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

DOCUMENT NUMBER: SD-WM-DP-148

SECTION 4 OF 4

TITLE: 60 DAY WASTE COMPATIBILITY SAFETY ISSUE + FINAL RESULTS FOR TANK 241-AN-101 GRAB SAMPLES 1AN-95-1 + 1AN-95-2 + 1AN-95-3

DATE: 11/02/95

ORIGINATOR: ESCH RA

CO: WHC

RECIPIENT:

CO:

REFERENCES: EDT-613463

BLANK

Spectrum 2a2943.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 13733.6

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Raw Data Dump for AEA Spectrum: 2a2943.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	2.	0.	3.
21	3.	0.	2.	2.	1.	2.	4.	3.	0.	2.
31	2.	2.	2.	2.	0.	1.	4.	2.	3.	2.
41	5.	1.	2.	2.	1.	0.	1.	5.	4.	0.
51	3.	0.	0.	1.	1.	0.	3.	4.	0.	3.
61	1.	4.	1.	5.	4.	1.	0.	1.	3.	1.
71	2.	1.	6.	3.	4.	1.	5.	3.	5.	5.
81	3.	1.	4.	4.	4.	5.	3.	2.	1.	2.
91	2.	1.	3.	4.	2.	4.	1.	1.	3.	4.
101	6.	5.	8.	3.	4.	4.	4.	4.	3.	4.
111	4.	7.	9.	6.	11.	8.	8.	4.	6.	8.
121	7.	5.	8.	5.	8.	7.	4.	7.	9.	9.
131	10.	3.	7.	9.	5.	8.	13.	6.	10.	4.
141	7.	11.	11.	5.	12.	12.	12.	10.	13.	12.
151	8.	13.	6.	9.	11.	14.	14.	8.	21.	7.
161	12.	14.	11.	16.	17.	14.	17.	12.	21.	24.
171	22.	24.	15.	14.	27.	20.	21.	15.	26.	30.
181	23.	32.	33.	33.	22.	26.	34.	29.	37.	51.
191	45.	46.	31.	47.	46.	41.	45.	54.	35.	53.
201	55.	41.	52.	59.	65.	82.	66.	67.	68.	57.
211	87.	92.	95.	103.	104.	123.	101.	105.	117.	121.
221	139.	162.	152.	173.	177.	189.	216.	210.	234.	254.
231	261.	304.	313.	324.	387.	402.	475.	437.	514.	590.
241	632.	656.	705.	816.	868.	947.	1052.	1042.	1200.	1335.
251	1297.	1415.	1495.	1488.	1445.	1604.	1612.	1511.	1477.	1466.
261	1275.	1254.	1110.	1041.	923.	800.	716.	650.	588.	491.
271	401.	416.	426.	360.	324.	400.	374.	342.	382.	384.
281	409.	441.	510.	552.	628.	679.	664.	784.	870.	968.
291	1070.	1123.	1176.	1314.	1397.	1478.	1627.	1641.	1848.	1815.
301	1852.	1807.	1904.	1972.	1816.	1736.	1538.	1499.	1357.	1212.
311	1080.	963.	736.	673.	531.	429.	357.	287.	218.	195.
321	114.	118.	74.	46.	45.	43.	21.	9.	7.	7.
331	5.	2.	0.	2.	3.	0.	1.	0.	0.	1.
341	0.	2.	0.	0.	0.	1.	0.	0.	1.	2.
351	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.
361	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
371	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.
381	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
391	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.
421	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
451	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	1.	0.	0.	0.	0.	0.	0.	2.
471	1.	1.	0.	0.	1.	1.	0.	0.	1.	0.
481	1.	0.	1.	0.	1.	2.	0.	0.	0.	0.
491	1.	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
WORKLIST2650-BLK
File ID: 3a3424.CNF

Counted on: 10/ 5/95 @19: 8
Detector: AEA3
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	2476.3	2476.3	257.118	257.118	16.000	8.111	8.000	2.557
2?	11.5	11.5	154.394	154.261	164.000	1.000	82.000	0.100
3?	10.3	10.3	151.491	151.000	152.000	1.000	76.000	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	Am243	0.928	5.270	5.269	0.0010	4.04	100.80	0.9	583.5	0.263E-03
2		????		4.796			0.91	9.5		
3		????		4.781			0.82	14.4		
Totals:		0.928	<--valid peaks only-->				100.80			

DETECTOR CALIBRATION
Energy(MEV) = 4.086 + (0.0046)*Channel
Energy range (MeV): 4.086 TO 6.442
Efficiency = 0.1745 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	52154.0	100.000
Smoothed	52154.0	100.000
Composite fit	49222.9	94.380
Residuals	2931.1	5.620

