This document was too large to scan as a whole document, therefore it required breaking into smaller sections.

Document number: SD-WM-DP-147

Section 4 **of** 5

Title: 60 Day Waste Compatibility Safety Issue and Final Results for Tank 241-AW-106, Grab Samples 6AW-95-1, 6AW-95-2 and 6AW-95-3

Date: 10/31/95 **Revision:** 0

Originator: Ruth A. Esch
Co: WHC

Recipient:
Co:

References: EDT-613457

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SEHogan 9-25-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WRKLST#2463-BLNK
File ID: 26a2666.CNF

Counted on: 9/25/95 @15:21
Detector: AEA26
Geometry number: 1
Count time: 28808. 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	4373.3	4373.3	255.338	255.338	10.000	4.142	5.000	1.593

PEAK RESULTS
Peak Error Limit: 30%

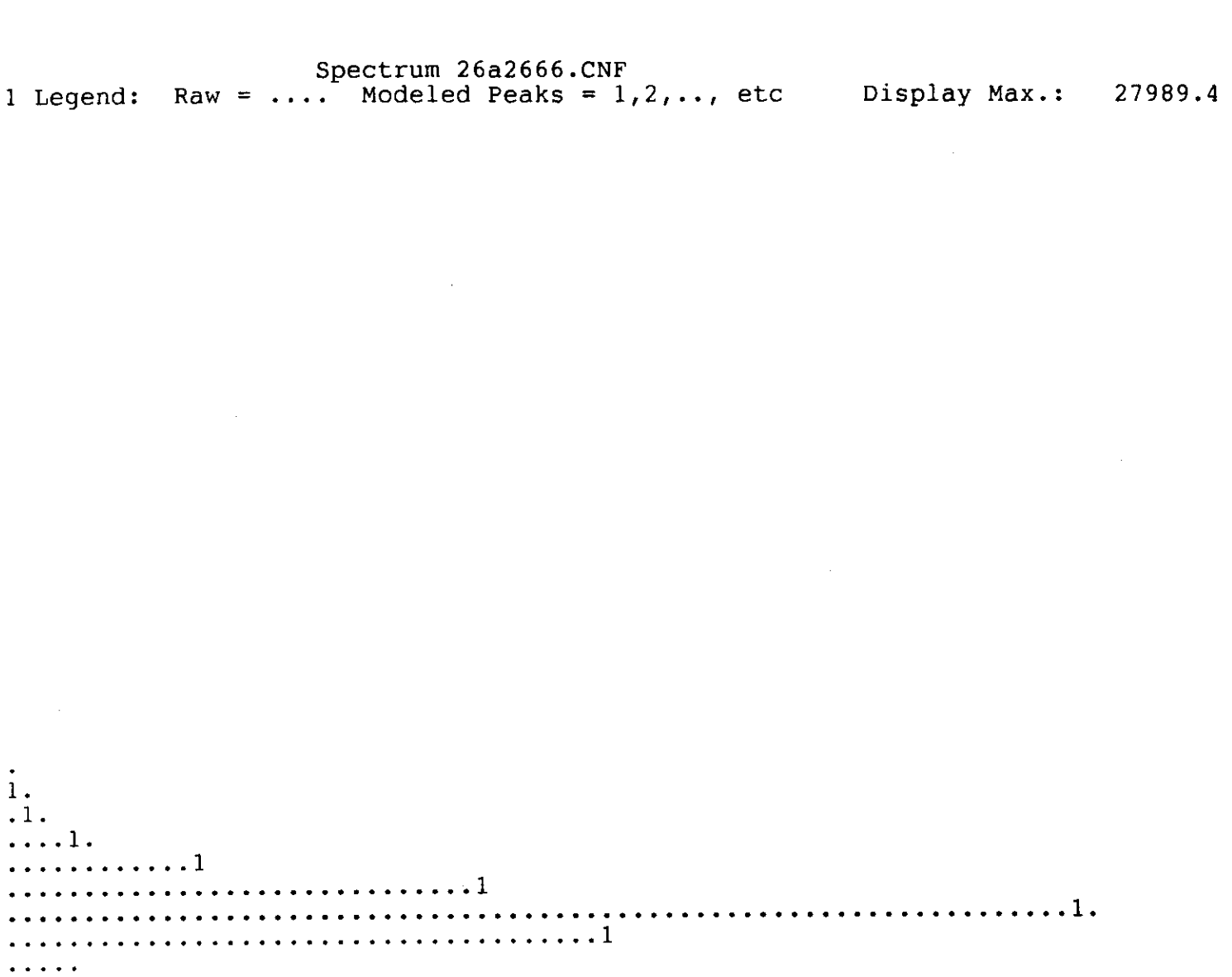
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am243	0.928	5.270	5.268	0.002	0.02	137.17	0.8	6927.9	0.312E-02
Totals:		0.928	<--valid peaks only-->				137.17			

DETECTOR CALIBRATION
Energy(MEV) = 4.093 + (0.0046)*Channel
Energy range (MeV): 4.093 TO 6.448
Efficiency = 0.0200 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	70948.0	100.000
Smoothed	70950.5	100.004
Composite fit	65860.9	92.830
Residuals	5087.1	7.170

Analyzed by: _____
MB


Spectrum 26a2666.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 27989.4

Raw Data Dump for AEA Spectrum: 26a2666.CNF

1	0.	0.	0.	2.	2.	1.	0.	0.	1.	1.
11	1.	0.	0.	0.	0.	0.	0.	1.	1.	2.
21	1.	1.	2.	0.	0.	0.	0.	0.	0.	0.
31	2.	2.	0.	0.	0.	0.	0.	0.	1.	2.
41	0.	1.	1.	0.	0.	2.	0.	1.	0.	1.
51	1.	2.	1.	0.	0.	1.	0.	0.	2.	1.
61	0.	2.	0.	0.	0.	0.	0.	0.	1.	2.
71	0.	1.	1.	0.	1.	1.	2.	4.	0.	0.
81	0.	0.	0.	2.	0.	2.	2.	3.	4.	1.
91	1.	1.	0.	4.	0.	1.	2.	0.	3.	1.
101	3.	3.	3.	6.	1.	1.	4.	0.	6.	0.
111	3.	2.	4.	3.	1.	1.	1.	0.	3.	3.
121	5.	1.	2.	3.	0.	3.	2.	3.	2.	6.
131	5.	4.	3.	3.	4.	4.	5.	2.	6.	3.
141	2.	5.	5.	5.	5.	2.	6.	6.	4.	9.
151	6.	9.	9.	9.	5.	4.	6.	4.	11.	4.
161	11.	9.	7.	5.	11.	10.	12.	6.	10.	11.
171	16.	11.	15.	11.	19.	17.	26.	16.	11.	13.
181	27.	22.	24.	19.	24.	27.	29.	25.	37.	34.
191	27.	43.	53.	42.	58.	45.	55.	55.	45.	54.
201	65.	68.	62.	60.	73.	67.	89.	97.	94.	97.
211	122.	106.	106.	133.	132.	126.	150.	168.	177.	161.
221	197.	198.	229.	208.	247.	301.	318.	319.	341.	380.
231	407.	439.	464.	535.	578.	608.	705.	806.	849.	925.
241	1092.	1239.	1315.	1502.	1685.	1986.	2305.	2471.	2622.	2884.
251	3166.	3527.	3934.	4438.	5007.	5115.	4692.	3438.	1920.	854.
261	489.	360.	338.	310.	255.	276.	233.	212.	175.	133.
271	109.	88.	54.	33.	8.	5.	3.	2.	0.	2.
281	4.	1.	6.	1.	0.	3.	2.	3.	3.	3.
291	4.	5.	4.	4.	12.	5.	4.	5.	5.	2.
301	14.	9.	8.	13.	3.	4.	1.	2.	1.	2.
311	2.	0.	0.	0.	0.	0.	0.	0.	0.	1.
321	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
341	2.	0.	1.	1.	0.	0.	0.	2.	0.	1.
351	0.	0.	0.	1.	0.	0.	1.	0.	1.	0.
361	1.	2.	1.	1.	1.	2.	0.	0.	0.	2.
371	1.	2.	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.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	1.	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.								

SEAbgan 9-25-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2021-SAMPLE
File ID: 27a2761.CNF

Counted on: 9/25/95 @15:22
Detector: AEA27
Geometry number: 1
Count time: 28806. 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?	14.8	14.8	371.407	371.407	10.000	3.114	5.000	1.252
2	3356.6	3356.6	303.140	303.140	12.000	4.511	6.000	2.406
3	5366.7	5366.7	257.534	257.532	10.000	3.530	5.000	1.871

PEAK RESULTS
Peak Error Limit: 30%

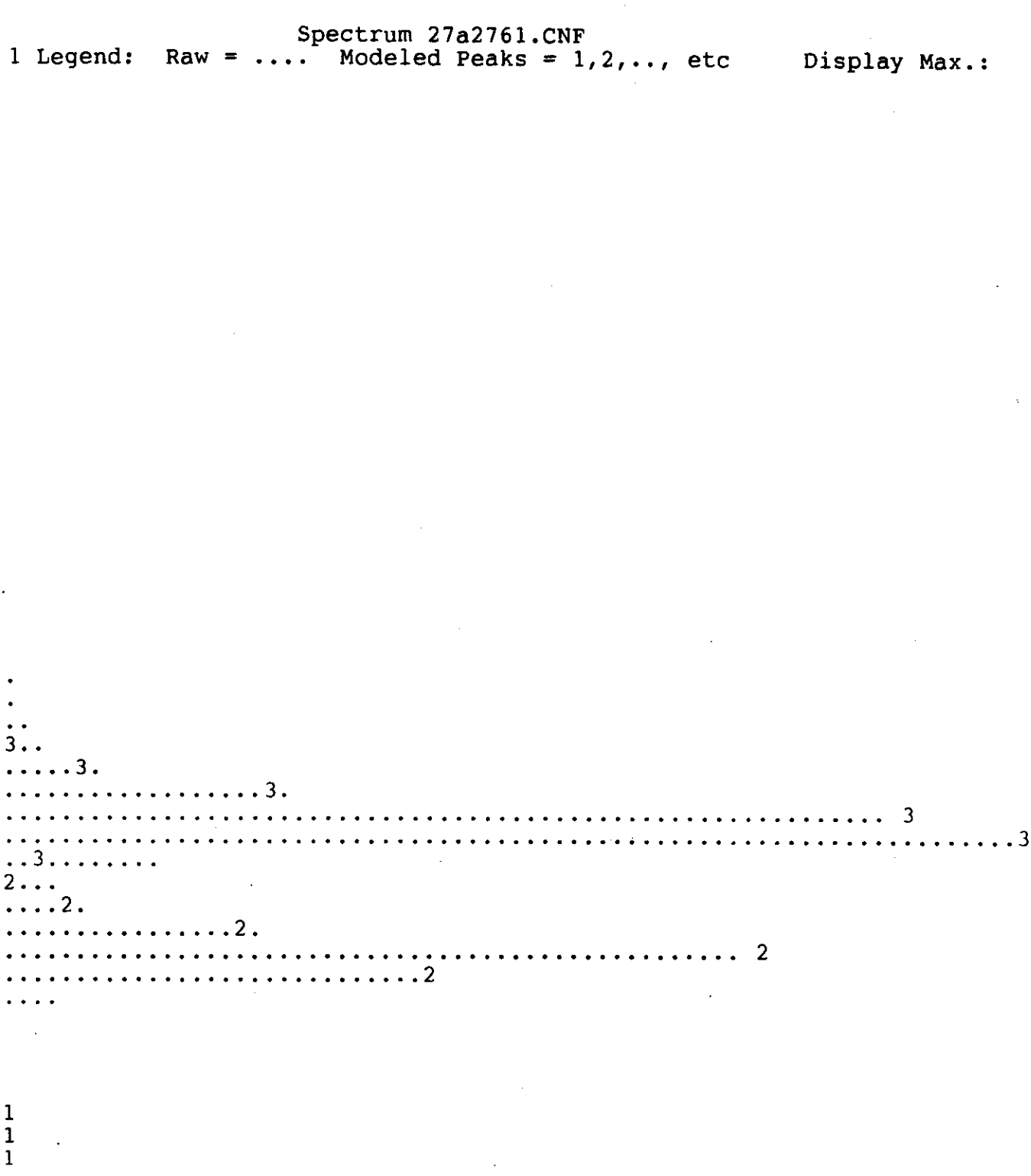
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		5.792			0.43	13.7		
2	Pu238	0.370	5.487	5.478	0.009	0.02	91.10	0.9	7068.4	0.318E-02
	Am241		5.479	5.478	0.001				5414.1	0.244E-02
3	Am243	0.556	5.270	5.268	0.002	0.02	136.77	0.8	7717.8	0.348E-02
Totals:		0.926	<--valid peaks only-->				227.87			

DETECTOR CALIBRATION
Energy(MEV) = 4.083 + (0.0046)*Channel
Energy range (MeV): 4.083 TO 6.439
Efficiency = 0.0179 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	118098.0	100.000
Smoothed	118099.1	100.001
Composite fit	109603.6	92.807
Residuals	8494.4	7.193

Analyzed by: MB


Spectrum 27a2761.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 27639.2

Raw Data Dump for AEA Spectrum: 27a2761.CNF

1	0.	0.	1.	0.	1.	0.	0.	1.	1.	0.
11	0.	0.	0.	2.	0.	2.	1.	0.	1.	1.
21	0.	0.	0.	0.	2.	0.	1.	0.	0.	2.
31	1.	1.	1.	0.	0.	2.	0.	0.	0.	0.
41	0.	0.	1.	1.	2.	1.	0.	0.	2.	1.
51	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.
61	0.	1.	0.	2.	0.	1.	0.	0.	2.	1.
71	1.	1.	0.	0.	0.	0.	1.	0.	0.	0.
81	0.	1.	2.	0.	1.	0.	1.	2.	2.	1.
91	2.	0.	2.	2.	0.	0.	2.	1.	0.	0.
101	2.	3.	1.	0.	1.	1.	0.	1.	1.	0.
111	1.	1.	0.	1.	0.	0.	2.	0.	0.	3.
121	3.	1.	6.	4.	2.	2.	1.	1.	3.	1.
131	4.	2.	3.	2.	1.	6.	2.	5.	7.	3.
141	2.	3.	6.	2.	7.	8.	2.	3.	10.	7.
151	9.	2.	7.	1.	6.	10.	6.	7.	8.	6.
161	13.	8.	9.	7.	9.	18.	11.	12.	12.	15.
171	13.	16.	18.	17.	15.	15.	23.	15.	20.	22.
181	32.	22.	24.	32.	25.	24.	36.	36.	28.	35.
191	29.	34.	21.	36.	40.	62.	47.	41.	47.	54.
201	56.	41.	54.	48.	57.	67.	67.	62.	75.	80.
211	86.	83.	83.	89.	95.	105.	108.	108.	120.	101.
221	137.	144.	130.	129.	129.	164.	201.	183.	214.	219.
231	249.	248.	271.	310.	354.	373.	397.	438.	493.	532.
241	586.	649.	777.	926.	1050.	1315.	1446.	1852.	2069.	2285.
251	2446.	2785.	3198.	3601.	4425.	5476.	6199.	6541.	6063.	4139.
261	2086.	912.	530.	440.	399.	382.	356.	369.	348.	345.
271	309.	247.	213.	222.	156.	171.	154.	160.	199.	214.
281	236.	250.	292.	314.	321.	366.	415.	449.	596.	591.
291	732.	857.	1046.	1168.	1343.	1471.	1586.	1873.	2096.	2563.
301	3121.	3552.	4028.	4027.	3295.	2060.	1199.	805.	640.	562.
311	459.	418.	295.	243.	161.	125.	67.	35.	15.	3.
321	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
331	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	1.	3.	0.	1.	0.	4.	1.	0.
351	1.	6.	2.	4.	0.	1.	0.	5.	4.	6.
361	5.	6.	10.	8.	11.	6.	8.	14.	14.	14.
371	15.	18.	17.	11.	4.	3.	0.	0.	0.	0.
381	0.	1.	0.	0.	0.	1.	0.	1.	0.	0.
391	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
401	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.
421	0.	0.	0.	2.	1.	0.	1.	1.	2.	1.
431	1.	2.	0.	0.	1.	2.	1.	2.	2.	1.
441	5.	0.	1.	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.								

SE Hogan 9-25-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2021-DUP
File ID: 28a2864.CNF

Counted on: 9/25/95 @15:22
Detector: AEA28
Geometry number: 1
Count time: 28803. 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	2399.7	2399.7	301.915	301.915	12.000	5.131	6.000	2.002
2	4788.2	4788.2	256.154	256.148	12.000	3.922	6.000	1.525
3?	15.2	15.2	122.644	122.644	240.000	1.000	120.000	0.100
4?	0.7	0.1	112.840	112.807	4.000	0.100	2.000	0.100

PEAK RESULTS
Peak Error Limit: 30%

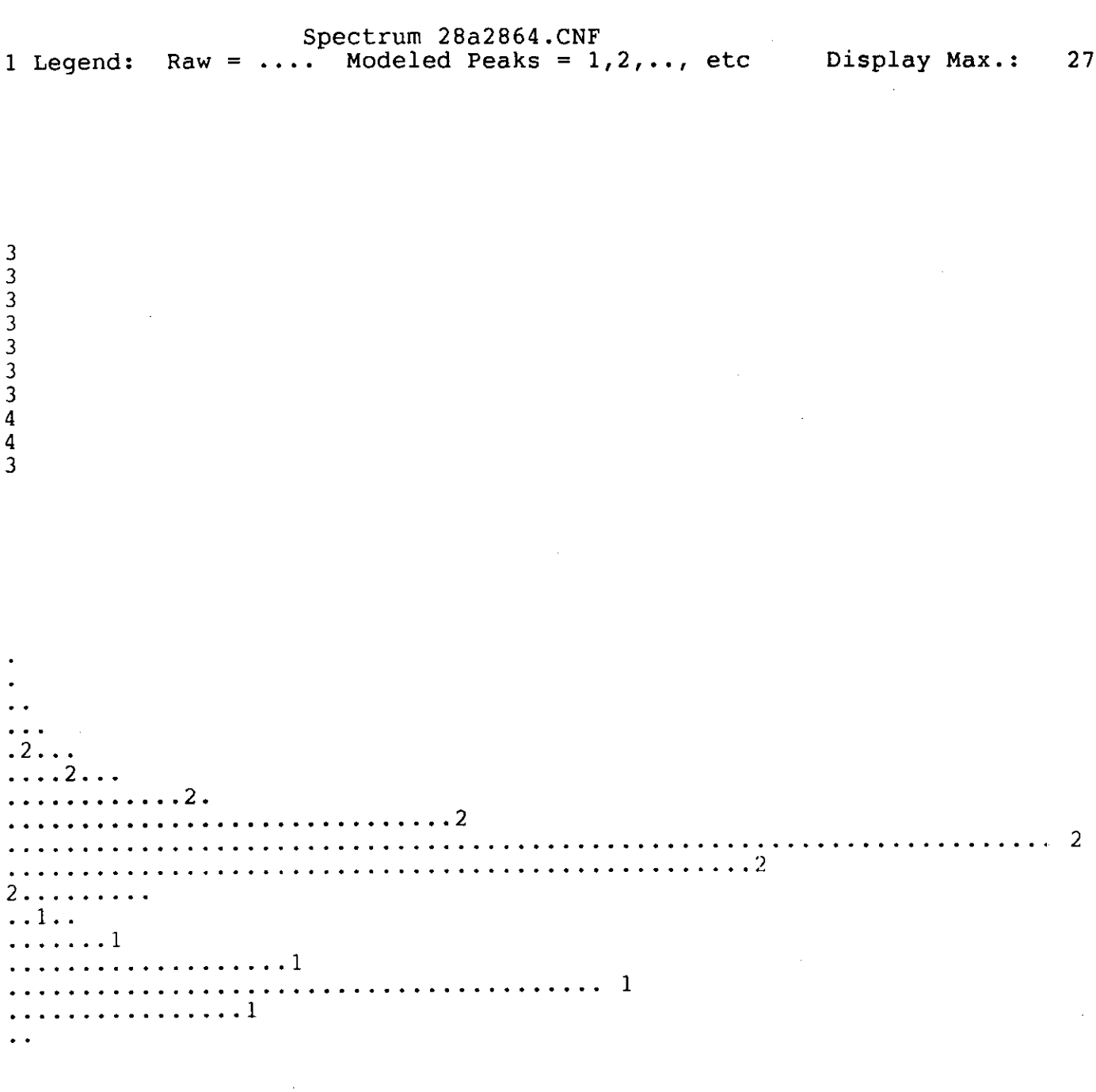
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.315	5.487	5.481	0.006	0.02	78.35	1.0	963.9	0.434E-03
	Am241		5.479	5.481	-.002				738.3	0.333E-03
2	Am243	0.593	5.270	5.271	-.001	0.02	147.54	0.7	1320.1	0.595E-03
3		????		4.657			1.18	8.2		
4		????		4.611			0.00	9147.		
Totals:		0.907	<--valid peaks only-->				225.90			

DETECTOR CALIBRATION
Energy(MEV) = 4.093 + (0.0046)*Channel
Energy range (MeV): 4.093 TO 6.448
Efficiency = 0.1129 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	119518.0	100.000
Smoothed	119521.6	100.003
Composite fit	109010.0	91.208
Residuals	10508.0	8.792

Analyzed by: MB


Spectrum 28a2864.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 27705.8
3
3
3
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3
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.....2
.....2
2.....
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.....1
.....1
.....1
..

Raw Data Dump for AEA Spectrum: 28a2864.CNF

1	0.	0.	2.	5.	4.	6.	1.	3.	5.	4.
11	6.	6.	2.	5.	1.	4.	2.	2.	2.	2.
21	3.	3.	5.	4.	2.	3.	2.	3.	1.	4.
31	2.	6.	2.	5.	4.	5.	8.	1.	3.	2.
41	4.	2.	7.	5.	3.	3.	7.	2.	5.	4.
51	4.	2.	4.	1.	9.	3.	4.	1.	6.	6.
61	4.	2.	6.	6.	3.	4.	3.	5.	3.	6.
71	1.	1.	9.	7.	7.	3.	3.	9.	8.	10.
81	5.	9.	3.	5.	10.	5.	5.	4.	6.	5.
91	9.	13.	6.	4.	10.	6.	7.	9.	8.	7.
101	8.	10.	9.	6.	12.	11.	6.	12.	7.	10.
111	12.	11.	15.	14.	9.	9.	9.	10.	6.	13.
121	13.	21.	17.	11.	14.	14.	8.	13.	14.	13.
131	16.	12.	17.	17.	11.	15.	21.	15.	14.	15.
141	25.	16.	21.	18.	19.	20.	17.	13.	23.	11.
151	23.	26.	22.	19.	22.	20.	18.	39.	17.	28.
161	26.	25.	26.	35.	32.	32.	34.	35.	37.	46.
171	35.	28.	41.	45.	49.	34.	51.	40.	59.	45.
181	39.	48.	60.	53.	47.	58.	56.	54.	87.	78.
191	80.	78.	80.	80.	91.	80.	82.	93.	95.	95.
201	111.	107.	122.	125.	107.	144.	145.	135.	156.	160.
211	186.	205.	154.	179.	194.	187.	211.	235.	252.	264.
221	283.	280.	294.	367.	349.	375.	354.	399.	430.	490.
231	510.	566.	550.	657.	739.	740.	754.	837.	915.	980.
241	1101.	1194.	1301.	1529.	1696.	1896.	2126.	2374.	2587.	2640.
251	2935.	3270.	3683.	4314.	5068.	5669.	5670.	4858.	3213.	1541.
261	872.	552.	492.	451.	413.	391.	442.	387.	363.	393.
271	292.	302.	282.	248.	244.	227.	253.	297.	305.	338.
281	349.	360.	416.	461.	452.	493.	548.	630.	650.	722.
291	887.	989.	1115.	1228.	1375.	1364.	1558.	1711.	2009.	2296.
301	2641.	2778.	2736.	2277.	1481.	926.	615.	533.	366.	315.
311	334.	231.	154.	124.	89.	75.	23.	5.	1.	0.
321	0.	0.	0.	1.	0.	0.	2.	1.	0.	0.
331	1.	0.	1.	2.	0.	2.	2.	0.	0.	1.
341	3.	2.	0.	1.	1.	1.	2.	0.	0.	1.
351	2.	2.	2.	8.	3.	2.	1.	7.	4.	5.
361	5.	6.	9.	8.	4.	5.	7.	11.	10.	12.
371	12.	7.	9.	4.	3.	0.	0.	0.	0.	0.
381	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
411	0.	0.	1.	0.	1.	1.	0.	1.	2.	1.
421	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.
431	1.	3.	1.	0.	0.	2.	2.	1.	3.	1.
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.								

SEHogan 9-25-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2037-SAMPLE
File ID: 29a2955.CNF

Counted on: 9/25/95 @15:23
Detector: AEA29
Geometry number: 1
Count time: 28800. 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	1395.2	1395.2	305.722	305.722	12.000	4.867	6.000	1.244
2	1410.7	1410.7	260.015	259.964	12.000	4.477	6.000	1.077
3	57.5	57.5	138.127	138.103	192.000	1.000	96.000	0.100
4	21.3	21.3	74.396	74.139	46.000	172.966	23.000	56.952
5?	3.0	3.0	67.733	67.733	6.000	0.000	3.000	2.765
6?	5.8	5.8	59.520	59.520	10.000	0.000	5.000	4.608
7?	12.5	12.5	47.665	47.665	26.000	0.700	13.000	13.255
8?	14.7	14.7	43.700	43.700	18.000	0.517	9.000	9.126
9?	14.7	14.7	35.786	35.106	12.000	4.230	6.000	0.778
10?	9.0	9.0	22.143	22.143	26.000	9.910	13.000	13.43?

PEAK RESULTS

Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.393	5.487	5.491	-.004	0.02	58.29	1.2	9637.2	0.434E-02
	Am241		5.479	5.491	-.012				7381.7	0.333E-02
2	Am243	0.409	5.270	5.280	-.010	0.02	60.67	1.2	7295.2	0.329E-02
3		0.031		4.720	0.00		4.53	4.2	539.1	0.243E-03
4	U 235	0.019	4.386	4.426	-.040	0.80	2.78	8.7	581.4	0.262E-03
5		????		4.396			0.00	1000.		
6		????		4.358			0.00	1000.		
7		????		4.304			0.10	85.7		
8		????		4.286			0.11	78.9		
9		????		4.246			0.65	16.6		
10		????		4.186			0.28	37.2		
Totals:		0.852	<--valid peaks only-->				126.26			

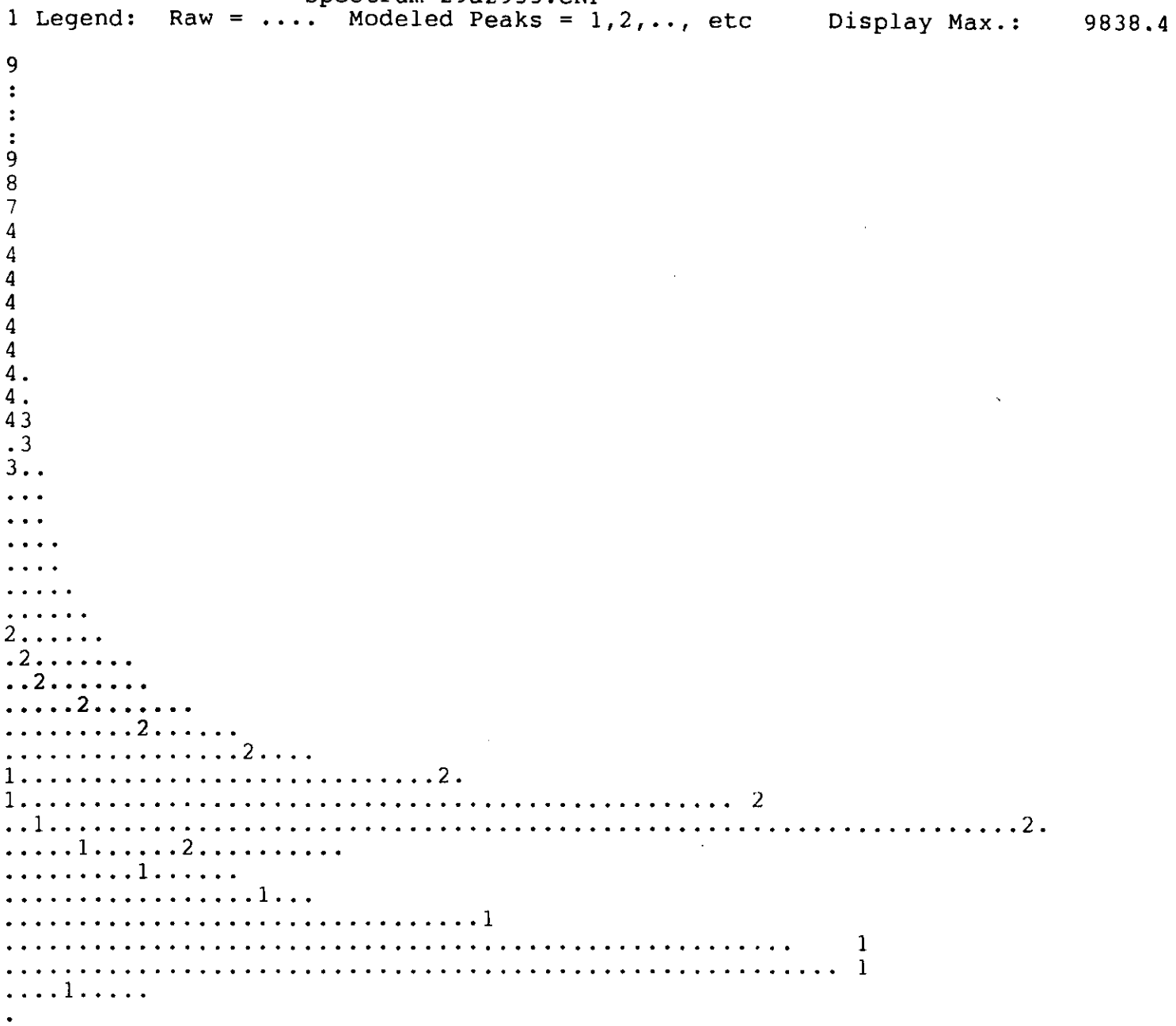
DETECTOR CALIBRATION

Energy(MEV) = 4.084 + (0.0046)*Channel
Energy range (MeV): 4.084 TO 6.440
Efficiency = 0.0084 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	71139.0	100.000
Smoothed	71152.2	100.019
Composite fit	61155.4	85.966
Residuals	9983.6	14.034

Analyzed by: MB


Spectrum 29a2955.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc
Display Max.: 9838.4

Raw Data Dump for AEA Spectrum: 29a2955.CNF

1	0.	0.	16.	19.	13.	14.	25.	18.	6.	15.
11	17.	12.	21.	18.	11.	18.	20.	23.	12.	18.
21	22.	19.	17.	21.	18.	15.	21.	10.	22.	18.
31	19.	27.	21.	22.	24.	31.	23.	21.	23.	16.
41	17.	27.	23.	24.	22.	22.	22.	26.	27.	19.
51	22.	18.	16.	35.	31.	23.	27.	28.	19.	32.
61	28.	25.	20.	22.	21.	32.	31.	29.	28.	28.
71	25.	22.	33.	36.	32.	30.	30.	20.	28.	18.
81	22.	41.	38.	30.	37.	27.	35.	35.	33.	31.
91	30.	33.	31.	31.	34.	23.	25.	31.	30.	37.
101	28.	31.	33.	44.	35.	50.	31.	37.	27.	31.
111	45.	35.	35.	26.	46.	29.	43.	27.	31.	47.
121	53.	41.	42.	46.	39.	45.	49.	56.	42.	48.
131	51.	57.	55.	51.	55.	46.	52.	62.	66.	46.
141	48.	51.	48.	55.	63.	59.	59.	61.	54.	62.
151	72.	48.	58.	59.	66.	68.	66.	68.	65.	66.
161	69.	76.	66.	72.	76.	83.	76.	84.	83.	76.
171	83.	71.	74.	82.	83.	75.	92.	98.	86.	99.
181	103.	105.	88.	112.	129.	103.	96.	115.	105.	109.
191	111.	115.	131.	127.	136.	143.	148.	138.	142.	148.
201	133.	149.	169.	168.	175.	178.	158.	179.	186.	171.
211	201.	203.	169.	178.	197.	180.	215.	233.	258.	241.
221	233.	245.	230.	256.	251.	271.	288.	300.	296.	312.
231	354.	334.	378.	360.	377.	365.	388.	406.	462.	441.
241	488.	540.	524.	564.	600.	606.	629.	697.	751.	865.
251	899.	828.	916.	929.	1007.	1120.	1219.	1323.	1541.	1668.
261	1718.	1447.	919.	508.	361.	301.	272.	266.	274.	275.
271	276.	285.	302.	278.	280.	272.	288.	313.	275.	286.
281	323.	353.	356.	411.	393.	401.	445.	455.	486.	510.
291	537.	571.	614.	656.	731.	765.	784.	819.	792.	919.
301	971.	1044.	1162.	1356.	1538.	1570.	1619.	1284.	733.	422.
311	315.	242.	223.	178.	170.	103.	96.	61.	55.	23.
321	16.	1.	1.	1.	0.	0.	1.	1.	0.	1.
331	0.	1.	1.	1.	1.	0.	2.	3.	1.	0.
341	1.	1.	3.	1.	2.	1.	1.	4.	3.	3.
351	1.	2.	1.	0.	2.	2.	2.	1.	5.	1.
361	1.	3.	1.	7.	8.	2.	4.	4.	7.	3.
371	4.	6.	2.	7.	9.	8.	6.	2.	2.	1.
381	0.	1.	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.	1.	0.	1.	0.	1.
421	2.	1.	0.	0.	1.	0.	1.	1.	0.	1.
431	1.	1.	0.	0.	1.	2.	0.	0.	0.	2.
441	2.	2.	1.	0.	1.	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.								

SE Hogan 9-25-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2037-DUP
File ID: 30a3087.CNF

Counted on: 9/25/95 @15:23
Detector: AEA30
Geometry number: 1
Count time: 28805. 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?	26.9	26.9	369.586	369.586	14.000	4.673	7.000	2.008
2	5383.4	5383.4	302.527	302.527	12.000	5.256	6.000	2.013
3	5110.0	5110.0	256.862	256.845	10.000	4.115	5.000	1.590

PEAK RESULTS
Peak Error Limit: 30%

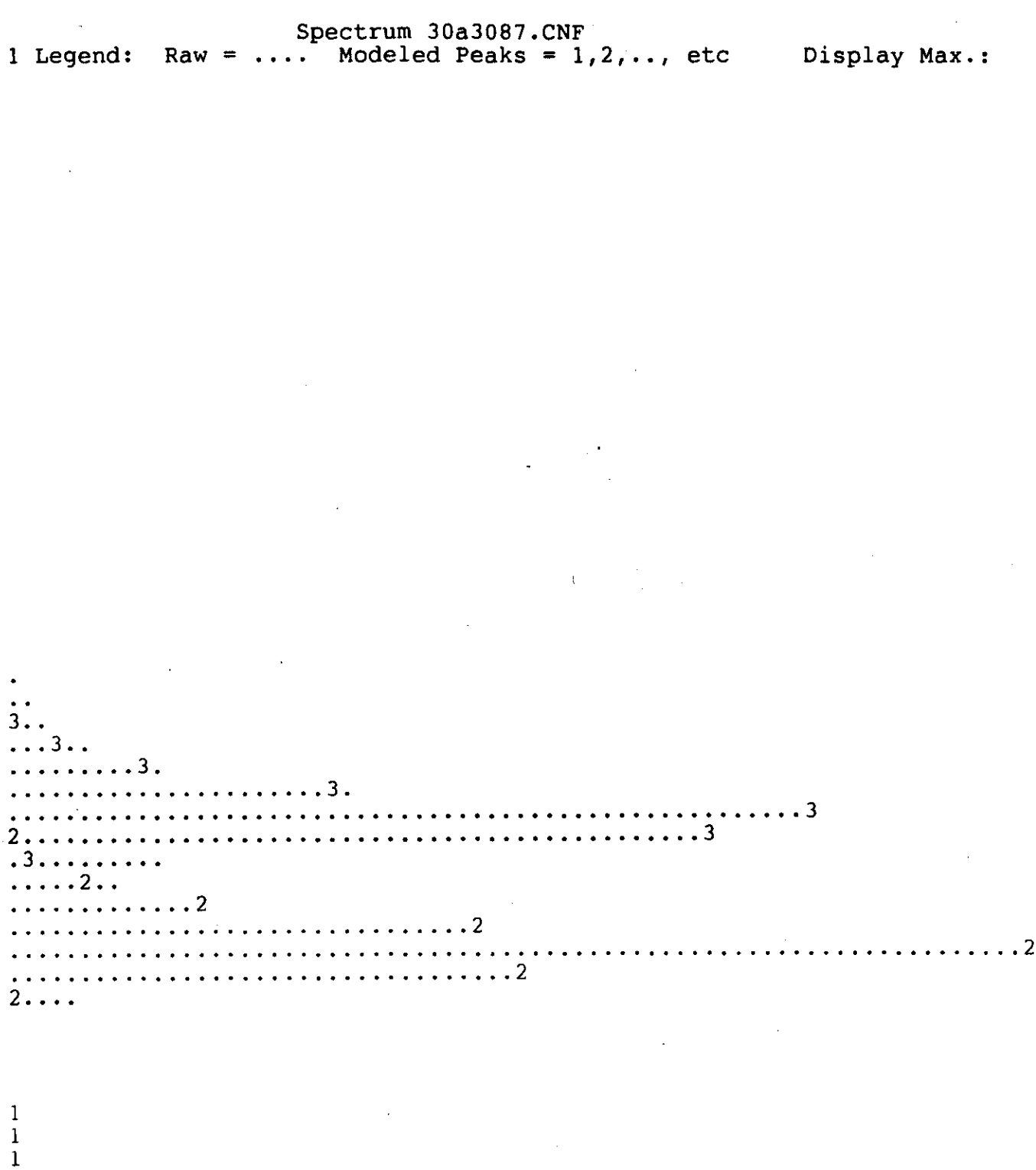
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		5.776			0.82	9.9		
2	Pu238	0.498	5.487	5.467	0.0200.02		178.49	0.7	2356.5	0.106E-02
	Am241		5.479	5.467	0.012				1805.0	0.813E-03
3	Am243	0.445	5.270	5.257	0.0130.02		159.64	0.7	1532.8	0.690E-03
Totals:		0.943	<--valid peaks only-->				338.13			

DETECTOR CALIBRATION
Energy(MEV) = 4.076 + (0.0046)*Channel
Energy range (MeV): 4.076 TO 6.431
Efficiency = 0.1052 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	172182.0	100.000
Smoothed	172180.0	99.999
Composite fit	162721.0	94.505
Residuals	9461.0	5.495

Analyzed by: MB


Spectrum 30a3087.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 35862.1

Raw Data Dump for AEA Spectrum: 30a3087.CNF

1	0.	0.	0.	0.	0.	3.	3.	2.	2.	1.
11	1.	1.	2.	1.	1.	0.	1.	1.	4.	2.
21	1.	1.	2.	1.	5.	2.	0.	0.	0.	1.
31	0.	3.	2.	2.	1.	2.	1.	2.	1.	3.
41	1.	0.	2.	2.	1.	0.	4.	1.	3.	0.
51	0.	0.	2.	3.	1.	2.	3.	1.	3.	0.
61	1.	4.	1.	1.	1.	3.	0.	0.	2.	3.
71	4.	2.	3.	3.	3.	0.	3.	3.	1.	2.
81	2.	4.	3.	2.	2.	3.	2.	2.	2.	4.
91	2.	2.	6.	1.	2.	1.	4.	2.	0.	4.
101	0.	3.	5.	2.	4.	2.	4.	5.	2.	4.
111	7.	2.	6.	5.	2.	7.	6.	7.	1.	6.
121	0.	2.	5.	5.	3.	4.	3.	12.	5.	3.
131	3.	3.	6.	6.	6.	6.	9.	4.	6.	5.
141	6.	6.	12.	6.	3.	9.	7.	8.	5.	15.
151	11.	7.	11.	8.	13.	9.	10.	7.	11.	13.
161	15.	14.	16.	20.	18.	17.	14.	11.	24.	14.
171	18.	20.	19.	26.	14.	32.	20.	28.	30.	24.
181	18.	22.	32.	41.	49.	42.	33.	37.	48.	39.
191	51.	49.	59.	55.	60.	63.	49.	71.	81.	66.
201	62.	91.	82.	89.	98.	84.	117.	116.	102.	139.
211	126.	137.	165.	160.	200.	172.	173.	188.	228.	229.
221	226.	244.	265.	263.	305.	327.	383.	391.	407.	469.
231	477.	536.	570.	622.	659.	724.	771.	838.	881.	958.
241	1069.	1248.	1362.	1524.	1676.	1950.	2203.	2386.	2658.	2895.
251	3099.	3432.	3795.	4311.	4839.	5611.	5994.	5917.	4832.	3048.
261	1471.	868.	675.	594.	596.	520.	564.	522.	548.	553.
271	519.	484.	444.	480.	428.	457.	494.	510.	592.	657.
281	704.	796.	789.	940.	956.	1060.	1236.	1331.	1491.	1714.
291	1895.	2178.	2389.	2685.	2926.	3192.	3452.	3693.	4321.	4679.
301	5394.	5930.	6315.	5901.	4455.	2802.	1703.	1248.	1019.	914.
311	724.	655.	511.	357.	257.	171.	92.	44.	13.	3.
321	0.	1.	0.	1.	0.	1.	0.	1.	1.	1.
331	0.	0.	0.	0.	2.	1.	3.	1.	2.	1.
341	0.	2.	3.	1.	1.	2.	1.	0.	2.	2.
351	4.	3.	7.	3.	7.	5.	6.	12.	9.	12.
361	16.	13.	14.	19.	13.	21.	22.	31.	33.	30.
371	25.	27.	20.	12.	5.	1.	1.	0.	0.	0.
381	0.	0.	0.	1.	0.	1.	0.	0.	0.	2.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	1.	0.	1.	0.	1.	0.	0.	0.	0.	0.
411	2.	2.	0.	0.	1.	0.	0.	1.	1.	2.
421	1.	0.	1.	2.	0.	0.	1.	1.	1.	0.
431	5.	3.	4.	2.	3.	4.	3.	6.	2.	3.
441	2.	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.	1.
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.								

