18	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
I129	LA-378-103	% RECOVERY	WB75L	0

Sample Size: ? 1ml
Customer ID:

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 124844

$\frac{(.115^{-3})(1000)}{.200} = 5.75^{-1}$ / 5.8524 n.

g. 2.1425
t. 2.1364
n. .0061
.200

98.2% .006

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/LC				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 2-21-90 | Time Completed: | Lab Unit Mgr:

54-8800-081 (R-10-83)

A4954

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7385	SEG.COMP#14	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
I129	LA-378-103	uCI/L	WB75L	0

Sample Size: ? 1ml
Customer ID:

Remarks, Calculations, Results:
REAGENT BLANK

$\frac{(<.124^{-4})(1000)}{.118} = <1.05^{-1}$ neil

g. 2.1468
t. 2.1432
n. .0036
.118

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/LC				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 2-21-90 | Time Completed: | Lab Unit Mgr:

54-8800-081 (R-10-83)

A4957

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7185	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
I129	LA-378-103	uCI/L	WB75L	0

Sample Size: ? 1ml
Customer ID: 000006

Remarks, Calculations, Results:
DUPLICATE SAMPLE

$\frac{(<.112^{-4})(1000)}{.1115} < 1.004^{-1}$ neil

g. 2.1527
t. 2.1493
n. .0034
.1115

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/LC				
Hrs	Hrs	Hrs	Hrs	Hrs

Date: 2-21-90 | Time Completed: | Lab Unit Mgr:

54-8800-081 (R-10-83)

9 1 1 2 [illegible] 0 [illegible] 7

Iodine-129 Analysis of the Water Digestion

A4953

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7585	SEG.COMP#13	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	% RECOVERY	WB75L	0

Sample Size: ?1ml

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 124B44

$\frac{(.139^{-3})(1000)}{.2033}$

116.8%

g. 1412
+. 2.1350
n. .0062

6.837^{-1} / 5.852^{-1} .2033

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/dC				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-21-90		[illegible]

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

A-4955

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7085	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
I129	LA-378-103	uCI/L	WB75L	0

Sample Size: ?1ml

Customer ID: 000006

Remarks, Calculations, Results:

$\frac{(<.132^{-4})(1000)}{.2131}$

g. 2.1495
+. 2.1430
n. .0065 .2131

<6.19^{-2} ucil

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725/dC				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
2-21-90		[illegible]

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

Neptunium-237 Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 904.-7383	SEG.COMP#14	1-24-90	8: 9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	uCI/L	WB75L	0

Sample Size: ? ~~250~~ λ MT 500 λ — Customer ID: 000005

Remarks, Calculations, Results:
REAGENT BLANK

<1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

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

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 1058.-7583	SEG.COMP#18	2-15-90	14: 9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	% RECOVERY		0

Sample Size: ? ~~250~~ λ RH/100 λ MT 500 λ — Customer ID: 000012

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 148033

70.8% KI

90.77/128.11

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

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

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7183	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	uCI/L	WB75L	0

Sample Size: ? 250 λ MT 500 λ — Customer ID: 000006

5380

Remarks, Calculations, Results:
DUPLICATE SAMPLE

<1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

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

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7083	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
NP	LA-933-141	uCI/L	WB75L	0

Sample Size: ? 250 λ MT 500 λ — Customer ID: 000006

Remarks, Calculations, Results:

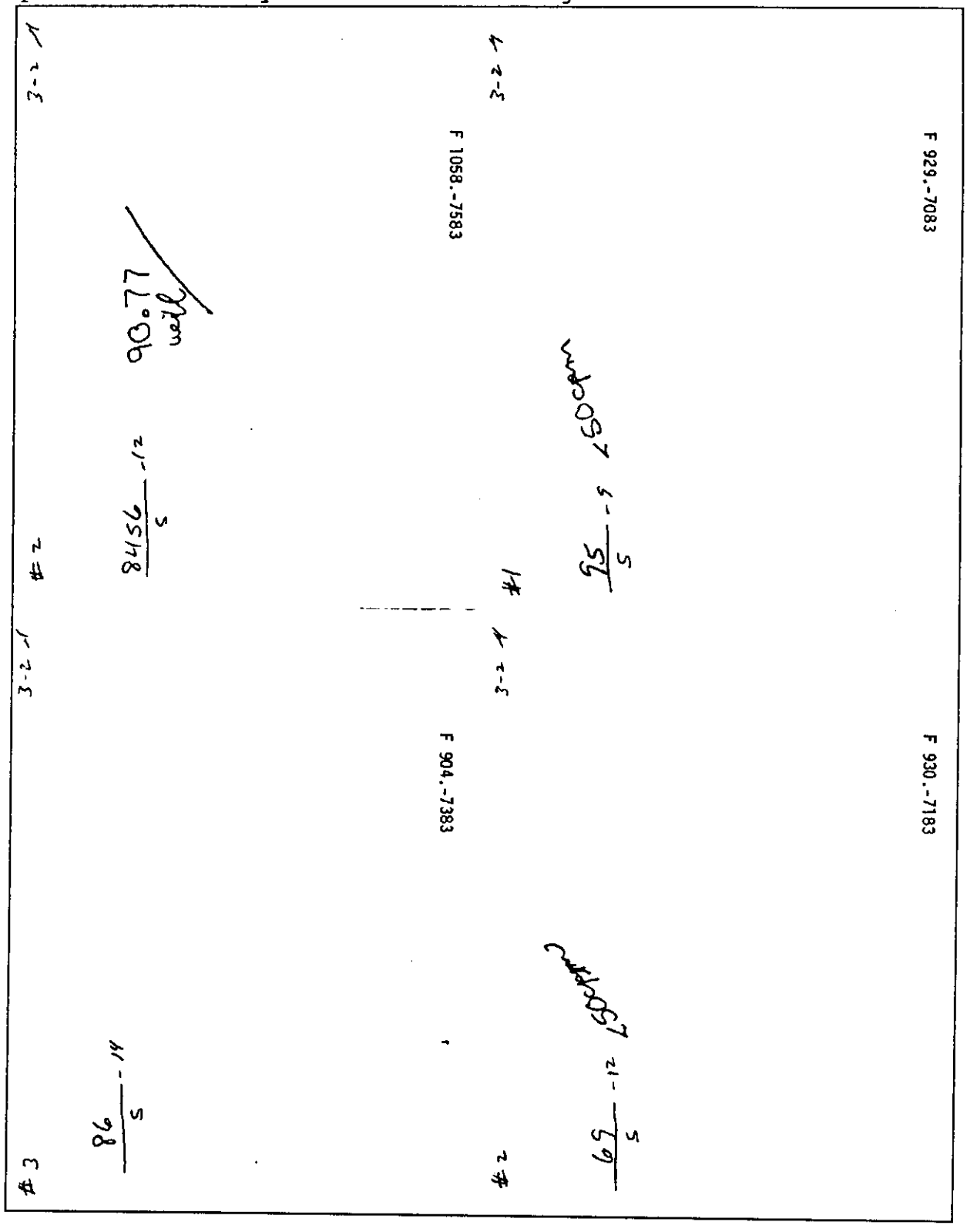
<1.08 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598/RH				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs

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

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

Neptunium-237 Analysis of the Water Digestion



9 1 1 2 [illegible] 0 [illegible] 0 0

Neptunium-237 Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 1077.-7583	SEG.COMP#13	2-16-90	8:10	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
NP	LA-933-141	% RECOVERY	E21D1	0

Sample Size: ? ~~25~~ 100λ mT 500λ

Customer ID: 000013

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 148833

91.76
128.11

71.6%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB598/KH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

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

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 1081.-7283	SEG.COMP#17	2-16-90	8:14	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
NP	LA-933-141	% RECOVERY	E21D1	0

Sample Size: ? 250λ 148833 +100λ std mT 500λ

Customer ID: 000013

Remarks, Calculations, Results: F905

SPIKED SAMPLE

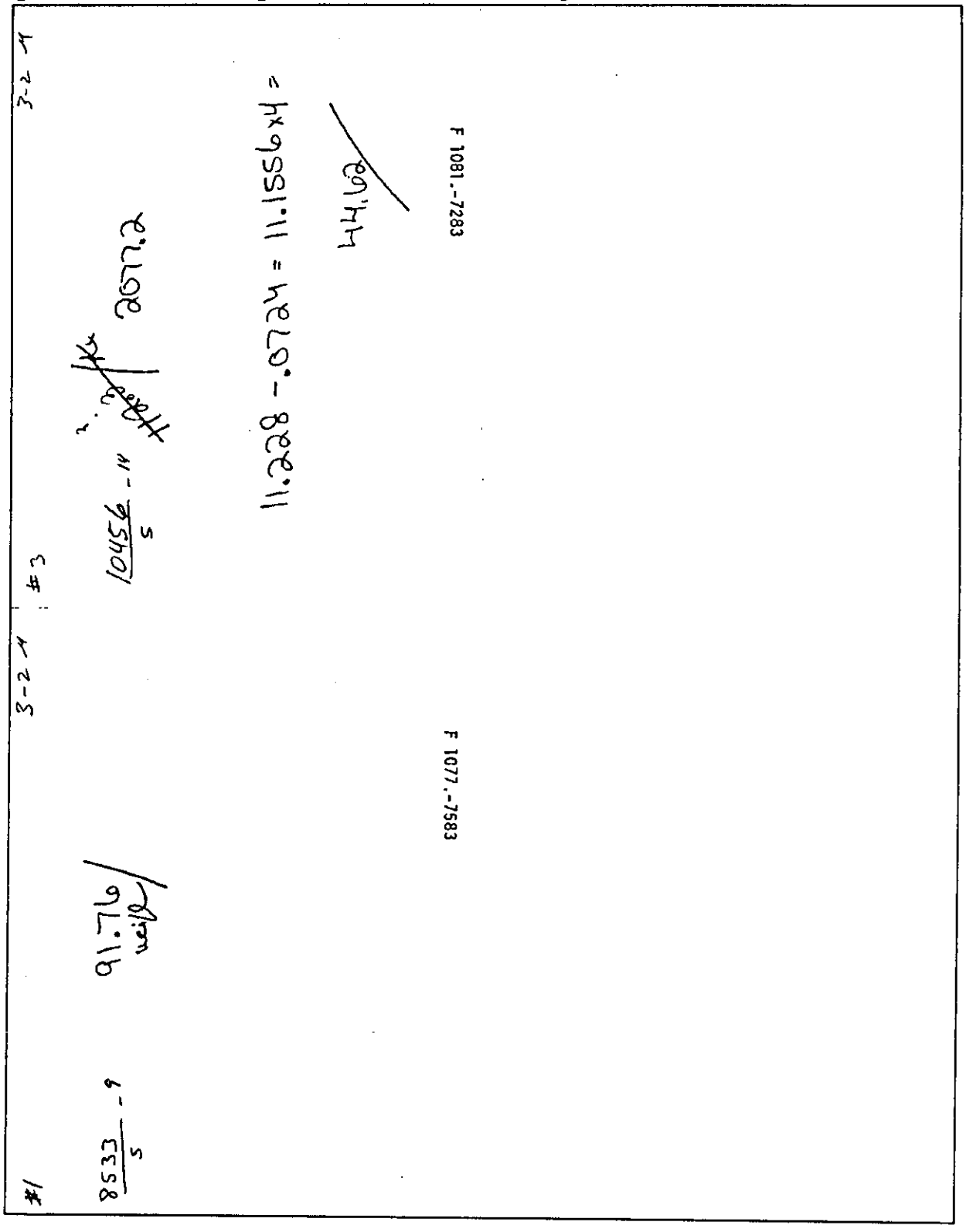
34.8%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GB598/KH				[illegible]
Hrs	Hrs	Hrs	Hrs	Hrs

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

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

Neptunium-237 Analysis of the Water Digestion



9 1 1 2 1 1 0 5 9 2

Strontium-90 Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7286	SEG.COMP#17	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	E21D1	0