Analyzed by: ALJ 10-6-95

WHC-SD-WM-DP-148, REV. 0

Spectrum 3a3424.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 15162.5

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WHC-SD-WM-DP-148, REV. 0

Raw Data Dump for AEA Spectrum: 3a3424.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	2.	1.	3.
21	1.	0.	0.	2.	0.	1.	2.	0.	1.	1.
31	1.	3.	2.	1.	1.	2.	2.	1.	3.	1.
41	2.	3.	1.	0.	1.	0.	0.	0.	1.	2.
51	1.	2.	2.	1.	0.	2.	1.	0.	4.	1.
61	0.	0.	2.	3.	0.	1.	0.	1.	3.	2.
71	3.	2.	1.	4.	2.	1.	2.	1.	2.	0.
81	1.	0.	4.	0.	6.	3.	0.	0.	2.	1.
91	8.	2.	1.	2.	7.	3.	1.	4.	1.	6.
101	1.	4.	4.	1.	5.	2.	4.	4.	2.	5.
111	2.	2.	1.	3.	5.	6.	2.	3.	2.	2.
121	5.	3.	4.	7.	3.	4.	3.	2.	6.	10.
131	1.	7.	3.	6.	3.	8.	3.	4.	3.	7.
141	5.	4.	4.	12.	6.	6.	11.	12.	9.	10.
151	12.	14.	9.	5.	17.	12.	7.	7.	9.	8.
161	13.	13.	9.	13.	12.	12.	27.	14.	9.	18.
171	13.	20.	21.	18.	16.	19.	27.	14.	28.	21.
181	22.	21.	30.	20.	23.	29.	42.	32.	31.	44.
191	40.	40.	38.	40.	47.	43.	42.	54.	60.	56.
201	61.	68.	64.	70.	73.	87.	84.	95.	97.	91.
211	109.	123.	127.	142.	137.	148.	137.	160.	184.	160.
221	216.	207.	197.	217.	246.	256.	266.	300.	242.	317.
231	344.	341.	369.	435.	447.	435.	487.	528.	607.	627.
241	663.	755.	794.	859.	967.	1111.	1273.	1367.	1424.	1558.
251	1837.	1954.	2073.	2255.	2556.	2644.	2660.	2698.	2518.	2084.
261	1729.	1290.	936.	661.	515.	371.	303.	247.	208.	187.
271	162.	138.	98.	89.	52.	40.	28.	14.	13.	4.
281	4.	5.	0.	4.	1.	2.	3.	1.	0.	5.
291	4.	7.	4.	3.	5.	4.	6.	2.	4.	5.
301	3.	7.	6.	9.	9.	3.	5.	4.	3.	5.
311	5.	3.	1.	1.	1.	1.	1.	2.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
331	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.
341	0.	0.	0.	0.	2.	0.	1.	0.	0.	2.
351	0.	0.	0.	0.	0.	0.	1.	1.	1.	0.
361	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.
371	1.	0.	0.	0.	1.	1.	0.	1.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	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.	1.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	1.	0.	0.	0.	1.	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
S95T2411
File ID: 4a4513.CNF

Counted on: 10/ 5/95 @19: 9
Detector: AEA4
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	88.9	88.9	300.300	300.300	18.000	10.855	9.000	4.040
2	1635.2	1635.2	255.299	255.297	16.000	7.906	8.000	3.039

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	Am241	0.052	5.479	5.472	0.007	0.05	3.62	4.7	21.6	0.975E-05
	Pu238		5.487	5.472	0.015				28.3	0.127E-04
2	Am243	0.860	5.270	5.265	0.005	0.04	59.99	1.2	340.6	0.153E-03
Totals:		0.912	<--valid peaks only-->				63.61			

DETECTOR CALIBRATION
Energy(MEV) = 4.091 + (0.0046)*Channel
Energy range (MeV): 4.091 TO 6.446
Efficiency = 0.1779 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	33501.0	100.000
Smoothed	33501.0	100.000
Composite fit	30538.0	91.155
Residuals	2963.0	8.845