LABCORE Completed Worklist Report for Worklist# 2691

Analyst: akl 10.5.95 **Instrument:** AM01 **Book#** 104843

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: Use a 0.5 mL sample size. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@AM24101 AM24101	LIQUID	3.07E-02	2.48E-2	80.780	% Recovery
1	STD		0		@AM24101 AM24101E	LIQUID	1.00	1.82E+00	1.820	% Ct. Error
1	STD		0		@AM24101 AM24101T	LIQUID	100	5.50E+01	55.000	% Recovery
2	BLNK		0		@AM24101 AM24101	LIQUID	1	<3.09E-5		uCi/mL
2	BLNK		0		@AM24101 AM24101E	LIQUID	1.00	1.00E+02	100.000	% Ct. Error
2	BLNK		0		@AM24101 AM24101T	LIQUID	100	7.21E+01	72.100	% Recovery
3	SAMPLE	S95T002031	0		@AM24101 AM24101	LIQUID	N/A	6.34E-04	7.150e-005	uCi/mL
3	SAMPLE	S95T002031	0		@AM24101 AM24101E	LIQUID	N/A	1.41E+00	0.000	% Ct. Error
3	SAMPLE	S95T002031	0		@AM24101 AM24101T	LIQUID	N/A	8.26E+01	1.000e-007	% Recovery
4	DUP	S95T002031	0		@AM24101 AM24101	LIQUID	6.34E-4	6.09E-4	4.020	RPD
4	DUP	S95T002031	0		@AM24101 AM24101E	LIQUID	1.00	2.19E+00	2.190	% Ct. Error
4	DUP	S95T002031	0		@AM24101 AM24101T	LIQUID	100	3.50E+01	35.000	% Recovery
5	SAMPLE	S95T002039	0		@AM24101 AM24101	LIQUID	N/A	3.23E-04	5.950e-005	uCi/mL
5	SAMPLE	S95T002039	0		@AM24101 AM24101E	LIQUID	N/A	1.90E+00	0.000	% Ct. Error
5	SAMPLE	S95T002039	0		@AM24101 AM24101T	LIQUID	N/A	6.53E+01	1.000e-007	% Recovery
6	DUP	S95T002039	0		@AM24101 AM24101	LIQUID	3.23E-4	7.14E-4	75.410	RPD
6	DUP	S95T002039	0		@AM24101 AM24101E	LIQUID	1.00	2.04E+00	2.040	% Ct. Error
6	DUP	S95T002039	0		@AM24101 AM24101T	LIQUID	100	3.74E+01	37.400	% Recovery

Final page for worklist# 2691

Analyst Signature **Date**

Analyst Signature **Date**

5 Oct 95

Reviewer Signature **Date**

Results for sample # S95T002039 not used due to low tracer recovery and high RPD of duplicate. 10/9/95

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2691

Analyst: ARL **Instrument:** AM01 _____ **Book#** 104643

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: Use a 0.5 mL sample size. --LLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@AM24101	LIQUID		
2	BLNK				@AM24101	LIQUID		
3	SAMPLE	S95T002031	0		@AM24101	LIQUID	95000126	AW-106 GRAB
	Analytes Requested: AM24101 , AM24101E, AM24101T							
4	DUP	S95T002031	0		@AM24101	LIQUID		
5	SAMPLE	S95T002039	0		@AM24101	LIQUID	95000126	AW-106 GRAB
	Analytes Requested: AM24101 , AM24101E, AM24101T							
6	DUP	S95T002039	0		@AM24101	LIQUID		

Final page for worklist # 2691

A Lewis 10/4/95
Analyst Signature **Date**

M B Brown 10/5/95
Analyst Signature **Date**

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID

Type	Date Counted		OCT-04-95	Am 241 AEA Frac.	(C241)	STD 0.506
STD	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.427
Work List	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0
2691	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		8994
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	3
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		52.63
LIQUID	Detector Number		2	Am 243 cpm		44.48
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002882	Standard Book No		104B43	AEA Count Time	(min)	480
Rerun	Standard Value in µCi/mL		0.03067	Am 241 µCi/L =		2.4838E+01
0				Cm 243/244 µCi/L =	<	4.4609E+00
Sample Prep						
N/A						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Sample Number			
WRKLST#2691			
Instrument Code			
AL10540			
Prepared By			
MCB			
Chemist			
LLF	Am 241 µCi/mL =	2.48E-02	DETECTION LEVELS in µCi/mL
Analyst	Relative Counting Error =	1.8%	
AKL			
Date Complete	NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
10/05/95	Cm 243/244 µCi/mL	< 4.46E-03	4.46E-03
Analysis Date	Relative Counting Error =	100.0%	Cm 243/244
10/04/95	Am 243 Tracer Recovery =	55.0%	4.46E-03
Analysis Time			
11:00 AM			
Sample Point			
AW-106 GRAB			

Analyst:	AKL	Date:	10/05/95
Signature of Chemist:	LLF	Date:	5 Oct 95

STANDARD.WB1 REV 1.2 953103ML

WORKBOOK PAGE: BLANK2

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-04-95	Am 241 AEA Frac.	(C241)	BLNK 0
BLNK	Sample Volume in mL	(SS)	0.500	Am 243 AEA Frac.	(C243)	0.932
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2691	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		5523
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	6
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		0
LIQUID	Detector Number		3	Am 243 cpm		60.95
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002882				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =	<	3.0900E-02
0				Cm 243/244 µCi/L =	<	3.0900E-02
Sample Prep						
N/A						

Sample Number	Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))
WRKLST#2691	Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))
Instrument Code	
AL10541	Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100
Prepared By	Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV
MCB	
Chemist	NOTE: Am-241 Result is a LESS THAN Value.
LLF	Am 241 µCi/mL = < 3.09E-05
Analyst	Relative Counting Error = 100.0%
AKL	
Date Complete	NOTE: Cm-243/244 Result is a LESS THAN Value.
10/05/95	Cm 243/244 µCi/mL < 3.09E-05
Analysis Date	Relative Counting Error = 100.0%
10/04/95	Am 243 Tracer Recovery = 72.1%
Analysis Time	
11:00 AM	
Sample Point	
AW-106 GRAB	

DETECTION LEVELS in µCi/mL	
Am 241	3.09E-05
Cm 243/244	3.09E-05

Analyst:		AKL	Date:	10/05/95
Signature of Chemist:		LLF	Date:	5 Oct 95

BLANK.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM3

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-04-95	Am 241 AEA Frac.	(C241)	SAMPLE 0.336
SAMPLE	Sample Volume in mL	(SS)	0.500	Am 243 AEA Frac.	(C243)	0.351
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2691	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		18420
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	5
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		102.5
LIQUID	Detector Number		1	Am 243 cpm		66.99
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002882				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		6.3380E-01
0				Cm 243/244 µCi/L =	<	7.1544E-02
Sample Prep						
N/A						
Sample Number	Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))					
S95T002031	Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))					
Instrument Code						
AL10539	Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100					
Prepared By	Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV					
MCB						
Chemist						
LLF	Am 241 µCi/mL =		6.34E-04			
Analyst	Relative Counting Error =		1.4%			
AKL						
Date Complete	NOTE: Cm-243/244 Result is a LESS THAN Value.					
10/05/95	Cm 243/244 µCi/mL		< 7.15E-05			
Analysis Date	Relative Counting Error =		100.0%			
10/04/95	Am 243 Tracer Recovery =		82.6%			
Analysis Time						
11:00 AM						
Sample Point						
AW-106 GRAB						

DETECTION LEVELS in µCi/mL	
Am 241	7.15E-05
Cm 243/244	7.15E-05

Analyst:	AKL	Date:	10/05/95
Signature of Chemist:	LLF	Date:	5 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP4

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-04-95	Am 241 AEA Frac.	(C241)	0.555
DUP	Sample Volume in mL	(SS)	0.500	Am 243 AEA Frac.	(C243)	0.378
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2691	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		6483
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	3
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		41.06
LIQUID	Detector Number		2	Am 243 cpm		27.95
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002882				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		6.0939E-01
0				Cm 243/244 µCi/L =	<	1.5700E-01
Sample Prep						
N/A						
Sample Number						
S95T002031						
Instrument Code						
AL10540						
Prepared By						
MCB						
Chemist						
LLF						
Analyst						
AKL						
Date Complete						
10/05/95						
Analysis Date						
10/04/95						
Analysis Time						
11:00 AM						
Sample Point						
AW-106 GRAB						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL =	6.09E-04	DETECTION LEVELS in µCi/mL	
Relative Counting Error =	2.2%		
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241	
Cm 243/244 µCi/mL	< 1.57E-04	1.57E-04	
Relative Counting Error =	100.0%	Cm 243/244	
Am 243 Tracer Recovery =	35.0%	1.57E-04	

Analyst:	AKL	Date:	10/05/95
Signature of Chemist:	LLF	Date:	5 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM5

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							SAMPLE
Type	Date Counted		OCT-04-95	Am 241 AEA Frac.	(C241)		0.415
SAMPLE	Sample Volume in mL	(SS)	0.500	Am 243 AEA Frac.	(C243)		0.534
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2691	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			8630
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)		6
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			39.36
LIQUID	Detector Number		3	Am 243 cpm			50.62
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002882				AEA Count Time	(min)		480
Rerun				Am 241 µCi/L =			3.2255E-01
0				Cm 243/244 µCi/L =		<	5.9516E-02
Sample Prep							
N/A							

Sample Number
S95T002039
Instrument Code
AL10541
Prepared By
MCB
Chemist
LLF
Analyst
AKL
Date Complete
10/05/95
Analysis Date
10/04/95
Analysis Time
11:00 AM
Sample Point
AW-106 GRAB

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	3.23E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	1.9%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 5.95E-05	5.95E-05
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	65.3%	5.95E-05

Analyst:	AKL	Date:	10/05/95
Signature of Chemist:	LLF	Date:	5 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

4.12

WORKBOOK PAGE: DUP6

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-04-95	Am 241 AEA Frac.	(C241)	0.576
DUP	Sample Volume in mL	(SS)	0.500	Am 243 AEA Frac.	(C243)	0.335
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2691	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		7864
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	5
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		52.28
LIQUID	Detector Number		1	Am 243 cpm		30.42
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002882				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		7.1363E-01
0				Cm 243/244 µCi/L =	<	1.6566E-01
Sample Prep						
N/A						
Sample Number						
S95T002039						
Instrument Code						
AL10539						
Prepared By						
MCB						
Chemist						
LLF						
Analyst						
AKL						
Date Complete						
10/05/95						
Analysis Date						
10/04/95						
Analysis Time						
11:00 AM						
Sample Point						
AW-106 GRAB						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL =	7.14E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error =	2.0%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
Cm 243/244 µCi/mL	< 1.66E-04	1.66E-04
Relative Counting Error =	100.0%	Cm 243/244
Am 243 Tracer Recovery =	37.4%	1.66E-04

Analyst:	AKL	Date:	10/05/95
Signature of Chemist:	LLF	Date:	5 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WRKLST2691-STD
File ID: 23a2388.CNF

Counted on: 10/ 4/95 @19: 8
Detector: AEA23
Geometry number: 1
Count time: 28801. 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	1481.9	1481.9	301.390	301.390	10.000	4.962	5.000	1.646
2	1225.8	1225.8	255.619	255.588	10.000	4.367	5.000	1.345

PEAK RESULTS
Peak Error Limit: 30%

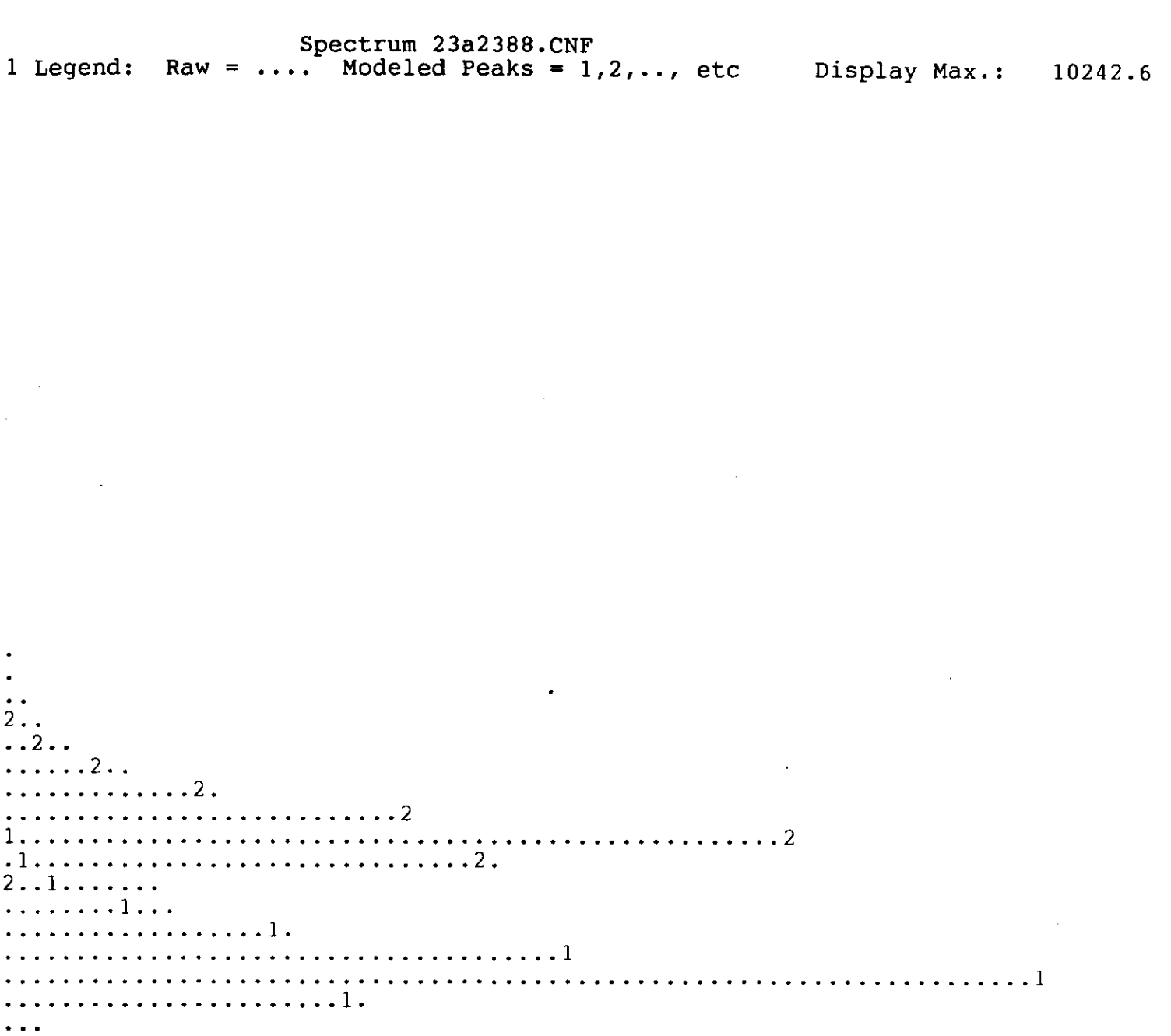
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.506	5.487	5.482	0.005	0.02	52.63	1.2	739.9	0.333E-03
	Am241		5.479	5.482	-.003				566.7	0.255E-03
2	Am243	0.427	5.270	5.272	-.002	0.02	44.48	1.4	454.7	0.205E-03
Totals:		0.933	<--valid peaks only-->				97.11			

DETECTOR CALIBRATION
Energy(MEV) = 4.096 + (0.0046)*Channel
Energy range (MeV): 4.096 TO 6.451
Efficiency = 0.0988 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	49949.0	100.000
Smoothed	49949.7	100.001
Composite fit	46612.9	93.321
Residuals	3336.1	6.679

Analyzed by: [signature] VR 10-5-95


Spectrum 23a2388.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 10242.6

Raw Data Dump for AEA Spectrum: 23a2388.CNF

1	0.	0.	1.	1.	0.	0.	0.	1.	0.	1.
11	0.	0.	1.	0.	0.	1.	0.	0.	1.	0.
21	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
31	1.	0.	0.	1.	2.	0.	0.	0.	1.	0.
41	0.	0.	0.	1.	0.	1.	0.	0.	4.	0.
51	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.
61	0.	1.	0.	1.	2.	1.	1.	1.	1.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	1.	0.	0.	1.	3.	0.	1.	0.	0.	0.
91	0.	2.	0.	0.	2.	1.	1.	0.	1.	0.
101	0.	0.	1.	1.	1.	2.	0.	0.	0.	1.
111	1.	3.	0.	5.	0.	2.	2.	1.	2.	1.
121	3.	0.	3.	2.	2.	1.	4.	4.	0.	1.
131	1.	4.	3.	2.	4.	4.	0.	4.	2.	1.
141	5.	4.	2.	5.	4.	5.	4.	2.	1.	4.
151	5.	2.	3.	6.	5.	7.	5.	6.	2.	5.
161	6.	5.	9.	4.	8.	6.	7.	7.	9.	6.
171	6.	11.	6.	9.	10.	12.	10.	10.	11.	12.
181	12.	15.	15.	19.	15.	13.	21.	24.	20.	20.
191	22.	31.	29.	22.	27.	30.	36.	40.	30.	37.
201	42.	33.	37.	45.	39.	41.	53.	50.	47.	53.
211	62.	68.	73.	64.	68.	80.	80.	96.	100.	121.
221	100.	129.	134.	138.	148.	140.	159.	185.	172.	191.
231	195.	196.	254.	253.	276.	274.	292.	300.	334.	389.
241	403.	419.	452.	549.	593.	645.	696.	737.	809.	825.
251	913.	939.	1072.	1180.	1407.	1431.	1418.	1092.	651.	321.
261	213.	197.	194.	185.	177.	189.	200.	202.	187.	192.
271	207.	190.	191.	195.	200.	202.	204.	254.	276.	249.
281	294.	323.	349.	353.	380.	445.	466.	467.	547.	582.
291	692.	699.	812.	868.	889.	954.	1050.	1183.	1327.	1516.
301	1657.	1743.	1565.	1223.	693.	417.	294.	252.	209.	177.
311	165.	120.	84.	49.	35.	24.	10.	5.	1.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	1.	0.	0.	2.
351	0.	0.	0.	0.	0.	0.	0.	1.	4.	1.
361	1.	1.	0.	0.	0.	1.	0.	[illegible]	[illegible]	[illegible]
371	2.	0.	3.	1.	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.	1.
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.								

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WRKLST2691-BLK
File ID: 24a.CNF

Counted on: **10/ 4/95 @19: 7**
Detector: **AEA24**
Geometry number: 1
Count time: 28803. 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	2089.5	2089.5	256.290	256.290	12.000	3.688	6.000	1.543

PEAK RESULTS
Peak Error Limit: 30%

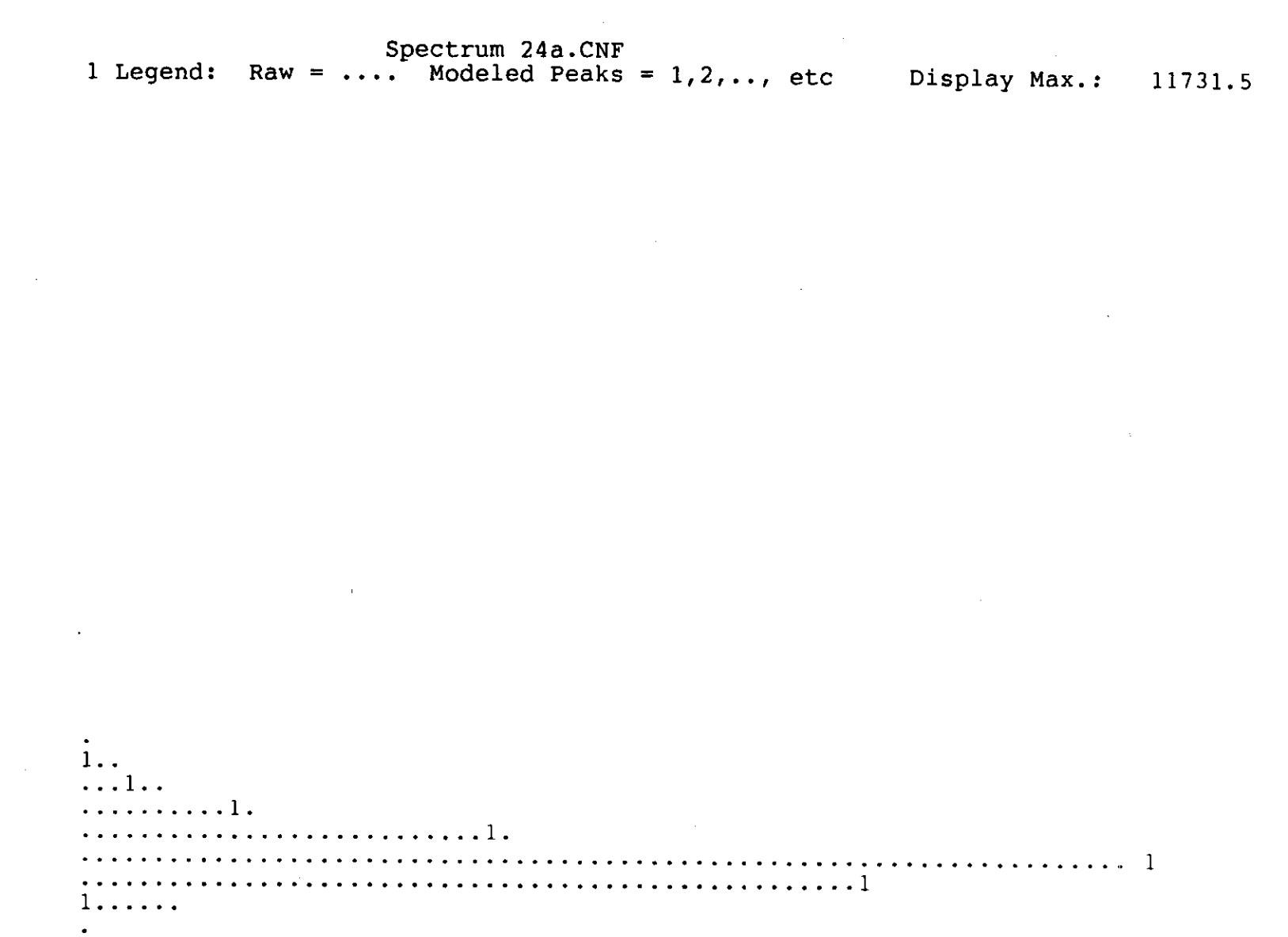
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am243	0.932	5.270	5.265	0.005	0.02	60.95	1.1	517.8	0.233E-03
Totals:		0.932	<--valid peaks only-->				60.95			

DETECTOR CALIBRATION
Energy(MEV) = 4.086 + (0.0046)*Channel
Energy range (MeV): 4.086 TO 6.441
Efficiency = 0.1189 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	31406.0	100.000
Smoothed	31406.0	100.000
Composite fit	29258.4	93.162
Residuals	2147.6	6.838

Analyzed by: VR 10-5-95


Spectrum 24a.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc
Display Max.: 11731.5

Paw Data Dump for AEA Spectrum: 24a.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
21	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	1.	0.	0.	1.	0.	0.
41	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.
51	1.	0.	0.	1.	1.	0.	0.	0.	0.	1.
61	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
71	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.
81	1.	0.	0.	0.	0.	0.	1.	1.	1.	0.
91	0.	0.	1.	1.	0.	0.	1.	0.	0.	0.
101	1.	0.	1.	0.	0.	0.	5.	1.	3.	0.
111	0.	0.	0.	1.	0.	0.	0.	1.	0.	1.
121	0.	0.	1.	0.	0.	0.	0.	0.	3.	0.
131	0.	1.	1.	0.	0.	0.	0.	0.	3.	1.
141	2.	0.	1.	2.	2.	1.	3.	0.	3.	2.
151	0.	2.	1.	1.	0.	2.	0.	1.	5.	2.
161	3.	1.	2.	1.	2.	1.	0.	2.	1.	4.
171	2.	1.	4.	2.	1.	3.	3.	0.	3.	2.
181	4.	3.	4.	4.	6.	7.	5.	10.	9.	5.
191	5.	2.	5.	9.	9.	6.	8.	12.	8.	17.
201	14.	12.	16.	15.	17.	29.	28.	24.	23.	27.
211	30.	34.	35.	42.	55.	44.	53.	64.	59.	64.
221	90.	67.	79.	95.	77.	117.	125.	142.	152.	170.
231	154.	168.	198.	219.	239.	263.	306.	335.	350.	378.
241	419.	506.	584.	550.	682.	794.	809.	893.	1049.	1166.
251	1194.	1343.	1612.	1875.	2141.	2450.	2520.	2221.	1481.	717.
261	318.	206.	162.	132.	115.	118.	108.	100.	104.	88.
271	59.	48.	45.	30.	11.	2.	0.	0.	2.	1.
281	1.	1.	1.	1.	0.	0.	2.	0.	2.	2.
291	1.	4.	6.	7.	2.	3.	2.	3.	2.	5.
301	6.	4.	3.	8.	2.	0.	2.	0.	0.	1.
311	0.	2.	0.	1.	0.	0.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	1.	0.	0.	0.	0.	0.	2.	1.	0.
351	0.	0.	0.	0.	0.	1.	0.	2.	0.	0.
361	0.	1.	0.	0.	0.	0.	1.	1.	0.	0.
371	2.	1.	3.	1.	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.	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.								

10/5/95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2031SAMWL269
File ID: 25a2579.CNF

Counted on: 10/ 4/95 @19: 6
Detector: AEA25
Geometry number: 1
Count time: 28802. 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?	16.7	16.7	370.327	370.327	8.000	3.040	4.000	1.248
2	3462.2	3462.2	301.915	301.915	12.000	4.326	6.000	1.882
3	2286.4	2286.4	256.371	256.361	12.000	4.033	6.000	1.735
4?	16.9	16.9	146.978	148.015	178.000	1.000	89.000	0.100
5?	2.5	2.5	129.647	128.986	4.000	0.000	2.000	1.843
6?	2.5	2.5	119.775	119.505	4.000	0.190	2.000	2.678

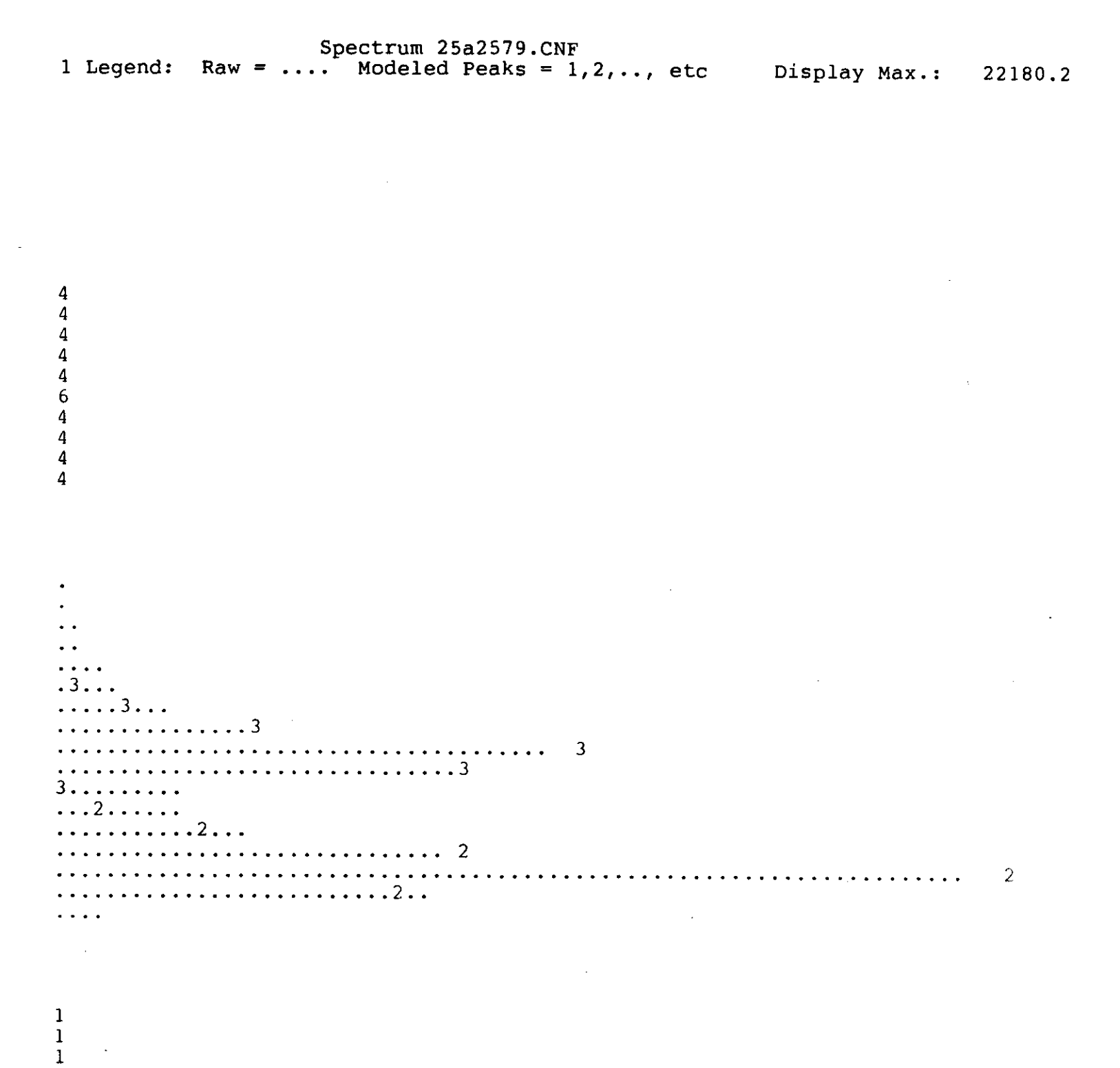
PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		5.784			0.47	13.0		
2	Pu238	0.536	5.487	5.469	0.0180	.02	102.50	0.9	11036.2	0.497E-02
	Am241		5.479	5.469	0.010				8453.2	0.381E-02
3	Am243	0.351	5.270	5.259	0.0110	.02	66.99	1.1	5245.5	0.236E-02
4		????		4.761			1.34	7.7		
5		????		4.673			0.00	1000.		
6		????		4.630			0.01	661.		
Totals:		0.887	<--valid peaks only-->				169.49			

DETECTOR CALIBRATION
Energy(MEV) = 4.080 + (0.0046)*Channel
Energy range (MeV): 4.080 TO 6.435
Efficiency = 0.0129 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	91748.0	100.000
Smoothed	91747.1	99.999
Composite fit	82238.7	89.635
Residuals	9509.3	10.365


Spectrum 25a2579.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 22180.2
4
4
4
4
4
6
4
4
4
4
3
3
3
3
3
2
2
2
2
1
1
1

Raw Data Dump for AEA Spectrum: 25a2579.CNF

1	0.	0.	2.	1.	0.	3.	1.	1.	1.	4.
11	0.	0.	0.	2.	1.	0.	0.	1.	1.	1.
21	1.	2.	1.	2.	3.	3.	3.	5.	1.	1.
31	1.	0.	2.	0.	0.	3.	1.	0.	2.	5.
41	2.	1.	2.	3.	1.	2.	1.	5.	1.	4.
51	4.	2.	3.	3.	0.	0.	1.	0.	3.	0.
61	2.	2.	4.	1.	2.	2.	2.	2.	0.	7.
71	2.	1.	6.	3.	4.	3.	7.	4.	8.	4.
81	4.	5.	5.	8.	6.	0.	4.	4.	3.	3.
91	4.	4.	3.	3.	9.	5.	4.	5.	4.	11.
101	3.	14.	4.	6.	5.	4.	14.	5.	4.	5.
111	5.	9.	8.	4.	8.	8.	3.	7.	10.	17.
121	9.	4.	9.	5.	6.	7.	8.	10.	15.	10.
131	9.	9.	12.	5.	10.	9.	12.	17.	12.	12.
141	16.	16.	15.	16.	18.	17.	12.	20.	17.	11.
151	18.	14.	12.	10.	17.	19.	20.	17.	16.	21.
161	24.	24.	19.	12.	21.	19.	26.	19.	31.	24.
171	30.	13.	35.	23.	22.	23.	37.	29.	31.	44.
181	30.	36.	33.	35.	35.	33.	47.	50.	58.	44.
191	41.	52.	44.	48.	59.	56.	60.	73.	55.	81.
201	79.	78.	65.	74.	90.	88.	99.	96.	96.	108.
211	117.	114.	112.	132.	132.	147.	150.	142.	164.	169.
221	174.	180.	173.	198.	221.	199.	241.	247.	207.	262.
231	275.	282.	294.	323.	351.	359.	421.	422.	407.	440.
241	507.	541.	610.	593.	674.	764.	864.	968.	988.	1090.
251	1104.	1380.	1609.	1945.	2389.	2779.	2839.	2477.	1591.	755.
261	485.	375.	315.	349.	335.	333.	392.	351.	339.	377.
271	365.	359.	383.	360.	358.	404.	419.	412.	463.	466.
281	550.	540.	556.	540.	629.	651.	724.	799.	829.	1063.
291	1077.	1223.	1379.	1543.	1598.	1698.	1872.	2202.	2582.	3172.
301	3833.	4270.	4038.	3037.	1826.	1138.	790.	620.	530.	482.
311	358.	263.	229.	146.	116.	87.	24.	10.	5.	1.
321	0.	0.	1.	2.	2.	0.	1.	0.	2.	1.
331	1.	0.	1.	2.	0.	1.	0.	2.	4.	2.
341	3.	2.	1.	4.	1.	2.	1.	1.	2.	2.
351	1.	0.	3.	6.	2.	1.	3.	5.	8.	5.
361	11.	12.	3.	9.	10.	10.	14.	12.	20.	19.
371	20.	17.	15.	4.	0.	1.	0.	0.	0.	0.
381	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
401	0.	0.	2.	0.	0.	0.	1.	1.	0.	0.
411	0.	0.	0.	0.	0.	1.	2.	0.	0.	0.
421	0.	1.	2.	1.	1.	3.	2.	3.	1.	1.
431	0.	4.	0.	1.	4.	0.	7.	3.	0.	0.
441	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	1.	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.								

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2031-DUPWL26
File ID: 26a2682.CNF

Counted on: 10/ 4/95 @19: 5
Detector: AEA26
Geometry number: 1
Count time: 28803. 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	1506.2	1506.2	302.142	302.142	12.000	4.213	6.000	2.135
2	1108.6	1108.6	256.132	256.128	10.000	3.282	5.000	1.714

PEAK RESULTS
Peak Error Limit: 30%

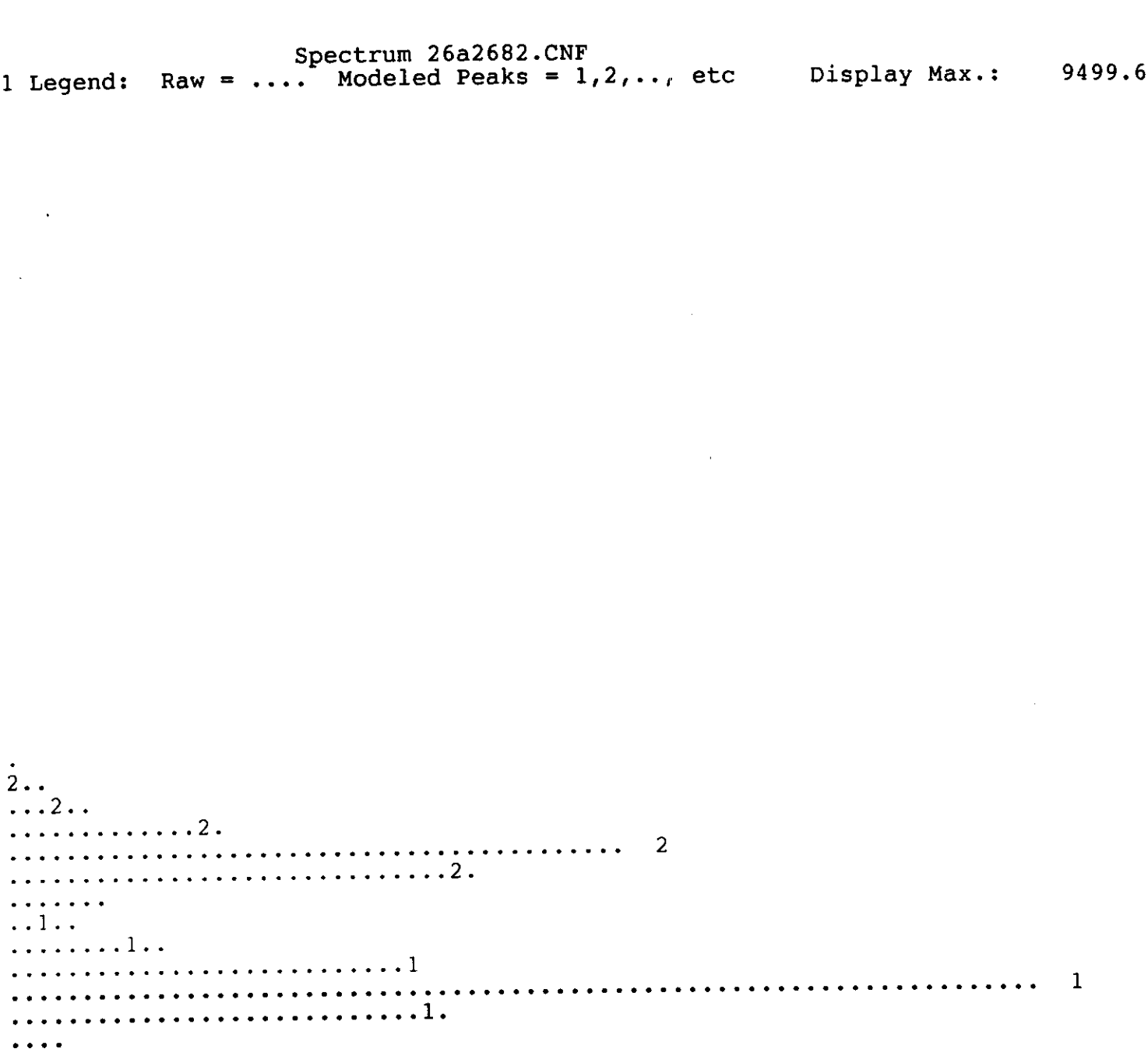
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	Err @95	d/m	Activity uCi/ea
1	Pu238	0.555	5.487	5.485	0.002	0.02	41.06	1.4	6789.4	0.306E-02
	Am241		5.479	5.485	-.006				5200.4	0.234E-02
2	Am243	0.378	5.270	5.273	-.003	0.02	27.95	1.7	3360.6	0.151E-02
Totals:		0.933	<--valid peaks only-->				69.01			

DETECTOR CALIBRATION
Energy(MEV) = 4.095 + (0.0046)*Channel
Energy range (MeV): 4.095 TO 6.450
Efficiency = 0.0084 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	35493.0	100.000
Smoothed	35493.0	100.000
Composite fit	33127.9	93.336
Residuals	2365.1	6.664

Analyzed by: VR 10/5/95


Spectrum 26a2682.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc
Display Max.: 9499.6

Raw Data Dump for AEA Spectrum: 26a2682.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
21	0.	1.	1.	2.	0.	2.	1.	0.	0.	0.
31	0.	0.	0.	0.	1.	0.	0.	1.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
51	0.	0.	0.	0.	3.	1.	0.	1.	0.	1.
61	0.	3.	0.	0.	0.	0.	0.	1.	0.	1.
71	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
81	0.	1.	1.	1.	1.	1.	1.	1.	0.	0.
91	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.
101	0.	0.	1.	1.	0.	0.	1.	1.	0.	0.
111	1.	0.	0.	1.	0.	0.	0.	3.	0.	1.
121	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
131	0.	0.	1.	0.	0.	0.	2.	1.	2.	2.
141	1.	1.	3.	2.	2.	0.	2.	1.	1.	1.
151	2.	0.	0.	1.	0.	0.	1.	0.	0.	2.
161	0.	0.	0.	1.	1.	0.	1.	1.	1.	2.
171	0.	1.	1.	1.	2.	1.	2.	2.	5.	3.
181	2.	1.	1.	1.	1.	2.	0.	2.	1.	1.
191	3.	3.	0.	6.	3.	3.	5.	5.	4.	5.
201	6.	6.	5.	6.	9.	5.	6.	8.	11.	12.
211	15.	12.	7.	11.	14.	22.	14.	17.	21.	32.
221	21.	29.	27.	31.	33.	44.	43.	47.	54.	67.
231	79.	73.	93.	93.	87.	113.	127.	142.	134.	137.
241	178.	199.	226.	242.	270.	341.	411.	411.	482.	523.
251	555.	634.	749.	924.	1190.	1372.	1418.	1011.	617.	276.
261	138.	117.	97.	93.	100.	90.	105.	109.	114.	95.
271	82.	69.	79.	86.	63.	87.	101.	102.	113.	145.
281	147.	162.	185.	177.	195.	225.	230.	260.	305.	343.
291	450.	460.	547.	609.	674.	651.	817.	891.	1125.	1282.
301	1596.	1875.	1809.	1419.	886.	505.	343.	278.	230.	206.
311	181.	158.	99.	75.	47.	42.	12.	9.	0.	0.
321	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
331	0.	1.	0.	0.	0.	1.	0.	1.	0.	0.
341	3.	0.	0.	3.	0.	1.	1.	1.	1.	1.
351	0.	2.	3.	1.	0.	2.	2.	1.	2.	1.
361	4.	5.	1.	0.	6.	3.	3.	4.	4.	6.
371	13.	11.	2.	6.	1.	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.	1.	0.	0.	0.	0.	1.	1.	0.	0.
421	0.	0.	0.	0.	0.	1.	0.	1.	1.	2.
431	0.	0.	0.	0.	3.	1.	0.	1.	0.	2.
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.	1.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2039-SAMWL26
File ID: 27a2777.CNF