Sample Size: ? 1ml + 1ml std + 1ml Sr carrier — Customer ID: 00006

Remarks, Calculations, Results:
SPIKED SAMPLE
Comp 2.
A 90.75% B
Sep Date: 6-11-90
Sep. Time: 11:10
Gross 8.0594 — 7.4 RERUN
Tare 7.9650 — 7.4053
net 0.0944 / .1 — 0.0911 / .1

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Sue Lai	D H Milicia		S H Catte	
Hrs 6c916	Hrs	Hrs	Hrs	Hrs

Date: 6-11-90 — Time Completed: — Lab Unit Mgr: [signature] Dyanne Southrick

54-0800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7586	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	E21D1	0

Sample Size: ? 1ml + 1ml Sr carrier — Customer ID: 00006

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID
A 1.141 / 1.256 RERUN
Sep Date: 6-11-90
Sep Time: 11:10
Gross 8.0518 — 7.6306
Tare 7.9581 — 7.5376
net 0.0937 / .1 — 0.0930 / .1
90.9%

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Sue Lai	D H Milicia		S H Catte	
Hrs 6c916	Hrs	Hrs	Hrs	Hrs

Date: 6-11-90 — Time Completed: — Lab Unit Mgr: [signature] Dyanne Southrick

54-0800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7386	SEG.COMP#14	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	E21D1	0

Sample Size: ? 1ml + 1ml Sr carrier — Customer ID: 00006

Remarks, Calculations, Results:
REAGENT BLANK
Comp 2.
A 1.55E-2 B
Sep Date: 6-11-90
Sep. Time: 11:00
Gross 8.0364 — 8.0828 RERUN
Tare 7.9448 — 7.9913
net 0.0916 / .1 — 0.0907 / .1

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Sue Lai	Raymond		S H Catte	
Hrs 6c916	Hrs	Hrs	Hrs	Hrs

Date: 6-11-90 — Time Completed: — Lab Unit Mgr: [signature] Dyanne Southrick

54-0800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7186	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 1ml Sr carrier — Customer ID: 00006

Remarks, Calculations, Results:
DUPLICATE SAMPLE
Comp 2.
A 5.9166E-1 B
Sep Date: 6-11-90
Sep Time: 11:05
Gross 7.9784 — 7.9448 RERUN
Tare 7.8862 — 7.3528
net 0.0922 / .1 — 0.0931 / .1

Analyst-1	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Sue Lai	D H Milicia		S H Catte	
Hrs 6c916	Hrs	Hrs	Hrs	Hrs

Date: 6-11-90 — Time Completed: — Lab Unit Mgr: [signature] Dyanne Southrick

54-0800-061 (R-10-83)

Strontium-90 Analysis of the Water Digestion

10/2 6-11-90 @ 1755 DM 932-7586 ΔT=6.75

Ⓐ 9330/10 -9

Ⓑ 10182/10

Sr Calculation by DM on 06-11-1990 at 18:50:47
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 6.75 hrs

9330/10 - 9.0 = 1.0179E+00 uCi/L strontium 1.086

.937

Mount # 2 Decay time = 6.75 hrs

10182/10 - 9.0 = 1.1118E+00 uCi/L strontium 1.1955

.930

10/2 6-11-90 @ 1630 DM 930-7186 ΔT=5.42

Ⓐ 5045/10 -9

Ⓑ 5030/10

Sr Calculation by DM on 06-11-1990 at 18:49:26
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 5.42 hrs

5045/10 - 9.0 = 5.5356E-01 uCi/L strontium 6.004E-1 uci/L

.922

Mount # 2 Decay time = 5.42 hrs

5030/10 - 9.0 = 5.5188E-01 uCi/L strontium 5.928E-1 uci/L

.931

10/2 6-11-90 @ 1700 DM 931-7286 ΔT=5.83

Ⓐ 14529/10 -9

Ⓑ 13931/10

Sr Calculation by DM on 06-11-1990 at 18:50:03
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 5.83 hrs

14529/10 - 9.0 = 1.6061E+00 uCi/L strontium 1.7014 uci/L

.944

Mount # 2 Decay time = 5.83 hrs

13931/10 - 9.0 = 1.5396E+00 uCi/L strontium 1.6900 uci/L

.911

$\frac{(1.6957\text{ uci/L} \cdot .5966)\left(\frac{1.008\text{ uci/L}}{9.704\text{ uCi/L}}\right)}{1.258\text{ uci/L}} \times 100 = 90.75\%$

10 2" 6-11-90 LR 1510 928-7386 ΔT=4.17

Ⓐ 215/10 - 11

Ⓑ 254/10

Sr Calculation by DM on 06-11-1990 at 16:47:08
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 4.17 hrs

215/10 - 11.0 = 1.1890E-02 uCi/L strontium 1.298E-2 uci/L

.916

Mount # 2 Decay time = 4.17 hrs

254/10 - 11.0 = 1.6306E-02 uCi/L strontium 1.798E-2 uci/L

.907

9 1 1 2 [illegible] 0 [illegible] 4

Strontium-90 Analysis of the Water Digestion

Serial No	Sample Point	Date	Time Issued	Priority
F 927.-7586	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	E21D1	0

Sample Size: ? 1ml & 1ml Sr carrier

Customer ID: 00006

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID _____
2TS
18B46
sep date: 6-11-90
cap Time: 11:00
Sue Lai

1.206 / 1.256
weight
Gross 7.9598
Tare 7.8686
Net 0.0912 / .1

RERUN
8.1074
8.0157
0.0917 / .1

96.0%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C916	Raymond		[signature]	
Hrs	Hrs	Hrs	Hrs	Hrs
			[signature]	

Date	Time Completed	Lab Unit Mgr
6-11-90		[signature] [signature]

34-6800-061 (R-10-83)

9 1 1 2 0 0 5 0 5

Strontium-90 Analysis of the Water Digestion

10 2" 6-11-90 VR 1445 4 375

$\frac{9731}{10}$ - 11

$\frac{9887}{10}$ -

Sr Calculation by VR on 06-11-1990 at 15:10:01
Det #10 2 -inch mount Sr eff : .3792 Y eff : .4215

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 3.75 hrs

$\frac{9731}{10}$ - 11.0 = $\frac{1.0945E+00 \text{ uCi/L}}{.912}$ strontium 1.200