Analyzed by: ALJ 10-6-95

WHC-SD-WM-DP-148, REV. 0

Spectrum 4a4513.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 11008.5

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Raw Data Dump for AEA Spectrum: 4a4513.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	1.	0.	0.	0.	0.	0.	0.	0.	1.	2.
61	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.
71	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
81	0.	1.	1.	1.	0.	0.	1.	1.	0.	0.
91	1.	0.	0.	0.	1.	1.	0.	1.	0.	1.
101	0.	1.	0.	0.	1.	0.	1.	0.	0.	1.
111	0.	2.	2.	4.	2.	3.	1.	1.	1.	0.
121	0.	0.	1.	0.	1.	1.	2.	1.	1.	0.
131	0.	2.	2.	1.	1.	2.	1.	1.	3.	2.
141	8.	2.	2.	2.	4.	2.	6.	5.	7.	4.
151	8.	1.	5.	4.	6.	4.	5.	4.	13.	6.
161	5.	9.	10.	6.	3.	6.	8.	4.	12.	9.
171	8.	13.	13.	18.	20.	17.	11.	23.	14.	22.
181	26.	27.	27.	33.	20.	26.	32.	29.	29.	29.
191	38.	59.	38.	34.	39.	38.	37.	37.	46.	67.
201	58.	48.	54.	61.	65.	72.	52.	58.	74.	75.
211	93.	82.	84.	92.	75.	90.	96.	83.	113.	107.
221	130.	122.	129.	142.	131.	144.	149.	163.	159.	158.
231	200.	223.	232.	237.	248.	257.	303.	325.	372.	400.
241	396.	432.	513.	547.	619.	761.	808.	923.	1025.	1207.
251	1394.	1507.	1644.	1676.	1820.	1827.	1587.	1458.	1166.	922.
261	738.	479.	350.	244.	186.	144.	112.	91.	85.	60.
271	55.	56.	43.	27.	26.	17.	22.	14.	6.	14.
281	22.	13.	12.	23.	17.	20.	21.	30.	30.	34.
291	46.	41.	63.	52.	80.	91.	84.	97.	80.	96.
301	98.	90.	75.	72.	56.	47.	44.	34.	18.	18.
311	13.	15.	13.	5.	2.	2.	1.	2.	0.	0.
321	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.
331	1.	0.	1.	2.	0.	0.	0.	0.	0.	0.
341	1.	0.	0.	0.	0.	0.	0.	1.	1.	2.
351	1.	1.	2.	3.	0.	1.	0.	4.	2.	1.
361	2.	1.	3.	3.	3.	5.	1.	2.	6.	8.
371	3.	2.	2.	3.	1.	1.	0.	0.	1.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	1.	0.	0.	0.	0.	0.	0.	0.	2.	0.
431	1.	0.	1.	0.	0.	0.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	1.	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
S95T2411-DUP
File ID: 5a5037.CNF

Counted on: 10/ 5/95 @19: 9
Detector: AEA5
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	97.9	97.9	298.721	298.721	24.000	25.146	12.000	2.385
2	1580.0	1580.0	254.367	254.314	24.000	21.202	12.000	4.969
3?	8.2	8.2	154.720	154.320	62.000	276.025	31.000	88.960
4?	0.0	0.1	145.232	145.232	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	Am241	0.098	5.479	5.485	-.006	0.12	10.47	2.8	43.9	0.198E-04
	Pu238		5.487	5.485	0.002				57.3	0.258E-04
2	Pu239	0.891	5.147	5.276	-.129	0.10	95.01	0.9	374.2	0.169E-03
	Am243		5.270	5.276	-.006				378.0	0.170E-03
3		????		4.806			1.36	48.2		
4		????		4.764			0.00	8722.		
Totals:		0.989	<--valid peaks only-->				105.48			

DETECTOR CALIBRATION
Energy(MEV) = 4.081 + (0.0047)*Channel
Energy range (MeV): 4.081 TO 6.487
Efficiency = 0.2539 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	51191.0	100.000
Smoothed	51191.0	100.000
Composite fit	51281.9	100.178
Residuals	-90.9	-0.178