Counted on: 10/ 4/95 @19: 4
Detector: AEA27
Geometry number: 1
Count time: 28805. 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	1230.8	1230.8	303.117	303.117	12.000	4.677	6.000	1.823
2	1662.1	1662.1	257.595	257.586	10.000	3.758	5.000	1.468

PEAK RESULTS
Peak Error Limit: 30%

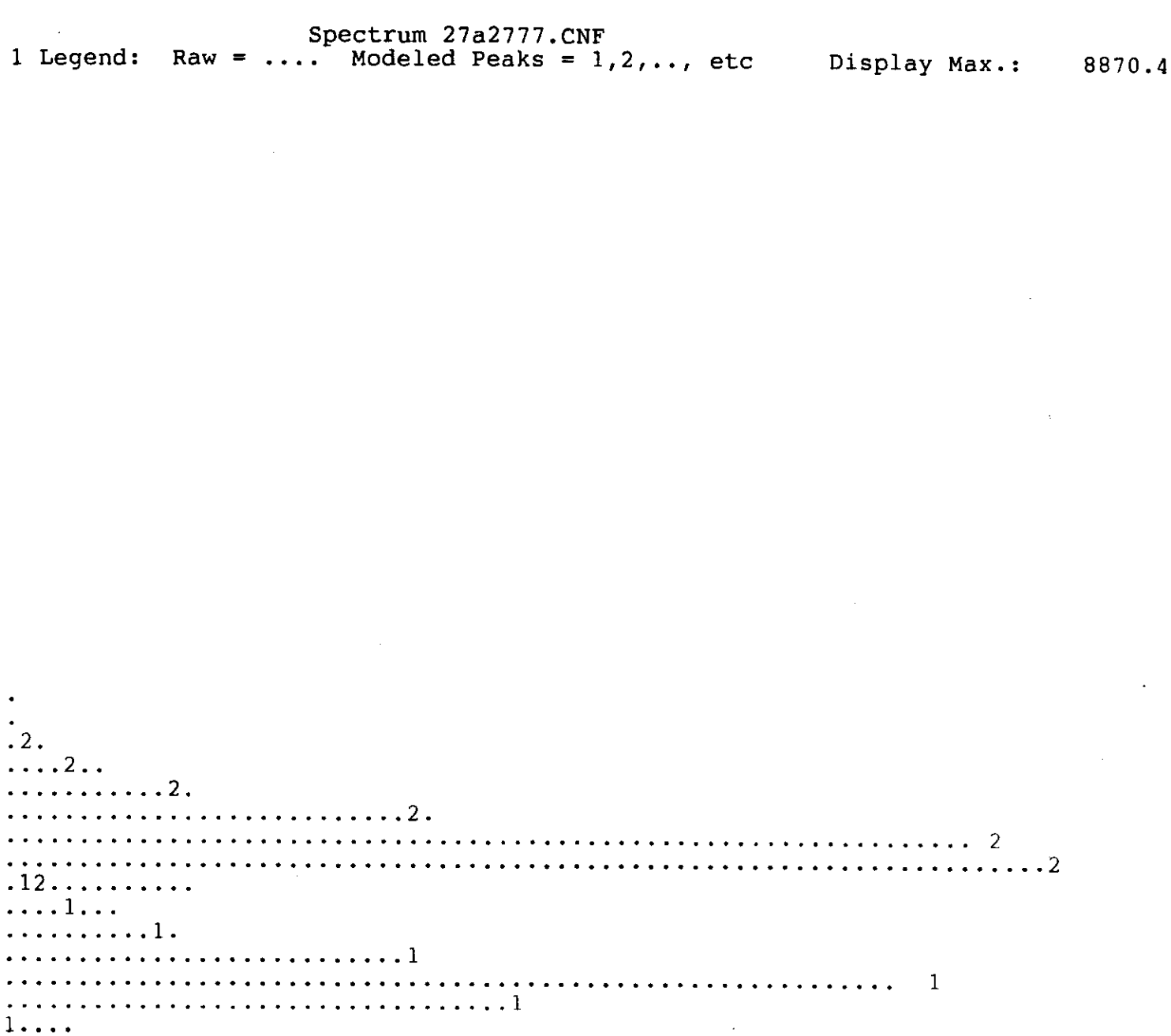
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.415	5.487	5.479	0.008	0.02	39.36	1.4	3003.4	0.135E-02
	Am241		5.479	5.479	0.000				2300.5	0.104E-02
2	Am243	0.534	5.270	5.270	0.0000	0.02	50.62	1.3	2809.7	0.127E-02
Totals:		0.949	<--valid peaks only-->				89.98			

DETECTOR CALIBRATION
Energy(MEV) = 4.085 + (0.0046)*Channel
Energy range (MeV): 4.085 TO 6.440
Efficiency = 0.0182 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	45529.0	100.000
Smoothed	45528.5	99.999
Composite fit	43198.3	94.881
Residuals	2330.7	5.119

Analyzed by: VR 10/5/95


Spectrum 27a2777.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc
Display Max.: 8870.4

Raw Data Dump for AEA Spectrum: 27a2777.CNF

1	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
11	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
31	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
41	1.	0.	1.	0.	0.	0.	0.	1.	0.	0.
51	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
61	0.	0.	1.	0.	0.	0.	0.	0.	2.	1.
71	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
81	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.
91	0.	1.	1.	0.	0.	0.	0.	0.	1.	0.
101	0.	1.	0.	0.	0.	0.	0.	0.	2.	0.
111	2.	1.	0.	0.	2.	0.	0.	0.	0.	0.
121	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.
131	2.	0.	0.	1.	0.	1.	0.	2.	0.	0.
141	2.	0.	0.	0.	0.	3.	3.	1.	0.	0.
151	4.	1.	1.	0.	2.	1.	2.	4.	2.	0.
161	3.	2.	1.	1.	1.	2.	1.	5.	0.	1.
171	4.	3.	3.	0.	1.	2.	3.	5.	4.	0.
181	3.	1.	5.	2.	5.	8.	9.	7.	7.	5.
191	7.	9.	7.	5.	10.	5.	13.	10.	7.	11.
201	11.	13.	17.	21.	12.	21.	22.	22.	32.	20.
211	27.	31.	36.	22.	30.	35.	44.	50.	53.	49.
221	66.	72.	71.	87.	96.	85.	112.	110.	122.	118.
231	159.	180.	167.	160.	209.	211.	246.	247.	268.	350.
241	329.	340.	413.	421.	505.	570.	645.	762.	782.	845.
251	919.	1019.	1041.	1224.	1379.	1614.	1903.	1997.	1862.	1421.
261	737.	331.	205.	192.	155.	137.	134.	135.	147.	127.
271	130.	114.	127.	125.	106.	107.	115.	104.	118.	161.
281	183.	148.	211.	203.	219.	205.	249.	283.	355.	381.
291	402.	443.	498.	521.	631.	652.	685.	758.	816.	968.
301	1091.	1309.	1455.	1462.	1195.	779.	485.	286.	243.	208.
311	156.	138.	127.	70.	53.	53.	31.	17.	[illegible]	[illegible]
321	0.	0.	0.	0.	0.	0.	0.	[illegible]	0.	[illegible]
331	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.
341	0.	1.	1.	1.	1.	0.	0.	2.	2.	1.
351	0.	2.	3.	0.	0.	3.	1.	2.	2.	4.
361	4.	6.	2.	7.	2.	5.	3.	3.	4.	2.
371	5.	3.	3.	4.	4.	4.	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.	1.	0.	0.	1.	0.	0.	0.
411	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.
421	0.	0.	0.	1.	0.	0.	1.	0.	1.	1.
431	0.	1.	1.	2.	0.	0.	0.	1.	1.	1.
441	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2039-DUPWL26
File ID: 28a2881.CNF

Counted on: 10/ 4/95 @19: 3
Detector: AEA28
Geometry number: 1
Count time: 28806. Sec

PEAK ANALYSIS

Peak	Peak height		Peak center		FWHM		Tau	
ID	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	1145.7	1145.7	302.229	302.229	10.000	5.456	5.000	1.258
2	673.4	673.4	256.558	256.450	10.000	4.664	5.000	1.055
3	14.1	14.1	146.619	146.552	180.000	1.000	90.000	0.100
4?	3.8	3.8	124.558	124.073	10.000	0.839	5.000	0.033

PEAK RESULTS
Peak Error Limit: 30%

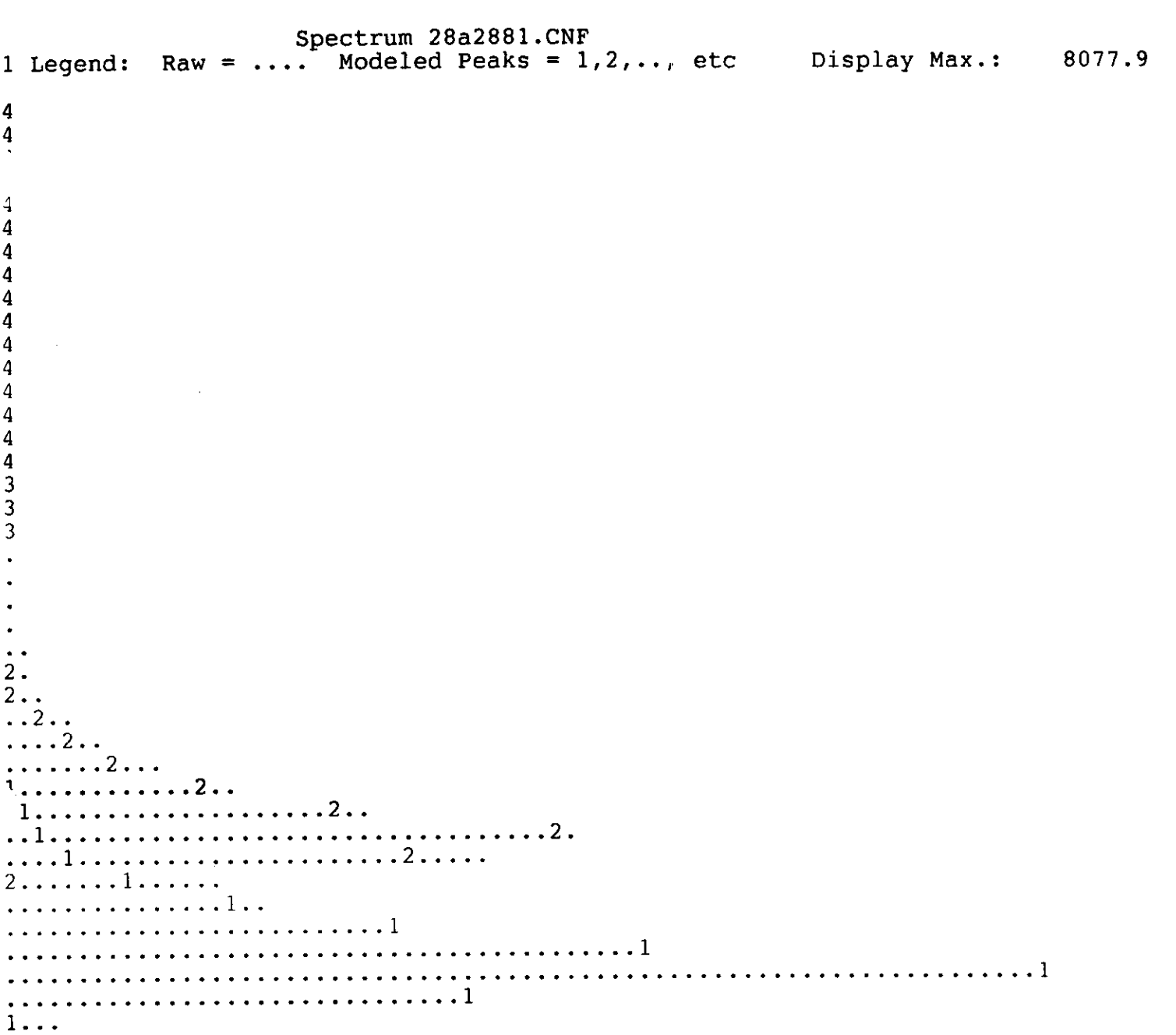
Peak		AEA	Peak Centroid				Count	%err		Activity
ID	Isotope	Frac	Exp.	Obs.	Diff.	FWHM	Rate c/m	@95	d/m	uCi/ea
1	Pu238	0.576	5.487	5.475	0.012	0.03	52.28	1.2	3821.7	0.172E-02
	Am241		5.479	5.475	0.004				2927.2	0.132E-02
2	Am243	0.335	5.270	5.264	0.006	0.02	30.42	1.7	1617.3	0.729E-03
3	Np237	0.012	4.769	4.758	0.011	0.00	1.12	8.6	67.6	0.305E-04
4		????		4.655			0.56	17.8		
Totals:		0.924	<--valid peaks only-->				83.82			

DETECTOR CALIBRATION
Energy(MEV) = 4.084 + (0.0046)*Channel
Energy range (MeV): 4.084 TO 6.440
Efficiency = 0.0190 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	43547.0	100.000
Smoothed	43546.0	99.998
Composite fit	40509.7	93.025
Residuals	3037.3	6.975

Analyzed by: VR 10/5/95


Spectrum 28a2881.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc
Display Max.: 8077.9

Raw Data Dump for AEA Spectrum: 28a2881.CNF

1	0.	0.	0.	7.	1.	9.	5.	2.	6.	8.
11	3.	4.	4.	6.	5.	5.	6.	7.	3.	3.
21	4.	2.	8.	4.	4.	3.	9.	9.	4.	6.
31	7.	3.	7.	6.	6.	9.	6.	7.	1.	2.
41	6.	7.	2.	6.	6.	6.	5.	7.	4.	4.
51	3.	11.	6.	7.	5.	5.	5.	6.	2.	5.
61	5.	4.	5.	4.	8.	3.	3.	1.	7.	4.
71	8.	7.	4.	3.	6.	4.	4.	7.	8.	1.
81	5.	5.	8.	4.	8.	5.	8.	8.	3.	4.
91	12.	8.	6.	5.	6.	7.	9.	4.	5.	4.
101	7.	7.	5.	6.	8.	12.	9.	8.	11.	8.
111	10.	11.	9.	5.	11.	12.	8.	12.	9.	3.
121	3.	7.	11.	17.	11.	8.	10.	10.	9.	9.
131	12.	7.	6.	9.	14.	9.	10.	13.	5.	9.
141	14.	12.	12.	12.	13.	17.	16.	18.	8.	13.
151	10.	19.	15.	18.	11.	15.	17.	13.	18.	20.
161	18.	13.	21.	11.	24.	19.	22.	17.	21.	23.
171	18.	25.	28.	25.	19.	26.	25.	24.	30.	28.
181	20.	26.	31.	30.	28.	32.	29.	28.	35.	39.
191	39.	30.	34.	37.	40.	42.	36.	47.	52.	50.
201	46.	58.	62.	51.	52.	56.	59.	81.	54.	59.
211	81.	79.	74.	82.	93.	87.	100.	89.	101.	103.
221	129.	117.	122.	144.	153.	148.	158.	159.	161.	174.
231	177.	194.	236.	209.	219.	240.	245.	287.	296.	292.
241	311.	306.	335.	357.	393.	386.	467.	478.	508.	497.
251	536.	517.	588.	620.	747.	806.	856.	783.	675.	418.
261	251.	209.	169.	185.	199.	221.	191.	213.	211.	219.
271	226.	236.	218.	269.	261.	269.	284.	272.	286.	335.
281	307.	381.	392.	417.	422.	455.	482.	485.	524.	557.
291	606.	676.	725.	762.	775.	784.	878.	862.	976.	1052.
301	1194.	1247.	1304.	1232.	890.	545.	355.	251.	202.	167.
311	144.	136.	92.	66.	50.	34.	13.	8.	1.	1.
321	2.	0.	0.	0.	1.	1.	0.	0.	1.	0.
331	0.	3.	0.	1.	0.	1.	0.	0.	1.	0.
341	0.	2.	3.	1.	2.	0.	1.	2.	2.	2.
351	2.	2.	1.	1.	3.	2.	2.	2.	3.	1.
361	1.	7.	7.	7.	3.	3.	0.	3.	3.	9.
371	5.	7.	12.	8.	1.	0.	0.	0.	0.	1.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
401	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	1.	0.	0.	0.	5.	0.	0.	0.	0.	1.
421	1.	1.	1.	0.	2.	0.	0.	0.	1.	0.
431	1.	1.	0.	1.	2.	2.	0.	4.	2.	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.								

LABCORE Completed Worklist Report for Worklist# 2692

Analyst: akl **Instrument:** AM01 **Book#** 10463

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: Use a 1.0 mL sample size. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@AM24101 AM24101	SOLID	3.07E-02	2.71E-2	88.270	% Recovery
1	STD		0		@AM24101 AM24101E	SOLID	1.00	6.32E+00	6.320	% Ct. Error
1	STD		0		@AM24101 AM24101T	SOLID	100	4.90E+00	4.900	% Recovery
2	BLNK-PREP		0		@AM24101 AM24101	SOLID	1	<5.68E-2		uCi/g
2	BLNK-PREP		0		@AM24101 AM24101E	SOLID	1.00	1.00E+02	100.000	% Ct. Error
2	BLNK-PREP		0		@AM24101 AM24101T	SOLID	100	2.68E+00	2.680	% Recovery
3	SAMPLE	S95T002021	0	F	@AM24101 AM24101	SOLID	N/A	1.16E-01	5.610e-002	uCi/g
3	SAMPLE	S95T002021	0	F	@AM24101 AM24101E	SOLID	N/A	2.96E+00	0.000	% Ct. Error
3	SAMPLE	S95T002021	0	F	@AM24101 AM24101T	SOLID	N/A	2.03E+01	1.000e-007	% Recovery
4	DUP	S95T002021	0	F	@AM24101 AM24101	SOLID	1.16E-1	9.49E-2	20.010	RPD
4	DUP	S95T002021	0	F	@AM24101 AM24101E	SOLID	1.00	2.38E+00	2.380	% Ct. Error
4	DUP	S95T002021	0	F	@AM24101 AM24101T	SOLID	100	3.43E+01	34.300	% Recovery

Final page for worklist# 2692

Analyst Signature **Date**

Analyst Signature **Date**

5 Oct 95

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2692

Analyst: AKL **Instrument:** AM01 _____ **Book#** 104843

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: Use a 1.0 mL sample size. --LLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@AM24101	SOLID		
2	BLNK-PREP				@AM24101	SOLID		
3	SAMPLE	S95T002021	0	F	@AM24101	SOLID	95000126	AW-106 GRAB
	Analytes Requested: AM24101 , AM24101E, AM24101T							
4	DUP	S95T002021	0	F	@AM24101	SOLID		

Final page for worklist # 2692

A Lewis 10-3-95
Analyst Signature **Date**

SE Hogan 10/5/95
Analyst Signature **Date**

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID

Type	Date Counted		OCT-03-95	Am 241 AEA Frac.	(C241)	0.537
STD	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.416
Work List	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0
2692	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		994
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	6
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		4.69
LIQUID	Detector Number		1	Am 243 cpm		3.56
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002883	Standard Book No		104B43	AEA Count Time	(min)	480
Reps	Standard Value in µCi/mL		0.03067	Am 241 µCi/L =		2.7056E+01
0				Cm 243/244 µCi/L =	<	2.5192E+01
Sample Prep						
N/A						
Sample Number	Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))					
worklist 2692	Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))					
Instrument Blank						
AL10539	Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100					
Prepared By	Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV					
SEH						
Counted						
LLF	Am 241 µCi/mL =		2.71E-02	DETECTION LEVELS in µCi/mL		
Analyst	Relative Counting Error =		6.3%			
AKL				Am 241		
Data Complete	NOTE: Cm-243/244 Result is a LESS THAN Value.			2.52E-02		
10/05/95	Cm 243/244 µCi/mL		< 2.52E-02	Cm 243/244		
Analysis Date	Relative Counting Error =		100.0%	2.52E-02		
10/03/95	Am 243 Tracer Recovery =		4.9%			
Analysis Time						
12:00 PM						
Sample Type						
AW-106 GRAB						

Analyst:	AKL	Date:	10/05/95
Signature of Chemist:	LLF	Date:	5 Oct 95

STANDARD.WB1 REV 1.2 953103ML

WORKBOOK PAGE: BLANK2

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-03-95	Am 241 AEA Frac.	(C241)	BLNK-PREP 0
BLNK-PREP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.808
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2692	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		319
Test Code	Digest Grams of Solids/L	(Dg/L)	2.262	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	3
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		0
SOLID	Detector Number		2	Am 243 cpm		2
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002883				AEA Count Time	(min)	480
Rerun				Am 241 µCi/g =	<	5.6772E-02
0				Cm 243/244 µCi/g =	<	5.6772E-02
Sample Prep						
N/A						

Sample Number	Am-241 µCi/g = (C241) (Am-243 Tracer Value) (SPKV) (1000mL/L) (DF) / [(C243) (SS) (D g/L) (2220000dpm/µCi)]
WORKLIST BLK	Cm-243/244 µCi/g = (Cm) (Am-243 Tracer Value) (SPKV) (1000mL/L) (DF) / [(C243) (SS) (D g/L) (2220000dpm/µCi)]
Instrument Code	
AL10540	Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100
Prepared By	Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV
SEH	
Chemist	NOTE: Am-241 Result is a LESS THAN Value.
LLF	Am241 µCi/g = < 5.68E-02
Analyst	Relative Counting Error = 100.0%
AKL	
Date Counted	NOTE: Cm-243/244 Result is a LESS THAN Value.
10/05/95	Cm 243/244 µCi/g < 5.68E-02
Analysis Date	Relative Counting Error = 100.0%
10/03/95	Am 243 Tracer Recovery = 2.7%
Analysis Time	
12:00 PM	
Sample Type	
AW-106 GRAB	

DETECTION LEVELS in µCi/g	
Am 241	5.68E-02
Cm 243/244	5.68E-02

Analyst:		AKL	Date:	10/05/95
Signature of Chemist:	[signature]	LLF	Date:	5 Oct 95

BLANK.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM3

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							SAMPLE
Type	Date Counted		OCT-03-95	Am 241 AEA Frac.	(C241)		0.811
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.493
Task Seq	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2692	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts			3632
Task Code	Digest Grams of Solids/L	(Dg/L)	2.262	AT Count Time (min)	(TC)		30
AM24101	Tracer Book No.		114E43	Background in cpm	(Bkg)		5
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			20.7
SOLID	Detector Number		3	Am 243 cpm			16.32
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002883				AEA Count Time	(min)		480
Reps				Am 241 µCi/g =			1.1633E-01
2				Cm 243/244 µCi/g =		<	5.6055E-02
Sample Prep							
FUSION01							

Sample Number	Am-241 µCi/g = (C241) (Am-243 Tracer Value) (SPKV) (1000mL/L) (DF) / [(C243) (SS) (D g/L) (2220000dpm/µCi)]
S95T002021	Cm-243/244 µCi/g = (Cm) (Am-243 Tracer Value) (SPKV) (1000mL/L) (DF) / [(C243) (SS) (D g/L) (2220000dpm/µCi)]
Instrument Code	
AL10541	Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100
Prepared By	Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV
SEH	
Chemist	
LLF	
Analyst	
AKL	
Data Completed	
10/05/95	
Analysis Date	
10/03/95	
Analysis Time	
12:00 PM	
Sample Point	
AW-106 GRAB	

Am241 µCi/g =	1.16E-01	DETECTION LEVELS in µCi/g
Relative Counting Error =	3.0%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
Cm 243/244 µCi/g	< 5.61E-02	5.61E-02
Relative Counting Error =	100.0%	Cm 243/244
Am 243 Tracer Recovery =	20.3%	5.61E-02

Analyst:	AKL	Date:	10/05/95
Signature of Chemist:	LLF	Date:	5 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP4

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-03-95	Am 241 AEA Frac.	(C241)	DUP 0.472
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.456
Work Unit	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2692	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		5377
Test Code	Digest Grams of Solids/L	(Dg/L)	2.263	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	5
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		28.81
SOLID	Detector Number		1	Am 243 cpm		27.85
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002883				AEA Count Time	(min)	480
Rerun				Am 241 µCi/g =		9.4928E-02
2				Cm 243/244 µCi/g =	<	2.9324E-02
Sample Prep						
FUSION01						

Sample Number	Am-241 µCi/g = (C241) (Am-243 Tracer Value) (SPKV) (1000mL/L) (DF) / [(C243) (SS) (D g/L) (2220000dpm/µCi)]
S95T002021	Cm-243/244 µCi/g = (Cm) (Am-243 Tracer Value) (SPKV) (1000mL/L) (DF) / [(C243) (SS) (D g/L) (2220000dpm/µCi)]
Instrument Code	
AL10539	Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100
Prepared By	Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV
SEH	
Chemist	
LLF	
Analyst	
AKL	
Date Counted	
10/05/95	
Analysis Date	
10/03/95	
Analysis Time	
12:00 PM	
Sample Type	
AW-106 GRAB	

Am241 µCi/g =	9.49E-02	DETECTION LEVELS in µCi/g
Relative Counting Error =	2.4%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
Cm 243/244 µCi/g	< 2.93E-02	2.93E-02
Relative Counting Error =	100.0%	Cm 243/244
Am 243 Tracer Recovery =	34.3%	2.93E-02

Analyst:	AKL	Date:	10/05/95
Signature of Chemist:	LLF	Date:	5 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WRKLST2692-STD
File ID: 19a1923.CNF

Counted on: 10/ 3/95 @22:24
Detector: AEA19
Geometry number: 1
Count time: 28805. 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	134.6	134.6	301.565	301.565	12.000	5.062	6.000	1.815
2	101.5	101.5	256.384	256.360	10.000	4.281	5.000	1.384

PEAK RESULTS
Peak Error Limit: 30%

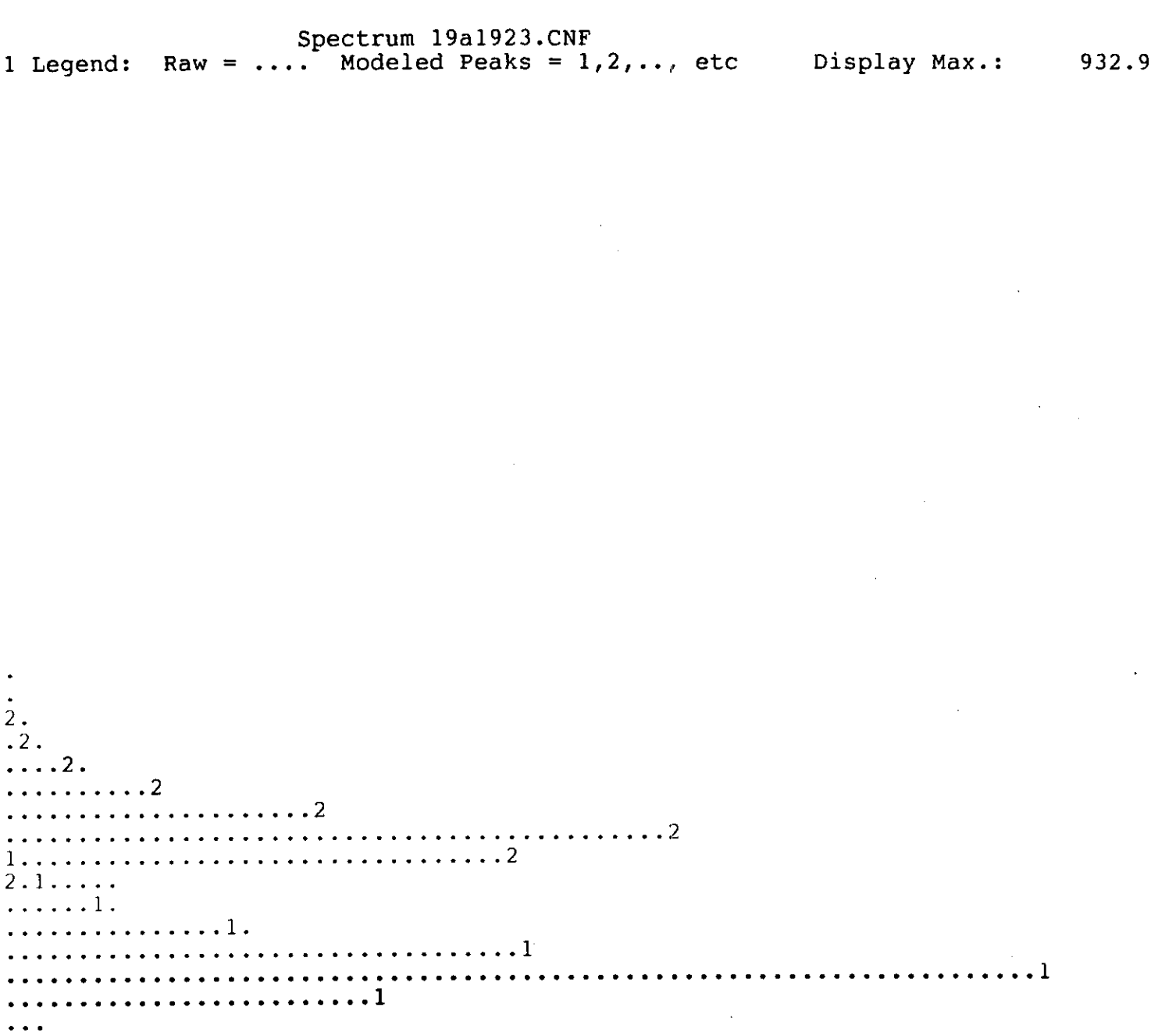
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.537	5.487	5.465	0.022	0.02	4.59	4.2	501.8	0.226E-03
	Am241		5.479	5.465	0.014				384.3	0.173E-03
2	Am243	0.416	5.270	5.257	0.013	0.02	3.56	4.8	282.9	0.127E-03
Totals:		**0.953**	**<--valid peaks only-->**				**8.14**			

DETECTOR CALIBRATION
Energy(MEV) = 4.077 + (0.0046)*Channel
Energy range (MeV): 4.077 TO 6.433
Efficiency = 0.0127 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	4103.0	100.000
Smoothed	4103.0	100.000
Composite fit	3910.2	95.302
Residuals	192.8	4.698

Analyzed by: VR 10-4-95


Spectrum 19a1923.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 932.9

Raw Data Dump for AEA Spectrum: 19a1923.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
51	1.	0.	0.	0.	0.	2.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
71	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.
91	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	2.	1.
111	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.
121	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
131	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
141	0.	1.	2.	0.	0.	0.	0.	0.	2.	0.
151	1.	3.	0.	0.	0.	1.	0.	0.	0.	1.
161	1.	0.	0.	0.	1.	2.	2.	1.	0.	1.
171	1.	1.	0.	0.	0.	0.	0.	2.	1.	1.
181	1.	0.	0.	1.	1.	0.	2.	2.	0.	1.
191	4.	5.	0.	3.	2.	2.	1.	3.	5.	0.
201	1.	3.	3.	1.	1.	3.	1.	2.	0.	6.
211	5.	3.	5.	4.	3.	7.	10.	2.	4.	6.
221	6.	6.	7.	6.	6.	7.	5.	18.	13.	8.
231	13.	20.	11.	22.	16.	16.	19.	17.	33.	35.
241	25.	30.	29.	41.	50.	48.	44.	48.	66.	66.
251	83.	78.	83.	81.	95.	119.	129.	106.	71.	53.
261	29.	21.	12.	14.	11.	9.	12.	8.	8.	13.
271	10.	15.	13.	11.	15.	10.	14.	17.	19.	21.
281	20.	28.	44.	28.	34.	36.	27.	26.	50.	40.
291	65.	53.	80.	71.	74.	76.	101.	113.	124.	138.
301	140.	149.	161.	115.	62.	42.	34.	30.	16.	16.
311	12.	11.	6.	8.	3.	2.	2.	1.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
351	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
361	0.	0.	0.	2.	0.	1.	1.	0.	0.	0.
371	0.	0.	0.	1.	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.	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.								

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WRKLST2692-BLK
File ID: 20a2028.CNF

Counted on: 10/ 3/95 @22:25
Detector: AEA20
Geometry number: 1
Count time: 28801. 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	34.2	34.2	256.082	256.082	12.000	4.627	6.000	0.740

PEAK RESULTS
Peak Error Limit: 30%

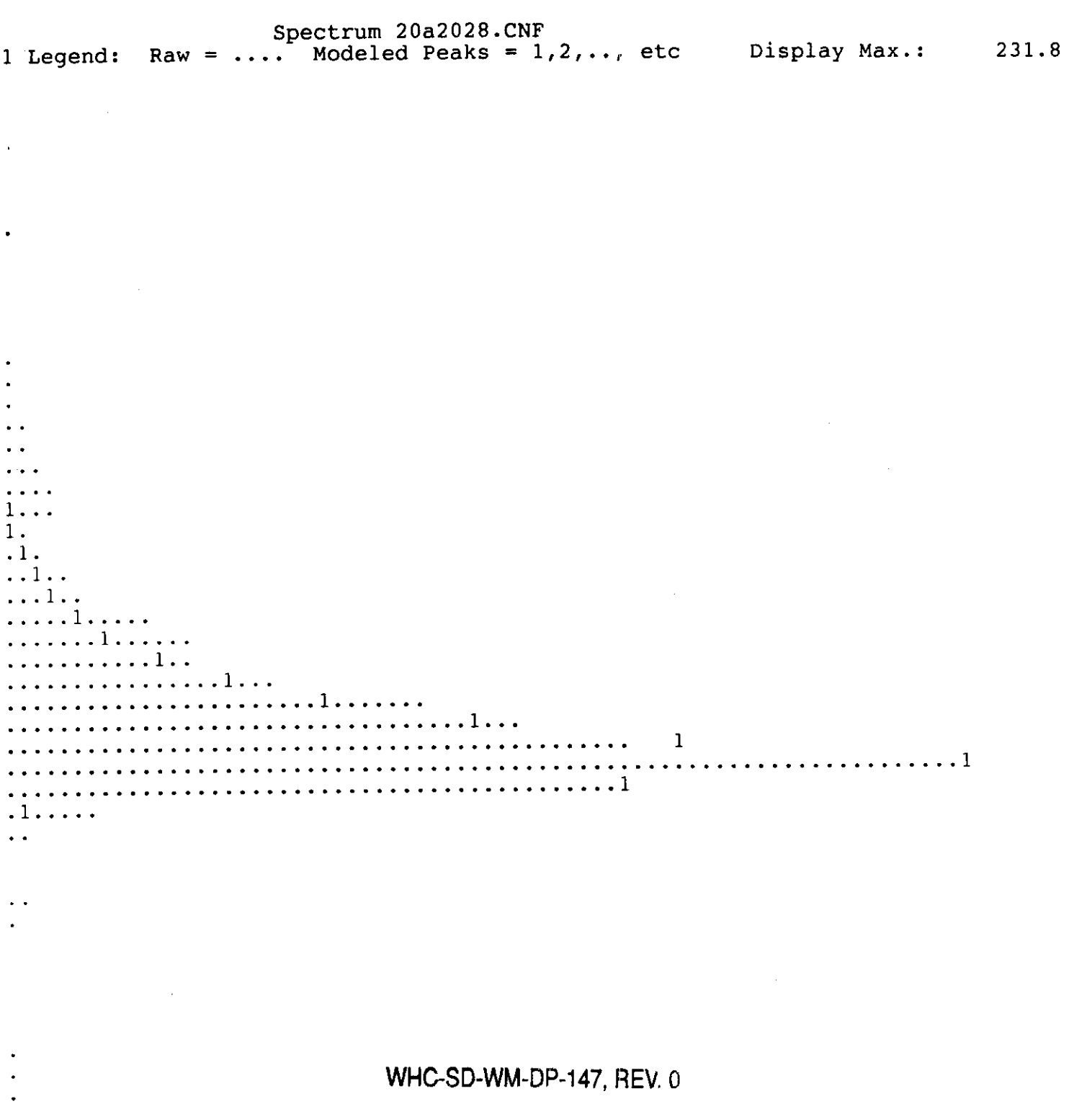
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am243	0.808	5.270	5.254	0.016	0.02	2.00	6.3	232.7	0.105E-03
Totals:		0.808	<--valid peaks only-->				2.00			

DETECTOR CALIBRATION
Energy(MEV) = 4.076 + (0.0046)*Channel
Energy range (MeV): 4.076 TO 6.431
Efficiency = 0.0087 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	1190.0	100.000
Smoothed	1190.0	99.997
Composite fit	962.0	80.837
Residuals	228.0	19.163

Analyzed by: VR 10-4-95


Spectrum 20a2028.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc
Display Max.: 231.8

Raw Data Dump for AEA Spectrum: 20a2028.CNF

1	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
11	0.	0.	1.	0.	0.	0.	0.	1.	1.	0.
21	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.
31	0.	0.	0.	1.	0.	0.	0.	1.	1.	0.
41	0.	0.	0.	0.	1.	1.	0.	0.	0.	1.
51	1.	0.	0.	1.	0.	1.	0.	0.	0.	0.
61	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
71	0.	1.	1.	0.	1.	0.	0.	0.	0.	0.
81	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
91	0.	0.	1.	0.	1.	0.	1.	0.	1.	0.
101	0.	0.	1.	1.	1.	0.	1.	0.	1.	0.
111	0.	0.	0.	1.	0.	0.	0.	1.	1.	1.
121	1.	1.	2.	0.	0.	2.	0.	2.	1.	3.
131	0.	0.	1.	0.	2.	0.	0.	1.	2.	3.
141	0.	0.	1.	5.	0.	1.	2.	3.	2.	3.
151	3.	3.	0.	2.	2.	1.	3.	2.	1.	0.
161	1.	2.	0.	2.	0.	0.	2.	1.	1.	1.
171	0.	1.	3.	3.	3.	2.	1.	0.	1.	3.
181	5.	6.	2.	1.	3.	1.	1.	3.	3.	3.
191	2.	5.	4.	6.	5.	7.	5.	4.	6.	4.
201	6.	6.	3.	2.	10.	7.	6.	10.	12.	3.
211	4.	3.	6.	7.	8.	5.	7.	7.	7.	8.
221	11.	13.	8.	8.	11.	9.	10.	16.	18.	16.
231	16.	20.	10.	10.	14.	21.	19.	15.	19.	19.
241	16.	14.	19.	23.	19.	21.	21.	21.	22.	31.
251	33.	27.	25.	32.	37.	39.	33.	41.	24.	13.
261	12.	1.	4.	2.	2.	4.	1.	1.	2.	0.
271	2.	2.	1.	2.	0.	1.	1.	0.	1.	2.
281	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
291	1.	0.	0.	1.	1.	0.	1.	0.	1.	0.
301	2.	2.	3.	3.	1.	0.	0.	0.	0.	0.
311	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
321	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
331	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
351	1.	0.	0.	0.	0.	0.	2.	1.	1.	1.
361	0.	0.	0.	1.	2.	0.	0.	0.	0.	0.
371	1.	2.	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.	0.	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.	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.								