Mount # 2 Decay time = 3.75 hrs

$\frac{9887}{10}$ - 11.0 = $\frac{1.1122E+00 \text{ uCi/L}}{\cancel{.912}\ .917}$ strontium 1.213

Strontium-90 Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 1057.-7286	SEG.COMP#17	2-15-90	14: 7	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	E21D1	0

Sample Size: 1 ML + 1ml Sr Std + 1ml Sr carrier
Customer ID:

Remarks, Calculations, Results: SPIKED SAMPLE 18B46 SEP 11:00

RERUN

7.9533 G. 7.8985
7.8614 T. 7.8053
0.0919 N. 0.0932
.1 .1

2.395 - 1.164 = 1.231 weight
~~2.395~~ 98.1% / 1.2545 weight

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	[signature]	[signature]		[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date: 6-25-90
Time Completed:
Lab Unit Mgr: [signature] Kathy Thomdike

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1058.-7586	SEG.COMP#18	2-15-90	14: 8	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	% RECOVERY	E21D1	0

Sample Size: 1 ML + 1ml Sr. carrier
Customer ID:

Remarks, Calculations, Results: LMCS CHECK SAMPLE SEP 10:40
LMCS ID 18B46

RERUN

7.9592 G. 8.1773
7.8675 T. 8.0844
0.0917 N. 0.0929
.1 .1

1.166 / 1.2545 92.9%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	[signature]	[signature]		[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				Kathy Thomdike

Date: 6-25-90
Time Completed:
Lab Unit Mgr: [signature] Kathy Thomdike

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1054.-7386	SEG.COMP#14	2-15-90	13:58	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	E21D1	0

Sample Size: ? 1ml + 1ml Sr carrier
Customer ID:

Remarks, Calculations, Results: REAGENT BLANK SEP 10:40

RERUN

8.1555 G. 8.1674
8.0626 T. 8.0756
0.0929 N. 0.0918
.1 .1

$<3.80 E^{-3}$ weight

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	[signature]	[signature]	[signature]	[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date: 6-25-90
Time Completed:
Lab Unit Mgr: [signature] Kathy Thomdike

84-6800-061 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7086	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SR	LA-220-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 1ml Sr carrier
Customer ID: 00006

Remarks, Calculations, Results: SEP 10:40

RERUN

7.9860 G. 8.1409
7.8954 T. 8.0486
0.0906 N. 0.0923
.1 .1

$6.78 E^{-1}$ weight

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6B598	[signature]	[signature]		[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hale				

Date: 6-25-90
Time Completed:
Lab Unit Mgr: [signature] Kathy Thomdike

84-6800-061 (R-10-83)

11/2 6-25-90 AJ 1655 ΔT 5.92 1ml

1057-7286

20929/10 - 22

Sr Calculation by VR on 06-26-1990 at 03:20:57
Det #11 2 -inch mount Sr eff : .3919 Y eff : .4443

Sample size : 1 mL Dilution : 1 Method : 1

20784/10

Mount # 1 Decay time = 5.92 hrs

20929/10 - 22.0 = 2.2239E+00 uCi/L strontium 2.4199 .919

Mount # 2 Decay time = 5.92 hrs

20784/10 - 22.0 = 2.2083E+00 uCi/L strontium 2.369 .932

2.395 - ~~1.678~~ 1.164 = ~~1.717~~ KJ

11/2 6-25-90 AJ 1830 ΔT 7.83 1ml

1058-7586

10072/10 - 22

Sr Calculation by VR on 06-26-1990 at 03:18:37
Det #11 2 -inch mount Sr eff : .3919 Y eff : .4443

Sample size : 1 mL Dilution : 1 Method : 1

10821/10

Mount # 1 Decay time = 7.83 hrs

10072/10 - 22.0 = 1.0369E+00 uCi/L strontium 1.131 .919

Mount # 2 Decay time = 7.83 hrs

10821/10 - 22.0 = 1.1157E+00 uCi/L strontium 1.20097 .929

11/2 6-25-90 AJ 2250 ΔT 12.17 1ml

1054-7386

170/10 - 22

Sr Calculation by VR on 06-26-1990 at 03:15:44
Det #11 2 -inch mount Sr eff : .3919 Y eff : .4443

Sample size : 1 mL Dilution : 1 Method : 1

155/10

Mount # 1 Decay time = 12.17 hrs

170/10 - 22.0 < 3.4848E-03 uCi/L strontium <3.75E-3 uCi/L .929

Mount # 2 Decay time = 12.17 hrs

155/10 - 22.0 < 3.4848E-03 uCi/L strontium <3.80E-3 uCi/L .918

11/2 6-25-90 AJ 1855 ΔT 8.25 1ml

929-7086

5954/10 - 22

Sr Calculation by VR on 06-26-1990 at 03:17:55
Det #11 2 -inch mount Sr eff : .3919 Y eff : .4443

Sample size : 1 mL Dilution : 1 Method : 1

5738/10

Mount # 1 Decay time = 8.25 hrs

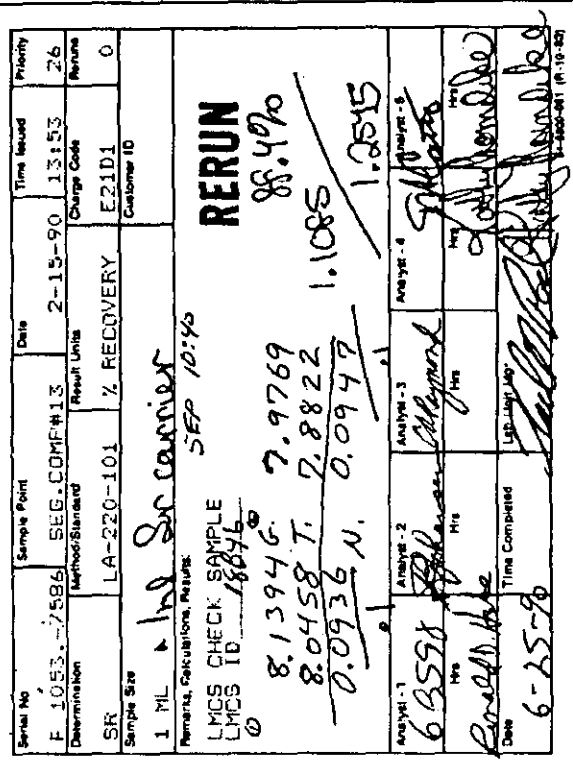
5954/10 - 22.0 = 6.0089E-01 uCi/L strontium 7.286E-1 .906