Analyzed by: ALJ 10-6-95

WHC-SD-WM-DP-148, REV. 0

Spectrum 5a5037.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 12391.4

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WHC-SD-WM-DP-148, REV. 0

Raw Data Dump for AEA Spectrum: 5a5037.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
21	1.	1.	1.	1.	0.	1.	0.	0.	0.	1.
31	0.	0.	0.	1.	0.	1.	0.	0.	0.	1.
41	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.
51	1.	0.	1.	3.	1.	3.	1.	0.	2.	2.
61	1.	2.	1.	0.	2.	2.	0.	2.	3.	0.
71	1.	0.	3.	0.	6.	2.	0.	1.	1.	2.
81	2.	2.	5.	3.	1.	1.	0.	3.	3.	2.
91	1.	2.	2.	4.	3.	1.	2.	6.	1.	3.
101	3.	4.	4.	4.	4.	1.	1.	5.	2.	3.
111	1.	4.	4.	5.	2.	8.	1.	3.	2.	2.
121	11.	6.	11.	6.	6.	5.	1.	7.	4.	6.
131	4.	5.	5.	4.	4.	6.	4.	9.	2.	6.
141	10.	7.	9.	11.	13.	10.	9.	9.	7.	9.
151	8.	8.	13.	18.	15.	11.	12.	10.	14.	7.
161	16.	20.	13.	11.	15.	13.	16.	22.	11.	24.
171	18.	20.	24.	18.	25.	37.	23.	24.	29.	29.
181	30.	34.	31.	22.	33.	36.	31.	41.	34.	42.
191	46.	50.	54.	56.	53.	56.	75.	59.	54.	47.
201	60.	75.	79.	74.	90.	105.	111.	99.	95.	109.
211	119.	130.	122.	142.	146.	164.	170.	189.	178.	199.
221	220.	218.	242.	274.	241.	332.	351.	317.	424.	376.
231	402.	460.	508.	544.	555.	591.	670.	748.	747.	819.
241	953.	1000.	1037.	1167.	1185.	1229.	1311.	1415.	1498.	1559.
251	1584.	1644.	1685.	1659.	1654.	1615.	1574.	1527.	1389.	1276.
261	1212.	1041.	894.	715.	662.	556.	450.	420.	293.	228.
271	193.	157.	143.	112.	89.	86.	65.	45.	49.	49.
281	35.	48.	39.	43.	65.	52.	51.	65.	73.	54.
291	70.	74.	92.	83.	85.	88.	103.	106.	104.	105.
301	84.	89.	91.	100.	87.	60.	59.	53.	56.	40.
311	36.	30.	26.	21.	23.	9.	7.	13.	8.	2.
321	2.	5.	4.	5.	0.	0.	1.	0.	1.	0.
331	2.	0.	2.	0.	0.	1.	1.	0.	1.	1.
341	4.	4.	1.	0.	2.	2.	2.	1.	1.	1.
351	4.	5.	5.	4.	2.	3.	0.	3.	2.	3.
361	4.	6.	3.	5.	5.	6.	4.	6.	1.	1.
371	4.	2.	7.	2.	4.	4.	0.	1.	1.	4.
381	1.	0.	0.	1.	0.	0.	0.	0.	0.	1.
391	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
401	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
431	1.	0.	0.	0.	0.	0.	0.	3.	0.	0.
441	0.	0.	1.	0.	0.	1.	0.	1.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
471	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
481	1.	0.	0.	1.	2.	0.	0.	0.	1.	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
S95T2412-SAM
File ID: 6a6248.CNF

Counted on: 10/ 5/95 @19:10
Detector: AEA6
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	41.6	41.6	370.019	370.019	14.000	6.719	7.000	2.217
2	835.7	835.7	300.994	300.994	16.000	10.619	8.000	3.939
3	2742.2	2742.2	254.644	254.633	14.000	8.890	7.000	3.568

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	Cm244	0.011	5.795	5.792	0.003	0.03	1.58	7.1	29.2	0.132E-04
	Cm243		5.779	5.792	-.013				40.0	0.180E-04
2	Am241	0.239	5.479	5.475	0.004	0.05	33.85	1.5	664.5	0.299E-03
	Pu238		5.487	5.475	0.012				867.5	0.391E-03
3	Am243	0.719	5.270	5.261	0.009	0.04	102.06	0.9	1902.1	0.857E-03
Totals:		0.969	<--valid peaks only-->				137.50			

DETECTOR CALIBRATION
Energy(MEV) = 4.090 + (0.0046)*Channel
Energy range (MeV): 4.090 TO 6.445
Efficiency = 0.0542 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	68116.0	100.000
Smoothed	68115.7	100.000
Composite fit	66007.6	96.905
Residuals	2108.4	3.095

Analyzed by: ALJ 10-6-95

Spectrum 6a6248.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 19444.1

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Raw Data Dump for AEA Spectrum: 6a6248.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.	0.	0.	0.	0.	1.	0.	0.	1.	0.
31	1.	0.	0.	1.	0.	0.	1.	0.	0.	0.
41	0.	1.	0.	1.	0.	1.	0.	0.	1.	0.
51	1.	0.	0.	1.	1.	1.	0.	0.	0.	0.
61	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
71	0.	0.	1.	0.	0.	1.	0.	0.	1.	1.
81	1.	2.	0.	1.	0.	1.	1.	0.	1.	0.
91	0.	0.	1.	2.	0.	0.	1.	1.	0.	2.
101	1.	0.	1.	0.	1.	0.	2.	0.	0.	1.
111	0.	0.	2.	0.	0.	1.	0.	1.	0.	1.
121	2.	0.	1.	0.	2.	0.	4.	1.	0.	0.
131	1.	1.	1.	0.	2.	1.	3.	3.	2.	2.
141	1.	3.	1.	1.	2.	1.	2.	1.	3.	2.
151	3.	1.	5.	1.	3.	2.	3.	1.	2.	4.
161	4.	4.	3.	2.	2.	2.	3.	4.	4.	2.
171	7.	6.	2.	3.	10.	8.	8.	6.	6.	8.
181	9.	7.	8.	8.	12.	13.	8.	14.	13.	22.
191	19.	10.	18.	22.	24.	24.	20.	19.	39.	19.
201	35.	36.	51.	45.	33.	38.	43.	38.	45.	54.
211	60.	58.	74.	72.	79.	78.	82.	89.	94.	139.
221	121.	138.	131.	138.	168.	161.	194.	192.	195.	249.
231	258.	290.	333.	328.	418.	415.	489.	530.	582.	642.
241	748.	861.	980.	1153.	1225.	1469.	1684.	1774.	2052.	2279.
251	2455.	2656.	2854.	2997.	3021.	2866.	2508.	2267.	1839.	1399.
261	1001.	772.	558.	401.	366.	296.	263.	250.	218.	173.
271	147.	142.	128.	99.	116.	79.	107.	118.	106.	107.
281	125.	140.	158.	183.	181.	247.	251.	283.	290.	372.
291	390.	439.	517.	557.	612.	684.	741.	833.	871.	933.
301	884.	858.	852.	760.	619.	483.	377.	329.	243.	198.
311	171.	140.	103.	70.	47.	42.	24.	16.	8.	6.
321	3.	4.	2.	1.	0.	0.	3.	0.	1.	1.
331	2.	1.	0.	1.	1.	1.	2.	0.	0.	4.
341	1.	3.	5.	5.	5.	5.	11.	6.	8.	4.
351	7.	7.	10.	11.	13.	9.	6.	18.	23.	25.
361	24.	30.	26.	25.	35.	37.	40.	40.	40.	49.
371	41.	43.	34.	15.	25.	21.	9.	3.	3.	0.
381	1.	0.	1.	0.	0.	1.	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.	2.	0.	0.	0.	1.	1.	0.	0.
421	1.	2.	2.	2.	2.	1.	3.	0.	0.	1.
431	0.	1.	2.	4.	3.	1.	2.	1.	2.	0.
441	2.	1.	1.	2.	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.	1.	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
S95T2412-DUP
File ID: 7a7853.CNF