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2021-SAM
File ID: 21a2136.CNF

Counted on: 10/ 3/95 @22:26
Detector: AEA21
Geometry number: 1
Count time: 28801. 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	564.1	564.1	300.267	300.267	12.000	5.085	6.000	1.611
2	452.8	452.8	254.510	254.474	10.000	4.464	5.000	1.399

PEAK RESULTS
Peak Error Limit: 30%

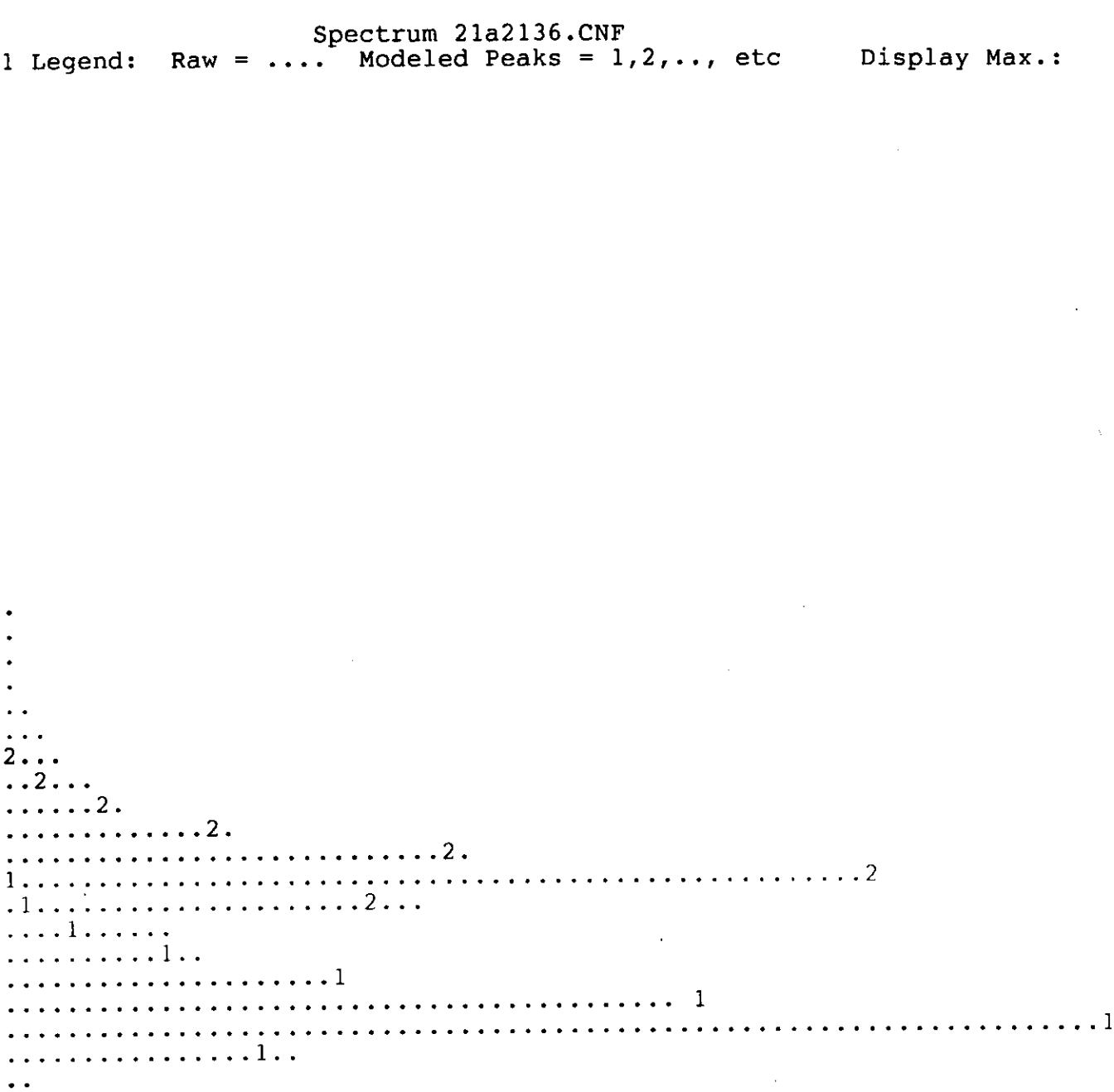
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	Err @95	d/m	Activity uCi/ea
1	Pu238	0.511	5.487	5.472	0.015	0.02	20.70	2.0	1570.7	0.708E-03
	Am241		5.479	5.472	0.007				1203.1	0.542E-03
2	Am243	0.403	5.270	5.261	0.009	0.02	16.32	2.3	900.6	0.406E-03
Totals:		0.914	<--valid peaks only-->				37.01			

DETECTOR CALIBRATION
Energy(MEV) = 4.091 + (0.0046)*Channel
Energy range (MeV): 4.091 TO 6.446
Efficiency = 0.0183 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	19434.0	100.000
Smoothed	19433.8	99.999
Composite fit	17766.7	91.421
Residuals	1667.3	8.579

Analyzed by: VR 10-4-95


Spectrum 21a2136.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 3883.3

Raw Data Dump for AEA Spectrum: 21a2136.CNF

1	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
11	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
21	0.	0.	1.	1.	0.	1.	0.	1.	0.	1.
31	1.	0.	1.	2.	0.	1.	1.	2.	0.	1.
41	0.	0.	0.	0.	2.	0.	1.	0.	1.	0.
51	0.	0.	1.	0.	1.	0.	1.	1.	1.	2.
61	1.	2.	1.	0.	0.	4.	1.	0.	0.	0.
71	0.	1.	2.	0.	2.	1.	0.	0.	1.	0.
81	1.	1.	3.	2.	1.	0.	1.	0.	0.	1.
91	2.	0.	1.	2.	1.	2.	3.	1.	2.	1.
101	1.	1.	0.	2.	2.	2.	1.	1.	1.	4.
111	2.	0.	7.	3.	4.	4.	0.	2.	0.	4.
121	2.	2.	2.	1.	1.	0.	5.	7.	2.	2.
131	3.	5.	1.	4.	5.	2.	4.	2.	3.	6.
141	0.	5.	6.	3.	10.	3.	6.	4.	6.	1.
151	6.	6.	9.	3.	4.	5.	10.	4.	10.	11.
161	5.	9.	8.	11.	8.	9.	3.	5.	7.	9.
171	11.	13.	8.	9.	10.	13.	10.	12.	10.	9.
181	11.	8.	11.	15.	13.	11.	10.	16.	17.	18.
191	13.	17.	14.	10.	20.	25.	16.	20.	19.	17.
201	19.	15.	23.	20.	21.	29.	16.	26.	31.	23.
211	33.	35.	26.	40.	27.	32.	43.	38.	46.	49.
221	53.	50.	51.	49.	53.	55.	50.	50.	69.	64.
231	80.	85.	88.	91.	92.	114.	129.	124.	134.	165.
241	173.	177.	172.	213.	243.	232.	279.	303.	310.	343.
251	381.	379.	458.	481.	573.	478.	390.	234.	140.	85.
261	78.	75.	65.	73.	67.	74.	77.	74.	75.	65.
271	65.	57.	86.	80.	80.	94.	99.	101.	118.	123.
281	114.	140.	136.	164.	160.	176.	184.	240.	241.	255.
291	274.	316.	338.	349.	381.	408.	468.	508.	595.	640.
301	654.	586.	438.	279.	154.	97.	100.	80.	64.	51.
311	39.	21.	21.	18.	7.	4.	1.	1.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
331	1.	0.	1.	0.	0.	0.	1.	0.	0.	2.
341	0.	1.	0.	0.	0.	2.	1.	2.	0.	1.
351	1.	1.	0.	1.	1.	1.	0.	3.	0.	2.
361	1.	3.	5.	1.	1.	2.	0.	4.	2.	4.
371	4.	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.	1.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
411	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	2.	2.	0.	0.	0.	0.	0.
431	0.	0.	1.	0.	1.	1.	2.	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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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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2021-DUP
File ID: 22a2285.CNF

Counted on: 10/ 3/95 @22:26
Detector: AEA22
Geometry number: 1
Count time: 28801. 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	910.7	910.7	304.180	304.180	12.000	4.729	6.000	1.889
2	958.3	958.3	258.117	258.108	10.000	3.602	5.000	1.504
3	11.2	11.2	191.372	191.267	108.000	1.000	54.000	0.100

PEAK RESULTS
Peak Error Limit: 30%

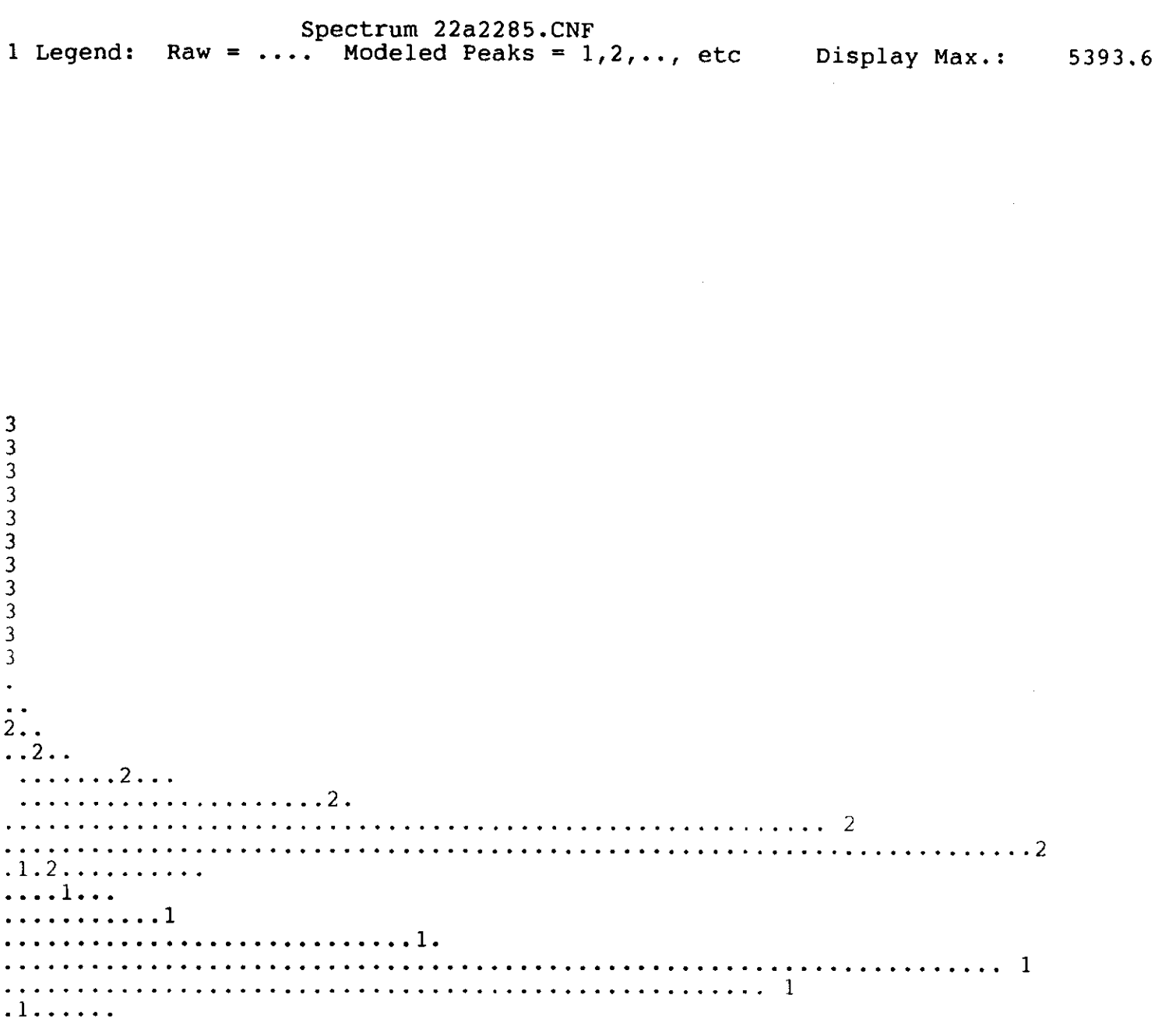
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.472	5.487	5.481	0.006	0.02	28.81	1.7	2084.3	0.939E-03
	Am241		5.479	5.481	-.002				1596.5	0.719E-03
2	Am243	0.456	5.270	5.269	0.001	0.02	27.85	1.7	1464.9	0.660E-03
3		0.015		4.962	0.00		0.90	9.6	46.7	0.210E-04
Totals:		0.943	<--valid peaks only-->				57.56			

DETECTOR CALIBRATION
Energy(MEV) = 4.082 + (0.0046)*Channel
Energy range (MeV): 4.082 TO 6.437
Efficiency = 0.0192 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	29294.0	100.000
Smoothed	29294.0	100.000
Composite fit	27627.7	94.312
Residuals	1666.3	5.688

Analyzed by: VR 10-4-95


Spectrum 22a2285.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 5393.6

Raw Data Dump for AEA Spectrum: 22a2285.CNF

1	0.	0.	1.	0.	0.	0.	1.	0.	2.	0.
11	0.	0.	0.	0.	0.	1.	1.	0.	1.	0.
21	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
31	2.	0.	0.	0.	0.	0.	1.	0.	1.	0.
41	1.	0.	0.	1.	1.	3.	3.	1.	0.	0.
51	0.	0.	0.	1.	0.	0.	0.	3.	0.	1.
61	0.	0.	1.	1.	1.	3.	1.	0.	0.	1.
71	1.	0.	0.	0.	1.	0.	2.	1.	0.	0.
81	0.	2.	2.	1.	1.	1.	0.	1.	0.	0.
91	2.	2.	0.	2.	0.	2.	2.	0.	0.	0.
101	1.	6.	3.	1.	0.	0.	0.	2.	0.	1.
111	3.	0.	4.	1.	0.	1.	0.	2.	3.	2.
121	2.	2.	1.	3.	2.	1.	1.	3.	1.	2.
131	1.	1.	4.	5.	2.	5.	6.	4.	1.	3.
141	2.	2.	5.	0.	4.	4.	4.	7.	3.	6.
151	8.	5.	2.	2.	5.	4.	3.	2.	0.	6.
161	3.	6.	3.	7.	2.	4.	4.	8.	4.	5.
171	3.	12.	6.	5.	6.	6.	9.	8.	7.	7.
181	10.	11.	5.	11.	9.	7.	7.	10.	5.	10.
191	18.	11.	7.	11.	9.	6.	11.	14.	11.	9.
201	10.	10.	17.	16.	12.	16.	18.	26.	24.	24.
211	17.	22.	26.	29.	26.	29.	23.	29.	20.	38.
221	35.	35.	37.	39.	35.	43.	46.	46.	53.	70.
231	76.	75.	78.	108.	105.	118.	146.	126.	150.	172.
241	168.	171.	212.	216.	219.	283.	328.	375.	458.	459.
251	474.	493.	574.	634.	705.	825.	1067.	1142.	1161.	962.
261	578.	279.	117.	107.	95.	115.	78.	85.	90.	84.
271	96.	75.	67.	75.	72.	61.	74.	75.	80.	98.
281	97.	119.	109.	116.	138.	138.	145.	157.	209.	217.
291	253.	306.	310.	369.	424.	479.	495.	488.	569.	621.
301	752.	840.	914.	1064.	1082.	920.	625.	308.	239.	193.
311	139.	127.	98.	83.	69.	54.	34.	24.	9.	5.
321	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
351	2.	1.	0.	1.	1.	0.	0.	0.	0.	1.
361	1.	1.	6.	0.	2.	1.	2.	2.	1.	2.
371	4.	5.	11.	6.	7.	3.	3.	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.	1.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
431	**1.**	**0.**	**2.**	**1.**	**1.**	**1.**	**0.**	**0.**	**0.**	**1.**
441	**2.**	**4.**	**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.	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.								

LABCORE Completed Worklist Report for Worklist# 2728

Analyst: akl **Instrument:** AM01 **Book#** 104843

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: For re-entry of Am, Cm results from wklst 2291. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
1	STD		0		@AM24102 AM24101	LIQUID	3.07E-02		2.63E-2	85.670	% Recovery
1	STD		0		@AM24102 AM24101E	LIQUID	1.00		1.40E+00	1.400	% Ct. Error
1	STD		0		@AM24102 AM24101T	LIQUID	100		7.66E+01	76.600	% Recovery
2	BLNK		0		@AM24102 AM24101	LIQUID	1		<2.11E-3		uCi/mL
2	BLNK		0		@AM24102 AM24101E	LIQUID	1.00		1.00E+02	100.000	% Ct. Error
2	BLNK		0		@AM24102 AM24101T	LIQUID	100		1.10E+01	11.000	% Recovery
2	BLNK		0		@AM24102 CM24301	LIQUID	1		<2.11E-3		uCi/mL
2	BLNK		0		@AM24102 CM24301E	LIQUID	1.00		1.00E+02	100.000	% Ct. Error
3	SAMPLE	S95T002017	0		@AM24102 AM24101	LIQUID	N/A	<	1.09E-03	1.090e-003	uCi/mL
3	SAMPLE	S95T002017	0		@AM24102 AM24101E	LIQUID	N/A		1.00E+02	0.000	% Ct. Error
3	SAMPLE	S95T002017	0		@AM24102 AM24101T	LIQUID	N/A		1.46E+01	1.000e-007	% Recovery
3	SAMPLE	S95T002017	0		@AM24102 CM24301	LIQUID	N/A	<	1.09E-03	1.090e-003	uCi/mL
3	SAMPLE	S95T002017	0		@AM24102 CM24301E	LIQUID	N/A		1.00E+02	0.000	% Ct. Error

Final page for worklist# 2728

Analyst Signature **Date**

Analyst Signature **Date**

AJFitz 3 Oct 95
Reviewer Signature **Date**

This sample was analyzed according to worklist # 2291. However, since the wrong test code was logged-in, the Cm data was not entered on that worklist. The test code was corrected, and the same raw data was re-entered for this worklist. RAE 10/10/95

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2728

Analyst: _____ **Instrument:** AM01 _____ **Book #** _____

Method: LA-953-103 Rev/Mod _____

Worklist Comment: For re-entry of Am, Cm results from wklst 2291. --LLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@AM24102 AM24101	LIQUID			N/A	uCi/mL
		1	STD				@AM24102 AM24101E	LIQUID			N/A	% Ct. Error
		1	STD				@AM24102 AM24101T	LIQUID			N/A	% Recovery
		2	BLNK				@AM24102 AM24101	LIQUID			N/A	uCi/mL
		2	BLNK				@AM24102 AM24101E	LIQUID			N/A	% Ct. Error
		2	BLNK				@AM24102 AM24101T	LIQUID			N/A	% Recovery
		2	BLNK				@AM24102 CM24301	LIQUID			N/A	uCi/mL
		2	BLNK				@AM24102 CM24301E	LIQUID			N/A	% Ct. Error
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@AM24102 AM24101	LIQUID	N/A			uCi/mL
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@AM24102 AM24101E	LIQUID	N/A			% Ct. Erro
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@AM24102 AM24101T	LIQUID	N/A			% Recovery
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@AM24102 CM24301	LIQUID	N/A			uCi/mL
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@AM24102 CM24301E	LIQUID	N/A			% Ct. Error

Final page for worklist # 2728

Analyst Signature **Date**

Analyst Signature **Date**

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID

							STD
	Date Counted		SEP-20-95	Am 241 AEA Frac.	(C241)		0.356
STD	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.568
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)		0
2728	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts			18791
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
AM24102	Tracer Book No.		114B43	Background in cpm	(Bkg)		5
	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			66.91
LIQUID	Detector Number		1	Am 243 cpm			106.71
	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002933	Standard Book No		104B43	AEA Count Time	(min)		480
	Standard Value in µCi/mL		0.03067	Am 241 µCi/L =			2.6274E+01
0				Cm 243/244 µCi/L =		<	4.8168E+00

N/A

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

WORKLIST 2728

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

AL10539

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

LLF

LLF	Am 241 µCi/mL =	2.63E-02	DETECTION LEVELS in µCi/mL
	Relative Counting Error =	1.4%	
AKL	NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
10/03/95	Cm 243/244 µCi/mL	< 4.82E-03	4.82E-03
	Relative Counting Error =	100.0%	Cm 243/244
09:20:36	Am 243 Tracer Recovery =	76.6%	4.82E-03

02:50 PM

AW-105

Analyst:		AKL	Date:	10/03/95
Signature of Chemist:	[signature]	LLF	Date:	3 Oct 95

STANDARD.WB1 REV 1.2 953103ML

WORKBOOK PAGE: BLANK2

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

						BLNK
	Date Counted		SEP-20-95	Am 241 AEA Frac.	(C241)	0
BLNK	Sample Volume in mL	(SS)	0.100	Am 243 AEA Frac.	(C243)	0.896
	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2728	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1757
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		114B43	Background in cpm	(Bkg)	2
	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		0
LIQUID	Detector Number		2	Am 243 cpm		15.98
	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002933				AEA Count Time	(min)	480
				Am 241 µCi/L =	<	2.1053E+00
0				Cm 243/244 µCi/L =	<	2.1053E+00
N/A						

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

WORKLIST #2291 Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

AL10840 Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

LLF

NOTE: Am-241 Result is a LESS THAN Value.

LLF

Am 241 µCi/mL	=	< 2.11E-03	DETECTION LEVELS In µCi/mL
Relative Counting Error	=	100.0%	
AKL			
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
10/03/95 Cm 243/244 µCi/mL		< 2.11E-03	2.11E-03
Relative Counting Error	=	100.0%	Cm 243/244
09/20/95 Am 243 Tracer Recovery	=	11.0%	2.11E-03

02:00 PM

AW:105

Analyst:	AKL	Date:	10/03/95
Signature of Chemist:	LLF	Date:	3 Oct 95

BLANK.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM3

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

							SAMPLE
	Date Counted		SEP-20-95	Am 241 AEA Frac.	(C241)		0
SAMPLE	Sample Volume in mL	(SS)	0.100	Am 243 AEA Frac.	(C243)		1.296
	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2728	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts			1661
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
QAM24102	Tracer Book No.		AB43	Background in cpm	(Bkg)		4
	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			0
LIQUID	Detector Number		3	Am 243 cpm			21.63
	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002933				AEA Count Time	(min)		480
				Am 241 µCi/L =		<	1.0939E+00
0				Cm 243/244 µCi/L =		<	1.0939E+00
N/A							

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

S95T002017 Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

AL10541 Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

LLF

NOTE: Am-241 Result is a LESS THAN Value.

LLF

Am 241 µCi/mL	=	< 1.09E-03	DETECTION LEVELS In µCi/mL
Relative Counting Error	=	100.0%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241 1.09E-03
Cm 243/244 µCi/mL		< 1.09E-03	
Relative Counting Error	=	100.0%	Cm 243/244 1.09E-03
Am 243 Tracer Recovery	=	14.6%	

AKL

10/03/95

09:20:35

02:30 PM

AW-106

Analyst:		AKL	Date:	10/03/95
Signature of Chemist:	[signature]	LLF	Date:	3 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

9-21-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST2291-STD
File ID: 17a1757.CNF

Counted on: 9/20/95 @17:35
Detector: AEA17
Geometry number: 1
Count time: 28804. Sec

PEAK ANALYSIS

Peak	Peak height		Peak center		FWHM		Tau	
ID	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	1942.4	1942.4	298.800	298.800	12.000	4.975	6.000	1.741
2	3191.4	3191.4	253.220	253.207	12.000	4.212	6.000	1.463
3	38.6	38.6	160.853	160.797	112.000	1.000	56.000	0.100
4?	4.2	4.2	144.769	144.029	4.000	0.383	2.000	0.270

PEAK RESULTS
Peak Error Limit: 30%

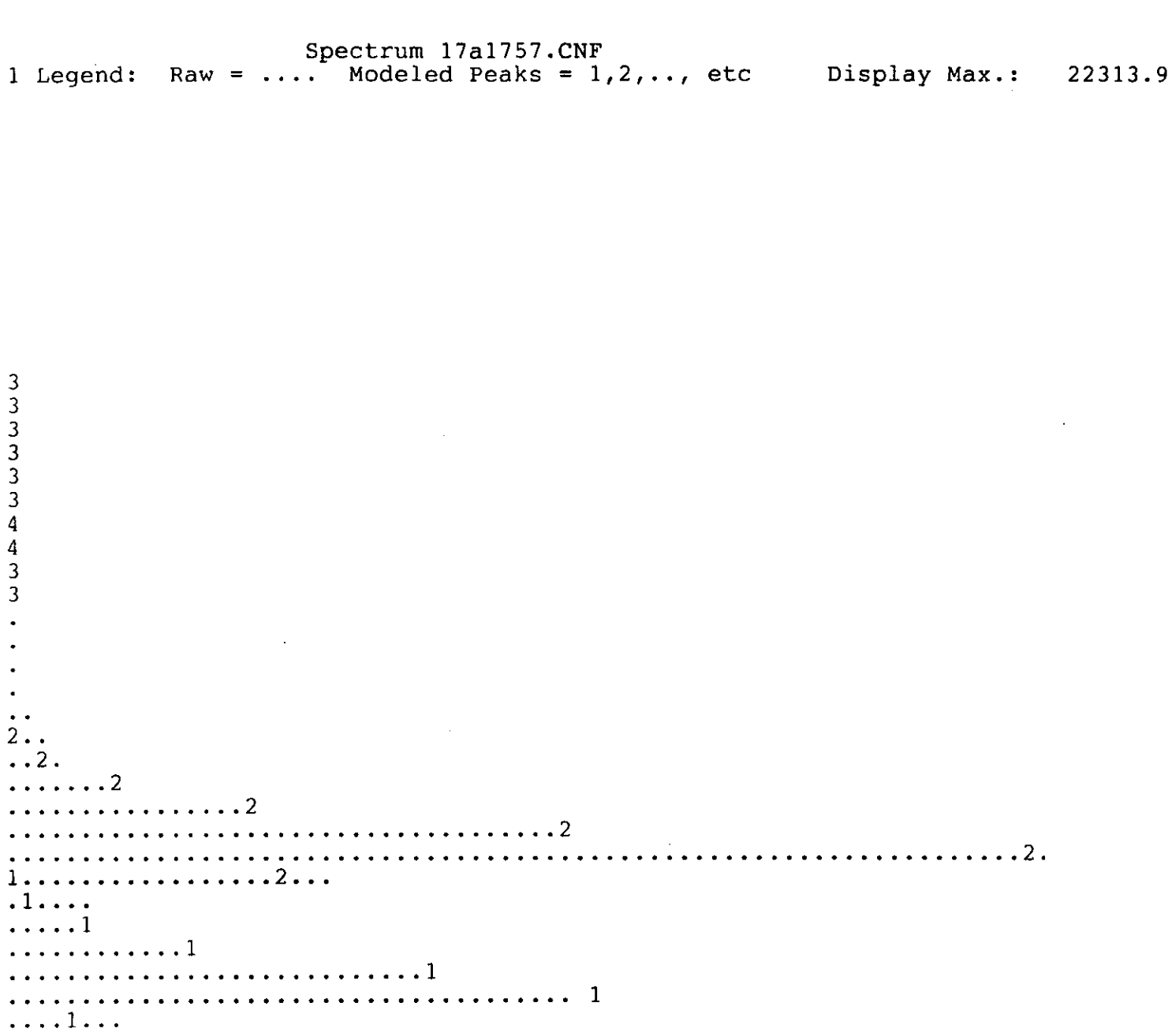
Peak		AEA	Peak Centroid				Count	%err		Activity
ID	Isotope	Frac	Exp.	Obs.	Diff.	FWHM	Rate c/m	@95	d/m	uCi/ea
1	Pu238	0.356	5.487	5.477	0.010	0.02	66.91	1.1	1058.4	0.477E-03
	Am241		5.479	5.477	0.002				810.7	0.365E-03
2	Am243	0.568	5.270	5.268	0.002	0.02	106.71	0.9	1227.7	0.553E-03
3		0.016		4.843	0.00		3.07	5.1	35.0	0.157E-04
4		????		4.765			0.06	220.		
		-----					---------			
Totals:		0.940	<--valid peaks only-->				176.69			

DETECTOR CALIBRATION
Energy(MEV) = 4.103 + (0.0046)*Channel
Energy range (MeV): 4.103 TO 6.458
Efficiency = 0.0878 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	90216.0	100.000
Smoothed	90223.4	100.008
Composite fit	84851.7	94.054
Residuals	5364.3	5.946

Analyzed by: EMB


Spectrum 17a1757.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 22313.9

Raw Data Dump for AEA Spectrum: 17a1757.CNF

1	0.	0.	7.	6.	5.	2.	3.	7.	7.	4.
11	2.	6.	4.	6.	4.	6.	5.	11.	5.	2.
21	5.	3.	6.	6.	5.	8.	9.	7.	4.	3.
31	10.	1.	7.	7.	5.	6.	7.	3.	6.	9.
41	4.	5.	7.	9.	8.	6.	9.	3.	9.	5.
51	7.	8.	5.	9.	4.	9.	13.	8.	5.	10.
61	6.	4.	7.	14.	6.	8.	5.	7.	6.	14.
71	6.	9.	7.	5.	10.	9.	8.	12.	9.	8.
81	12.	8.	11.	8.	13.	17.	11.	21.	9.	9.
91	13.	9.	20.	10.	10.	8.	14.	9.	8.	18.
101	14.	15.	9.	13.	9.	14.	17.	15.	8.	21.
111	14.	15.	13.	11.	18.	15.	19.	22.	10.	21.
121	18.	9.	16.	30.	20.	22.	15.	23.	17.	20.
131	19.	15.	21.	18.	19.	26.	29.	18.	22.	23.
141	28.	14.	38.	26.	28.	29.	31.	18.	23.	27.
151	24.	28.	26.	33.	28.	34.	31.	30.	27.	40.
161	40.	31.	35.	25.	30.	31.	43.	40.	38.	38.
171	47.	44.	46.	39.	51.	45.	56.	51.	40.	47.
181	48.	51.	39.	51.	64.	42.	57.	56.	56.	57.
191	69.	70.	64.	58.	77.	82.	71.	64.	60.	77.
201	95.	78.	84.	98.	78.	94.	113.	99.	99.	114.
211	134.	117.	130.	143.	143.	159.	173.	164.	169.	190.
221	196.	228.	208.	262.	264.	274.	295.	354.	384.	429.
231	431.	495.	539.	626.	676.	665.	745.	798.	940.	1005.
241	1108.	1244.	1461.	1607.	1782.	1854.	1973.	2216.	2310.	2589.
251	3047.	3321.	3622.	3798.	3321.	2475.	1333.	670.	426.	305.
261	252.	264.	267.	260.	246.	235.	200.	230.	219.	189.
271	176.	174.	190.	194.	240.	242.	262.	289.	354.	372.
281	385.	477.	461.	531.	587.	627.	727.	846.	961.	1002.
291	1106.	1167.	1222.	1253.	1451.	1720.	1860.	2103.	2194.	2282.
301	1749.	1141.	729.	445.	371.	279.	218.	205.	139.	106.
311	93.	62.	36.	21.	4.	2.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
331	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
351	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
361	0.	0.	0.	2.	0.	1.	0.	0.	1.	1.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
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.	1.	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.								

Westinghouse 9-21-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST2291-BLK
File ID: 18a1897.CNF

Counted on: 9/20/95 @17:35
Detector: AEA18
Geometry number: 1
Count time: 28805. 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	113.6	113.6	244.386	244.756	42.000	46.432	21.000	3.361
2	8.1	8.1	79.179	77.386	40.000	1.000	20.000	0.100
3?	4.0	4.0	71.769	68.955	134.000	1.000	67.000	0.100
4?	3.3	3.3	28.268	26.460	6.000	0.867	3.000	0.362

PEAK RESULTS
Peak Error Limit: 30%

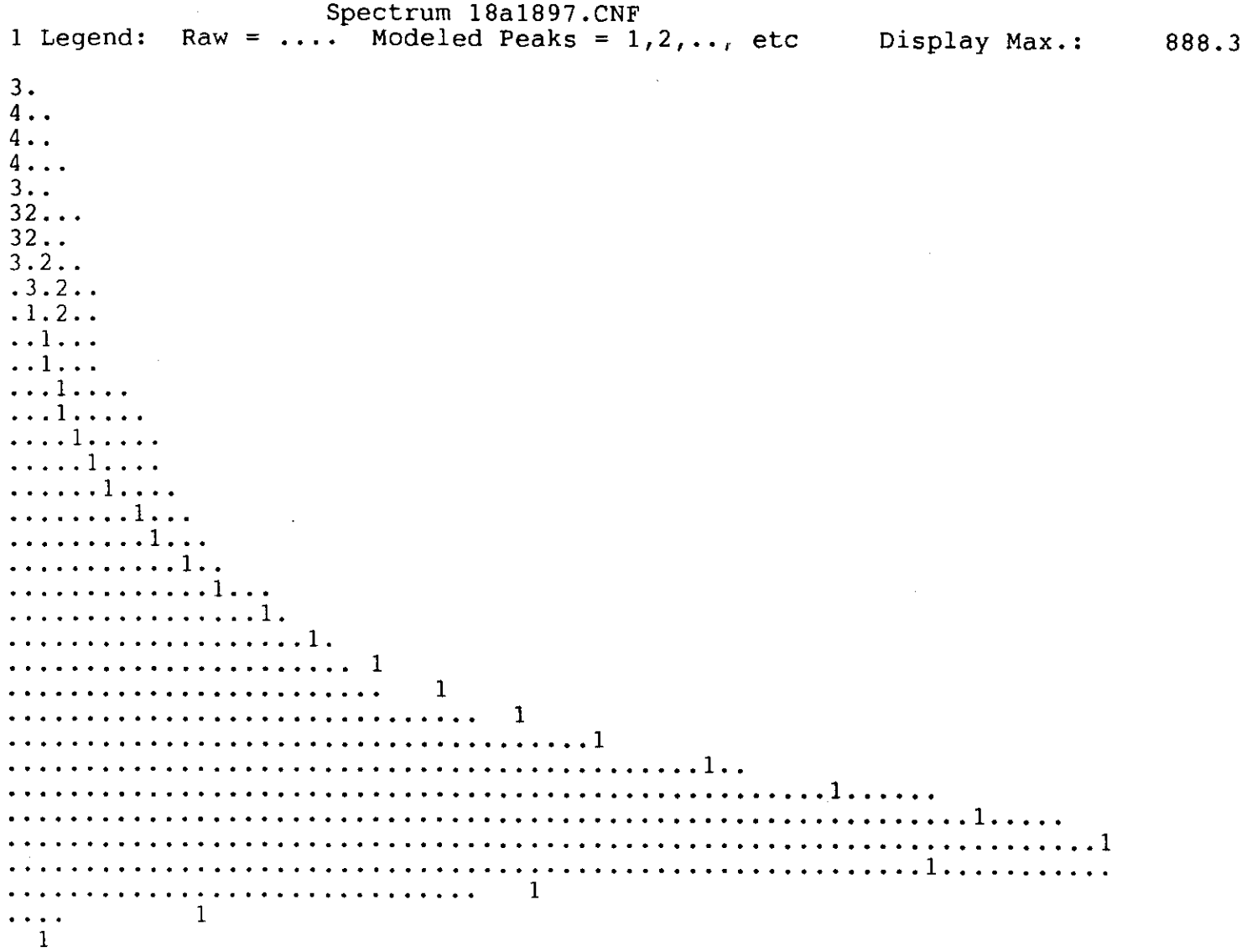
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu239	0.896	5.147	5.217	-.070	0.21	15.98	2.2	832.5	0.375E-03
	Am243		5.270	5.217	0.053				840.9	0.379E-03
2		0.032		4.447	0.00		0.58	15.4	30.0	0.135E-04
3		????		4.408			0.27	34.4		
4		????		4.213			0.07	69.0		
Totals:		0.928	<--valid peaks only-->				16.56			

DETECTOR CALIBRATION
Energy(MEV) = 4.091 + (0.0046)*Channel
Energy range (MeV): 4.091 TO 6.446
Efficiency = 0.0192 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	8567.0	100.000
Smoothed	8568.7	100.020
Composite fit	8115.6	94.731
Residuals	451.4	5.269

Analyzed by: EMB


Spectrum 18a1897.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc
Display Max.: 888.3

Raw Data Dump for AEA Spectrum: 18a1897.CNF

1	0.	0.	3.	8.	6.	6.	5.	5.	9.	9.
11	3.	2.	9.	4.	4.	3.	10.	6.	6.	6.
21	3.	4.	6.	6.	7.	7.	11.	10.	3.	5.
31	5.	7.	6.	6.	5.	2.	9.	3.	4.	5.
41	13.	11.	5.	6.	11.	10.	7.	13.	7.	6.
51	10.	7.	3.	5.	8.	8.	10.	10.	5.	8.
61	8.	16.	10.	9.	11.	6.	9.	12.	12.	15.
71	10.	10.	9.	11.	5.	10.	16.	13.	10.	11.
81	5.	13.	14.	7.	8.	13.	10.	12.	7.	7.
91	7.	11.	13.	4.	19.	11.	11.	11.	19.	11.
101	18.	17.	14.	19.	12.	15.	14.	14.	15.	19.
111	19.	16.	10.	21.	15.	15.	19.	17.	9.	24.
121	14.	16.	23.	17.	10.	21.	16.	17.	17.	20.
131	20.	22.	13.	22.	14.	20.	22.	15.	19.	25.
141	23.	16.	23.	13.	23.	17.	18.	19.	14.	35.
151	22.	30.	18.	23.	21.	26.	22.	25.	24.	26.
161	25.	27.	27.	23.	29.	26.	34.	30.	33.	29.
171	30.	32.	27.	26.	26.	26.	29.	27.	34.	40.
181	41.	42.	31.	36.	29.	35.	29.	31.	35.	37.
191	40.	47.	37.	28.	44.	35.	39.	44.	43.	32.
201	47.	49.	41.	41.	64.	61.	50.	59.	56.	53.
211	56.	56.	58.	76.	65.	76.	63.	71.	78.	89.
221	63.	84.	91.	81.	82.	90.	93.	84.	92.	105.
231	112.	113.	111.	100.	104.	98.	106.	126.	117.	106.
241	122.	110.	106.	105.	115.	128.	100.	95.	119.	125.
251	96.	103.	114.	101.	127.	128.	105.	81.	45.	21.
261	15.	13.	8.	8.	8.	12.	2.	5.	2.	2.
271	2.	2.	1.	2.	0.	2.	0.	1.	0.	0.
281	1.	0.	0.	0.	1.	1.	0.	0.	1.	0.
291	2.	0.	0.	2.	0.	0.	2.	1.	1.	0.
301	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.
311	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
351	0.	1.	0.	1.	0.	0.	0.	0.	0.	0.
361	0.	3.	0.	0.	1.	0.	0.	0.	0.	0.
371	0.	1.	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.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	1.	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.								

A Johnson 9-21-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2017-SAM
File ID: 19a1900.CNF

Counted on: 9/20/95 @17:36
Detector: AEA19
Geometry number: 1
Count time: 28806. 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	201.3	201.3	255.679	255.679	12.000	5.682	6.000	0.449

PEAK RESULTS
Peak Error Limit: 30%

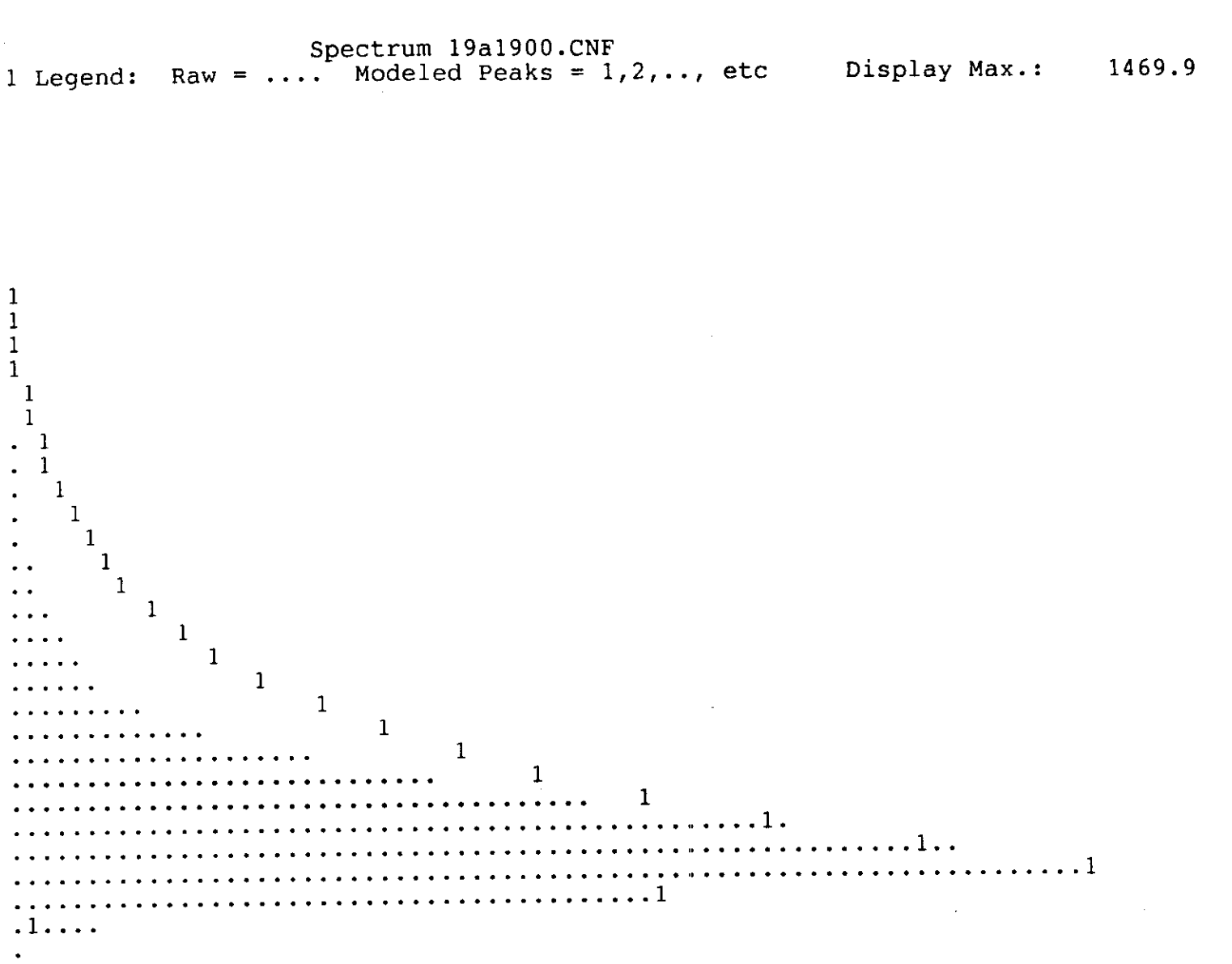
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am243	1.296	5.270	5.278	-.0080	.03	21.63	1.9	1791.1	0.807E-03
Totals:		1.296	<--valid peaks only-->				21.63			

DETECTOR CALIBRATION
Energy(MEV) = 4.076 + (0.0047)*Channel
Energy range (MeV): 4.076 TO 6.482
Efficiency = 0.0122 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	8016.0	100.000
Smoothed	8016.0	100.000
Composite fit	10386.1	129.567
Residuals	-2370.1	-29.567

Analyzed by: _____
EMB


Spectrum 19a1900.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc
Display Max.: 1469.9

Raw Data Dump for AEA Spectrum: 19a1900.CNF

1	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.
11	1.	0.	0.	0.	1.	1.	1.	0.	0.	1.
21	1.	0.	0.	0.	2.	1.	1.	3.	0.	0.
31	0.	0.	0.	1.	0.	0.	1.	0.	1.	2.
41	1.	1.	0.	3.	0.	0.	2.	2.	2.	2.
51	2.	1.	1.	1.	0.	1.	0.	2.	2.	1.
61	0.	0.	0.	0.	2.	2.	0.	1.	0.	1.
71	1.	1.	1.	1.	0.	1.	3.	0.	0.	1.
81	0.	0.	3.	0.	2.	2.	0.	3.	4.	3.
91	2.	0.	1.	2.	2.	2.	0.	2.	2.	1.
101	2.	1.	1.	3.	4.	3.	3.	3.	3.	3.
111	1.	1.	6.	1.	2.	3.	4.	3.	2.	4.
121	6.	2.	5.	2.	2.	2.	5.	2.	4.	3.
131	8.	5.	7.	4.	8.	5.	4.	5.	6.	4.
141	5.	3.	6.	3.	3.	5.	6.	5.	6.	8.
151	11.	1.	2.	10.	1.	4.	8.	10.	6.	6.
161	12.	5.	9.	15.	5.	7.	5.	11.	12.	9.
171	9.	14.	13.	9.	9.	14.	11.	18.	13.	10.
181	10.	22.	21.	19.	18.	18.	16.	19.	14.	19.
191	19.	20.	22.	25.	22.	19.	32.	30.	35.	25.
201	29.	16.	42.	31.	38.	45.	48.	36.	52.	58.
211	54.	53.	48.	66.	55.	60.	61.	70.	65.	75.
221	90.	88.	91.	87.	74.	115.	98.	103.	90.	103.
231	124.	115.	111.	118.	126.	150.	131.	146.	181.	151.
241	147.	160.	173.	157.	168.	173.	177.	172.	167.	204.
251	168.	173.	167.	196.	200.	217.	225.	181.	158.	108.
261	48.	31.	25.	14.	18.	9.	8.	8.	12.	5.
271	4.	3.	1.	4.	2.	2.	3.	0.	0.	2.
281	1.	2.	1.	3.	3.	1.	3.	2.	0.	2.
291	3.	0.	2.	1.	1.	1.	2.	3.	2.	0.
301	2.	5.	3.	2.	0.	2.	0.	1.	0.	1.
311	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
351	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
361	0.	1.	0.	0.	1.	0.	0.	0.	0.	1.
371	0.	1.	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.	0.	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.								