Mount # 2 Decay time = 8.25 hrs

5738/10 - 22.0 = 5.7825E-01 uCi/L strontium .6265 .923

9 1 1 2 [illegible] 0 5 7 8

Strontium-90 Analysis of the Water Digestion



Serial No	Sample Point	Date	Time Issued	Priority
F 1053.-7586	SEG.COMP#13	2-15-90	13:53	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
SR	LA-220-101	% RECOVERY	E21D1	0

Sample Size	Customer ID
1 ML + Ind Sr carrier	

Remarks, Calculations, Results: SEP 10:40

LMCS CHECK SAMPLE
LMCS ID 18846

RERUN

8.1394 G. 7.9769
8.0458 T. 7.8822
0.0936 N. 0.0947
.1 .1

88.4%
1.1085
1.2545

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
63598	[signature]	[signature]	[signature]	[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
Ronald D. Hake			[signature]	

Date	Time Completed	Lab Unit Mgr
6-25-90		[signature] [signature]

84-5800-061 (R-10-83)

Strontium-90 Analysis of the Water Digestion

11/2 6-25-90 2315 ΔT 12.58

1053-7586

1 ml

① $\frac{10609}{10} - 22$

② $\frac{10609}{10}$

Sr Calculation by VR on 06-26-1990 at 03:15:04
Det #11 2 -inch mount Sr eff : .3919 Y eff : .4443

Sample size : 1 mL Dilution : 1 Method : 1

Mount # 1 Decay time = 12.58 hrs

$\frac{10609}{10} - 22.0 = 1.0436E+00$ uCi/L strontium 1.115

Mount # 2 Decay time = 12.58 hrs

$\frac{10609}{10} - 22.0 = 1.0436E+00$ uCi/L strontium 1.102

.947

9 1 1 2 0 0 5 1 0

Technetium-99 Analysis of the Water Digestion

3 & 4

Serial No	Sample Point	Date	Time Issued	Priority
F 928.-7384	SEG.COMP#14	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 100λ Tc 99 spike 49B39

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

Δ 3.4117 < 20.00

Q+S 2619.18

$< 2.04^{-2}$ uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725	80518			[illegible]
Shirley Cuventas	1			

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

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

1 & 2

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7584	SEG.COMP#13	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 250λ + 100λ Tc 99 spike 49B39

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 148B39

107.9%

Δ 935.416

Q+S 3474.09

3.903 / 3.6166

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725	80518			[illegible]
Shirley Cuventas	1			

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

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

11 & 12

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7584	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	% RECOVERY	WB75L	0

Sample Size: ? 250λ + 100λ spike 49B39

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 148B39

104.4%

Δ 923.3778

Q+S 3512.99

3.777 / 3.6166

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725	80518			[illegible]
Shirley Cuventas	1			

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

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

7 & 8

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7184	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size: ? 1ml + 100λ spike 49B39

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Δ 27.5557

Q+S 2589.59

2.85^{-2} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725	80518			[illegible]
Shirley Cuventas	1			

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

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

9 1 1 2 [illegible] 0 5 1 1

Technetium-99 Analysis of the Water Digestion

5 x 6

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7084	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
TC99	LA-438-101	uCI/L	WB75L	0

Sample Size	Customer ID
? 1ml + 100 uTc spike 49839	000006

Remarks, Calculations, Results:

ia 33.9522

a+s 2639.68

3.451 -2 uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
80725	805.8			[illegible]
Hrs Shirley Cervantes 1-	Hrs	Hrs	Hrs	Hrs

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

54-6600-081 (R-10-83)

Tritium Analysis of the Water Digestion

2

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7387	SEG.COMP#14	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	uCI/L	WB75L	0

Sample Size: ? 1 ml

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK

<25

$<1.13^{-2}$ uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545			[signature]	
Hrs [signature]	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3/29/90		[signature]	DMS

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

1

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7587	SEG.COMP#13	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	% RECOVERY	WB75L	0

Sample Size: ? 1 ml

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 140B44

$7.277^{-1} / 7.076^{-1}$

102.9%

DMS

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545			[signature]	
Hrs [signature]	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3/29/90		[signature]	DMS

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

4-5

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7187	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	uCI/L	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE
37.7795
36.76596

1.68^{-2} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545			[signature]	
Hrs [signature]	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3/29/90		[signature]	DMS

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

3

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7087	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	uCI/L	WB75L	0

Sample Size: ? 1 ml

Customer ID: 000006

Remarks, Calculations, Results:

41.7015

1.88^{-2} uci/l

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545			[signature]	
Hrs [signature]	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3/29/90		[signature]	DMS

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

9 1 1 2 [illegible] 0 5 1 3

Tritium Analysis of the Water Digestion

7

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7587	SEG.COMP#18	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	% RECOVERY	WB75L	0

Sample Size	Customer ID
?	