Counted on: 10/ 5/95 @19:11
Detector: AEA7
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	18.3	18.3	369.163	369.163	12.000	6.538	6.000	1.181
2	363.3	363.3	301.156	301.151	16.000	11.448	8.000	2.275
3	1172.9	1172.9	255.220	255.132	18.000	10.643	9.000	2.532

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	Cm244	0.012	5.795	5.810	-.015	0.03	1.02	8.9	4.7	0.213E-05
	Cm243		5.779	5.810	-.031				6.5	0.291E-05
2	Am241	0.255	5.479	5.490	-.011	0.05	20.76	2.0	102.3	0.461E-04
	Pu238		5.487	5.490	-.003				133.6	0.602E-04
3	Am243	0.727	5.270	5.274	-.004	0.05	59.29	1.2	277.4	0.125E-03
Totals:		0.994	<--valid peaks only-->				81.07			

DETECTOR CALIBRATION
Energy(MEV) = 4.075 + (0.0047)*Channel
Energy range (MeV): 4.075 TO 6.481
Efficiency = 0.2159 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	39161.0	100.000
Smoothed	39161.2	100.000
Composite fit	38913.2	99.367
Residuals	247.8	0.633

Analyzed by: ALJ 10-6-95

WHC-SD-WM-DP-148, REV. 0

Spectrum 7a7853.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 8786.7

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Raw Data Dump for AEA Spectrum: 7a7853.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.	2.	0.	0.	0.	0.	1.	0.	0.
31	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
41	0.	0.	0.	0.	1.	0.	0.	3.	0.	0.
51	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.
61	1.	1.	0.	1.	0.	0.	2.	0.	0.	1.
71	0.	0.	0.	1.	0.	0.	2.	0.	0.	0.
81	0.	0.	1.	1.	1.	0.	0.	1.	1.	1.
91	0.	3.	1.	2.	1.	1.	0.	1.	1.	0.
101	1.	0.	1.	2.	0.	0.	0.	1.	0.	3.
111	0.	0.	0.	1.	2.	1.	3.	1.	2.	2.
121	1.	3.	0.	0.	2.	3.	2.	2.	2.	1.
131	1.	3.	2.	1.	2.	1.	4.	3.	1.	3.
141	0.	0.	2.	6.	2.	5.	5.	4.	1.	0.
151	1.	0.	3.	1.	4.	4.	7.	4.	0.	3.
161	4.	5.	6.	7.	5.	7.	7.	6.	8.	6.
171	12.	11.	6.	6.	5.	8.	10.	8.	14.	9.
181	11.	12.	9.	8.	20.	16.	17.	21.	15.	10.
191	15.	21.	19.	27.	17.	31.	18.	30.	28.	29.
201	34.	40.	25.	41.	24.	46.	53.	45.	49.	64.
211	73.	84.	68.	78.	104.	92.	112.	127.	133.	143.
221	139.	129.	163.	159.	212.	201.	211.	209.	234.	270.
231	286.	281.	316.	323.	368.	357.	436.	437.	497.	514.
241	527.	605.	642.	680.	746.	757.	792.	924.	928.	1026.
251	1142.	1160.	1300.	1222.	1257.	1266.	1199.	1183.	982.	859.
261	680.	529.	404.	307.	251.	178.	177.	150.	124.	101.
271	106.	111.	102.	109.	88.	98.	105.	103.	94.	112.
281	127.	112.	148.	145.	139.	179.	200.	198.	218.	253.
291	258.	244.	280.	283.	319.	325.	351.	364.	362.	375.
301	329.	411.	350.	341.	291.	244.	185.	171.	137.	97.
311	79.	54.	50.	31.	27.	15.	12.	9.	9.	5.
321	7.	0.	1.	0.	3.	1.	0.	2.	0.	2.
331	0.	0.	1.	2.	0.	3.	2.	4.	4.	0.
341	4.	1.	6.	2.	7.	8.	2.	5.	2.	3.
351	5.	8.	12.	9.	7.	12.	11.	14.	20.	20.
361	15.	20.	18.	13.	17.	10.	22.	16.	18.	20.
371	22.	11.	15.	5.	3.	7.	4.	3.	0.	0.
381	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	2.	0.	0.	0.	2.
421	0.	0.	1.	1.	1.	0.	1.	1.	1.	1.
431	1.	1.	0.	0.	1.	1.	1.	2.	1.	1.
441	0.	0.	2.	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.	2.	1.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	2.	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
S95T2413-SAM
File ID: 8a8028.CNF