AW102

LABCORE Completed Worklist Report for Worklist# 2751

Analyst: akl **Instrument:** AM01 **Book#** 104B43

Method: LA-953 103 Rev/Mod A-4 WHC-SD-WM-DP-147, REV. 0

Worklist Comment: Use a 0.5 mL sample size. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@AM24101 AM24101	LIQUID	3.07E-02	2.28E-2	74.270	% Recovery
1	STD		0		@AM24101 AM24101E	LIQUID	1.00	6.78E+00	6.780	% Ct. Error
1	STD		0		@AM24101 AM24101T	LIQUID	100	2.09E+01	20.900	% Recovery
2	BLNK		0		@AM24101 AM24101	LIQUID	1	<2.56E-4		uCi/mL
2	BLNK		0		@AM24101 AM24101E	LIQUID	1.00	1.00E+02	100.000	% Ct. Error
2	BLNK		0		@AM24101 AM24101T	LIQUID	100	8.57E+00	8.570	% Recovery
3	SAMPLE	S95T002039	0		@AM24101 AM24101	LIQUID	N/A	5.62E-04	6.750e-005	uCi/mL
3	SAMPLE	S95T002039	0		@AM24101 AM24101E	LIQUID	N/A	1.44E+00	0.000	% Ct. Error
3	SAMPLE	S95T002039	0		@AM24101 AM24101T	LIQUID	N/A	8.20E+01	1.000e-007	% Recovery
4	DUP	S95T002039	0		@AM24101 AM24101	LIQUID	5.62E-4	5.84E-4	3.840	RPD
4	DUP	S95T002039	0		@AM24101 AM24101E	LIQUID	1.00	1.62E+00	1.620	% Ct. Error
4	DUP	S95T002039	0		@AM24101 AM24101T	LIQUID	100	6.12E+01	61.200	% Recovery

Final page for worklist# 2751

Analyst Signature **Date**

Analyst Signature **Date**

LL Fitts 9 Oct 95
Reviewer Signature **Date**

Standard and blank AEAs were mislabled. AEAs were marked and switched.

Sample and dup S95T2039 show Cm-243/244 activity at levels below quantification.

LL Fitts 9 Oct 95

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2751

Analyst: AKL **Instrument:** AM01 _____ **Book#** 104643

Method: LA-953-103 Rev/Mod A-4

Worklist Comment: Use a 0.5 mL sample size. --LLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@AM24101	LIQUID		
2	BLNK				@AM24101	LIQUID		
3	SAMPLE	S95T002039	0		@AM24101	LIQUID	95000126	AW-106 GRAB
	Analytes Requested: AM24101 , AM24101E, AM24101T							
4	DUP	S95T002039	0		@AM24101	LIQUID		

Final page for worklist # 2751

C. Lewis
Analyst Signature **Date**

N. Kirch 10-7-95
Analyst Signature **Date**

SE Hogan 10-9-95

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID

Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)	0.45
STD	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.413
Work List	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0
2751	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		3623
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		3.64
LIQUID	Detector Number		1	Am 243 cpm		3.34
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002968	Standard Book No		104B43	AEA Count Time	(min)	480
Reps	Standard Value in µCi/mL		0.03067	Am 241 µCi/L =		2.2838E+01
0				Cm 243/244 µCi/L =	<	1.2121E+01

Sample Prep
N/A
Sample Number
WORKLIST 2751-STD
Determined Code
AL10539
Prepared By
SEH
Chemist
LLF
Analyst
AKL
Date Completed
10/09/95
Analysis Date
10/07/95
Analysis Time
09:30 PM
Sample Type
AW-106 GRAB

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

			DETECTION LEVELS in µCi/mL
Am 241 µCi/mL	=	2.28E-02	
Relative Counting Error	=	6.8%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241 1.21E-02
Cm 243/244 µCi/mL		< 1.21E-02	
Relative Counting Error	=	100.0%	Cm 243/244 1.21E-02
Am 243 Tracer Recovery	=	20.9%	

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	9 Oct 95

STANDARD.WB1 REV 1.2 953103ML

WORKBOOK PAGE: BLANK2

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)	0	BLNK
BLNK	Sample Volume in mL	(SS)	0.500	Am 243 AEA Frac.	(C243)	0.811	
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0	
2751	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		850	
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30	
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	4	
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		0	
LIQUID	Detector Number		2	Am 243 cpm		32	
Batch Workload	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0	
95002968				AEA Count Time	(min)	480	
Rerun				Am 241 µCi/L =	<	2.5588E-01	
0				Cm 243/244 µCi/L =	<	2.5588E-01	
Sample Prep							
N/A							

Sample Number	Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))
WORKLIST 2751-BLK	Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))
Instrument Code	
AL10540	Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100
Prepared By	Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV
SEH	
Chemist	NOTE: Am-241 Result is a LESS THAN Value.
LLF	Am 241 µCi/mL = < 2.56E-04
Analyst	Relative Counting Error = 100.0%
AKL	
Date Counted	NOTE: Cm-243/244 Result is a LESS THAN Value.
10/09/95	Cm 243/244 µCi/mL < 2.56E-04
Analysis Date	Relative Counting Error = 100.0%
10/07/95	Am 243 Tracer Recovery = 8.6%
Analysis Time	
09:30 PM	
Sample Point	
AW-106 GRAB	

DETECTION LEVELS in µCi/mL	
Am 241	2.56E-04
Cm 243/244	2.56E-04

Analyst:	AKL	Date:	10/09/95
Signature of Chemist: LLFitt	LLF	Date:	9 Oct 95

BLANK.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM3

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)	SAMPLE 0.605
SAMPLE	Sample Volume in mL	(SS)	0.500	Am 243 AEA Frac.	(C243)	0.375
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2751	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		15234
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
AM24101	Tracer Book No.		114643	Background in cpm	(Bkg)	4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		91
LIQUID	Detector Number		3	Am 243 cpm		67.18
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002968				AEA Count Time	(min)	480
Barrel				Am 241 µCi/L =		5.6225E-01
0				Cm 243/244 µCi/L =	<	6.7473E-02
Sample Type						
N/A						

Sample Number: S95T002039

Instrument Code: AL10541

Prepared By: SEH

Chemist: LLF

Analyst: AKL

Data Complete: 10/09/95

Analysis Date: 10/07/95

Analysis Time: 09:30 PM

Sample Type: AW-106 GRAB

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL =	5.62E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error =	1.4%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
Cm 243/244 µCi/mL	< 6.75E-05	6.75E-05
Relative Counting Error =	100.0%	Cm 243/244
Am 243 Tracer Recovery =	82.0%	6.75E-05

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	9 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP4

Am 241 and Cm 243/244: LA-953-103 (A-4) LIQUID / SOLID

Type	Date Counted		OCT-07-95	Am 241 AEA Frac.	(C241)	DUP 0.497
DUP	Sample Volume in mL	(SS)	0.500	Am 243 AEA Frac.	(C243)	0.353
Work Unit	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2751	Tracer Volume in mL	(SPKV)	0.050	Total AT Counts		12102
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	4
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		73.17
LIQUID	Detector Number		3	Am 243 cpm		61.96
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002968				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		5.8436E-01
0				Cm 243/244 µCi/L =	<	9.6050E-02
Sample Prep						
N/A						

Sample Number: S95T002039

Instrument Code: AL10541

Prepared By: SEH

Chemist: LLF

Analyst: AKL

Date Counted: 10/09/95

Analysis Date: 10/07/95

Analysis Time: 09:30 PM

Sample Type: AW-106 GRAB

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL =	5.84E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error =	1.6%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
Cm 243/244 µCi/mL	< 9.60E-05	9.60E-05
Relative Counting Error =	100.0%	Cm 243/244
Am 243 Tracer Recovery =	61.2%	9.60E-05

Analyst:	AKL	Date:	10/09/95
Signature of Chemist:	LLF	Date:	9 Oct 95

SAMPLE.WB1 REV 1.2 953103ML

Raymond 10-8-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2751 ~~BL~~ STD 10/9/95
File ID: 26a2690.CNF

Counted on: 10/ 7/95 @21:35
Detector: AEA26
Geometry number: 1
Count time: 28801. 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	91.3	91.3	302.094	302.094	12.000	4.842	6.000	1.327
2	91.0	91.0	256.143	256.105	12.000	4.030	6.000	1.193

PEAK RESULTS
Peak Error Limit: 30%

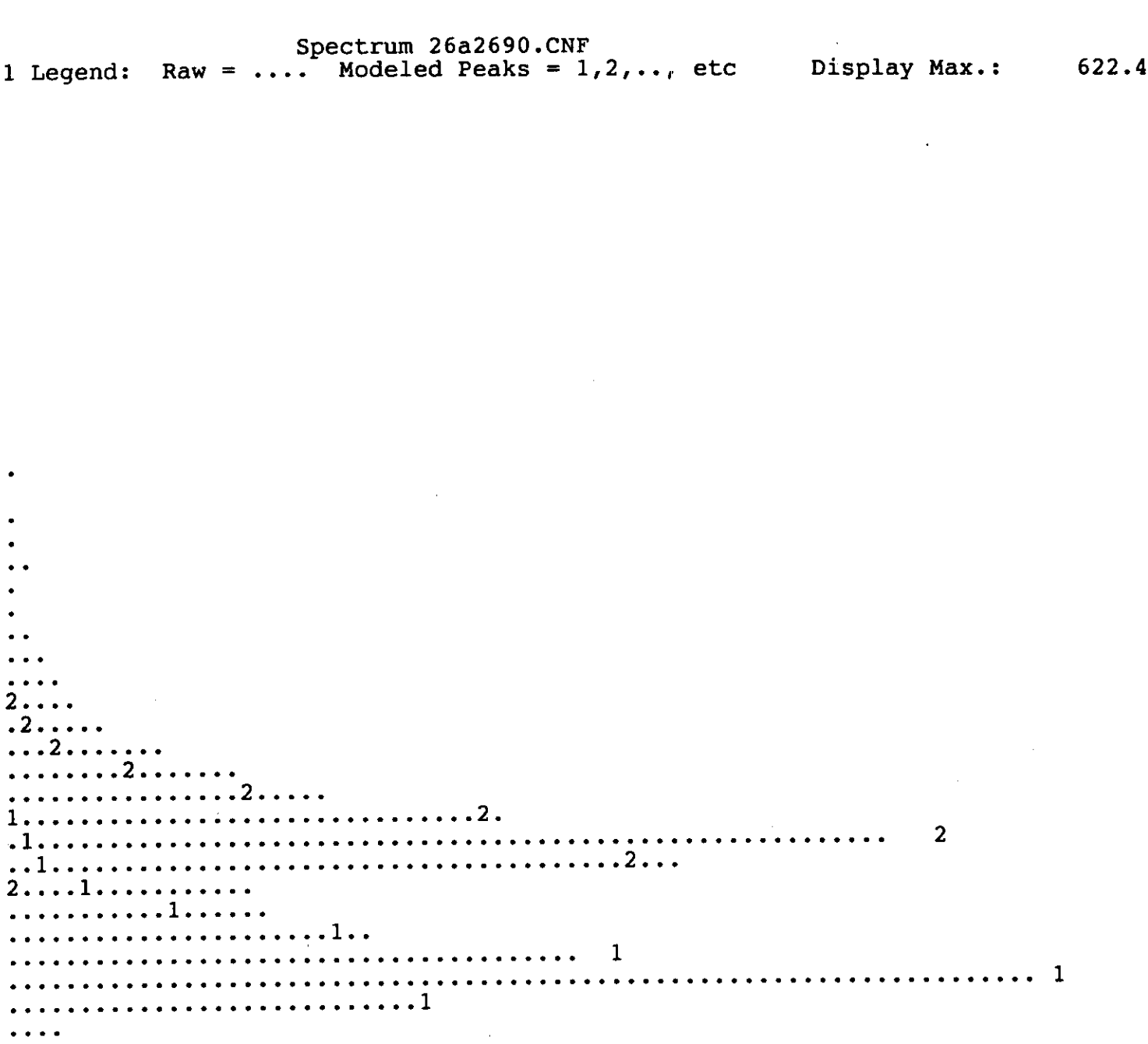
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu238	0.450	5.487	5.489	-.00	20.02	3.64	4.7	259.3	0.117E-03
	Am241		5.479	5.489	-.01	0			198.6	0.895E-04
2	Am243	0.413	5.270	5.277	-.00	70.02	3.34	5.0	173.0	0.779E-04
Totals:		0.863	<--valid peaks only-->				6.98			

DETECTOR CALIBRATION
Energy(MEV) = 4.099 + (0.0046)*Channel
Energy range (MeV): 4.099 TO 6.454
Efficiency = 0.0195 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	3882.0	100.000
Smoothed	3881.3	99.982
Composite fit	3350.7	86.313
Residuals	531.3	13.687

Analyzed by: _____
ALJ


Spectrum 26a2690.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 622.4

Raw Data Dump for AEA Spectrum: 26a2690.CNF

1	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
11	1.	0.	0.	0.	1.	0.	1.	0.	0.	1.
21	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
31	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	1.	1.	1.	0.	0.	0.	0.	0.	1.
51	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.
71	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.
81	1.	1.	1.	0.	0.	1.	1.	0.	0.	0.
91	0.	1.	0.	0.	1.	0.	2.	1.	1.	1.
101	1.	0.	2.	1.	1.	0.	0.	0.	1.	1.
111	0.	1.	0.	0.	1.	0.	0.	1.	0.	1.
121	2.	0.	3.	3.	0.	1.	1.	1.	1.	0.
131	0.	3.	1.	1.	0.	0.	0.	0.	2.	0.
141	4.	0.	2.	3.	2.	1.	0.	3.	2.	3.
151	1.	2.	4.	1.	3.	4.	4.	1.	1.	1.
161	1.	0.	2.	3.	1.	0.	1.	4.	1.	3.
171	2.	1.	1.	2.	0.	2.	5.	2.	3.	3.
181	5.	2.	1.	3.	3.	2.	7.	2.	3.	6.
191	5.	5.	3.	7.	3.	5.	4.	7.	5.	7.
201	4.	12.	2.	9.	5.	8.	9.	3.	11.	8.
211	9.	6.	8.	12.	6.	5.	7.	12.	12.	14.
221	14.	19.	16.	16.	15.	15.	20.	17.	27.	18.
231	17.	20.	19.	35.	22.	24.	17.	28.	27.	36.
241	30.	31.	35.	44.	37.	43.	49.	50.	43.	48.
251	57.	61.	76.	91.	86.	118.	104.	90.	69.	33.
261	16.	21.	9.	16.	15.	23.	17.	13.	16.	18.
271	22.	24.	21.	18.	17.	20.	21.	23.	23.	28.
281	22.	29.	31.	33.	26.	17.	30.	38.	37.	48.
291	32.	48.	46.	44.	53.	54.	69.	63.	76.	85.
301	94.	108.	99.	96.	65.	25.	22.	23.	18.	10.
311	11.	7.	5.	7.	2.	2.	3.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	1.	0.	1.	0.	1.	0.	0.
351	0.	1.	0.	1.	2.	1.	0.	0.	0.	0.
361	0.	0.	1.	0.	1.	0.	1.	1.	2.	0.
371	2.	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.	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.								

Raymond 10-8-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2751-ST DCN1 AA3 10/9/95
File ID: 25a2586.CNF

Counted on: 10/ 7/95 @21:34
Detector: AEA25
Geometry number: 1
Count time: 28802. 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	1232.1	1232.1	257.094	257.094	10.000	3.194	5.000	1.556

PEAK RESULTS
Peak Error Limit: 30%

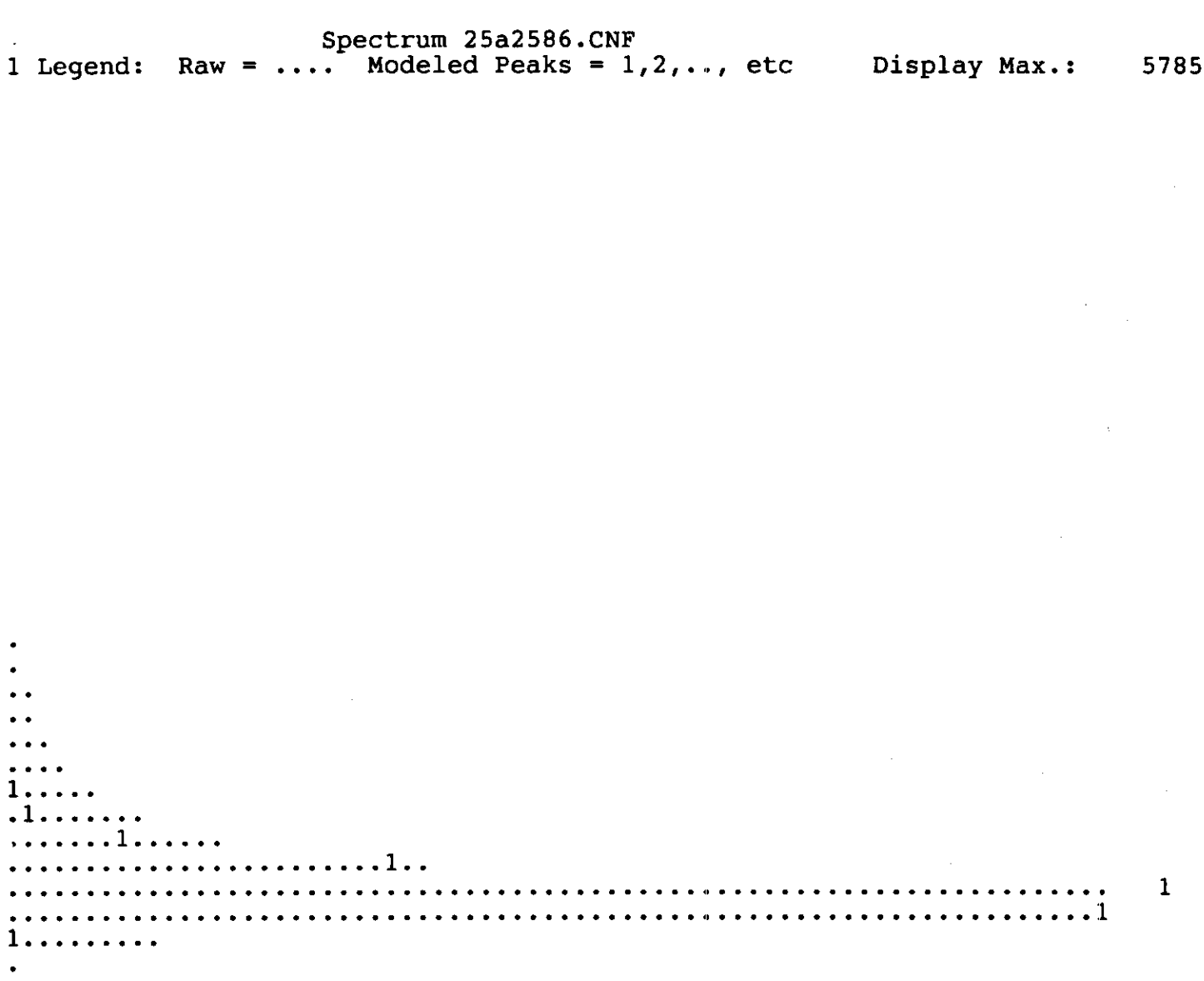
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am243	0.811	5.270	5.260	0.010	0.01	32.00	1.6	1701.1	0.766E-03
Totals:		0.811	<--valid peaks only-->				32.00			

DETECTOR CALIBRATION
Energy(MEV) = 4.078 + (0.0046)*Channel
Energy range (MeV): 4.078 TO 6.433
Efficiency = 0.0190 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	18934.0	100.000
Smoothed	18934.0	100.000
Composite fit	15360.2	81.125
Residuals	3573.8	18.875

Analyzed by: _____
ALJ


Spectrum 25a2586.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 5785.8

Raw Data Dump for AEA Spectrum: 25a2586.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
31	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
41	0.	0.	0.	0.	1.	1.	0.	0.	1.	0.
51	0.	0.	0.	0.	3.	1.	0.	0.	0.	0.
61	0.	1.	0.	0.	1.	1.	1.	0.	1.	0.
71	2.	1.	0.	0.	1.	2.	0.	0.	0.	0.
81	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
91	0.	2.	1.	0.	0.	2.	0.	3.	1.	1.
101	0.	1.	3.	2.	3.	0.	1.	0.	2.	1.
111	1.	1.	1.	2.	2.	1.	3.	1.	1.	0.
121	0.	1.	2.	0.	6.	2.	4.	1.	2.	3.
131	0.	4.	2.	3.	7.	3.	6.	4.	3.	3.
141	3.	4.	5.	6.	7.	1.	7.	5.	4.	6.
151	9.	4.	4.	7.	10.	5.	6.	4.	3.	7.
161	12.	6.	10.	3.	5.	19.	12.	16.	14.	3.
171	19.	7.	14.	14.	12.	12.	10.	22.	15.	23.
181	11.	16.	24.	23.	35.	22.	22.	20.	23.	29.
191	31.	25.	23.	27.	29.	29.	33.	36.	29.	31.
201	28.	48.	42.	46.	36.	39.	58.	50.	30.	42.
211	44.	42.	56.	49.	62.	45.	63.	60.	52.	59.
221	66.	77.	74.	89.	90.	81.	105.	88.	96.	107.
231	109.	129.	125.	144.	125.	152.	163.	154.	179.	165.
241	207.	223.	222.	286.	281.	343.	400.	446.	479.	537.
251	574.	662.	720.	878.	1090.	1276.	1537.	1485.	1185.	650.
261	297.	134.	100.	81.	67.	70.	61.	75.	63.	48.
271	46.	29.	30.	15.	16.	3.	2.	2.	1.	0.
281	2.	0.	1.	0.	0.	0.	1.	1.	0.	2.
291	0.	3.	1.	2.	1.	4.	2.	3.	1.	2.
301	3.	4.	3.	0.	3.	1.	1.	1.	0.	0.
311	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
351	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.
361	0.	0.	0.	0.	0.	0.	2.	0.	1.	1.
371	0.	0.	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	0.	0.	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.	1.	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.	1.	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.								

Raymond 10.8.95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2039-SAM
File ID: 27a2783.CNF

Counted on: 10/ 7/95 @21:36
Detector: AEA27
Geometry number: 1
Count time: 28802. 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?	13.3	13.3	370.250	370.250	12.000	5.074	6.000	1.843
2	3083.6	3083.6	303.386	303.386	10.000	4.742	5.000	2.172
3	2324.2	2324.2	257.821	257.812	10.000	4.155	5.000	1.859

PEAK RESULTS
Peak Error Limit: 30%

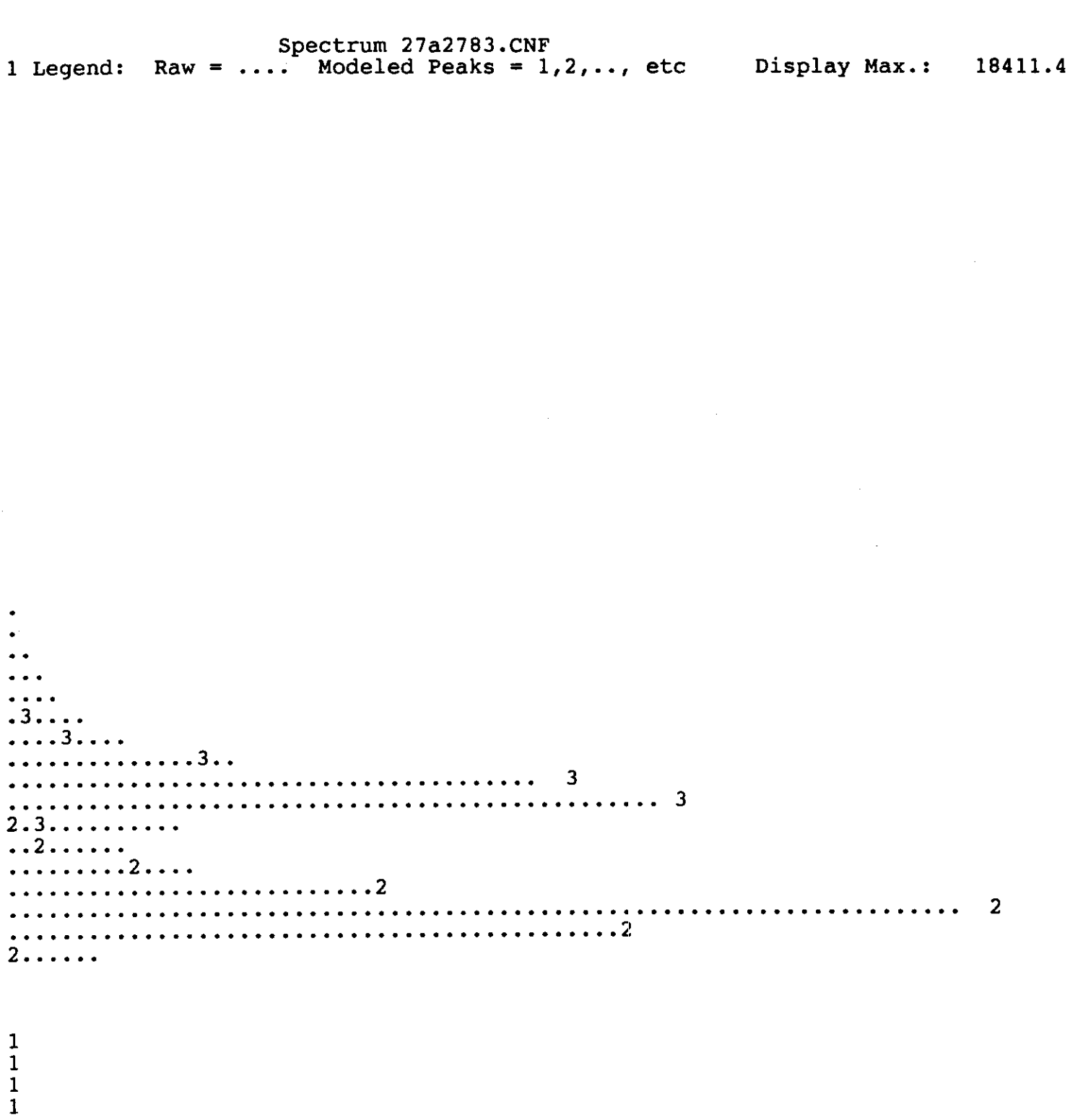
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????	5.776				0.45	13.3		
2	Pu238	0.508	5.487	5.469	0.018	0.02	91.00	0.9	6906.8	0.311E-02
	Am241		5.479	5.469	0.01				5290.3	0.238E-02
3	Am243	0.375	5.270	5.259	0.011	0.02	67.18	1.1	3707.9	0.167E-02
Totals:		0.884	<--valid peaks only-->				158.18			

DETECTOR CALIBRATION
Energy(MEV) = 4.073 + (0.0046)*Channel
Energy range (MeV): 4.073 TO 6.428
Efficiency = 0.0183 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	85923.0	100.000
Smoothed	85924.7	100.002
Composite fit	76148.3	88.624
Residuals	9774.7	11.376

Analyzed by: _____
ALJ


Spectrum 27a2783.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 18411.4

Raw Data Dump for AEA Spectrum: 27a2783.CNF

1	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.
11	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
31	0.	0.	0.	1.	1.	0.	0.	2.	0.	0.
41	1.	0.	0.	0.	3.	0.	1.	0.	0.	0.
51	0.	0.	0.	0.	1.	0.	0.	1.	1.	2.
61	0.	1.	0.	1.	1.	0.	0.	2.	1.	0.
71	0.	1.	1.	0.	0.	0.	2.	0.	0.	2.
81	0.	1.	0.	1.	0.	0.	0.	2.	2.	1.
91	0.	1.	2.	1.	0.	1.	2.	0.	0.	1.
101	1.	0.	0.	2.	0.	0.	0.	0.	3.	0.
111	0.	1.	2.	1.	0.	1.	1.	0.	5.	0.
121	1.	5.	2.	1.	5.	1.	3.	2.	1.	2.
131	2.	2.	2.	5.	3.	3.	3.	3.	3.	3.
141	4.	2.	2.	4.	2.	5.	7.	6.	6.	6.
151	9.	5.	11.	9.	10.	9.	8.	9.	12.	12.
161	4.	14.	15.	6.	17.	6.	15.	16.	12.	12.
171	19.	13.	11.	10.	30.	23.	28.	15.	24.	32.
181	36.	27.	34.	41.	37.	42.	42.	43.	40.	40.
191	46.	34.	47.	65.	54.	59.	55.	57.	62.	77.
201	61.	71.	76.	56.	61.	88.	74.	99.	113.	92.
211	118.	116.	117.	109.	127.	124.	130.	117.	158.	163.
221	182.	164.	163.	160.	178.	174.	207.	198.	207.	212.
231	212.	261.	274.	274.	285.	318.	336.	372.	394.	369.
241	402.	460.	505.	532.	580.	661.	731.	854.	912.	999.
251	1105.	1183.	1327.	1607.	1827.	2159.	2602.	2853.	2697.	2013.
261	1177.	681.	422.	360.	315.	328.	299.	349.	337.	346.
271	338.	325.	289.	303.	298.	299.	290.	326.	356.	353.
281	410.	432.	420.	466.	505.	535.	599.	596.	641.	709.
291	813.	936.	1032.	1135.	1303.	1314.	1483.	1622.	1921.	2265.
301	2718.	3182.	3604.	3837.	3190.	2213.	1389.	887.	616.	554.
311	521.	397.	351.	254.	199.	137.	80.	41.	21.	7.
321	0.	1.	0.	0.	0.	2.	0.	0.	0.	2.
331	0.	1.	0.	1.	1.	0.	1.	1.	3.	0.
341	1.	0.	0.	2.	1.	3.	4.	1.	1.	1.
351	2.	4.	2.	7.	4.	6.	5.	2.	2.	4.
361	5.	9.	7.	9.	9.	5.	9.	20.	11.	10.
371	19.	10.	13.	8.	4.	5.	0.	1.	2.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	1.	0.	1.	0.	1.	0.	0.	0.	0.
411	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.
421	1.	1.	0.	0.	2.	2.	2.	0.	2.	1.
431	2.	1.	1.	1.	2.	0.	2.	3.	7.	3.
441	1.	2.	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.								

Raymond 10.8.95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2039-DUP
File ID: 28a2887.CNF

Counted on: 10/ 7/95 @21:37
Detector: AEA28
Geometry number: 1
Count time: 28803. 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?	15.1	15.1	372.226	372.226	8.000	2.335	4.000	1.130
2	2967.4	2967.4	303.098	303.098	12.000	4.033	6.000	2.503
3	2141.5	2141.5	257.274	257.272	10.000	3.560	5.000	2.108
4?	12.6	12.6	140.900	140.900	200.000	1.000	100.000	0.100

PEAK RESULTS
Peak Error Limit: 30%

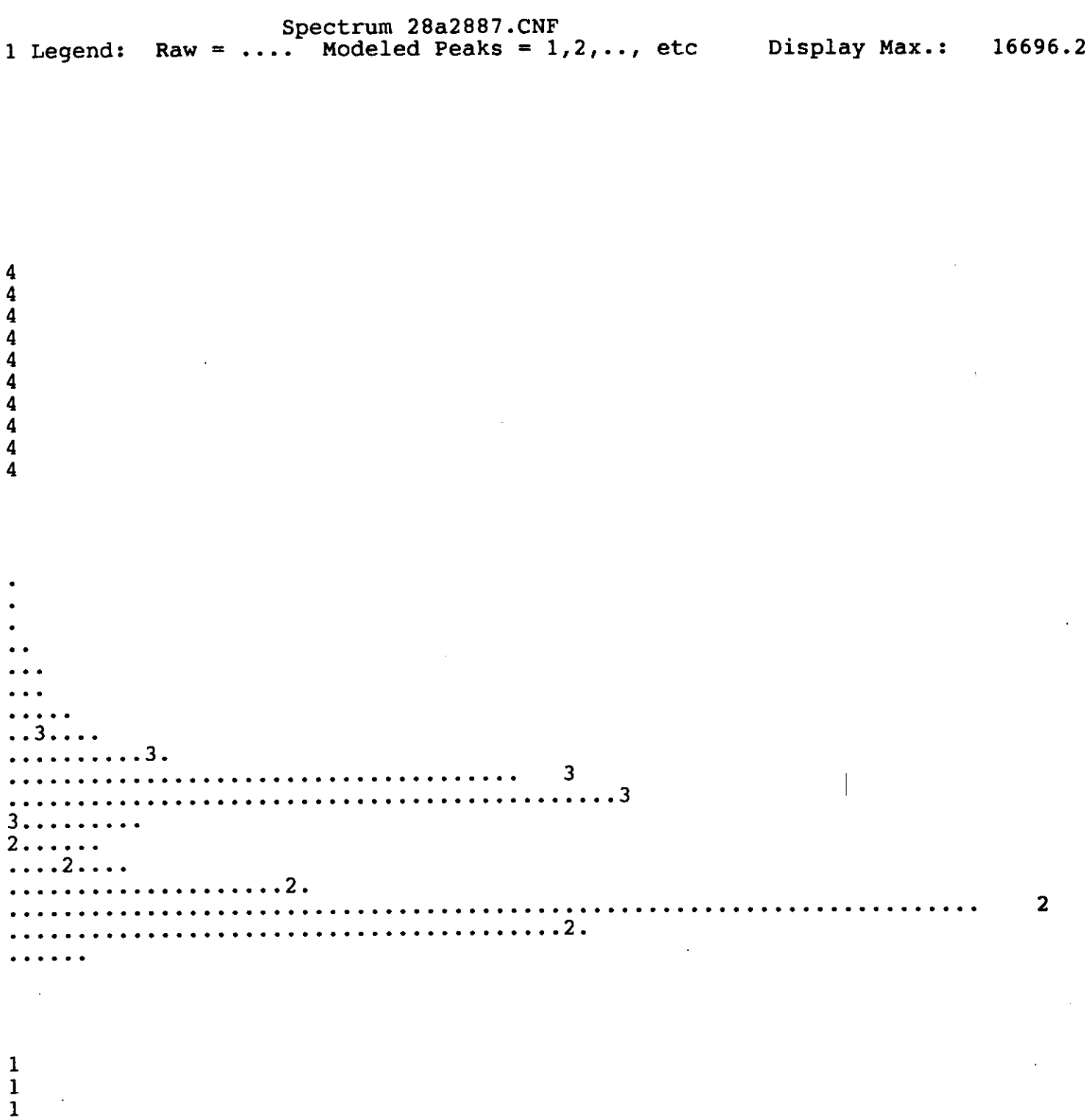
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		5.801			0.37	14.8		
2	Pu238	0.497	5.487	5.483	0.004	0.02	73.17	1.0	5434.7	0.245E-02
	Am241			5.479	5.483	-.004			4162.8	0.188E-02
3	Am243	0.353	5.270	5.272	-.002	0.02	51.95	1.2	2806.0	0.126E-02
4		????		4.737			0.99	9.0		
		-----					---------			
Totals:		0.849	<--valid peaks only-->				125.12			

DETECTOR CALIBRATION
Energy(MEV) = 4.089 + (0.0046)*Channel
Energy range (MeV): 4.089 TO 6.444
Efficiency = 0.0187 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	70729.0	100.000
Smoothed	70730.5	100.002
Composite fit	60717.4	85.845
Residuals	10011.6	14.155

Analyzed by: _____
ALJ


Spectrum 28a2887.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 16696.2
4
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Raw Data Dump for AEA Spectrum: 28a2887.CNF

1	0.	0.	0.	0.	2.	1.	0.	2.	0.	0.
11	0.	1.	0.	0.	0.	2.	1.	0.	0.	0.
21	0.	0.	0.	1.	0.	1.	1.	0.	1.	0.
31	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
41	0.	1.	0.	0.	0.	3.	1.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	2.	0.	0.	1.	3.	0.	0.	0.	0.	1.
71	0.	1.	0.	2.	1.	1.	1.	1.	0.	0.
81	1.	2.	2.	1.	5.	0.	1.	0.	1.	0.
91	0.	2.	1.	1.	1.	2.	1.	1.	2.	2.
101	3.	0.	3.	2.	1.	7.	4.	2.	2.	2.
111	4.	2.	0.	3.	2.	1.	6.	4.	8.	2.
121	8.	10.	12.	5.	6.	5.	4.	5.	5.	11.
131	7.	1.	8.	3.	2.	8.	6.	11.	12.	12.
141	16.	12.	11.	7.	5.	6.	10.	11.	13.	13.
151	18.	10.	15.	16.	9.	17.	10.	17.	23.	23.
161	15.	17.	21.	19.	26.	23.	29.	21.	21.	26.
171	22.	26.	29.	25.	36.	32.	33.	43.	40.	28.
181	51.	29.	31.	44.	43.	37.	43.	48.	44.	63.
191	46.	57.	38.	50.	51.	64.	57.	59.	71.	68.
201	64.	57.	75.	79.	68.	87.	70.	65.	83.	85.
211	77.	103.	110.	87.	92.	104.	101.	118.	123.	126.
221	133.	124.	108.	138.	144.	140.	137.	172.	167.	184.
231	185.	189.	194.	203.	201.	205.	279.	225.	253.	270.
241	251.	264.	322.	368.	414.	448.	537.	637.	741.	752.
251	798.	943.	1145.	1381.	1758.	2281.	2682.	2725.	2147.	1230.
261	591.	372.	292.	281.	245.	264.	277.	245.	259.	223.
271	247.	224.	238.	200.	186.	210.	184.	184.	204.	241.
281	283.	260.	295.	295.	295.	288.	333.	402.	422.	474.
291	504.	592.	779.	934.	968.	1011.	1110.	1259.	1625.	1983.
301	2574.	3305.	3800.	3589.	2655.	1608.	988.	685.	568.	490.
311	447.	370.	287.	207.	151.	114.	60.	22.	5.	2.
321	0.	1.	1.	0.	0.	2.	0.	1.	0.	0.
331	0.	0.	0.	0.	0.	1.	2.	2.	1.	0.
341	0.	2.	1.	0.	1.	1.	1.	0.	1.	0.
351	1.	0.	0.	2.	0.	3.	4.	2.	0.	1.
361	1.	8.	9.	11.	4.	10.	5.	8.	11.	13.
371	16.	17.	18.	21.	3.	2.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
401	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
411	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.
421	1.	0.	0.	0.	1.	0.	1.	2.	1.	1.
431	0.	1.	0.	3.	4.	2.	2.	5.	4.	2.
441	2.	1.	1.	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.								