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 140B44

1537.190

6.92 -1 / 7.076 -1 97.8% KI

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
[signature]				

Date	Time Completed	Lab Unit Mgr	
3/29/90		[signature]	DMS

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

6

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7287	SEG.COMP#17	1-24-90	8:47	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
H3	LA-218-113	% RECOVERY	WB75L	0

Sample Size	Customer ID
?1000x Sample + 1000x Spike Std 140B44 = 1000x	

Remarks, Calculations, Results:

SPIKED SAMPLE

104.7%

7.411 -1 / 7.076 -1

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65545				[signature]
Hrs	Hrs	Hrs	Hrs	Hrs
[signature]				

Date	Time Completed	Lab Unit Mgr	
3/29/90		[signature]	DMS

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

Arsenic Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7395	SEG.COMP#14	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? ~~1ml~~ 1ml

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK
peak height 2, -.0822 ng,
<.005 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fuller 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
3-16-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7595	SEG.COMP#13	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size: ? 35l

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 58C11BR
Peak height 43, 38.83 ng, 95.69%, 1.11 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fuller 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
3-16-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7195	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? 1ml

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE
peak height 4, 1.11 ng, .0011 ppm
<.005 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fuller 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
3-16-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7095	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? 1ml

Customer ID: 000006

Remarks, Calculations, Results:

peak height 4, 1.11 ng .0011 ppm
<.005 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fuller 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
3-16-90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7595	SEG.COMP#18	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size: ? 35 l

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 58C11BR

peak height 47, 105.12%, 42.70 ng, 1.22ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
LA543				RK 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-16-90		

54-9800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7295	SEG.COMP#17	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size: ? 1ml + 35 l 58C11BR

Customer ID:

Remarks, Calculations, Results:

SPIKED SAMPLE
peak height 41, 35.78 ng, 88.14%, 1.05ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
LA543				RK 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr
3-16-90		

54-9800-081 (R-10-83)

Mercury Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7397	SEG.COMP#14	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
Ha	LA-325-102	PPM	E21D1	0

Sample Size: ? Ø

Customer ID: 000006

Remarks, Calculations, Results:

REAGENT BLANK
~~8H~~, .8135 ng
peak height 6

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK Fuller 3-16-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr	
3-9-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7597	SEG.COMP#13	1-24-90	8:42	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
Ha	LA-325-102	% RECOVERY	E21D1	0

Sample Size: ? 25λ

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 58C11BQ
pK HT 104, 28.54 ng, 1.14 ppm, 91.~~39~~ 20%
DMS

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK Fuller 3-16-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr	
3-9-90		[signature]	DMS

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

Serial No	Sample Point	Date	Time Issued	Priority
F 930.-7197	SEG.COMP#16	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
Ha	LA-325-102	PPM	E21D1	0

Sample Size: ? 1500λ

Customer ID: 00006

Remarks, Calculations, Results:

DUPLICATE SAMPLE
pK HT - 7, 1.08 ng 7.77 X 10^{-4} ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK Fuller 3-16-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr	
3-9-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7097	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Rerune
Ha	LA-325-102	PPM	E21D1	0

Sample Size: ? 1500λ

Customer ID: 000006

Remarks, Calculations, Results:

pK HT - 8, 1.36 ng, 9.06 X 10^{-4} ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK Fuller 3-16-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr	
3-9-90		[signature]	DMS

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

Mercury Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7597	SEG.COMP#18	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
Hg	LA-325-102	% RECOVERY	E21D1	0

Sample Size: ? 25λ

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 58C11BQ
pk. Ht. 121, 33.36 ng, ~~106.74%~~, 1.33ppm

106.4%
BMS

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK 3-16-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date 3-9-90	Time Completed	Lab Unit Mgr	BMS	

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7297	SEG.COMP#17	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	% RECOVERY	E21D1	0

Sample Size: ? 1500λ + 25λ 58C11BQ

Customer ID: 000006

Remarks, Calculations, Results:

SPIKED SAMPLE
PK HT-109, 29.96 ng, 92.03%, 1.15ppm
- spike Recovery

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK 3-16-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date 3-9-90	Time Completed	Lab Unit Mgr	BMS	

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

Selenium Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 928.-7396	SEG.COMP#14	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: ? 1 mL

Customer ID:

Remarks, Calculations, Results: REAGENT BLANK

pk Hgt: ~~[illegible]~~ 5.0 mm

<5ng/1000 = <.005

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
GC280				RK Fuller 4-27-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
4-4-90		[illegible]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 927.-7596	SEG.COMP#13	1-24-90	8:43	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: ? 35A

Customer ID:

Remarks, Calculations, Results: LMCS CHECK SAMPLE
LMCS ID 58C11BU

pk Hgt: 62.0 m

104.4%

41.304/35 = 1.18/1.13

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
[illegible]				RK Fuller 4-27-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
4-4-90		[illegible]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-7196	SEG.COMP#16	1-24-90	8:46	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: ? 1 mL

Customer ID: 000006

Remarks, Calculations, Results: DUPLICATE SAMPLE

pk Hgt: 7.0 mm

1.45^{-3} ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
GC280				RK Fuller 4-27-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
4-4-90		[illegible]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-7096	SEG.COMP#15	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: ? 1 mL

Customer ID: 000006

Remarks, Calculations, Results:

pk Hgt: ~~[illegible]~~ 7.0 mm

1.449/1000 = < 1.45^{-3} ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
GC280				RK Fuller 4-27-90
Hrs: 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
4-4-90		[illegible]	DMS

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

9 1 1 2 [illegible] 0 0 5 1 9

Selenium Analysis of the Water Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 932.-7596	SEG.COMP#18	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: ? 35 ml

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 58C11BU

pk Hgt: 57.5

KP

96.2%

38.043/35 = 1.087/1.13

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C280				RK Fuller 4-27-90
Hrs 25 min	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
4-4-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 931.-7296	SEG.COMP#17	1-24-90	8:48	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: ? 1 ml

Customer ID:

Remarks, Calculations, Results:

SPIKED SAMPLE
58C11BU

pk Hgt: 55.0

87.96%

36.232-1.449 = 34.78/35 = .994/1.13

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C280				RK Fuller 4-27-90
Hrs 25 min	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
4-4-90		[signature]	DMS

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 929.-8050	SEG.COMP#15	1-24-90	8:44	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E21D1	0

Sample Size: ? .750 ML-10mL

Customer ID: Core 06

Remarks, Calculations, Results: H2O Digest

Completed

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs

Janice G. White

Date	Time Completed	Lab Unit Mgr.
07-09-90		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 930.-8150	SEG.COMP#16	1-24-90	8:45	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E21D1	0

Sample Size: ? .750mL-10mL

Customer ID: Core 06

Remarks, Calculations, Results: DUPLICATE SAMPLE H2O Digest

Completed

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs

Janice G. White

Date	Time Completed	Lab Unit Mgr.
07-09-90		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 905.-8050	SEG.COMP#15	1-24-90	8:9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	E21D1	1

Sample Size: ? .5mL-10mL

Customer ID: #5

Remarks, Calculations, Results:

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs

Janice G. White

Date	Time Completed	Lab Unit Mgr.
07-09-90		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 904.-8350	SEG.COMP#14	1-24-90	8:8	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: REAGENT BLANK

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs

Janice G. White

Date	Time Completed	Lab Unit Mgr.
07-09-90		

54-8800-081 (R-10-83)

ICP Analysis of the Water Digestion

Serial No. F 907.-8250	Sample Point SEG.COMP#17	Date 1-24-90	Time Issued 8:11	Priority 26
Determination ICP	Method/Standard LA-505-151	Result Units PPM	Charge Code E21D1	Remarks 1
Sample Size .5mL - 10mL			Customer ID #5	

Remarks Calculation Results
SPIKE SAMPLE
SPIKE ID
SPIKE VOLUME 1mL EACH

78C11-S
87B38-B
77C11-R

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
Date 07-09-90	Time Completed	Lab Unit Mgr		

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

Acid Digestion Analysis

Acid Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 935.-8000	SEG.COMP#21	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-159	G/L	WB75L	0

Sample Size: ?

Customer ID: 000006

Remarks, Calculations, Results:

GRAMS SAMPLE_____
VOLUME ON
COMPLETION 50ml

~~9.51 -3 g/ml~~ sj
9.51g/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
69769				
Hrs	Hrs	Hrs	Hrs	Hrs
D. Southwick			[signature]	

Date	Time Completed	Lab Unit Mgr
2/8/90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 306.-8200	SEGMENT-S	11-21-89	8:32	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-158	~~% RECOVERY~~ g/L sj	WB75L	0

Sample Size: ?

Customer ID: 089050

Remarks, Calculations, Results:

SPIKED ANALYSIS
GRAMS SAMPLE_____
VOLUME ON
COMPLETION 50ml
VOLUME SPIKE 5 ml
SPIKE ID 104C15B 103C15D
~~9.93 -3 g/ml~~ sj
~~Completed~~ 9.93g/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
69769				
Hrs	Hrs	Hrs	Hrs	Hrs
D. Southwick				

Date	Time Completed	Lab Unit Mgr
2/8/90		[signature]

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 936.-8100	SEG.COMP#22	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ACD-DGST	LA-505-159	G/L	WB75L	0

Sample Size: ?

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE_____
VOLUME ON
COMPLETION 50ml

~~1.16 -2 g/ml~~
1.16x10¹ g/L

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
69769				
Hrs	Hrs	Hrs	Hrs	Hrs
D. Southwick				

Date	Time Completed	Lab Unit Mgr
2/8/90		[signature]

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

ICP Analysis of the Acid Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 487.-8350	SEGMENT-X	11-30-89	8:38	18

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ?

Customer ID: C89072

Remarks, Calculations, Results:
REAGENT BLANK

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs 1	Hrs	Hrs	Hrs	Hrs
J White				
Date 3-31-90	Time Completed	Lab Unit Mgr		

84-8600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 479.-8550	SEGMENT-P	11-30-89	8:37	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	WB75L	0

Sample Size: ? DIRECT

Customer ID: C89072

Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID
78C11F
82B38C
77C11F

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J. White				
Date 3-31-90	Time Completed	Lab Unit Mgr		

84-8600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 482.-8250	SEGMENT-S	11-30-89	8:37	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ?

Customer ID: C89072

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
J White				
Date 3-31-90	Time Completed	Lab Unit Mgr		

84-8600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 480.-8050	SEGMENT-Q	11-30-89	8:37	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ?

Customer ID: C89072

Remarks, Calculations, Results:

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs	Hrs	Hrs	Hrs	Hrs
J. White				
Date 3-31-90	Time Completed	Lab Unit Mgr		

84-8600-081 (R-10-83)

ICP Analysis of the Acid Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 935.-8050	SEG.COMP#21	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? 100 - 10 , 500 - 10

Customer ID: 000006

Remarks, Calculations, Results:

Reruns at w/89072

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs: J White	Hrs	Hrs	Hrs	Hrs
Date: 3-31-90	Time Completed	Lab Unit Mgr		

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 483.-8550	SEGMENT-T	11-30-89	8:37	23

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	% RECOVERY	WB75L	0

Sample Size: ?

Customer ID: 089072

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID_____

78C11F
82B38C
77C11F

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs: J White	Hrs	Hrs	Hrs	Hrs
Date: 3-31-90	Time Completed	Lab Unit Mgr		

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 936.-8150	SEG.COMP#22	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
ICP	LA-505-151	PPM	WB75L	0

Sample Size: ? 100-10 , 500-10

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

Reruns at w/89072

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
65283				
Hrs: J. White	Hrs	Hrs	Hrs	Hrs
Date: 3-31-90	Time Completed	Lab Unit Mgr		

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

Arsenic Analysis of the Acid Digestion

Serial No	Sample Point	Date	Time Issued	Priority
F 937.-8295	SEG.COMP#23	1-24-90	8:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size: ? 2ml

Customer ID:

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 58C11BR
SPIKE VOLUME 35λ
peak ht. 67, 32.38ng, 79.76% Recovery
.9253ppm
Reran 100λ+35λ 58C11BR
peak height 35, 30.96ng, 76.21% Recovery

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fuller 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
3-15-90		

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 1011.-8595	SEG.COMP#19	2-12-90	11:35	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size: 35λ

Customer ID: 000014

Remarks, Calculations, Results:

peak 83, 41.98ng, 1.20ppm
LMCS CHECK SAMPLE
LMCS ID 58C11BR
1.199
103.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fuller 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
3-15-90		

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 935.-8095	SEG.COMP#21	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? 500λ

Customer ID: 000006

Remarks, Calculations, Results:

peak height 10, ~~3.22ng~~, ~~.0064ppm~~
3.15
.0063 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fuller 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
3-15-90		

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 936.-8195	SEG.COMP#22	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? 500λ

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE
peak height 6, ~~1.098ng~~ 1.05 <.0022 ppm
<.001 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK Fuller 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
3-15-90		

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

Serial No.	Sample Point	Date	Time Issued	Priority
F 934.-8395	SEG.COMP#20	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	PPM	WB75L	0