Counted on: 10/ 5/95 @19:11
Detector: AEA8
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	32.1	32.1	373.449	373.449	16.000	7.342	8.000	2.269
2	662.0	662.0	304.917	304.917	18.000	11.678	9.000	4.277
3	2246.4	2246.4	258.601	258.589	16.000	10.072	8.000	3.855

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	Cm244	0.011	5.795	5.791	0.004	0.03	1.29	7.9	25.3	0.114E-04
	Cm243		5.779	5.791	-.012				34.7	0.156E-04
2	Am241	0.227	5.479	5.476	0.003	0.05	27.73	1.7	578.5	0.261E-03
	Pu238		5.487	5.476	0.011				755.2	0.340E-03
3	Am243	0.723	5.270	5.263	0.007	0.05	88.45	1.0	1751.8	0.789E-03
Totals:		0.960	<--valid peaks only-->				117.47			

DETECTOR CALIBRATION
Energy(MEV) = 4.073 + (0.0046)*Channel
Energy range (MeV): 4.073 TO 6.428
Efficiency = 0.0510 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	58728.0	100.000
Smoothed	58728.0	100.000
Composite fit	56392.4	96.023
Residuals	2335.6	3.977

Analyzed by: ALJ

WHC-SD-WM-DP-148, REV. 0

Spectrum 8a8028.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 15876.0

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Raw Data Dump for AEA Spectrum: 8a8028.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	2.	3.
21	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.
31	1.	1.	1.	0.	1.	0.	1.	0.	0.	0.
41	0.	1.	0.	0.	0.	2.	0.	1.	0.	1.
51	2.	2.	4.	0.	3.	2.	0.	1.	1.	0.
61	0.	1.	0.	2.	2.	0.	1.	0.	1.	0.
71	2.	1.	0.	0.	2.	0.	0.	2.	0.	1.
81	1.	1.	2.	0.	1.	0.	1.	1.	2.	0.
91	1.	0.	0.	1.	0.	3.	0.	2.	0.	4.
101	2.	0.	2.	0.	0.	2.	3.	2.	1.	0.
111	1.	2.	4.	0.	0.	5.	2.	0.	6.	2.
121	3.	0.	2.	3.	3.	1.	2.	2.	2.	4.
131	0.	1.	2.	4.	4.	5.	2.	3.	3.	1.
141	2.	3.	5.	1.	6.	4.	4.	2.	3.	1.
151	4.	4.	2.	1.	5.	2.	6.	7.	4.	12.
161	6.	3.	8.	3.	6.	11.	11.	5.	13.	3.
171	8.	5.	9.	4.	9.	12.	12.	16.	13.	12.
181	8.	11.	19.	14.	15.	10.	25.	17.	16.	17.
191	16.	18.	27.	33.	17.	31.	22.	30.	30.	41.
201	34.	39.	43.	43.	38.	41.	37.	44.	52.	59.
211	58.	77.	70.	66.	85.	75.	81.	89.	90.	88.
221	103.	134.	110.	109.	125.	142.	140.	139.	160.	183.
231	183.	208.	227.	231.	259.	233.	277.	364.	403.	397.
241	425.	501.	561.	649.	646.	764.	878.	985.	1030.	1155.
251	1332.	1469.	1626.	1884.	2016.	2189.	2393.	2445.	2474.	2316.
261	2090.	1810.	1559.	1247.	1017.	786.	559.	438.	369.	279.
271	271.	211.	196.	161.	138.	144.	113.	92.	98.	93.
281	79.	79.	103.	96.	112.	127.	126.	146.	169.	189.
291	197.	229.	271.	294.	325.	332.	407.	455.	487.	555.
301	585.	639.	667.	702.	724.	702.	630.	544.	518.	427.
311	359.	295.	207.	181.	151.	117.	82.	73.	48.	34.
321	32.	17.	8.	8.	3.	2.	1.	0.	3.	0.
331	1.	1.	1.	0.	0.	3.	2.	1.	5.	3.
341	2.	2.	3.	2.	1.	5.	3.	0.	2.	6.
351	7.	11.	3.	3.	7.	10.	6.	10.	9.	11.
361	15.	13.	13.	23.	23.	28.	20.	34.	22.	25.
371	24.	25.	40.	38.	31.	22.	20.	19.	18.	8.
381	9.	7.	1.	2.	1.	0.	0.	0.	0.	2.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	1.	0.	0.	0.	1.	0.	1.
421	0.	0.	1.	0.	0.	0.	0.	1.	1.	1.
431	0.	0.	2.	1.	2.	2.	2.	1.	2.	1.
441	2.	2.	1.	0.	2.	1.	0.	0.	0.	1.
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.	1.	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
S95T2413-DUP
File ID: 9a9116.CNF