LABCORE Completed Worklist Report for Worklist# 2287

Analyst: rwk **Instrument:** PU01 **Book#** _____

Method: LA-943-127 Rev/Mod B-0

Worklist Comment: See chemist for sample size. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@PU23901	PU23901 LIQUID	0.128	1.26e-1	98.440	% Recovery
1	STD		0		@PU23901	PU23901E LIQUID	1.00	4.3	4.300	% Ct. Error
1	STD		0		@PU23901	PU23901T LIQUID	100	23.6	23.600	% Recovery
2	BLNK		0		@PU23901	PU23901 LIQUID	1	<6.42e-5		uCi/mL
2	BLNK		0		@PU23901	PU23901T LIQUID	100	35.8	35.800	% Recovery
2	BLNK		0		@PU23901	PU23901E LIQUID	1.00	100.0	100.000	% Ct. Error
3	SAMPLE	S95T002031	0		@PU23901	PU23901 LIQUID	N/A	1.49e-4	4.610e-005	uCi/mL
3	SAMPLE	S95T002031	0		@PU23901	PU23901T LIQUID	N/A	58.6	1.000e-007	% Recovery
3	SAMPLE	S95T002031	0		@PU23901	PU23901E LIQUID	N/A	5.3	0.000	% Ct. Error
4	DUP	S95T002031	0		@PU23901	PU23901 LIQUID	1.49e-4	1.64e-4	9.580	RPD
4	DUP	S95T002031	0		@PU23901	PU23901T LIQUID	100	58.8	58.800	% Recovery
4	DUP	S95T002031	0		@PU23901	PU23901E LIQUID	1.00	5.1	5.100	% Ct. Error
5	SAMPLE	S95T002039	0		@PU23901	PU23901 LIQUID	N/A	2.30e-4	5.920e-005	uCi/mL
5	SAMPLE	S95T002039	0		@PU23901	PU23901T LIQUID	N/A	51.2	1.000e-007	% Recovery
5	SAMPLE	S95T002039	0		@PU23901	PU23901E LIQUID	N/A	5.2	0.000	% Ct. Error
6	DUP	S95T002039	0		@PU23901	PU23901 LIQUID	2.30e-4	2.55e-4	10.310	RPD
6	DUP	S95T002039	0		@PU23901	PU23901T LIQUID	100	44.0	44.000	% Recovery
6	DUP	S95T002039	0		@PU23901	PU23901E LIQUID	1.00	4.9	4.900	% Ct. Error

Final page for worklist# 2287

Analyst Signature **Date**

Analyst Signature **Date**

LL Fitts 18 Sep 95

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2287

Analyst: _____ **Instrument:** PU01 _____ **Book #** 104B43

Method: LA-943-127 Rev/Mod B-0

Worklist Comment: See chemist for sample size. --LLF .100mL

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@PU23901 PU23902	LIQUID			N/A	uCi/mL
		1	STD				@PU23901 PU23902E	LIQUID			N/A	% Ct. Error
		1	STD				@PU23901 PU23902T	LIQUID			N/A	% Recovery
		2	BLNK				@PU23901 PU23902	LIQUID			N/A	uCi/mL
		2	BLNK				@PU23901 PU23902T	LIQUID			N/A	% Recovery
		2	BLNK				@PU23901 PU23902E	LIQUID			N/A	% Ct. Error
95000126	AW-106 GRAB	3	SAMPLE	S95T002031	0		@PU23901 PU23902	LIQUID	N/A			uCi/mL
95000126	AW-106 GRAB	3	SAMPLE	S95T002031	0		@PU23901 PU23902T	LIQUID	N/A			% Recovery
95000126	AW-106 GRAB	3	SAMPLE	S95T002031	0		@PU23901 PU23902E	LIQUID	N/A			% Ct. Error
95000126	AW-106 GRAB	4	DUP	S95T002031	0		@PU23901 PU23902	LIQUID			N/A	uCi/mL
95000126	AW-106 GRAB	4	DUP	S95T002031	0		@PU23901 PU23902T	LIQUID			N/A	% Recovery
95000126	AW-106 GRAB	4	DUP	S95T002031	0		@PU23901 PU23902E	LIQUID			N/A	% Ct. Error
95000126	AW-106 GRAB	5	SAMPLE	S95T002039	0		@PU23901 PU23902	LIQUID	N/A			uCi/mL
95000126	AW-106 GRAB	5	SAMPLE	S95T002039	0		@PU23901 PU23902T	LIQUID	N/A			% Recovery
95000126	AW-106 GRAB	5	SAMPLE	S95T002039	0		@PU23901 PU23902E	LIQUID	N/A			% Ct. Error
95000126	AW-106 GRAB	6	DUP	S95T002039	0		@PU23901 PU23902	LIQUID			N/A	uCi/mL
95000126	AW-106 GRAB	6	DUP	S95T002039	0		@PU23901 PU23902T	LIQUID			N/A	% Recovery
95000126	AW-106 GRAB	6	DUP	S95T002039	0		@PU23901 PU23902E	LIQUID			N/A	% Ct. Error

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 2287

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT

Final page for worklist # 2287

Analyst Signature **Date**

Nola Kinn 9/15/95
Analyst Signature **Date**
Sharon L Hall 9-18-95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID

Type	DATE COUNTED		SEP-16-95	PU 236 AEA FRAC (C236)	STD 0.381
STD	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC (C238)	0.000
Work List	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC (C239)	0.622
2287	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS	1694
Test Code	DIGEST DILUTION FACTOR	DDF	1.000	AT COUNT TIME (MIN)	30
@PU23901	TRACER BOOK NO		110B43	BACKGROUND in cpm (Bkg)	4.000
Matrix	DETECTOR NUMBER		1	PU 236 cpm	6.880
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm	0.000
Batch Number	TRACER PREPARATION DATE		04/03/95	PU 239 cpm	11.250
95002401	TRACER PREPARATION VALUE (dpm/mL)		1889.000	AEA COUNT TIME	480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		1691.324	Pu 239/240 µCi/L	1.2562E+02
0	PU-238 TRACER VALUE (dpm/mL		0.000		
Sample Kind	STANDARD BOOK NO		104B43		
N/A	STANDARD VALUE in µCi/mL		0.128		
Sample #					
WORKLIST#2287					
Instrument Code	Decay Time = Date Counted - Tracer Preparation Date				
AL10539	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]				
Prepared By	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)* 1/EFF *C236*100/Pu-236 Decay Corr'd Value * SPKV				
SLH	Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(2220000 dpm/µCi)]				
Checked	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)				
LLF	Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]				
Analyst	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100				
RWK					
Date Counted	v RESULTS v				
09/18/95	Pu 239/240 µCi/mL		1.26E-01	DETECTION LEVELS in µCi/mL	
Analysis Date	Relative Counting Error	=	4.3%		
09/15/95				Pu 239/240	
Analysis Time				2.56E-02	
10:30 PM					
Sample Point					
AW-106 GRAB	Pu 236 Tracer Recovery	=	23.6%		

SLH

Analyst: Sharon L Hobbs RWK Date: 18-Sep-95

Signature of Chemist: LLF Date: 18 Sep 95

STANDARD.WB1 REV 1. 943127ML

WORKBOOK PAGE: BLANK2

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type					BLNK
BLNK	DATE COUNTED		SEP-18-95	PU 236 AEA FRAC (C236)	0.995
Work List	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC (C238)	0.000
2287	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC (C239)	0.000
Test Code	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS	1032
@PU23901	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)	30
Matrix	TRACER BOOK NO		110B43	BACKGROUND in cpm (Bkg)	4.000
LIQUID	DETECTOR NUMBER		2	PU 236 cpm	10.050
Batch Number	EFFICIENCY FACTOR	EFF	0.5000	PU 238 cpm	0.000
95002401	TRACER PREPARATION DATE		04/03/95	PU 239 cpm	0.000
Reps	TRACER PREPARATION VALUE (dpm/mL)		1889.00	AEA COUNT TIME	480
0	PU-236 DECAY CORR'D VALUE (dpm/mL)		1691.32	Pu 239/240 µCi/L =	< 6.422E-02
Sample Prep	PU-238 TRACER VALUE (dpm/mL)		0.00		
N/A					

Sample #	Decay Time = Date Counted - Tracer Preparation Date
S95T2031	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95}]
Instrument Code	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)*C236*100/(Pu-236 Decay Corr'd Value * SPKV*EFF)
AL10540	Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]
Prepared By	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
SLH	Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Chemist	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100
LLF	
Analyst	
RWK	
Date Complete	v RESULTS v
09/18/95	**Pu 239/240 µCi/mL < 6.42E-05**
Analysis Date	**Relative Counting Error = 100.0%**
09/15/95	
Analysis Time	**NOTE: Pu 238 Result is a LESS THAN Value.**
10:30 PM	**Pu 238 µCimL < 6.42E-05**
Sample Point	**Relative Counting Error = 100.0%**
AW-106 GRAB	**Pu 236 Tracer Recovery = 35.8%**

DETECTION LEVELS in µCi/mL
Pu 239/240
6.42E-05
Pu 238
6.42E-05

Analyst:		RWK	Date:	18-Sep-95
Signature of Chemist:		LLF	Date:	18 Sep 95

BLANK.WB1 REV 1.1 943127ML

WORKBOOK PAGE: SAM3

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type						SAMPLE
SAMPLE	DATE COUNTED		SEP-16-95	PU 236 AEA FRAC	(C236)	0.847
Work List	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC	(C238)	0.020
2287	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.166
Test Code	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		1874
@PU23901	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
Matrix	TRACER BOOK NO		110B43	BACKGROUND in cpm	(Bkg)	4.000
LIQUID	DETECTOR NUMBER		1	PU 236 cpm		17.570
Batch Number	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		0.410
95002401	TRACER PREPARATION DATE		04/03/95	PU 239 cpm		3.460
Kernel	TRACER PREPARATION VALUE (dpm/mL)		1889.000	AEA COUNT TIME		480
0	PU-236 DECAY CORR'D VALUE (dpm/mL)		1691.324	Pu 239/240 µCi/L		1.4931E-01
	PU-238 TRACER VALUE (dpm/mL)		0.000			

Sample Prep
N/A
Sample #
S95T002031
Instrument Code
AL10539
Prepared By
SLH
Element
LLF
Analyst
RWK
Date Completed
09/18/95
Analysis Date
09/15/95
Analysis Time
10:30 PM
Sample Point
AW-106 GRAB

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

			DETECTION LEVELS in µCi/mL
Pu 239/240 µCi/mL		1.49E-04	Pu 239/240
Relative Counting Error	=	5.3%	4.61E-05
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 238
Pu 238 µCi/mL		< 4.61E-05	4.61E-05
Relative Counting Error	=	14.1%	
Pu 236 Tracer Recovery	=	58.6%	

Analyst:		RWK	Date:	18-Sep-95
Signature of Chemist:	[signature]	LLF	Date:	18 Sep 95

SAMPLE.WB1 REV 1.1 943127ML

WORKBOOK PAGE: DUP4

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type						DUP
DUP	DATE COUNTED		SEP-18-95	PU 236 AEA FRAC	(C236)	0.843
Work List	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC	(C238)	0.019
2287	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.182
Test Code	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		1889
@PU23901	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
Matrix	TRACER BOOK NO		110B43	BACKGROUND in cpm	(Bkg)	4.000
LIQUID	DETECTOR NUMBER		2	PU 236 cpm		17.340
Basis Number	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		0.390
95002401	TRACER PREPARATION DATE		04/03/95	PU 239 cpm		3.730
Reran	TRACER PREPARATION VALUE (dpm/mL)		1889.000	AEA COUNT TIME		480
0	PU-236 DECAY CORR'D VALUE (dpm/mL)		1691.324	Pu 239/240 µCi/L		1.6448E-01
	PU-238 TRACER VALUE (dpm/mL)		0.000			

Sample Prep
N/A
Sample #
S95T002031
Instrument Code
AL10540
Prepared By
SLH
Chemist
LLF
Analyst
RWK
Date Counted
09/18/95
Analysis Date
09/15/95
Analysis Time
10:30 PM
Sample Point
AW-106 GRAB

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

			DETECTION LEVELS in µCi/mL
Pu 239/240 µCi/mL		1.64E-04	
Relative Counting Error	=	5.1%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240 4.61E-05
Pu 238 µCi/mL		< 4.61E-05	
Relative Counting Error	=	14.5%	Pu 238 4.61E-05
Pu 236 Tracer Recovery	=	58.8%	

Analyst:	RWK	Date:	18-Sep-95
Signature of Chemist:	LLF	Date:	18 Sep 95

SAMPLE.WB1 REV 1.1 943127ML

WORKBOOK PAGE: SAM5

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

							SAMPLE
Type	DATE COUNTED		SEP-18-95	PU 236 AEA FRAC	(C236)		0.754
SAMPLE	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC	(C238)		0.028
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.228
2287	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			1843
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		110B43	BACKGROUND in cpm	(Bkg)		4.000
Matrix	DETECTOR NUMBER		1	PU 236 cpm			12.990
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			0.490
Batch Number	TRACER PREPARATION DATE		04/03/95	PU 239 cpm			3.930
95002401	TRACER PREPARATION VALUE (dpm/mL)		1889.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		1691.324	Pu 239/240 µCi/L			2.3038E-01
0	PU-238 TRACER VALUE (dpm/mL)		0.000				
Sample Prep							
N/A							
Sample #	Decay Time = Date Counted - Tracer Preparation Date						
S95T002039	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]						
Instrument Code	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)						
AL10639	Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]						
Prepared By	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)						
SLH	Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]						
Chemist	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100						
LLF							
Analyst							
RWK							
Date Counted	v RESULTS v						
09/18/95	Pu 239/240 µCi/mL		2.30E-04	DETECTION LEVELS In µCi/mL			
Analysis Date	Relative Counting Error	=	5.2%				
09/15/95							
Analysis Time	NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240			
10:30 PM	Pu 238 µCi/mL		< 5.92E-05	5.92E-05			
Sample Point	Relative Counting Error	=	13.0%	Pu 238			
AW-106 GRAB	Pu 236 Tracer Recovery	=	51.2%	5.92E-05			

Analyst:		RWK	Date:	18-Sep-95
Signature of Chemist:		LLF	Date:	18 Sep 95

SAMPLE.WB1 REV 1.1 943127ML

WORKBOOK PAGE: DUP6

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type	DATE COUNTED		SEP-15-95	PU 236 AEA FRAC (C236)	DUP 0.746
DUP	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC (C238)	0.031
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC (C239)	0.260
2287	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS	1618
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)	30
@PU23901	TRACER BOOK NO		110B43	BACKGROUND in cpm (Bkg)	4.000
Matrix	DETECTOR NUMBER		2	PU 236 cpm	13.310
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm	0.560
Batch Number	TRACER PREPARATION DATE		04/03/95	PU 239 cpm	4.470
95002401	TRACER PREPARATION VALUE (dpm/mL)		1889.000	AEA COUNT TIME	480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		1691.324	Pu 239/240 µCi/L	2.5531E-01
0	PU-238 TRACER VALUE (dpm/mL)		0.000		
Sample Prep					
N/A					

Sample #: S95T002039

Instrument Code: AL10540

Prepared By: SLH

Chemist: LLF

Analyst: RWK

Date Completed: 09/18/95

Analysis Date: 09/15/95

Analysis Time: 10:30 PM

Sample Point: AW-106 GRAB

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

Pu 239/240 µCi/mL		2.55E-04	DETECTION LEVELS In µCi/mL
Relative Counting Error	=	4.9%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240 6.96E-05
Pu 238 µCi/mL		< 6.96E-05	
Relative Counting Error	=	12.2%	Pu 238 6.96E-05
Pu 236 Tracer Recovery	=	44.0%	

Analyst:		RWK	Date: 18-Sep-95
Signature of Chemist:		LLF	Date: 18 Sep 95

SAMPLE.WB1 REV 1.1 943127ML

Eric Bauer
09-16-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE — WHC-SD-WM-DP-147, Rev. 0
WORKLIST#2287-ST
File ID: 13a1371.CNF

Counted on: 9/16/95 @ 5:22
Detector: AEA13
Geometry number: 1
Count time: 28801. 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	157.5	157.5	358.479	358.479	14.000	5.126	7.000	1.242
2	288.6	288.6	225.382	225.382	14.000	5.658	7.000	1.680

PEAK RESULTS
Peak Error Limit: 30%

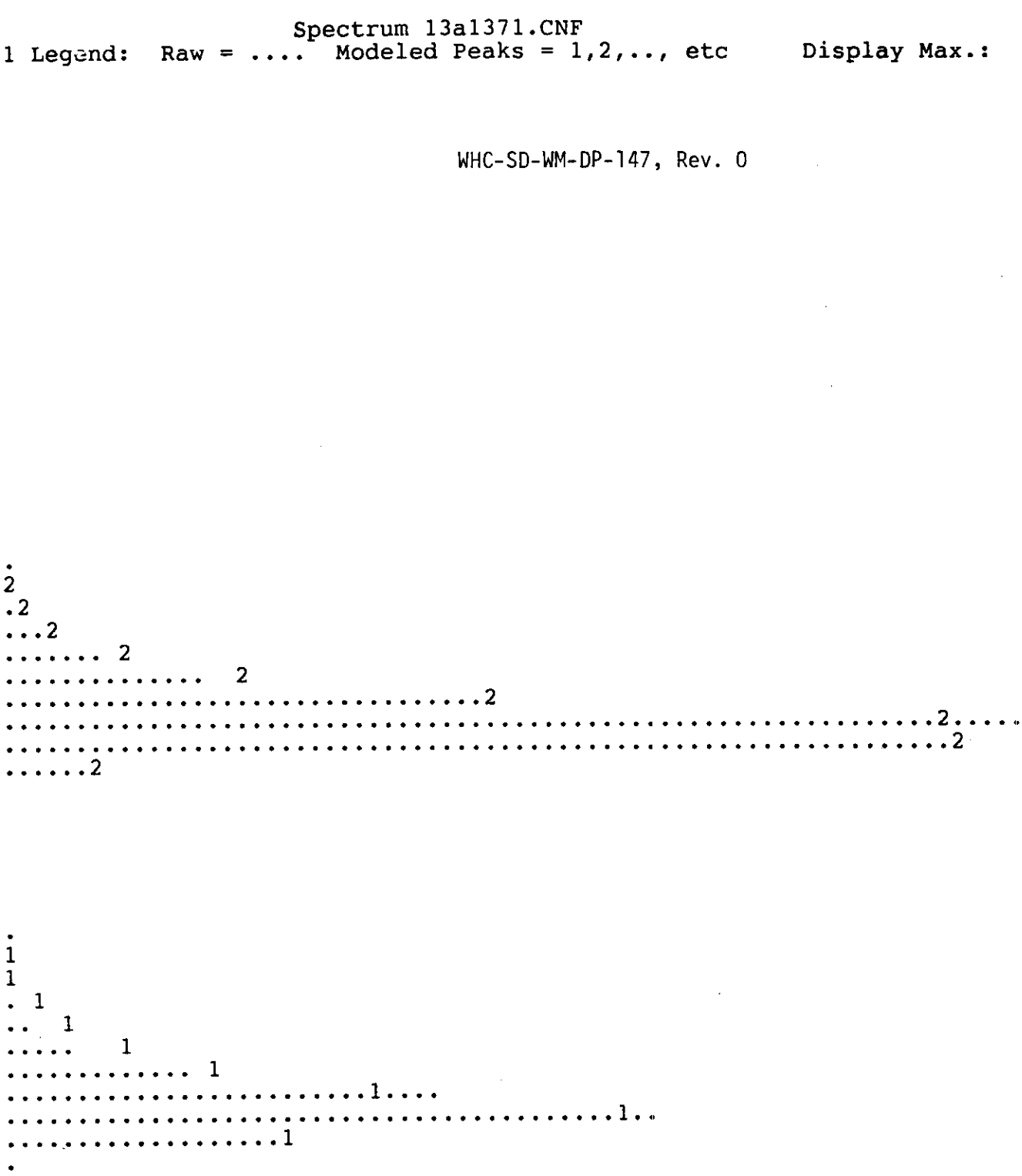
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.381	5.755	5.746	0.009	0.02	6.88	3.4	358.3	0.161E-03
2	Pu239	0.622	5.147	5.134	0.013	0.03	11.25	2.7	573.9	0.259E-03
	Pu240		5.144	5.134	0.010				573.9	0.259E-03
Totals:		1.003	<--valid peaks only-->				18.13			

DETECTOR CALIBRATION
Energy(MEV) = 4.097 + (0.0046)*Channel
Energy range (MeV): 4.097 TO 6.452
Efficiency = 0.0196 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	8678.0	100.000
Smoothed	8678.0	100.000
Composite fit	8703.2	100.291
Residuals	-25.2	-0.291

Analyzed by: _____
ALJ



Raw Data Dump for AEA Spectrum: 13a1371.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	1.	0.	1.	0.	0.	1.	0.
31	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
41	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
61	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
71	0.	2.	0.	0.	0.	0.	1.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	1.	1.	1.	1.	0.	0.	0.	0.
111	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
121	1.	0.	1.	0.	1.	2.	1.	0.	0.	0.
131	0.	1.	2.	1.	1.	0.	0.	2.	1.	0.
141	0.	0.	2.	1.	2.	0.	0.	3.	0.	1.
151	1.	1.	1.	0.	1.	1.	3.	3.	4.	6.
161	1.	6.	4.	4.	2.	7.	3.	1.	7.	2.
171	3.	4.	6.	4.	8.	6.	6.	5.	6.	7.
181	9.	6.	11.	7.	8.	11.	11.	16.	7.	13.
191	17.	17.	18.	20.	21.	26.	26.	25.	32.	31.
201	26.	37.	32.	50.	50.	63.	77.	82.	68.	87.
211	97.	126.	118.	140.	141.	157.	202.	207.	209.	247.
221	247.	263.	252.	297.	320.	322.	281.	269.	206.	143.
231	77.	42.	18.	3.	1.	0.	1.	0.	0.	0.
241	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.
251	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.
261	1.	0.	1.	1.	0.	1.	0.	0.	0.	1.
271	0.	1.	0.	0.	1.	0.	2.	0.	1.	0.
281	0.	0.	2.	2.	1.	2.	4.	6.	3.	2.
291	5.	1.	5.	7.	4.	3.	5.	4.	3.	4.
301	12.	6.	2.	4.	2.	3.	3.	3.	2.	0.
311	3.	3.	2.	4.	9.	4.	4.	4.	6.	7.
321	9.	6.	10.	10.	12.	6.	8.	8.	6.	22.
331	13.	17.	20.	26.	29.	26.	30.	35.	32.	42.
341	44.	61.	60.	74.	73.	79.	84.	111.	105.	147.
351	121.	134.	151.	135.	140.	155.	142.	183.	153.	158.
361	164.	118.	79.	27.	6.	2.	0.	0.	0.	1.
371	0.	0.	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.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	1.	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.	1.	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.								

Eric Burda
09/16/95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2287-BL
File ID: 14a1476.CNF

Counted on: 9/16/95 @ 5:21
Detector: AEA14
Geometry number: 1
Count time: 28803. 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	402.0	402.0	359.718	359.718	10.000	2.957	5.000	1.496

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.995	5.755	5.754	0.001	0.01	10.05	2.8	1235.4	0.556E-03
Totals:		0.995	<--valid peaks only-->				10.05			

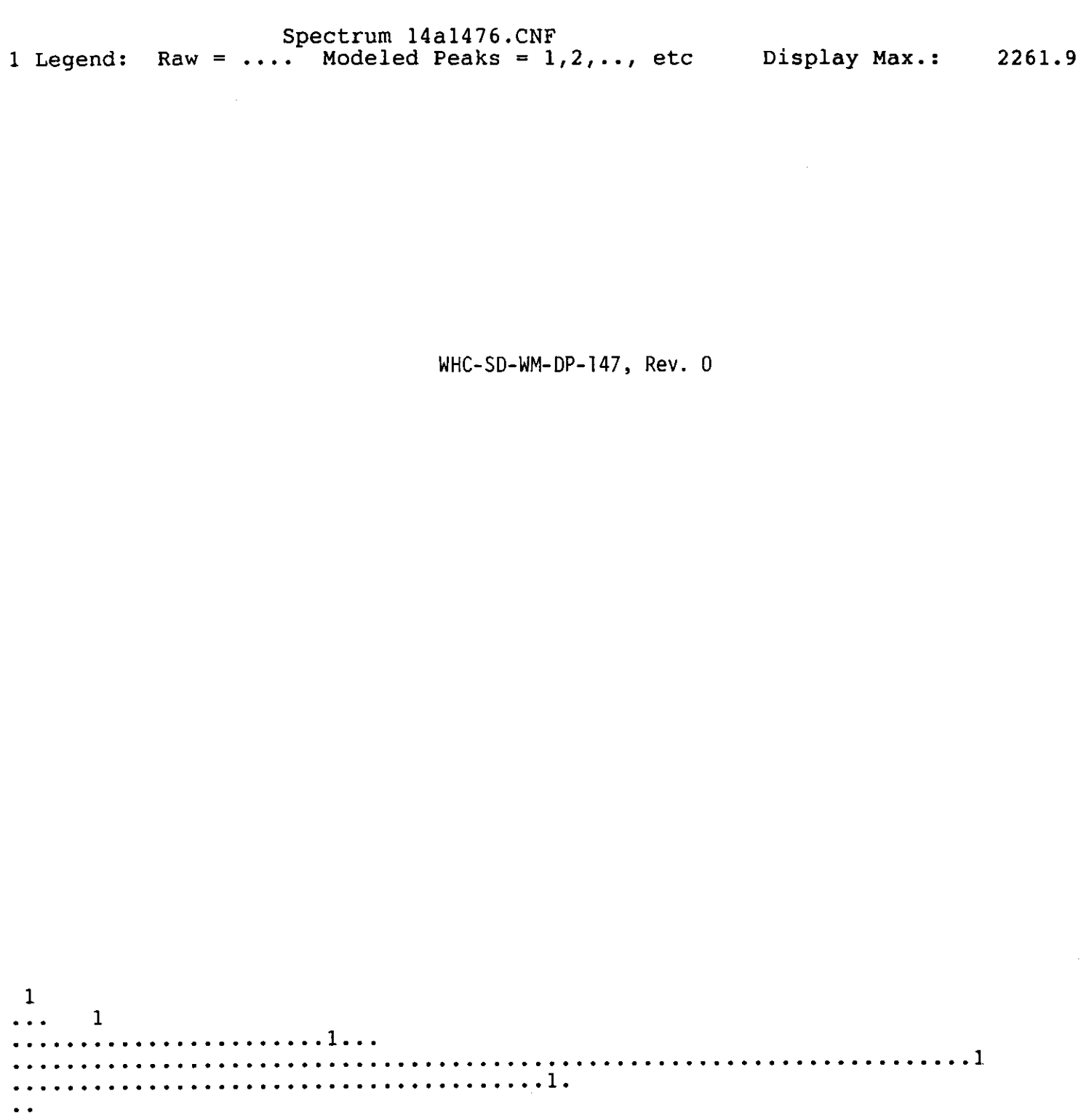
DETECTOR CALIBRATION
Energy(MEV) = 4.099 + (0.0046)*Channel
Energy range (MeV): 4.099 TO 6.454
Efficiency = 0.0083 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	4848.0	100.000
Smoothed	4848.0	100.000
Composite fit	4823.7	99.500
Residuals	24.3	0.500

Analyzed by: _____
ALJ

WHC-SD-WM-DP-147, Rev. 0



Raw Data Dump for AEA Spectrum: 14a1476.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
111	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
121	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
131	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
141	1.	0.	0.	0.	2.	0.	0.	0.	1.	0.
151	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
161	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
171	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
181	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
191	0.	0.	0.	0.	1.	0.	0.	2.	0.	0.
201	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.
211	0.	0.	0.	0.	0.	1.	1.	2.	2.	4.
221	5.	1.	2.	4.	2.	8.	5.	8.	4.	1.
231	1.	3.	2.	1.	0.	0.	0.	0.	0.	0.
241	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.
251	0.	2.	0.	0.	0.	0.	0.	1.	0.	1.
261	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
271	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
281	0.	0.	0.	0.	2.	0.	1.	0.	0.	0.
291	1.	0.	0.	2.	0.	3.	3.	4.	2.	1.
301	1.	2.	6.	2.	1.	1.	0.	0.	2.	0.
311	0.	0.	0.	0.	0.	0.	2.	0.	0.	0.
321	0.	0.	1.	0.	1.	1.	1.	1.	1.	1.
331	3.	2.	3.	2.	4.	3.	1.	5.	10.	11.
341	15.	9.	20.	44.	56.	69.	99.	128.	159.	168.
351	185.	171.	175.	179.	208.	267.	308.	410.	464.	477.
361	466.	362.	175.	47.	10.	2.	0.	0.	0.	1.
371	2.	0.	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.	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.								

Eric Bauer
09/16/95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T002031-SAM
File ID: 15a1562.CNF

WHC-SD-WM-DP-147, Rev. 0

Counted on: 9/16/95 @ 5:20
Detector: AEA15
Geometry number: 1
Count time: 28801. 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	590.2	590.2	361.926	361.926	10.000	3.627	5.000	1.455
2	18.8	18.8	303.312	303.246	10.000	2.488	5.000	1.481
3	123.3	123.3	228.283	228.283	14.000	5.279	7.000	2.915

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.847	5.755	5.764	-.009	0.02	17.57	2.1	182.2	0.821E-04
	Cm243		5.779	5.764	0.015				244.7	0.110E-03
2	Pu238	0.020	5.487	5.494	-.007	0.01	0.41	14.8	5.8	0.263E-05
	Am241		5.479	5.494	-.015				4.5	0.201E-05
3	Pu239	0.166	5.147	5.149	-.002	0.02	3.45	4.8	35.1	0.158E-04
	Pu240		5.144	5.149	-.005				35.1	0.158E-04
Totals:		1.033	<--valid peaks only-->				21.44			

DETECTOR CALIBRATION
Energy(MEV) = 4.099 + (0.0046)*Channel
Energy range (MeV): 4.099 TO 6.454
Efficiency = 0.0984 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	9960.0	100.000
Smoothed	9960.0	100.000
Composite fit	10292.1	103.335
Residuals	-332.1	-3.335

Analyzed by: ALJ

Raw Data Dump for AEA Spectrum: 15a1562.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	1.	0.	0.	1.	0.	0.	0.	1.	0.
81	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
121	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
131	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
141	1.	0.	0.	0.	0.	0.	2.	0.	1.	1.
151	1.	2.	0.	0.	1.	0.	0.	0.	0.	0.
161	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
171	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
181	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.
191	0.	0.	0.	0.	1.	1.	2.	0.	2.	1.
201	1.	3.	1.	2.	2.	1.	1.	5.	5.	5.
211	11.	17.	11.	19.	15.	21.	39.	42.	46.	48.
221	63.	56.	96.	80.	103.	116.	146.	138.	141.	124.
231	104.	78.	51.	23.	15.	12.	1.	0.	0.	0.
241	0.	1.	0.	0.	0.	1.	1.	1.	1.	1.
251	1.	1.	4.	2.	4.	6.	1.	2.	0.	2.
261	1.	0.	0.	0.	0.	0.	1.	0.	1.	0.
271	0.	0.	1.	0.	1.	0.	1.	0.	0.	0.
281	0.	0.	1.	0.	0.	1.	0.	4.	6.	3.
291	3.	2.	5.	6.	10.	12.	8.	8.	8.	7.
301	17.	26.	26.	20.	23.	13.	10.	0.	0.	0.
311	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.
321	0.	0.	0.	0.	0.	3.	3.	1.	3.	2.
331	5.	4.	2.	11.	6.	6.	5.	7.	15.	8.
341	20.	25.	26.	42.	72.	94.	97.	136.	165.	230.
351	254.	303.	318.	351.	355.	365.	379.	422.	510.	564.
361	644.	657.	704.	550.	403.	189.	57.	12.	0.	3.
371	0.	2.	2.	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.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	1.	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.								

Em Barker 09-16-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT WHC-SD-WM-DP-147, Rev. 0

SAMPLE
S95T002031-DUP
File ID: 16a1654.CNF

Counted on: 9/16/95 @ 5:20
Detector: AEA16
Geometry number: 1
Count time: 28804. 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	521.1	521.1	360.031	360.031	10.000	3.847	5.000	1.310
2	15.7	15.7	301.664	301.476	10.000	2.813	5.000	1.387
3	130.4	130.4	228.028	228.028	12.000	4.553	6.000	2.173

PEAK RESULTS
Peak Error Limit: 30%

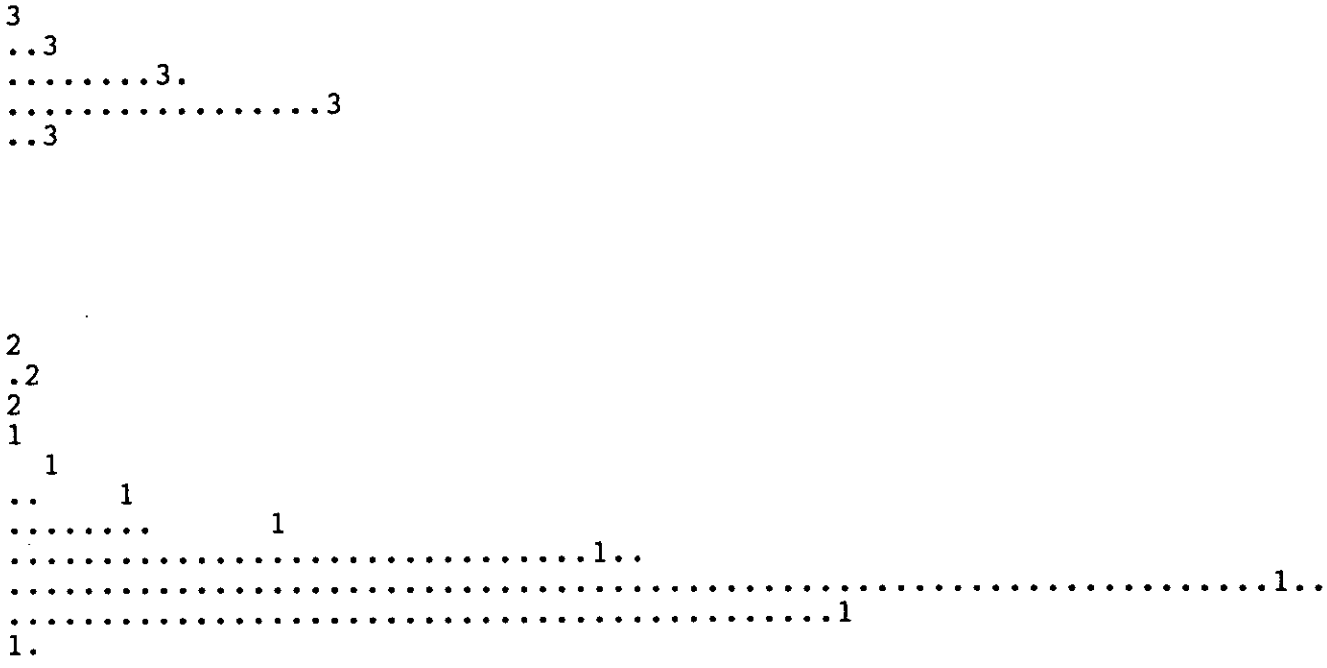
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.843	5.755	5.749	0.006	0.02	17.34	2.1	921.3	0.415E-03
2	Pu238	0.019	5.487	5.479	0.008	0.01	0.39	16.6	28.5	0.128E-04
	Am241		5.479	5.479	0.000				21.8	0.983E-05
3	Pu239	0.182	5.147	5.141	0.006	0.02	3.73	4.6	194.5	0.876E-04
	Pu240		5.144	5.141	0.003				194.5	0.876E-04
Totals:		1.044	<--valid peaks only-->				21.46			

DETECTOR CALIBRATION
Energy(MEV) = 4.093 + (0.0046)*Channel
Energy range (MeV): 4.093 TO 6.448
Efficiency = 0.0192 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	9873.0	100.000
Smoothed	9873.0	100.000
Composite fit	10304.2	104.367
Residuals	-431.2	-4.367

Analyzed by: _____
ALJ



Raw Data Dump for AEA Spectrum: 16a1654.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
101	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.
111	1.	0.	0.	0.	1.	0.	1.	1.	0.	0.
121	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
131	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
141	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
151	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
161	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.
171	1.	0.	0.	0.	0.	0.	0.	1.	1.	1.
181	1.	0.	0.	0.	0.	0.	0.	2.	0.	1.
191	3.	1.	1.	2.	1.	2.	2.	4.	3.	1.
201	5.	4.	6.	3.	8.	3.	10.	7.	5.	12.
211	17.	21.	17.	31.	25.	28.	45.	50.	55.	59.
221	72.	69.	93.	81.	117.	146.	130.	150.	143.	135.
231	92.	57.	42.	18.	9.	1.	0.	0.	0.	0.
241	0.	0.	0.	0.	1.	0.	0.	0.	0.	2.
251	2.	0.	0.	0.	2.	0.	1.	1.	0.	1.
261	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
271	0.	0.	3.	0.	1.	0.	1.	4.	1.	1.
281	0.	1.	2.	1.	3.	4.	7.	6.	4.	2.
291	6.	8.	7.	7.	4.	11.	10.	16.	15.	16.
301	20.	24.	18.	13.	12.	9.	2.	3.	3.	4.
311	2.	1.	0.	1.	2.	5.	2.	3.	2.	1.
321	3.	2.	1.	4.	9.	5.	5.	10.	7.	10.
331	9.	17.	9.	10.	15.	28.	26.	38.	27.	39.
341	60.	74.	86.	101.	139.	145.	165.	209.	258.	294.
351	282.	340.	355.	355.	348.	400.	443.	503.	570.	545.
361	631.	511.	382.	219.	72.	17.	0.	1.	0.	0.
371	1.	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.	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.								

Eric Barker 09-16-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

WHC-SD-WM-DP-147, Rev. 0

SAMPLE
S95T002039-SAM
File ID: 17a1748.CNF

Counted on: 9/16/95 @ 5:18
Detector: AEA17
Geometry number: 1
Count time: 28804. 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	518.9	518.9	358.721	358.721	10.000	2.880	5.000	1.436
2	19.3	19.3	300.587	300.570	12.000	3.358	6.000	1.761
3	164.7	164.7	226.719	226.719	12.000	4.084	6.000	2.801

PEAK RESULTS
Peak Error Limit: 30%

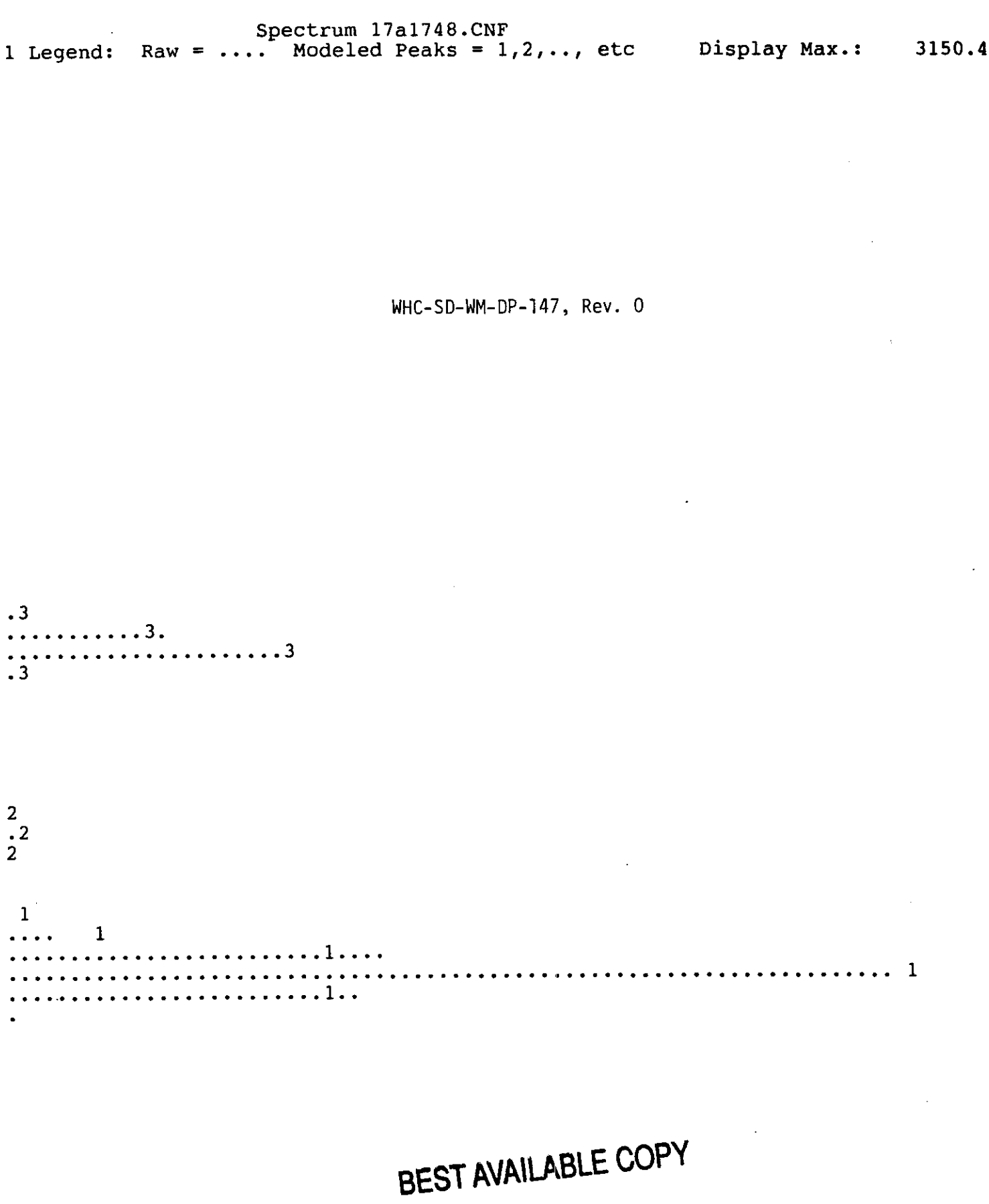
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.754	5.755	5.747	0.008	0.01	12.99	2.5	1152.5	0.519E-03
2	Pu238	0.028	5.487	5.480	0.007	0.02	0.49	13.0	59.0	0.266E-04
	Am241		5.479	5.480	-.001				45.2	0.204E-04
3	Pu239	0.228	5.147	5.140	0.007	0.02	3.93	4.5	341.6	0.154E-03
	Pu240		5.144	5.140	0.004				341.6	0.154E-03
Totals:		1.010	<--valid peaks only-->				17.40			

DETECTOR CALIBRATION
Energy(MEV) = 4.097 + (0.0046)*Channel
Energy range (MeV): 4.097 TO 6.452
Efficiency = 0.0115 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	8271.0	100.000
Smoothed	8271.0	100.000
Composite fit	8355.5	101.022
Residuals	-84.5	-1.022

Analyzed by: _____
ALJ



Raw Data Dump for AEA Spectrum: 17a1748.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	1.	0.	0.	1.	0.	0.
91	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
111	1.	0.	0.	1.	0.	0.	0.	0.	0.	1.
121	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
131	0.	1.	0.	0.	1.	1.	0.	0.	0.	1.
141	0.	0.	0.	2.	1.	0.	1.	0.	0.	0.
151	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
161	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.
171	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
181	0.	0.	0.	0.	0.	0.	3.	0.	1.	0.
191	0.	0.	1.	0.	2.	1.	1.	0.	0.	0.
201	0.	0.	1.	4.	1.	1.	4.	4.	4.	12.
211	8.	14.	12.	21.	24.	37.	47.	40.	58.	63.
221	85.	99.	106.	152.	170.	202.	193.	173.	158.	95.
231	60.	33.	6.	1.	1.	1.	0.	0.	0.	0.
241	0.	0.	1.	1.	1.	0.	0.	1.	0.	0.
251	0.	0.	3.	0.	1.	0.	0.	0.	0.	0.
261	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
271	0.	0.	1.	0.	0.	0.	0.	1.	1.	0.
281	0.	1.	1.	3.	2.	1.	2.	4.	9.	6.
291	10.	7.	7.	14.	8.	12.	8.	9.	28.	26.
301	20.	21.	21.	8.	3.	1.	2.	0.	1.	0.
311	2.	1.	0.	1.	1.	2.	1.	2.	1.	1.
321	1.	0.	2.	0.	2.	1.	3.	4.	3.	7.
331	0.	2.	4.	5.	9.	7.	3.	9.	10.	12.
341	30.	34.	42.	64.	88.	154.	167.	207.	224.	259.
351	259.	185.	211.	266.	344.	399.	506.	584.	645.	580.
361	462.	206.	71.	18.	0.	0.	0.	0.	0.	0.
371	0.	0.	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.	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.	1.	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.								