Sample Size: ? 1 ml

Customer ID:

Remarks, Calculations, Results:

REAGENT BLANK
peak height 2, -1.0256ng, 2.005ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J Hopkins				
Date: 3-15-90	Time Completed	Lab Unit Mgr		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 933.-8595	SEG.COMP#19	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
AS	LA-355-131	% RECOVERY	WB75L	0

Sample Size: ? 35 l

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID S8C11BR
peak height 82.5, 41.24ng, 102.9%, 1.19ppm
ppm 8

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6A543				RK 3-26-90
Hrs	Hrs	Hrs	Hrs	Hrs
J Hopkins				
Date: 3-15-90	Time Completed	Lab Unit Mgr		

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 938.-8597	SEG.COMP#24	1-24-90	8:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	% RECOVERY	WB75L	0

Sample Size: ? 25λ

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID S8C11BP
peak height 131, 1.13ppm, ~~87.21%~~ *, 28.39ng
90.4%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK Fuller 3-9-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
2-27-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 933.-8597	SEG.COMP#19	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	% RECOVERY	WB75L	0

Sample Size: ? 8λ

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID S8C11BP
peak height 145, 31.39ng, 1.26ppm, ~~92.20%~~ *
100.8%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK Fuller 3-9-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
2-27-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 936.-8197	SEG.COMP#22	1-24-90	8:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	PPM	WB75L	0

Sample Size: ? 500λ

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE
peak height 42.5, 7.82ng, 1.36×10^{-2} ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK Fuller 3-9-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
2-27-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 937.-8297	SEG.COMP#23	1-24-90	8:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	% RECOVERY	WB75L	0

Sample Size: ? 250λ

Customer ID:

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID S8C11P
SPIKE VOLUME 20λ
peak height 159, 34.84ng, 1.20ppm, 92.42%

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK Fuller 3-9-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				

Date	Time Completed	Lab Unit Mgr
2-27-90		

54-6600-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 935.-8097	SEG.COMP#21	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	PPM	W875L	0

Sample Size: ? 500l

Customer ID: 000006

Remarks, Calculations, Results:

Peak height 43, 7.93ng, 1.59×10^{-2} ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK 3-9-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date	Time Completed	Lab Unit Mgr		
2-27-90				

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 1060.-8397	SEG.COMP#20	2-15-90	14: 9	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
HG	LA-325-102	PPM		0

Sample Size: ? 0

Customer ID: 000012

Remarks, Calculations, Results:

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PK HT 8 = .1149ng

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst
6A543				RK 3-9-90
Hrs	Hrs	Hrs	Hrs	Hrs
J. Hopkins				
Date	Time Completed	Lab Unit Mgr		
2-27-90				

54-8800-081 (R-10-83)

Selenium Analysis of the Acid Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 937.-8296	SEG.COMP#23	1-24-90	8:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: ? 100λ

Customer ID:

Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 58C11BU
SPIKE VOLUME 35λ

pk Height = 31.5mm 80.7%

32.471/35 = .9278

~~pk Hgt = 31.5mm = 40.3ng~~

~~40.13ng / 35λ = 0.8038 ppm~~ ~~0.8038 ppm / 1.15 ppm~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC280				RK Fuller 3-29-90
Hrs 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-29-90		[signature]	DMS

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 938.-8596	SEG.COMP#24	1-24-90	8:50	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: ? 35λ

Customer ID:

Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID 58C11BU

pk Height = ~~[illegible]~~ 33.0 mm

85.0%

34.195/35 = .9770 / 1.15

DMS

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC280				RK Fuller 3-29-90
Hrs 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-29-90		[signature]	DMS

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 935.-8096	SEG.COMP#21	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: ? 100λ

Customer ID: 000006

Remarks, Calculations, Results:

~~pk Height = 2.0 mm = 2.156ng~~

pk Height = 4.0

.8621/100 = .0086

~~< 5ng / 100λ = < 0.05 ppm~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC280				RK Fuller 3-29-90
Hrs 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-29-90		[signature]	DMS

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 936.-8196	SEG.COMP#22	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: ? 100λ

Customer ID: 000006

Remarks, Calculations, Results:

DUPLICATE SAMPLE

pk Height = 3.5 mm

~~pk Height = 2.0 mm = 2.156ng~~

~~< 5ng / 100λ = < 0.05 ppm~~ <.05 ppm

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
GC280				RK Fuller 3-29-90
Hrs 25m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-29-90		[signature]	DMS

54-8800-081 (R-10-83)

Selenium Analysis of the Acid Digestion

Serial No.	Sample Point	Date	Time Issued	Priority
F 933.-8596	SEG.COMP#19	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	% RECOVERY	WB75L	0

Sample Size: ? 35λ

Customer ID:

Remarks, Calculations, Results:

pK Height = 39.0 mm

LMCS CHECK SAMPLE
LMCS ID 5861168

~~pK Height = 39 mm ; 35.8316 ng ; 1.0237 ppm~~

96.4%

~~1.0237 ppm / 1.15 ppm x 100 = 89.02% rec~~

AMS

38.793/35 = 1.1084/1.15

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C28				RK Tuckey 3-29-90
Hrs: 25 m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-29-90		[signature]	AMS

54-8800-081 (R-10-83)

Serial No.	Sample Point	Date	Time Issued	Priority
F 934.-8396	SEG.COMP#20	1-24-90	8:49	26

Determination	Method/Standard	Result Units	Charge Code	Reruns
SE	LA-365-131	PPM	WB75L	0

Sample Size: ? 100λ

Customer ID:

Remarks, Calculations, Results:

pK Height = 4.0

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~~pK Height = 3.5 mm ; 1.6627 ng~~

.862/100 = .00862 ppm

~~1.6 ng / 100λ = 1.6 ppm~~

Analyst - 1	Analyst - 2	Analyst - 3	Analyst - 4	Analyst - 5
6C28				RK Tuckey 3-29-90
Hrs: 25 m	Hrs	Hrs	Hrs	Hrs

Date	Time Completed	Lab Unit Mgr	
3-29-90		[signature]	AMS

54-8800-081 (R-10-83)