Counted on: 10/ 5/95 @19:12
Detector: AEA9
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	30.6	30.6	372.036	372.036	12.000	5.274	6.000	1.219
2	670.2	670.2	303.147	303.146	14.000	7.920	7.000	2.056
3	2242.8	2242.8	256.997	256.972	14.000	6.139	7.000	1.625

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	Cm243	0.010	5.779	5.806	-.027	0.02	1.39	7.6	7.7	0.346E-05
	Cm244		5.795	5.806	-.011				5.6	0.252E-05
2	Pu238	0.221	5.487	5.489	-.002	0.04	30.27	1.6	169.7	0.764E-04
	Am241		5.479	5.489	-.010				130.0	0.585E-04
3	Am243	0.696	5.270	5.277	-.007	0.03	95.34	0.9	388.6	0.175E-03
Totals:		0.927	<--valid peaks only-->				127.00			

DETECTOR CALIBRATION
Energy(MEV) = 4.095 + (0.0046)*Channel
Energy range (MeV): 4.095 TO 6.450
Efficiency = 0.2478 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	65737.0	100.000
Smoothed	65737.0	100.000
Composite fit	60965.8	92.742
Residuals	4771.2	7.258

Analyzed by: ALJ 10/4/95

Spectrum 9a9116.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 13941.4

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1
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Raw Data Dump for AEA Spectrum: 9a9116.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.	3.	1.	0.	1.	0.	0.	2.
31	1.	0.	0.	2.	0.	0.	0.	0.	2.	0.
41	1.	2.	0.	1.	1.	1.	3.	1.	3.	0.
51	0.	0.	0.	2.	1.	1.	1.	0.	1.	2.
61	2.	3.	2.	1.	0.	1.	2.	3.	0.	2.
71	1.	3.	1.	1.	0.	0.	2.	2.	2.	1.
81	3.	0.	3.	2.	3.	0.	4.	0.	2.	1.
91	3.	3.	3.	2.	3.	4.	2.	1.	2.	1.
101	2.	1.	3.	3.	2.	4.	5.	3.	2.	2.
111	4.	5.	4.	5.	4.	1.	3.	2.	1.	5.
121	1.	4.	6.	4.	2.	8.	3.	6.	7.	7.
131	5.	5.	2.	7.	6.	4.	9.	5.	12.	9.
141	9.	6.	10.	6.	3.	10.	9.	7.	17.	13.
151	6.	12.	16.	14.	8.	16.	20.	13.	14.	15.
161	21.	19.	17.	17.	14.	20.	24.	18.	15.	22.
171	24.	39.	30.	21.	32.	33.	39.	34.	32.	40.
181	43.	34.	39.	33.	54.	45.	43.	59.	55.	56.
191	70.	64.	62.	60.	87.	81.	73.	79.	107.	79.
201	111.	94.	125.	118.	139.	116.	126.	139.	140.	157.
211	158.	198.	159.	188.	201.	197.	217.	226.	239.	222.
221	264.	292.	305.	278.	323.	300.	331.	336.	369.	385.
231	438.	471.	472.	519.	514.	539.	588.	702.	655.	740.
241	766.	832.	840.	943.	1011.	1127.	1184.	1298.	1385.	1527.
251	1615.	1669.	1953.	2067.	2259.	2371.	2490.	2492.	2246.	1781.
261	1293.	846.	549.	417.	310.	269.	248.	234.	261.	222.
271	243.	222.	189.	158.	164.	129.	131.	139.	141.	136.
281	154.	161.	184.	183.	211.	190.	250.	243.	273.	307.
291	300.	344.	381.	379.	411.	442.	515.	496.	646.	597.
301	635.	730.	725.	719.	692.	574.	433.	315.	246.	184.
311	154.	111.	88.	79.	81.	43.	30.	20.	7.	11.
321	5.	2.	3.	2.	1.	3.	2.	3.	6.	5.
331	3.	1.	5.	2.	3.	5.	5.	6.	2.	6.
341	5.	4.	4.	10.	7.	3.	7.	3.	8.	10.
351	5.	13.	7.	8.	11.	12.	10.	12.	17.	14.
361	20.	20.	26.	19.	17.	17.	30.	38.	30.	27.
371	31.	27.	37.	31.	19.	25.	13.	4.	1.	1.
381	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
391	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.
401	0.	1.	0.	1.	1.	0.	0.	0.	2.	0.
411	1.	1.	0.	0.	1.	1.	1.	0.	0.	0.
421	0.	0.	1.	1.	0.	0.	0.	1.	2.	1.
431	1.	0.	1.	1.	0.	1.	3.	0.	6.	0.
441	2.	0.	0.	0.	0.	1.	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.	1.	0.	0.	1.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