Em Bracky
09-16-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT WHC-SD-WM-DP-147, Rev. 0

SAMPLE
S95T002039-DUP
File ID: 18a1888.CNF

Counted on: 9/16/95 @ 5:17
Detector: AEA18
Geometry number: 1
Count time: 28804. 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	454.3	454.3	360.454	360.454	10.000	3.656	5.000	1.513
2	18.8	18.8	302.723	302.664	12.000	3.066	6.000	1.171
3	160.7	160.7	228.103	228.103	12.000	4.370	6.000	2.168

PEAK RESULTS
Peak Error Limit: 30%

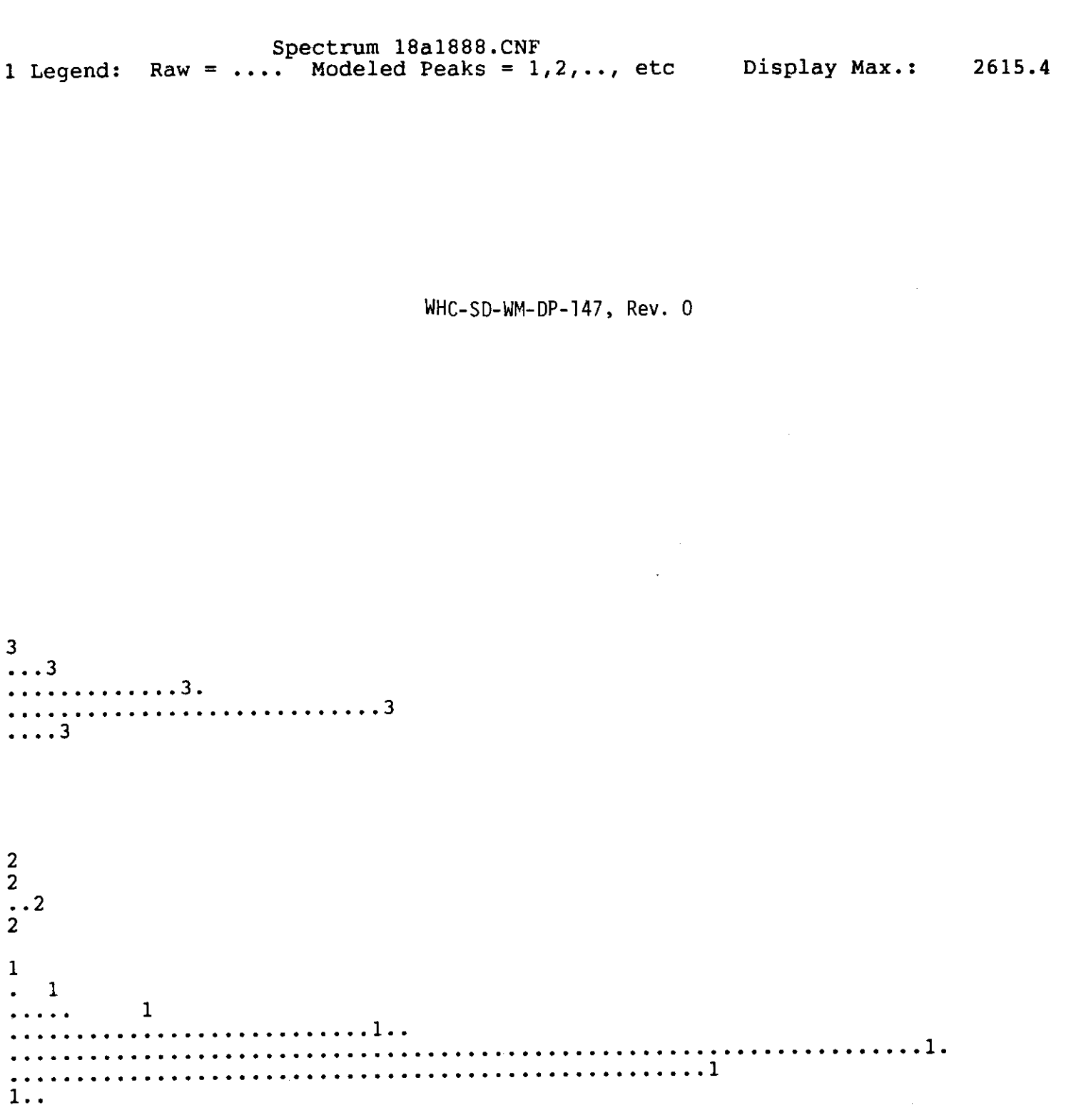
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Peak Centroid Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.746	5.755	5.753	0.002	0.02	13.31	2.5	120.5	0.543E-04
2	Pu238	0.031	5.487	5.487	0.000	0.01	0.56	12.4	6.9	0.310E-05
	Am241		5.479	5.487	-.008				5.3	0.237E-05
3	Pu239	0.250	5.147	5.144	0.003	0.02	4.47	4.2	39.6	0.179E-04
	Pu240		5.144	5.144	0.000				39.6	0.179E-04
Totals:		1.027	<--valid peaks only-->				18.34			

DETECTOR CALIBRATION
Energy(MEV) = 4.095 + (0.0046)*Channel
Energy range (MeV): 4.095 TO 6.450
Efficiency = 0.1127 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	8568.0	100.000
Smoothed	8568.0	100.000
Composite fit	8802.5	102.737
Residuals	-234.5	-2.737

Analyzed by: _____
ALJ



Raw Data Dump for AEA Spectrum: 18a1888.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
121	0.	1.	0.	1.	0.	1.	0.	0.	0.	0.
131	0.	0.	0.	2.	0.	0.	1.	0.	0.	0.
141	0.	2.	1.	0.	0.	0.	0.	0.	1.	2.
151	0.	3.	0.	0.	0.	2.	0.	1.	0.	0.
161	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.
171	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
181	1.	1.	0.	0.	0.	1.	0.	0.	1.	0.
191	0.	1.	0.	1.	0.	0.	0.	4.	3.	1.
201	2.	1.	0.	4.	4.	3.	3.	8.	8.	13.
211	11.	11.	26.	16.	43.	48.	50.	52.	62.	73.
221	80.	98.	107.	117.	149.	146.	176.	181.	190.	150.
231	126.	72.	37.	26.	6.	3.	1.	0.	0.	0.
241	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
251	1.	3.	2.	1.	0.	0.	0.	1.	0.	0.
261	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.
271	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.
281	1.	0.	3.	0.	2.	2.	8.	3.	3.	4.
291	5.	11.	17.	11.	16.	8.	18.	9.	11.	14.
301	16.	28.	18.	23.	17.	10.	7.	1.	2.	0.
311	0.	0.	1.	0.	1.	1.	0.	1.	0.	0.
321	2.	1.	0.	3.	2.	3.	2.	2.	2.	3.
331	4.	5.	5.	6.	9.	13.	8.	16.	16.	23.
341	32.	26.	42.	53.	82.	75.	125.	142.	165.	210.
351	241.	245.	251.	254.	270.	304.	332.	414.	481.	509.
361	526.	492.	387.	234.	94.	20.	4.	0.	0.	0.
371	2.	0.	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.	0.	0.	0.	0.	1.	0.	0.	1.
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.								

LABCORE Completed Worklist Report for Worklist# 2288

Analyst: jmv **Instrument:** PU01 **Book#** _____

Method: LA-943-127 Rev/Mod B-0

Worklist Comment: See chemist for sample size. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
1	STD		0		@PU23902 PU23901	LIQUID	0.128		1.18e-1	92.190	% Recovery
1	STD		0		@PU23902 PU23901E	LIQUID	1.00		2.5	2.500	% Ct. Error
1	STD		0		@PU23902 PU23901T	LIQUID	100		70.4	70.400	% Recovery
2	BLNK		0		@PU23902 PU23901	LIQUID	1		<5.31e-5		uCi/mL
2	BLNK		0		@PU23902 PU23901T	LIQUID	100		41.7	41.700	% Recovery
2	BLNK		0		@PU23902 PU23901E	LIQUID	1.00		100.0	100.000	% Ct. Error
2	BLNK		0		@PU23902 PU23801	LIQUID	1		<5.31e-5		uCi/mL
2	BLNK		0		@PU23902 PU23801E	LIQUID	1.00		100.0	100.000	% Ct. Error
3	SAMPLE	S95T002017	0		@PU23902 PU23901	LIQUID	N/A		1.38e-4	4.840e-005	uCi/mL
3	SAMPLE	S95T002017	0		@PU23902 PU23901T	LIQUID	N/A		54.9	1.000e-007	% Recovery
3	SAMPLE	S95T002017	0		@PU23902 PU23901E	LIQUID	N/A		5.7	0.000	% Ct. Error
3	SAMPLE	S95T002017	0		@PU23902 PU23801	LIQUID	N/A	<	4.84e-5	4.840e-005	uCi/mL
3	SAMPLE	S95T002017	0		@PU23902 PU23801E	LIQUID	N/A		14.1	0.000	% Ct. Error

Final page for worklist# 2288

Analyst Signature **Date**

Analyst Signature **Date**

LL Fitts 18 Sep 95

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2288

Analyst: JVS **Instrument:** PU01 **Book #** 164B43

Method: LA-943-127 Rev/Mod B-0

Worklist Comment: See chemist for sample size. --LLF .100mL

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@PU23902 PU23901	LIQUID			N/A	uCi/mL
		1	STD				@PU23902 PU23901E	LIQUID			N/A	% Ct. Error
		1	STD				@PU23902 PU23901T	LIQUID			N/A	% Recovery
		2	BLNK				@PU23902 PU23901	LIQUID			N/A	uCi/mL
		2	BLNK				@PU23902 PU23901T	LIQUID			N/A	% Recovery
		2	BLNK				@PU23902 PU23901E	LIQUID			N/A	% Ct. Error
		2	BLNK				@PU23902 PU23801	LIQUID			N/A	uCi/mL
		2	BLNK				@PU23902 PU23801E	LIQUID			N/A	% Ct. Error
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@PU23902 PU23901	LIQUID	N/A			uCi/mL
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@PU23902 PU23901T	LIQUID	N/A			% Recovery
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@PU23902 PU23901E	LIQUID	N/A			% Ct. Error
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@PU23902 PU23801	LIQUID	N/A			uCi/mL
95000126	AW-106 GRAB	3	SAMPLE	S95T002017	0		@PU23902 PU23801E	LIQUID	N/A			% Ct. Error

Final page for worklist # 2288

Analyst Signature Date

Analyst Signature Date 9-18-95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID

Type						STD
STD	DATE COUNTED		SEP-13-95	PU 236 AEA FRAC	(C236)	0.410
Work List	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC	(C238)	0.000
2288	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.626
Test Code	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		4514
@PU23902	DIGEST DILUTION FACTOR	DDF	1.000	AT COUNT TIME (MIN)		30
Matrix	TRACER BOOK NO		110B43	BACKGROUND in cpm	(Bkg)	5.000
LIQUID	DETECTOR NUMBER		1	PU 236 cpm		20.640
Batch Number	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		0.000
95002402	TRACER PREPARATION DATE		04/03/95	PU 239 cpm		31.500
Parms	TRACER PREPARATION VALUE (dpm/mL)		1889.000	AEA COUNT TIME		480
0	PU-236 DECAY CORR'D VALUE (dpm/mL)		1694.706	Pu 239/240 µCi/L		1.1772E+02
Sample Prep	PU-238 TRACER VALUE (dpm/mL		0.000			
N/A	STANDARD BOOK NO		104B43			
Sample #	STANDARD VALUE in µCi/mL		0.128			
WORKLIST#2288						
Instrument Code	Decay Time = Date Counted - Tracer Preparation Date					
AL10539	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]					
Prepared By	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)* 1/EFF *C236*100/Pu-236 Decay Corr'd Value * SPKV					
SLH	Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(2220000 dpm/µCi)]					
Chemist	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)					
LLF	Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]					
Analyst	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100					
JVS						
Date Completed	v RESULTS v					
09/14/95	Pu 239/240 µCi/mL		1.18E-01	DETECTION LEVELS in µCi/mL		
Analysis Date	Relative Counting Error	=	2.5%			
09/13/95				Pu 239/240		
Analysis Time				8.02E-03		
02:00 PM						
Sample Point						
AW-106 GRAB	Pu 236 Tracer Recovery	=	70.4%			

Analyst:		JVS	Date:	14-Sep-95
Signature of Chemist:		LLF	Date:	14 Sep 95

STANDARD.WB1 REV 1. 943127ML

WORKBOOK PAGE: BLANK2

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type						BLNK
BLNK	DATE COUNTED		SEP-13-95	PU 236 AEA FRAC	(C236)	1.035
Work List	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC	(C238)	0.000
2288	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.000
Test Code	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		1113
@PU23902	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
Matrix	TRACER BOOK NO		110B43	BACKGROUND in cpm (Bkg)		3.000
LIQUID	DETECTOR NUMBER		2	PU 236 cpm		12.170
Batch Number	EFFICIENCY FACTOR	EFF	0.5000	PU 238 cpm		0.000
95002402	TRACER PREPARATION DATE		04/03/95	PU 239 cpm		0.000
Rerun	TRACER PREPARATION VALUE (dpm/mL)		1889.00	AEA COUNT TIME		480
0	PU-236 DECAY CORR'D VALUE (dpm/mL)		1694.71	Pu 239/240 µCi/L =	<	5.312E-02
	PU-238 TRACER VALUE (dpm/mL)		0.00			

Sample Prep
N/A
Sample #
S95T002017
Instrument Code
AL10540
Prepared By
SLH
Chemist
LLF
Analyst
JVS
Date Counted
09/14/95
Analysis Date
09/13/95
Analysis Time
02:00 PM
Sample Point
AW-106 GRAB

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)*C236*100/(Pu-236 Decay Corr'd Value * SPKV*EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

Pu 239/240 µCi/mL		**< 5.31E-05**	**DETECTION LEVELS in µCi/mL**
Relative Counting Error	**=**	**100.0%**	
NOTE: Pu 238 Result is a LESS THAN Value.			**Pu 239/240**
Pu 238 µCimL		**< 5.31E-05**	**5.31E-05**
Relative Counting Error	**=**	**100.0%**	**Pu 238**
Pu 236 Tracer Recovery	**=**	**41.7%**	**5.31E-05**

Analyst:		JVS	Date:	14-Sep-95
Signature of Chemist:	[signature]	LLF	Date:	14 Sep 95

BLANK.WB1 REV 1.1 943127ML

WORKBOOK PAGE: SAM3

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type						SAMPLE
SAMPLE	DATE COUNTED		SEP-13-95	PU 236 AEA FRAC	(C236)	0.881
Prep List	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC	(C238)	0.022
2288	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.156
Test Code	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		1742
@PU23902	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
Matrix	TRACER BOOK NO		110B43	BACKGROUND in cpm	(Bkg)	4.000
LIQUID	DETECTOR NUMBER		3	PU 236 cpm		15.030
Batch Number	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		0.410
95002402	TRACER PREPARATION DATE		04/03/95	PU 239 cpm		2.900
Rerun	TRACER PREPARATION VALUE (dpm/mL)		1889.000	AEA COUNT TIME		480
0	PU-236 DECAY CORR'D VALUE (dpm/mL)		1694.706	Pu 239/240 µCi/L		1.3831E-01
	PU-238 TRACER VALUE (dpm/mL)		0.000			

Sample Prep
N/A
Sample #
S95T002017
Instrument Code
AL10541
Prepared By
SLH
Chemist
LLF
Analyst
JVS
Date Counted
09/14/95
Analysis Date
09/13/95
Analysis Time
02:00 PM
Sample Type
AW-106 GRAB

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

v RESULTS v

			DETECTION LEVELS in µCi/mL
Pu 239/240 µCi/mL		1.38E-04	
Relative Counting Error	=	5.7%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCi/mL		< 4.84E-05	4.84E-05
Relative Counting Error	=	14.1%	Pu 238
Pu 236 Tracer Recovery	=	54.9%	4.84E-05

Analyst:	JVS	Date:	14-Sep-95
Signature of Chemist:	LLF	Date:	14 Sep 95

SAMPLE.WB1 REV 1.1 943127ML

Raymond
9.14.95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLI2288-STD
File ID: 19a1987.CNF

Counted on: 9/13/95 @17: 5
Detector: AEA19
Geometry number: 1
Count time: 28803. 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	531.7	531.7	361.326	361.326	10.000	3.867	5.000	1.044
2?	9.0	9.0	303.007	302.419	6.000	1.123	3.000	0.395
3	960.8	960.8	229.394	229.394	10.000	4.649	5.000	1.729

PEAK RESULTS
Peak Error Limit: 30%

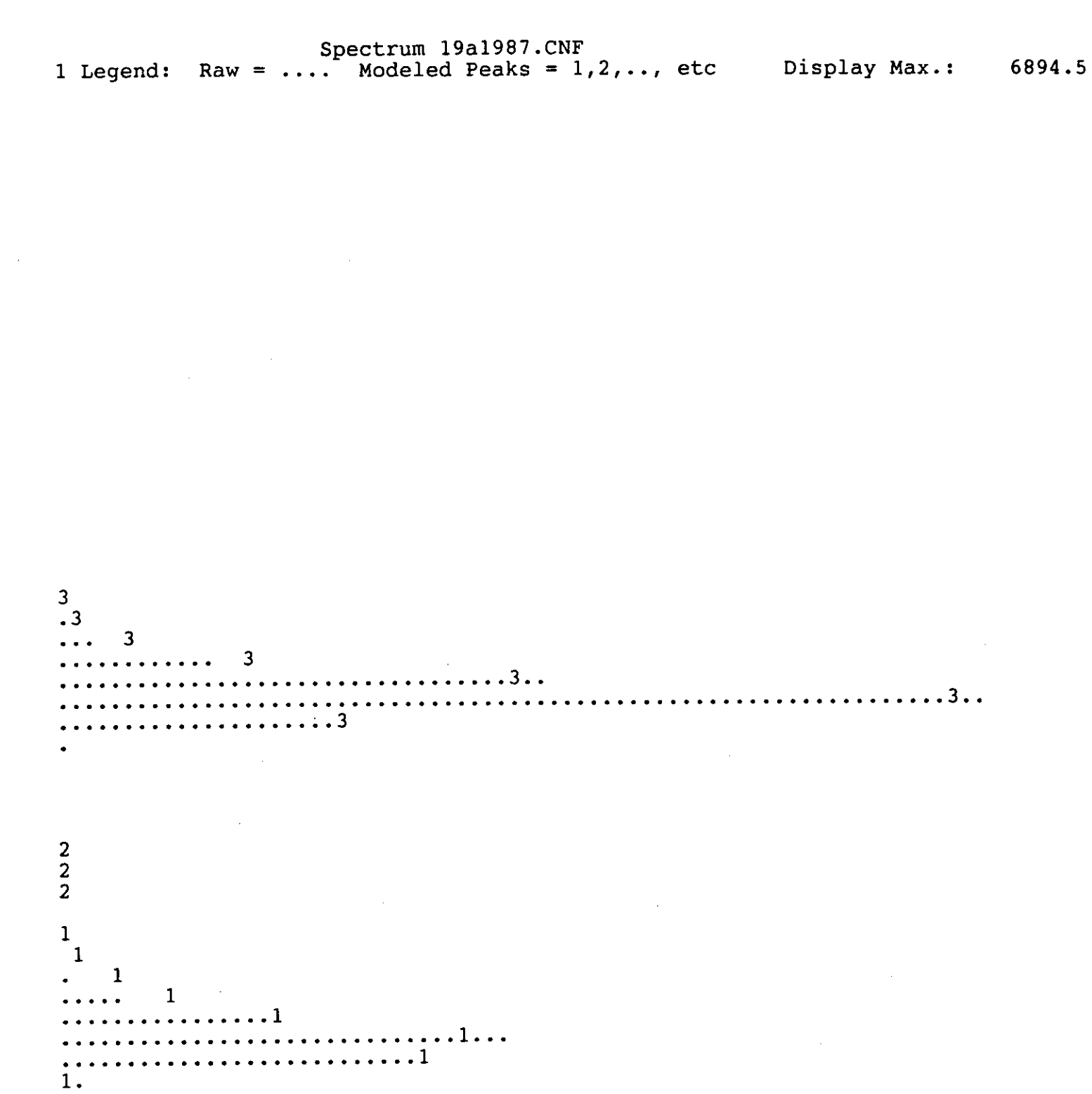
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.410	5.755	5.744	0.011	0.02	20.64	2.0	219.4	0.988E-04
2		????		5.473			0.24	27.7		
3	Pu239	0.626	5.147	5.137	0.010	0.02	31.50	1.6	328.2	0.148E-03
	Pu240		5.144	5.137	0.007				328.2	0.148E-03
Totals:		1.036	<--valid peaks only-->				52.14			

DETECTOR CALIBRATION
Energy(MEV) = 4.082 + (0.0046)*Channel
Energy range (MeV): 4.082 TO 6.437
Efficiency = 0.0960 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	24151.0	100.000
Smoothed	24150.5	99.998
Composite fit	25147.4	104.126
Residuals	-996.4	-4.126

Analyzed by: _____
ALJ


Spectrum 19a1987.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6894.5

Raw Data Dump for AEA Spectrum: 19a1987.CNF

1	0.	0.	0.	0.	0.	1.	0.	1.	0.	1.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
61	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
71	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
81	1.	0.	1.	0.	0.	0.	1.	0.	0.	1.
91	1.	1.	2.	0.	0.	1.	1.	0.	0.	1.
101	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	1.	0.	1.	1.	2.	1.	0.	1.	0.	2.
121	0.	0.	1.	0.	0.	2.	1.	1.	0.	0.
131	0.	2.	1.	2.	1.	1.	1.	1.	2.	0.
141	1.	1.	1.	1.	1.	1.	2.	1.	1.	0.
151	2.	0.	3.	2.	0.	1.	0.	2.	2.	1.
161	3.	2.	1.	2.	3.	3.	2.	1.	3.	1.
171	1.	3.	5.	4.	1.	3.	8.	6.	7.	1.
181	5.	9.	11.	10.	9.	7.	7.	12.	8.	12.
191	14.	15.	20.	16.	18.	24.	27.	21.	25.	29.
201	34.	45.	44.	51.	51.	59.	54.	76.	88.	116.
211	131.	139.	175.	198.	217.	286.	339.	345.	427.	480.
221	548.	565.	629.	717.	759.	803.	917.	1016.	1076.	1051.
231	1033.	838.	650.	301.	144.	60.	19.	8.	0.	0.
241	1.	0.	0.	0.	1.	0.	0.	1.	0.	1.
251	0.	1.	1.	3.	0.	3.	2.	0.	2.	3.
261	1.	0.	0.	1.	0.	1.	1.	0.	1.	0.
271	0.	4.	1.	1.	2.	0.	3.	0.	2.	0.
281	1.	3.	2.	2.	1.	4.	3.	5.	5.	8.
291	2.	3.	10.	13.	9.	18.	5.	12.	7.	13.
301	15.	12.	22.	18.	13.	10.	4.	6.	2.	5.
311	3.	2.	3.	8.	1.	5.	9.	2.	6.	10.
321	5.	7.	8.	5.	8.	7.	16.	17.	14.	14.
331	19.	23.	21.	22.	32.	43.	35.	50.	46.	59.
341	79.	85.	109.	107.	108.	154.	195.	219.	269.	308.
351	329.	356.	387.	400.	430.	426.	426.	472.	500.	518.
361	550.	598.	564.	488.	263.	93.	29.	0.	0.	0.
371	0.	0.	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.	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.	1.	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.								

Raymond 9.14.95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2288-BL
File ID: 20a2092.CNF

Counted on: 9/13/95 @17: 7
Detector: AEA20
Geometry number: 1
Count time: 28802. 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	371.2	371.2	362.105	362.105	10.000	3.351	5.000	1.123

PEAK RESULTS
Peak Error Limit: 30%

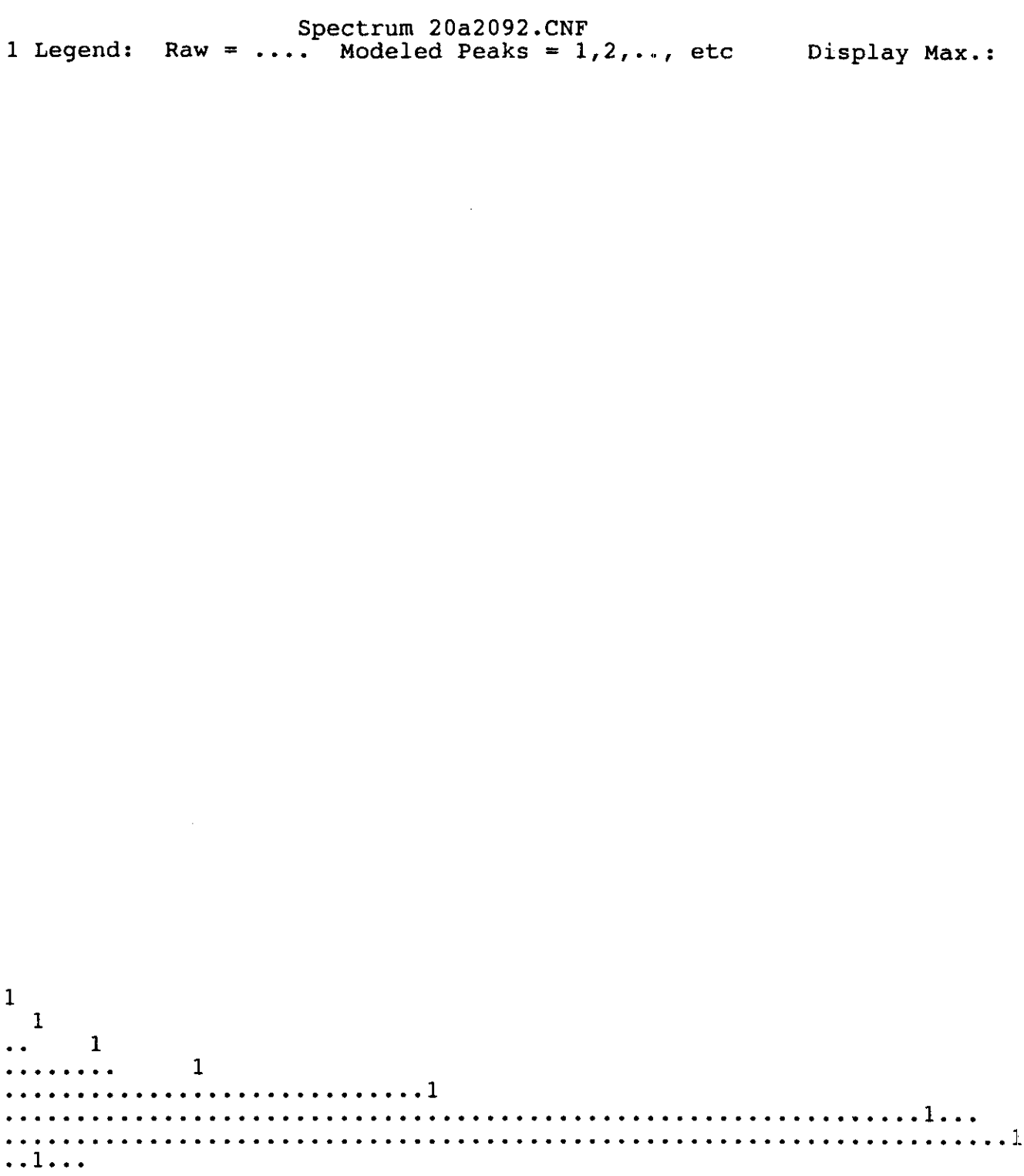
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Peak Centroid Obs.	Peak Centroid Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	1.035	5.755	5.774	-.019	0.02	12.17	2.6	3028.9	0.136E-02
	Cm243		5.779	5.774	0.005				4066.2	0.183E-02
Totals:		1.035	<--valid peaks only-->				12.17			

DETECTOR CALIBRATION
Energy(MEV) = 4.109 + (0.0046)*Channel
Energy range (MeV): 4.109 TO 6.464
Efficiency = 0.0041 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	5643.0	100.000
Smoothed	5643.0	100.000
Composite fit	5842.1	103.528
Residuals	-199.1	-3.528

Analyzed by: _____
ALJ


Spectrum 20a2092.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 2064.7

Raw Data Dump for AEA Spectrum: 20a2092.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.
21	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	2.	2.	1.
71	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
91	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
101	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	1.	0.	0.	1.	0.	0.	1.
121	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
131	0.	0.	0.	0.	0.	0.	2.	0.	2.	0.
141	0.	1.	0.	0.	0.	0.	0.	0.	0.	2.
151	2.	0.	2.	1.	0.	1.	0.	0.	0.	0.
161	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.
171	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
181	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
191	0.	0.	1.	0.	0.	1.	0.	0.	1.	1.
201	1.	0.	0.	0.	1.	0.	0.	1.	1.	1.
211	1.	0.	1.	0.	0.	0.	1.	0.	1.	2.
221	1.	1.	4.	1.	3.	4.	0.	3.	3.	1.
231	6.	5.	3.	3.	4.	5.	2.	0.	0.	0.
241	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
251	0.	0.	0.	1.	0.	0.	1.	0.	0.	0.
261	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.
271	1.	0.	0.	0.	0.	2.	0.	0.	1.	0.
281	0.	0.	0.	0.	1.	0.	0.	0.	1.	1.
291	2.	1.	2.	3.	0.	1.	2.	0.	1.	1.
301	1.	4.	2.	0.	4.	1.	1.	2.	0.	0.
311	0.	0.	0.	0.	2.	2.	4.	1.	0.	1.
321	5.	4.	1.	3.	3.	7.	5.	4.	8.	6.
331	5.	14.	13.	7.	13.	13.	20.	27.	21.	24.
341	26.	55.	41.	59.	61.	70.	93.	92.	109.	160.
351	179.	216.	234.	238.	249.	218.	235.	281.	308.	345.
361	365.	428.	431.	374.	269.	101.	34.	13.	1.	0.
371	2.	0.	2.	1.	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.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	1.	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.								

Raymond 9.14.95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T002017-SAM
File ID: 21a2197.CNF

Counted on: 9/13/95 @17: 7
Detector: AEA21
Geometry number: 1
Count time: 28806. 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	500.7	500.7	362.264	362.264	10.000	3.683	5.000	1.316
2	14.3	14.3	304.790	304.539	12.000	2.686	6.000	1.032
3	95.4	95.4	230.098	230.098	14.000	5.674	7.000	2.697

PEAK RESULTS
Peak Error Limit: 30%

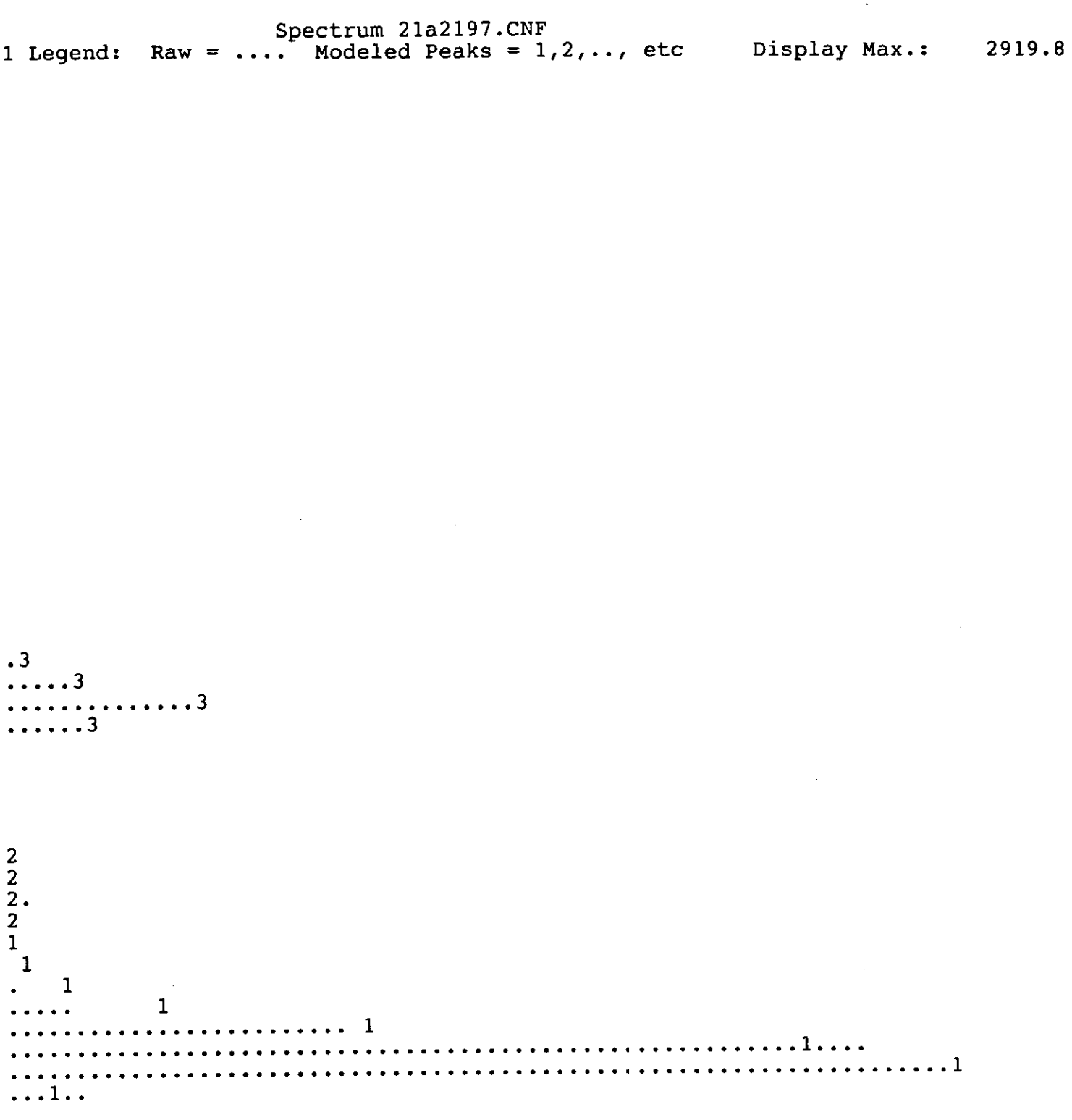
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.861	5.755	5.749	0.006	0.02	16.03	2.2	150.0	0.676E-04
2	Pu238	0.022	5.487	5.484	0.003	0.01	0.41	15.7	5.2	0.236E-05
	Am241		5.479	5.484	-.005				4.0	0.181E-05
3	Pu239	0.156	5.147	5.141	0.006	0.03	2.90	5.3	26.6	0.120E-04
	Pu240		5.144	5.141	0.003				26.6	0.120E-04
Totals:		1.039	<--valid peaks only-->				19.34			

DETECTOR CALIBRATION
Energy(MEV) = 4.083 + (0.0046)*Channel
Energy range (MeV): 4.083 TO 6.438
Efficiency = 0.1090 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	8938.0	100.000
Smoothed	8938.0	100.000
Composite fit	9285.4	103.887
Residuals	-347.4	-3.887

Analyzed by: _____
ALJ


Spectrum 21a2197.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 2919.8
.3
.....3
.....3
.....3
2
2
2.
2
1
1
. 1
..... 1
..... 1
.....1....
.....1
...1..

Raw Data Dump for AEA Spectrum: 21a2197.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
31	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.
61	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
101	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
111	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
121	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
131	0.	0.	1.	0.	0.	2.	0.	0.	0.	0.
141	0.	0.	1.	1.	1.	0.	1.	1.	1.	0.
151	1.	1.	0.	0.	1.	0.	0.	0.	1.	0.
161	0.	0.	0.	1.	1.	0.	0.	0.	0.	1.
171	1.	1.	0.	0.	1.	0.	1.	1.	0.	0.
181	0.	0.	0.	0.	1.	2.	0.	1.	0.	2.
191	0.	1.	2.	1.	2.	1.	1.	0.	2.	2.
201	0.	2.	2.	4.	2.	6.	2.	4.	7.	6.
211	4.	11.	18.	9.	14.	17.	20.	22.	26.	40.
221	44.	46.	43.	81.	61.	72.	88.	84.	109.	110.
231	107.	78.	89.	71.	34.	26.	10.	1.	1.	1.
241	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
251	0.	0.	0.	0.	0.	0.	4.	1.	2.	1.
261	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.
271	1.	0.	1.	0.	0.	1.	0.	0.	0.	1.
281	1.	0.	1.	3.	0.	3.	6.	4.	2.	1.
291	2.	5.	5.	9.	9.	6.	11.	13.	11.	8.
301	10.	15.	13.	20.	20.	13.	19.	7.	6.	3.
311	0.	3.	2.	3.	0.	1.	0.	3.	2.	0.
321	1.	2.	1.	6.	1.	1.	6.	5.	4.	8.
331	4.	9.	6.	9.	17.	15.	17.	18.	24.	26.
341	35.	40.	46.	62.	60.	99.	92.	142.	143.	175.
351	239.	233.	291.	308.	346.	316.	357.	344.	373.	460.
361	544.	530.	596.	517.	408.	218.	85.	19.	2.	1.
371	2.	0.	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.	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.								

LABCORE Completed Worklist Report for Worklist# 2462

Analyst: dcd **Instrument:** AEA00 **Book#** 104643

Method: LA-943-127 Rev/Mod B-0

Worklist Comment: Determine sample size using Ludlum. --LLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@PU23901	PU23901 SOLID	1.28E-01	1.29E-1	100.780	% Recovery
1	STD		0		@PU23901	PU23901T SOLID	100	7.80E+01	78.000	% Recovery
1	STD		0		@PU23901	PU23901E SOLID	1	2.17E+00	2.170	% Ct. Error
2	BLNK-PREP		0		@PU23901	PU23901 SOLID	1	<1.66E-3		uCi/g
2	BLNK-PREP		0		@PU23901	PU23901T SOLID	100	7.82E+01	78.200	% Recovery
2	BLNK-PREP		0		@PU23901	PU23901E SOLID	1	1.00E+02	100.000	% Ct. Error
3	SAMPLE	S95T002021	0	F	@PU23901	PU23901 SOLID	N/A	3.45E-02	3.440e-003	uCi/g
3	SAMPLE	S95T002021	0	F	@PU23901	PU23901T SOLID	N/A	7.52E+01	1.000e-007	% Recovery
3	SAMPLE	S95T002021	0	F	@PU23901	PU23901E SOLID	N/A	2.51E+00	0.000	% Ct. Error
4	DUP	S95T002021	0	F	@PU23901	PU23901 SOLID	3.45E-2	3.24E-2	6.280	RPD
4	DUP	S95T002021	0	F	@PU23901	PU23901T SOLID	100	6.67E+01	66.700	% Recovery
4	DUP	S95T002021	0	F	@PU23901	PU23901E SOLID	1.00	2.50E+00	2.500	% Ct. Error
5	SAMPLE	S95T002037	0	F	@PU23901	PU23901 SOLID	N/A	5.56E-02	4.250e-003	uCi/g
5	SAMPLE	S95T002037	0	F	@PU23901	PU23901T SOLID	N/A	7.37E+01	1.000e-007	% Recovery
5	SAMPLE	S95T002037	0	F	@PU23901	PU23901E SOLID	N/A	2.56E+00	0.000	% Ct. Error
6	DUP	S95T002037	0	F	@PU23901	PU23901 SOLID	5.56E-2	5.56E-2	0.000	RPD
6	DUP	S95T002037	0	F	@PU23901	PU23901T SOLID	100	5.96E+01	59.600	% Recovery
6	DUP	S95T002037	0	F	@PU23901	PU23901E SOLID	1.00	2.14E+00	2.140	% Ct. Error

Final page for worklist# 2462

Analyst Signature **Date**

Analyst Signature **Date**

LLFitts 2 Oct 95

Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 2462

Analyst: DCD **Instrument:** PU01 WC38931 K **Book#** 104B43

Method: LA-943-127 Rev/Mod B-0

Worklist Comment: Determine sample size using Ludlum. --LLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@PU23901	SOLID		
2	BLNK-PREP				@PU23901	SOLID		
3	SAMPLE	S95T002021	0	F	@PU23901	SOLID	95000126	AW-106 GRAB
	Analytes Requested: PU23901 , PU23901E, PU23901T							
4	DUP	S95T002021	0	F	@PU23901	SOLID		
5	SAMPLE	S95T002037	0	F	@PU23901	SOLID	95000126	AW-106 GRAB
	Analytes Requested: PU23901 , PU23901E, PU23901T							
6	DUP	S95T002037	0	F	@PU23901	SOLID		

Final page for worklist # 2462

David L Dunham 9-27-95
Analyst Signature **Date**

M G Brown 9/29/95
Analyst Signature **Date**

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID

Type						STD
STD	DATE COUNTED		SEP-28-95	PU 236 AEA FRAC	(C236)	0.451
Work List	SAMPLE VOLUME in mL	SS	0.100	PU 238 AEA FRAC	(C238)	0.000
2462	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.571
Test Code	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		5967
@PU23901	DIGEST DILUTION FACTOR	DDF	1.000	AT COUNT TIME (MIN)		30
Matrix	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)	5.000
LIQUID	DETECTOR NUMBER		1	PU 236 cpm		30.390
Batch Number	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		0.000
95002603	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		38.440
Result	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME		480
0	PU-236 DECAY CORR'D VALUE (dpm/mL)		2240.997	Pu 239/240 µCi/L		1.2908E+02
Sample Prep	PU-238 TRACER VALUE (dpm/mL		0.000			
N/A	STANDARD BOOK NO		104B43			
Sample #	STANDARD VALUE in µCi/mL		0.128			
WRKLST#2462						

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95}]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)* 1/EFF *C236*100/Pu-236 Decay Corr'd Value * SPKV

Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Instrument Code	Prepared By	Chemist	Analyst	Date Counted	Analysis Date	Analysis Time	Sample Point
AL10539	MCB	LLF	DCD	09/29/95	09/27/95	10:00 PM	AW-106 GRAB

v RESULTS v

Pu 239/240 µCi/mL		1.29E-01	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	2.2%	Pu 239/240 8.69E-03
Pu 236 Tracer Recovery	=	78.0%	

Analyst:	DCD	Date:	29-Sep-95
Signature of Chemist:	LLF	Date:	SEP 29 1995

STANDARD WB1 REV 1.2 943127ML

WORKBOOK PAGE: BLANK2

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type						BLNK-PREP
BLNK-PREP	DATE COUNTED		SEP-28-95	PU 236 AEA FRAC	(C236)	1.032
Work List	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
2462	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.000
Test Code	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2636
@PU23901	DIGEST GRAMS of SOLIDS/L	Dg/L	2.2620	AT COUNT TIME (MIN)		30
Matrix	TRACER BOOK NO		117843	BACKGROUND in cpm (Bkg)		3.000
SOLID	DETECTOR NUMBER		2	PU 236 cpm		31.690
Batch Number	EFFICIENCY FACTOR	EFF	0.5000	PU 238 cpm		0.000
95002603	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		0.000
Reruns	TRACER PREPARATION VALUE (dpm/mL)		2265.00	AEA COUNT TIME		480
0	PU-236 DECAY CORR'D VALUE (dpm/mL)		2241.00	Pu 239/240 µCi/g =	<	1.660E-03
Sample Prep	PU-238 TRACER VALUE (dpm/mL)		0.00			
N/A						
Sample #	Decay Time = Date Counted - Tracer Preparation Date					
WRKLST#2462	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95}]					
Instrument Code	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg)*C236*100/(Pu-236 Decay Corr'd Value * SPKV*EFF)					
AL10540	Pu 239/240 µCi/g = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]					
Prepared By	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)					
MCB	Pu 238 µCi/g = [(Pu 238 dpm)(DF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]					
Chemist	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100					
LLF						
Analyst						
DCD						
Date Complete	v RESULTS v					
09/29/95	**Pu 239/240 µCi/g**		**< 1.66E-03**	**DETECTION LEVELS in µCi/g**		
Analysis Date	**Relative Counting Error**	**=**	**100.0%**			
09/27/95						
Analysis Time	**NOTE: Pu 238 Result is a LESS THAN Value.**			**Pu 239/240**		
10:00 PM	**Pu 238 µCi/g**		**< 1.66E-03**	**1.66E-03**		
Sample Point	**Relative Counting Error**	**=**	**100.0%**	**Pu 238**		
AW-106 GRAB	**Pu 236 Tracer Recovery**	**=**	**78.2%**	**1.66E-03**		

Analyst:		DCD	Date:	29-Sep-95
Signature of Chemist:		LLF	Date:	SEP 29 1995

BLANK.WB1 REV 1.2 943127ML

WORKBOOK PAGE: SAM3

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type						SAMPLE
SAMPLE	DATE COUNTED		SEP-28-95	PU 236 AEA FRAC	(C236)	0.518
Work List	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.067
2462	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.400
Test Code	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		6030
@PU23901	DIGEST GRAMS of SOLIDS/L	Dg/L	2.2620	AT COUNT TIME (MIN)		30
Matrix	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)	6.000
SOLID	DETECTOR NUMBER		3	PU 236 cpm		29.210
Batch Number	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		3.210
95002603	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		22.580
Rerun	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME		480
0	PU-236 DECAY CORR'D VALUE (dpm/mL)		2240.997	Pu 239/240 µCi/g		3.4461E-02
	PU-238 TRACER VALUE (dpm/mL)		0.000			
Sample Prep						
FUSION01						

Sample #	Decay Time = Date Counted - Tracer Preparation Date
S95T002021	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)}
Instrument Code	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)
AL10641	Pu 239/240 µCi/g = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]
Prepared By	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
MCB	Pu 238 µCi/g = [(Pu 238 dpm)(DF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Chemist	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100
LLF	
Analyst	
DCD	

v RESULTS v

Data Complete				
09/29/95	Pu 239/240 µCi/g		3.45E-02	DETECTION LEVELS In µCi/g
Analysis Date	Relative Counting Error	=	2.5%	
09/27/95				Pu 239/240
Analysis Time				3.44E-03
10:00 PM	Pu 238 µCi/g		4.91E-03	
Sample Point	Relative Counting Error	=	5.3%	Pu 238
AW-106 GRAB	Pu 236 Tracer Recovery	=	75.2%	3.44E-03

Analyst:		DCD	Date:	29-Sep-95
Signature of Chemist:		LLF	Date:	SEP 29 1995

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: DUP4

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type	DATE COUNTED		SEP-28-95	PU 236 AEA FRAC (C236)	DUP 0.668
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC (C238)	0.051
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC (C239)	0.413
2462	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS	4097
Test Code	DIGEST GRAMS of SOLIDS/L	Dg/L	2.2628	AT COUNT TIME (MIN)	30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm (Bkg)	6.000
Matrix	DETECTOR NUMBER		3	PU 236 cpm	30.450
SOLID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm	2.750
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm	22.120
95002603	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME	480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2240.997	Pu 239/240 µCi/g	3.2437E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000		
Sample Prep					
FUSION01					

Sample #	Decay Time = Date Counted - Tracer Preparation Date
S95T002021	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]
Instrument Code	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)
AL10641	Pu 239/240 µCi/g = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]
Prepared By	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)
MCB	Pu 238 µCi/g = [(Pu 238 dpm)(DF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]
Chemist	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100
LLF	
Analyst	
DCD	

v RESULTS v

Date Counted				DETECTION LEVELS In µCi/g
09/29/95	Pu 239/240 µCi/g		3.24E-02	
	Relative Counting Error	=	2.5%	Pu 239/240
Analysis Date				3.53E-03
09/27/95				
Analysis Time	Pu 238 µCi/g		4.01E-03	Pu 238
10:00 PM	Relative Counting Error	=	5.6%	3.53E-03
Sample Point	Pu 236 Tracer Recovery	=	66.7%	
AW-106 GRAB				

Analyst:		DCD	Date:	29-Sep-95
Signature of Chemist:		LLF	Date:	SEP 29 1995

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: SAM5

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type	DATE COUNTED		SEP-28-95	PU 236 AEA FRAC	(C236)	SAMPLE 0.440
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.065
Plant Unit	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.533
2462	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		6777
Test Code	DIGEST GRAMS of SOLIDS/L	Dg/L	2.2012	AT COUNT TIME (MIN)		30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)	6.000
Matrix	DETECTOR NUMBER		1	PU 236 cpm		22.380
SOLID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		3.320
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		27.080
95002603	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME		480
Replicate	PU-236 DECAY CORR'D VALUE (dpm/mL)		2240.997	Pu 239/240 µCi/g		5.5552E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000			
Sample Type						
FUSION01						
Sample #	Decay Time = Date Counted - Tracer Preparation Date					
S95T002037	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)]					
Instrument Code	Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)					
AL10539	Pu 239/240 µCi/g = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]					
Prepared By	Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)					
MCB	Pu 238 µCi/g = [(Pu 238 dpm)(DF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]					
Chemist	Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100					
LLF						
Analyst						
DCD						
Date Received	v RESULTS v					
09/29/95	Pu 239/240 µCi/g		5.56E-02	DETECTION LEVELS In µCi/g		
Analysis Date	Relative Counting Error	=	2.6%			
09/27/95				Pu 239/240		
Analysis Time				4.25E-03		
10:00 PM	Pu 238 µCi/g		6.77E-03	Pu 238		
Sample Point	Relative Counting Error	=	5.3%	4.25E-03		
AW-106 GRAB	Pu 236 Tracer Recovery	=	73.7%			

Analyst:		DCD	Date:	29-Sep-95
Signature of Chemist:		LLF	Date:	SEP 29 1995

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: DUP6

Pu 238 and 239/240 : LA-943-127 (B-0) LIQUID / SOLID

Type	DATE COUNTED		SEP-26-95	PU 236 AEA FRAC (C236)	DUP 0.435
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC (C238)	0.064
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC (C239)	0.532
2462	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS	4683
Test Code	DIGEST GRAMS of SOLIDS/L	Dg/L	2.2148	AT COUNT TIME (MIN)	30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm (Bkg)	3.000
Matrix	DETECTOR NUMBER		2	PU 236 cpm	31.670
SOLID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm	4.680
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm	38.640
95002603	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME	480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2240.997	Pu 239/240 µCi/g	5.5613E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000		
Sample Prep					
FUSION01					

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value *[e to the power of {(-ln2 * Decay Time/1040.95)}]

Pu 236 Tracer Recovery = (Total AT Counts / TC -Bkg) *C236*100/(Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/g = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF) / [(C236)(SS)(D g/L)(2220000 dpm/µCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value *SPKV *Pu 236 Tracer Recovery / 100)

Pu 238 µCi/g = [(Pu 238 dpm)(DF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Sample #	Instrument Code	Prepared By	Chemist	Analyst	Data Complete
S95T002037	AL10540	MCB	LLF	DCD	09/29/95

v RESULTS v

Analysis Date				DETECTION LEVELS in µCi/g
09/27/95	Pu 239/240 µCi/g		5.56E-02	
Analysis Time	Relative Counting Error	=	2.1%	Pu 239/240
10:00 PM	Pu 238 µCi/g		6.69E-03	5.26E-03
Sample Point	Relative Counting Error	=	4.4%	Pu 238
AW-106 GRAB	Pu 236 Tracer Recovery	=	59.6%	5.26E-03

Analyst:		DCD	Date:	29-Sep-95
Signature of Chemist:		LLF	Date:	SEP 29 1995

SAMPLE.WB1 REV 1.2 943127ML

Raymond 9.28.95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2462-ST
File ID: 25a2568.CNF

Counted on: 9/28/95 @11:34
Detector: AEA25
Geometry number: 1
Count time: 28808. 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	1011.4	1011.4	362.082	362.082	10.000	2.851	5.000	1.046
2?	19.9	19.9	303.874	303.690	10.000	2.040	5.000	0.943
3	1428.6	1428.6	229.823	229.823	10.000	3.568	5.000	1.707

PEAK RESULTS
Peak Error Limit: 30%

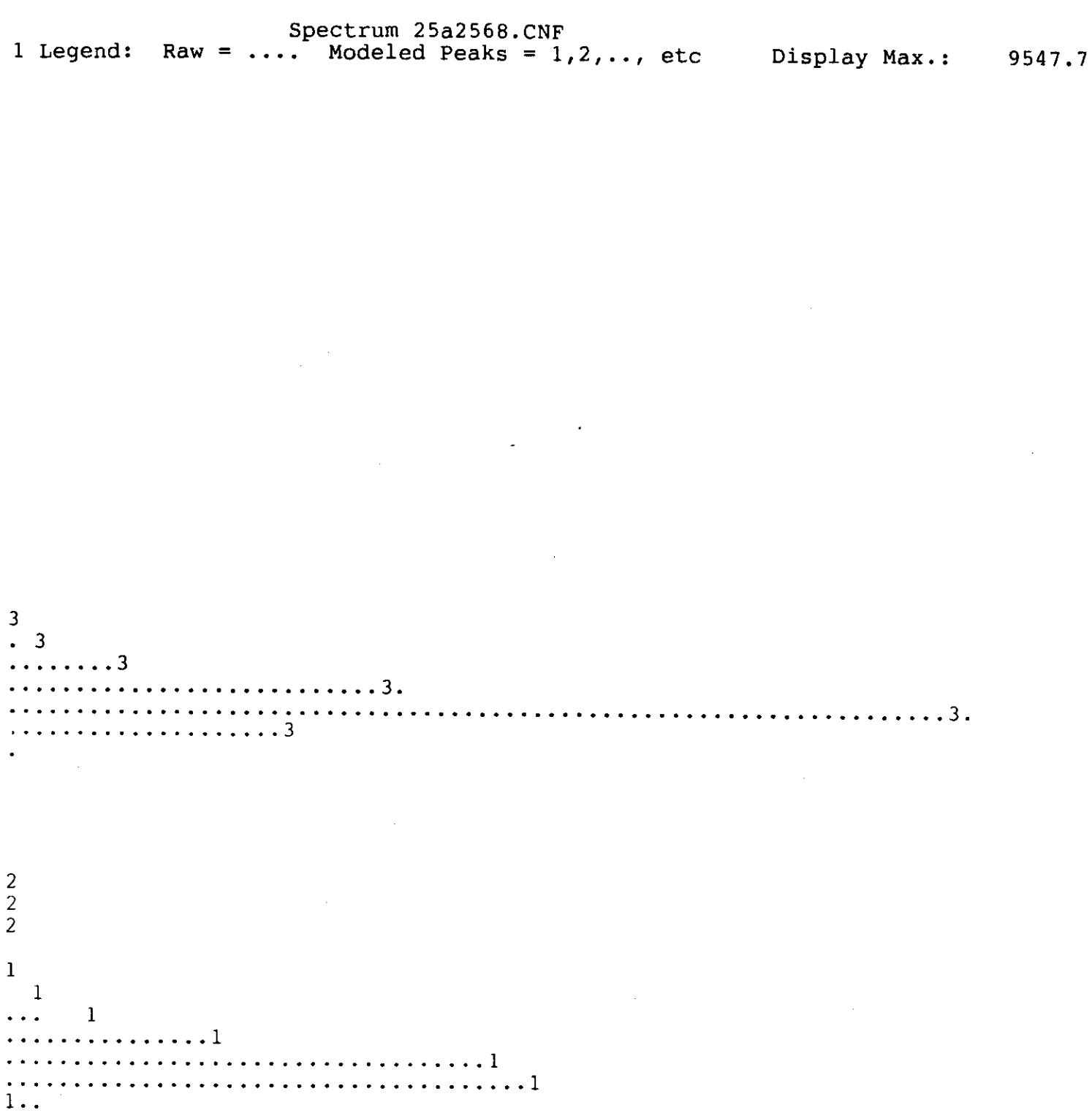
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.451	5.755	5.767	-.012	0.01	30.39	1.6	9689.5	0.436E-02
	Cm243		5.779	5.767	0.012				13007.9	0.586E-02
2		????		5.499			0.49	14.6		
3	Pu239	0.571	5.147	5.159	-.012	0.02	38.44	1.4	12011.3	0.541E-02
	Pu240		5.144	5.159	-.015				12011.3	0.541E-02
Totals:		1.022	<--valid peaks only-->				68.82			

DETECTOR CALIBRATION
Energy(MEV) = 4.102 + (0.0046)*Channel
Energy range (MeV): 4.102 TO 6.457
Efficiency = 0.0032 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	32333.0	100.000
Smoothed	32333.8	100.003
Composite fit	33277.5	102.921
Residuals	-944.5	-2.921

Analyzed by: _____
ALJ


Spectrum 25a2568.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 9547.7

Raw Data Dump for AEA Spectrum: 25a2568.CNF

1	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.
11	0.	0.	0.	2.	0.	1.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.
81	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	1.	1.	0.	1.
101	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
111	1.	0.	0.	0.	0.	0.	0.	1.	0.	0.
121	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.
131	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.
141	1.	0.	0.	0.	3.	0.	0.	1.	0.	2.
151	1.	3.	0.	1.	0.	1.	1.	0.	1.	0.
161	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
171	0.	1.	0.	0.	0.	1.	0.	0.	1.	0.
181	0.	3.	1.	1.	0.	2.	1.	2.	3.	0.
191	5.	2.	2.	6.	8.	5.	10.	10.	9.	12.
201	21.	23.	20.	37.	37.	32.	57.	53.	76.	99.
211	104.	133.	171.	180.	226.	277.	333.	369.	481.	563.
221	578.	622.	710.	758.	915.	1030.	1169.	1370.	1655.	1664.
231	1612.	1338.	833.	415.	142.	58.	16.	1.	0.	0.
241	0.	0.	0.	0.	1.	0.	1.	2.	1.	0.
251	2.	1.	1.	3.	6.	7.	4.	6.	3.	1.
261	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
271	0.	0.	1.	0.	1.	0.	0.	0.	2.	0.
281	0.	0.	0.	3.	3.	3.	6.	2.	4.	3.
291	8.	10.	6.	11.	10.	8.	11.	7.	14.	15.
301	20.	21.	23.	27.	31.	15.	16.	3.	4.	1.
311	0.	1.	2.	0.	1.	1.	2.	2.	1.	2.
321	4.	5.	2.	3.	5.	7.	4.	6.	11.	7.
331	8.	13.	15.	18.	21.	26.	24.	37.	44.	44.
341	63.	61.	97.	123.	153.	182.	237.	266.	314.	422.
351	410.	557.	584.	679.	598.	535.	571.	666.	707.	871.
361	1031.	1226.	1217.	980.	601.	182.	46.	5.	2.	1.
371	0.	0.	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.	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.	1.
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.								

Waymore 9-28-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
WORKLIST#2462-BL
File ID: 26a2671.CNF

Counted on: 9/28/95 @11:35
Detector: AEA26
Geometry number: 1
Count time: 28803. 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	1065.0	1065.0	363.052	363.052	10.000	2.703	5.000	0.992

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	1.032	5.755	5.761	-.0060	.01	31.69	1.6	2431.5	0.110E-02
	Cm243		5.779	5.761	0.018				3264.2	0.147E-02
Totals:		1.032	<--valid peaks only-->				31.69			

DETECTOR CALIBRATION
Energy(MEV) = 4.091 + (0.0046)*Channel
Energy range (MeV): 4.091 TO 6.446
Efficiency = 0.0133 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	14744.0	100.000
Smoothed	14745.0	100.007
Composite fit	15213.9	103.187
Residuals	-469.9	-3.187

Analyzed by: _____
ALJ


Spectrum 26a2671.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6218.1

Raw Data Dump for AEA Spectrum: 26a2671.CNF

1	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
11	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
31	0.	0.	1.	0.	0.	0.	0.	0.	1.	0.
41	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
51	0.	0.	0.	1.	0.	1.	1.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	1.	0.	1.	0.	0.	1.	0.	1.	0.	0.
91	0.	0.	1.	1.	0.	0.	0.	1.	0.	0.
101	1.	0.	0.	0.	1.	1.	0.	1.	0.	0.
111	1.	1.	1.	0.	0.	1.	0.	1.	0.	0.
121	2.	1.	3.	0.	1.	0.	1.	1.	0.	1.
131	0.	0.	1.	1.	1.	0.	0.	2.	1.	0.
141	1.	2.	3.	1.	2.	2.	0.	1.	1.	1.
151	2.	1.	0.	0.	1.	0.	0.	1.	0.	0.
161	2.	0.	1.	0.	0.	0.	1.	0.	0.	0.
171	1.	1.	1.	0.	0.	0.	1.	0.	0.	0.
181	1.	1.	1.	1.	1.	0.	1.	2.	0.	0.
191	0.	1.	1.	1.	1.	1.	1.	1.	0.	1.
201	0.	0.	0.	0.	2.	0.	1.	2.	0.	0.
211	0.	0.	1.	1.	2.	2.	2.	3.	2.	2.
221	3.	2.	2.	4.	4.	1.	6.	5.	8.	10.
231	5.	4.	10.	1.	3.	2.	0.	0.	1.	0.
241	0.	1.	1.	0.	0.	2.	1.	0.	1.	2.
251	0.	0.	2.	4.	4.	5.	3.	3.	1.	0.
261	2.	0.	1.	0.	0.	0.	1.	0.	2.	0.
271	1.	1.	0.	0.	0.	1.	0.	1.	2.	0.
281	0.	0.	3.	0.	2.	1.	1.	2.	1.	4.
291	2.	4.	2.	2.	5.	4.	3.	7.	2.	2.
301	6.	9.	10.	7.	9.	10.	2.	3.	1.	2.
311	1.	0.	0.	3.	2.	2.	4.	1.	3.	0.
321	5.	3.	2.	1.	6.	6.	4.	12.	6.	13.
331	15.	17.	12.	26.	24.	23.	24.	34.	50.	60.
341	61.	94.	102.	104.	129.	164.	202.	254.	261.	341.
351	386.	512.	614.	653.	633.	565.	546.	571.	709.	781.
361	926.	1097.	1269.	1295.	1091.	496.	165.	29.	3.	2.
371	1.	1.	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.	0.	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.								

Reynard 9-28-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2021-SAM
File ID: 27a2766.CNF

Counted on: 9/28/95 @11:36
Detector: AEA27
Geometry number: 1
Count time: 28802. 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	772.9	772.9	363.399	363.399	10.000	3.016	5.000	0.804
2	75.3	75.3	305.663	305.482	10.000	3.001	5.000	0.679
3	659.6	659.6	231.233	231.232	12.000	4.191	6.000	1.399

PEAK RESULTS
Peak Error Limit: 30%

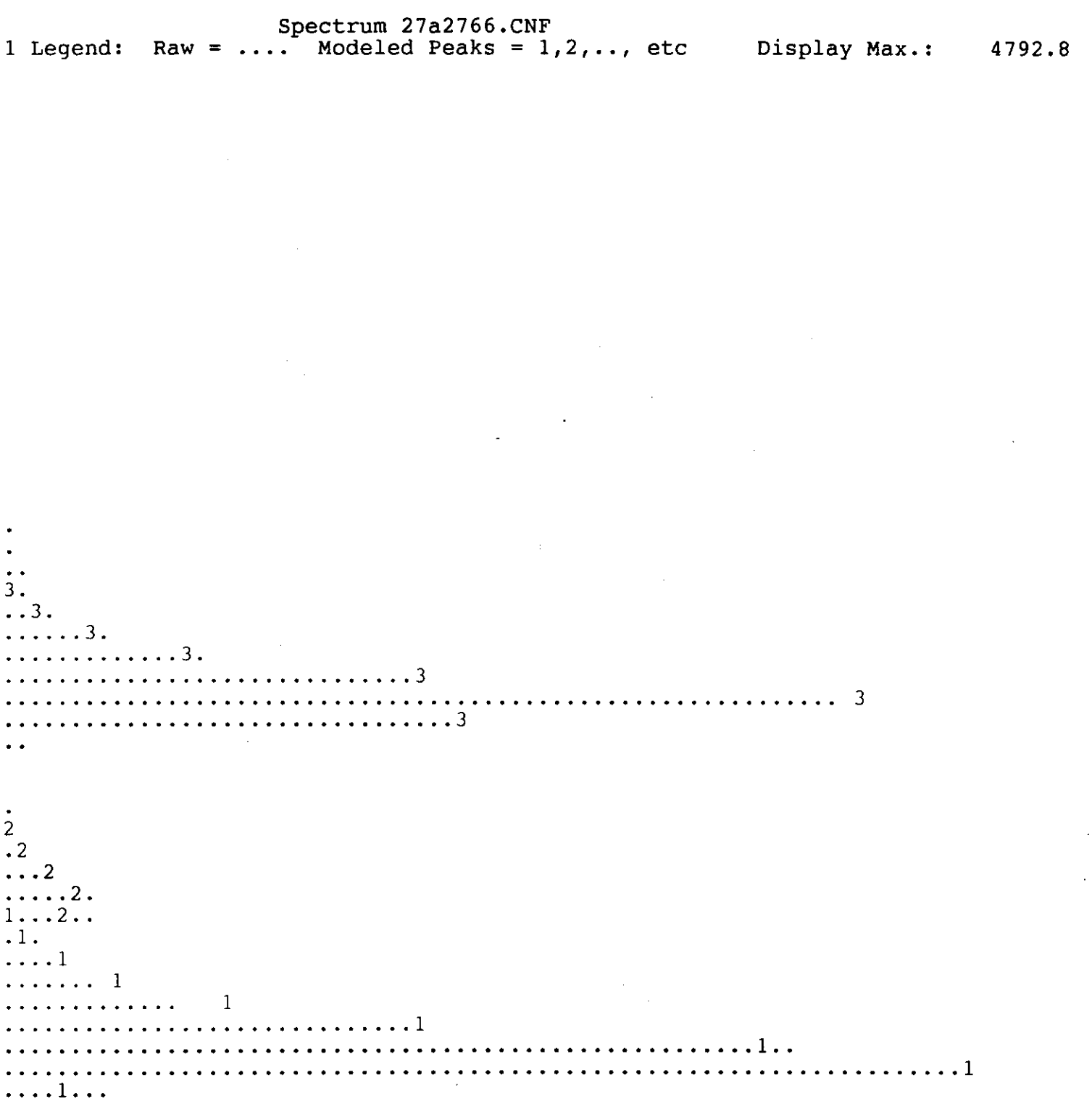
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Peak Centroid Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.518	5.755	5.755	0.0000.01		29.21	1.7	277.5	0.125E-03
2	Pu238	0.057	5.487	5.488	-.0010.01		3.21	5.5	41.6	0.187E-04
	Am241		5.479	5.488	-.009				31.8	0.143E-04
3	Pu239	0.400	5.147	5.147	0.0000.02		22.58	1.9	210.2	0.947E-04
	Pu240		5.144	5.147	-.003				210.2	0.947E-04
Totals:		0.975	<--valid peaks only-->				55.00			

DETECTOR CALIBRATION
Energy(MEV) = 4.083 + (0.0046)*Channel
Energy range (MeV): 4.083 TO 6.438
Efficiency = 0.1074 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	27076.0	100.000
Smoothed	27075.7	99.999
Composite fit	26401.2	97.508
Residuals	674.8	2.492

Analyzed by: _____
ALJ


Spectrum 27a2766.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4792.8

Raw Data Dump for AEA Spectrum: 27a2766.CNF

1	0.	0.	1.	0.	0.	1.	0.	0.	1.	0.
11	1.	1.	0.	0.	0.	0.	1.	0.	0.	2.
21	0.	0.	2.	1.	0.	0.	0.	1.	1.	0.
31	0.	1.	0.	0.	2.	1.	1.	0.	0.	1.
41	0.	0.	3.	0.	1.	2.	1.	2.	0.	2.
51	0.	0.	0.	0.	1.	3.	1.	1.	2.	0.
61	0.	0.	7.	0.	1.	2.	1.	0.	2.	1.
71	1.	2.	1.	2.	1.	0.	0.	1.	0.	1.
81	2.	3.	2.	0.	3.	1.	1.	1.	0.	1.
91	0.	2.	3.	1.	3.	1.	1.	2.	0.	2.
101	1.	3.	5.	2.	1.	3.	1.	3.	1.	3.
111	5.	1.	2.	2.	3.	6.	3.	0.	2.	4.
121	2.	4.	4.	3.	4.	1.	3.	4.	4.	2.
131	1.	2.	3.	2.	8.	1.	8.	6.	6.	5.
141	5.	6.	7.	8.	8.	7.	3.	7.	5.	2.
151	10.	11.	12.	10.	7.	8.	5.	8.	8.	9.
161	12.	7.	8.	11.	11.	5.	14.	10.	9.	9.
171	15.	19.	12.	19.	7.	21.	14.	24.	18.	21.
181	17.	15.	24.	20.	20.	17.	23.	24.	23.	33.
191	26.	46.	33.	38.	39.	41.	36.	46.	60.	54.
201	44.	73.	69.	66.	72.	100.	76.	114.	119.	95.
211	145.	118.	132.	153.	166.	151.	189.	198.	255.	287.
221	305.	367.	386.	369.	415.	426.	452.	483.	607.	725.
231	776.	726.	698.	511.	305.	196.	96.	35.	7.	1.
241	5.	5.	7.	1.	6.	3.	2.	6.	6.	6.
251	3.	10.	5.	4.	5.	12.	7.	4.	9.	7.
261	8.	6.	7.	7.	7.	13.	9.	9.	10.	11.
271	6.	13.	12.	10.	11.	15.	17.	5.	15.	25.
281	15.	17.	12.	26.	23.	19.	18.	39.	25.	40.
291	43.	47.	32.	48.	43.	61.	60.	69.	75.	50.
301	52.	77.	66.	94.	87.	98.	97.	86.	45.	21.
311	13.	21.	14.	26.	20.	27.	24.	31.	35.	43.
321	28.	29.	29.	44.	43.	57.	49.	52.	43.	62.
331	44.	71.	69.	89.	66.	96.	90.	97.	116.	114.
341	131.	142.	129.	164.	191.	198.	239.	235.	260.	343.
351	342.	464.	507.	518.	557.	511.	503.	491.	497.	574.
361	656.	713.	885.	920.	867.	593.	234.	72.	9.	0.
371	1.	1.	1.	0.	0.	1.	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.	0.	0.	0.	1.	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.	1.	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.								

Raymond 9-28-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2021-DUP
File ID: 28a2870.CNF

Counted on: 9/28/95 @11:36
Detector: AEA28
Geometry number: 1
Count time: 28803. 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	1013.1	1013.1	362.930	362.930	10.000	3.155	5.000	1.191
2	97.1	97.1	304.542	304.495	10.000	3.151	5.000	1.307
3	789.6	789.6	230.149	230.149	12.000	4.533	6.000	2.260

PEAK RESULTS
Peak Error Limit: 30%

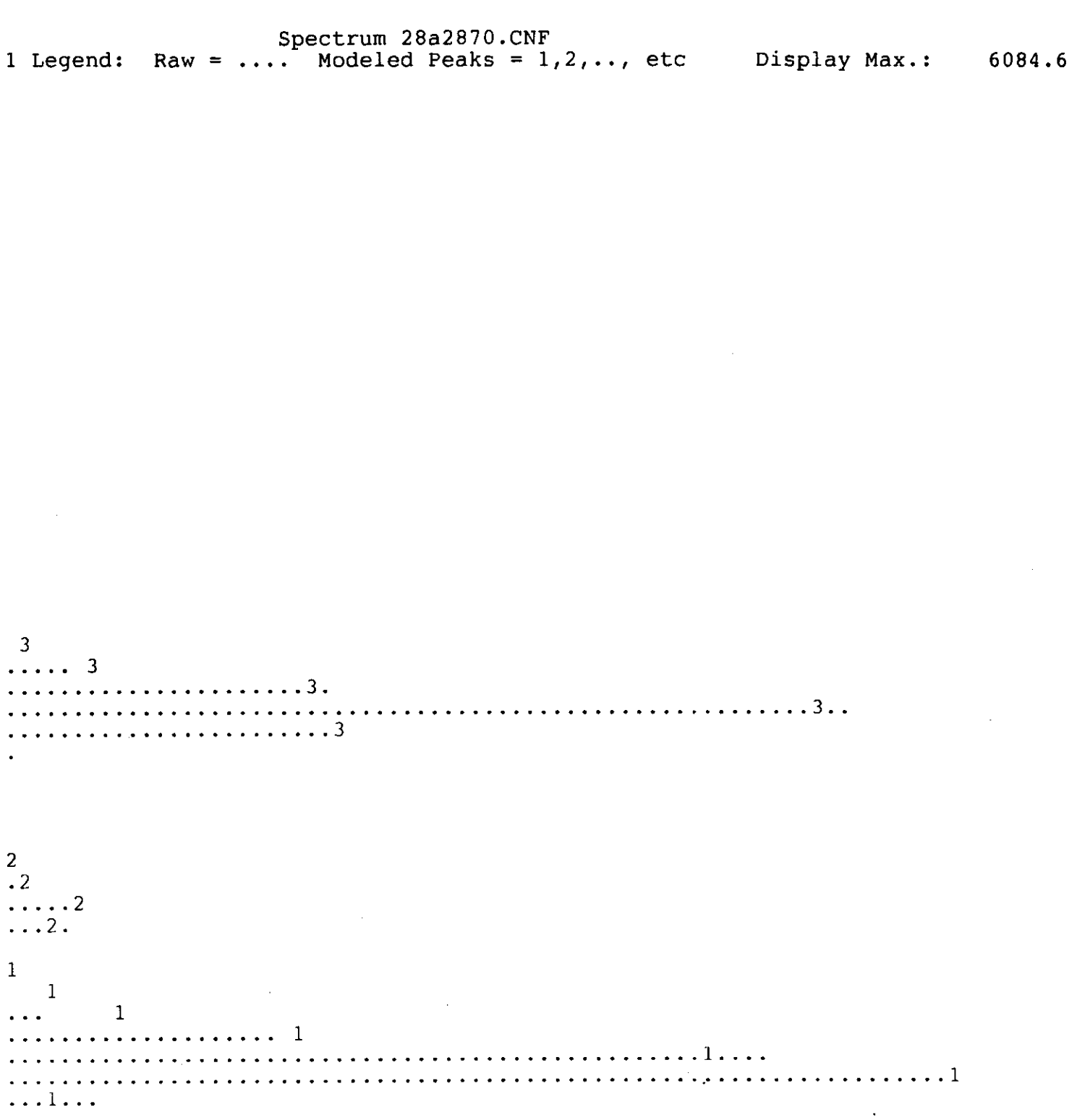
Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.568	5.755	5.763	-.0080	.01	30.45	1.6	1644.1	0.741E-03
	Cm243		5.779	5.763	0.016				2207.2	0.994E-03
2	Pu238	0.051	5.487	5.494	-.0070	.01	2.75	5.5	202.3	0.911E-04
	Am241		5.479	5.494	-.015				154.9	0.698E-04
3	Pu239	0.413	5.147	5.152	-.0050	.02	22.12	1.9	1170.3	0.527E-03
	Pu240		5.144	5.152	-.008				1170.3	0.527E-03
Totals:		1.032	<--valid peaks only-->				55.32			

DETECTOR CALIBRATION
Energy(MEV) = 4.094 + (0.0046)*Channel
Energy range (MeV): 4.094 TO 6.449
Efficiency = 0.0189 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	25728.0	100.000
Smoothed	25727.8	99.999
Composite fit	26558.2	103.227
Residuals	-830.2	-3.227

Analyzed by: _____
ALJ


Spectrum 28a2870.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6084.6

Raw Data Dump for AEA Spectrum: 28a2870.CNF

1	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
61	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
101	0.	0.	2.	0.	1.	1.	0.	0.	0.	0.
111	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
121	0.	2.	0.	0.	0.	0.	1.	0.	0.	0.
131	0.	0.	1.	2.	0.	1.	1.	1.	2.	0.
141	0.	0.	2.	0.	0.	0.	1.	1.	1.	2.
151	1.	2.	0.	1.	0.	1.	0.	0.	0.	0.
161	0.	1.	0.	1.	1.	2.	2.	0.	1.	0.
171	2.	0.	1.	1.	0.	1.	0.	0.	0.	1.
181	0.	0.	2.	0.	2.	0.	1.	2.	0.	1.
191	0.	1.	3.	1.	6.	3.	3.	2.	4.	5.
201	4.	5.	7.	9.	11.	11.	17.	15.	25.	30.
211	58.	51.	72.	85.	106.	131.	149.	160.	228.	286.
221	339.	355.	401.	446.	528.	666.	626.	793.	862.	873.
231	917.	806.	600.	414.	218.	111.	34.	6.	1.	0.
241	1.	0.	0.	0.	0.	0.	0.	1.	1.	2.
251	2.	0.	3.	0.	3.	0.	6.	4.	4.	0.
261	0.	1.	1.	0.	0.	0.	0.	0.	0.	1.
271	0.	0.	1.	2.	0.	2.	0.	0.	4.	1.
281	2.	5.	2.	4.	8.	3.	9.	10.	16.	14.
291	19.	23.	34.	37.	52.	59.	65.	65.	63.	67.
301	81.	84.	105.	106.	117.	103.	96.	54.	9.	5.
311	2.	1.	0.	0.	2.	1.	1.	1.	1.	3.
321	0.	1.	2.	2.	5.	2.	6.	4.	1.	5.
331	2.	6.	11.	7.	6.	7.	11.	18.	32.	31.
341	34.	58.	57.	87.	111.	138.	159.	177.	254.	327.
351	383.	475.	503.	600.	578.	619.	637.	695.	770.	817.
361	939.	1055.	1165.	1175.	1013.	579.	202.	44.	3.	1.
371	0.	3.	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.	0.	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.								

Raymond 9-28-95

Westinghouse Hanford Co.

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. 2.01

DATA REDUCTION REPORT

SAMPLE
S95T2037-SAM
File ID: 29a2959.CNF

Counted on: 9/28/95 @11:42
Detector: AEA29
Geometry number: 1
Count time: 28806. 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	699.3	699.3	362.446	362.446	10.000	3.065	5.000	1.040
2	110.0	110.0	304.456	304.418	8.000	2.658	4.000	0.949
3	919.6	919.6	230.042	230.042	12.000	4.225	6.000	1.837

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.440	5.755	5.754	0.0010	01	22.38	1.9	2686.8	0.121E-02
2	Pu238	0.065	5.487	5.487	0.0000	01	3.32	5.0	542.9	0.245E-03
	Am241		5.479	5.487	-.008				415.9	0.187E-03
3	Pu239	0.533	5.147	5.144	0.0030	02	27.08	1.7	3185.9	0.144E-02
	Pu240		5.144	5.144	0.000				3185.9	0.144E-02
Totals:		1.038	<--valid peaks only-->				52.78			

DETECTOR CALIBRATION
Energy(MEV) = 4.086 + (0.0046)*Channel
Energy range (MeV): 4.086 TO 6.442
Efficiency = 0.0085 CPM/DPM

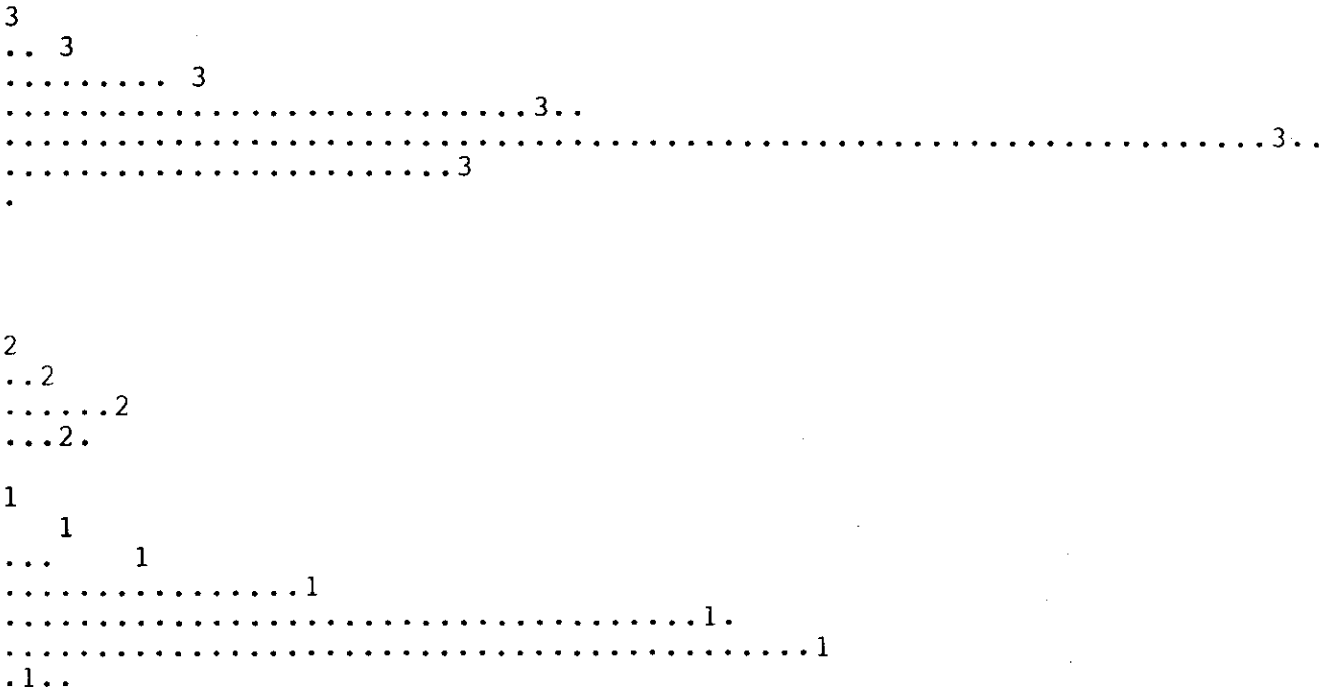
TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	24412.0	100.000
Smoothed	24412.2	100.001
Composite fit	25341.6	103.808
Residuals	-929.6	-3.808

Analyzed by: _____
ALJ

Spectrum 29a2959.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6337.8



Raw Data Dump for AEA Spectrum: 29a2959.CNF

1	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
11	1.	1.	1.	0.	0.	0.	0.	0.	2.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.
41	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
61	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
71	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
101	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
121	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
131	1.	1.	1.	0.	0.	0.	0.	0.	0.	2.
141	0.	0.	0.	0.	1.	2.	0.	1.	1.	2.
151	0.	1.	0.	0.	3.	0.	1.	1.	1.	1.
161	1.	0.	0.	0.	0.	0.	1.	1.	2.	2.
171	1.	2.	0.	0.	0.	2.	1.	2.	3.	0.
181	1.	1.	4.	1.	1.	3.	5.	0.	1.	0.
191	7.	2.	7.	5.	3.	9.	4.	7.	5.	16.
201	15.	12.	17.	20.	24.	35.	41.	36.	43.	74.
211	83.	87.	113.	141.	151.	208.	242.	247.	309.	395.
221	441.	478.	515.	527.	662.	681.	796.	914.	987.	1024.
231	1062.	914.	667.	400.	213.	81.	40.	2.	0.	0.
241	3.	0.	0.	0.	0.	0.	0.	0.	2.	0.
251	0.	3.	1.	4.	1.	2.	6.	7.	3.	1.
261	2.	0.	2.	1.	1.	0.	1.	1.	1.	0.
271	2.	0.	1.	2.	2.	0.	3.	1.	5.	2.
281	3.	3.	3.	10.	20.	10.	10.	17.	27.	24.
291	39.	35.	38.	57.	55.	56.	80.	71.	67.	73.
301	97.	95.	101.	126.	140.	120.	96.	31.	11.	4.
311	0.	2.	1.	0.	2.	0.	0.	2.	0.	0.
321	3.	0.	1.	3.	1.	3.	3.	3.	8.	5.
331	7.	10.	14.	12.	14.	17.	24.	26.	33.	37.
341	55.	52.	78.	85.	114.	126.	159.	198.	225.	269.
351	337.	383.	424.	476.	395.	401.	413.	479.	569.	613.
361	665.	752.	835.	771.	590.	227.	65.	6.	1.	0.
371	1.	1.	0.	1.	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.	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.								