THE FOLLOWING ANALYSES ARE INCLUDED IN THE DATA PACKAGE BUT THE RESULTS HAVE NOT BEEN REPORTED IN THE FINAL SUMMARY REPORTS.

LABCORE Completed Worklist Report for Worklist# 2500

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

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

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

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0	@AM24101	AM24101	LIQUID	3.07E-02	2.64E-2	85.990	% Recovery
1	STD		0	@AM24101	AM24101E	LIQUID	1.00	1.06E+00	1.060	% Ct. Error
1	STD		0	@AM24101	AM24101T	LIQUID	100	8.94E+01	89.400	% Recovery
2	BLNK		0	@AM24101	AM24101	LIQUID	1	<2.49E-4		uCi/mL
2	BLNK		0	@AM24101	AM24101E	LIQUID	1.00	6.41E+00	6.410	% Ct. Error
2	BLNK		0	@AM24101	AM24101T	LIQUID	100	8.92E+01	89.200	% Recovery
3	SAMPLE	S95T002411	0	@AM24101	AM24101	LIQUID	N/A	< 2.48E-04	2.480e-004	uCi/mL
3	SAMPLE	S95T002411	0	@AM24101	AM24101E	LIQUID	N/A	5.90E+00	0.000	% Ct. Error
3	SAMPLE	S95T002411	0	@AM24101	AM24101T	LIQUID	N/A	9.04E+01	1.000e-007	% Recovery
4	DUP	S95T002411	0	@AM24101	AM24101	LIQUID	<2.48E-4	<2.16E-4		RPD
4	DUP	S95T002411	0	@AM24101	AM24101E	LIQUID	1.00	1.00E+02	100.000	% Ct. Error
4	DUP	S95T002411	0	@AM24101	AM24101T	LIQUID	100	9.80E+01	98.000	% Recovery
5	SAMPLE	S95T002412	0	@AM24101	AM24101	LIQUID	N/A	< 2.37E-04	2.370e-004	uCi/mL
5	SAMPLE	S95T002412	0	@AM24101	AM24101E	LIQUID	N/A	4.49E+00	0.000	% Ct. Error
5	SAMPLE	S95T002412	0	@AM24101	AM24101T	LIQUID	N/A	9.25E+01	1.000e-007	% Recovery
6	DUP	S95T002412	0	@AM24101	AM24101	LIQUID	<2.37E-4	2.68E-4		RPD
6	DUP	S95T002412	0	@AM24101	AM24101E	LIQUID	1.00	2.87E+00	2.870	% Ct. Error
6	DUP	S95T002412	0	@AM24101	AM24101T	LIQUID	100	9.50E+01	95.000	% Recovery
7	SAMPLE	S95T002413	0	@AM24101	AM24101	LIQUID	N/A	< 2.39E-04	2.390e-004	uCi/mL
7	SAMPLE	S95T002413	0	@AM24101	AM24101E	LIQUID	N/A	4.08E+00	0.000	% Ct. Error
7	SAMPLE	S95T002413	0	@AM24101	AM24101T	LIQUID	N/A	9.28E+01	1.000e-007	% Recovery
8	DUP	S95T002413	0	@AM24101	AM24101	LIQUID	<2.39E-4	5.79E-4		RPD
8	DUP	S95T002413	0	@AM24101	AM24101E	LIQUID	1.00	1.89E+00	1.890	% Ct. Error
8	DUP	S95T002413	0	@AM24101	AM24101T	LIQUID	100	8.86E+01	88.600	% Recovery

Final page for worklist# 2500

Analyst Signature Date

Analyst Signature Date

[signature] 26 Sep 95
Reviewer Signature Date

This data is not used in final results. All samples were rerun on worklist # 2650. [signature] 10/16/95

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

(19)

LABCORE Data Entry Template for Worklist# 2500

Analyst: AKL **Instrument:** AM01 _____ **Book#** 104B43

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

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

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@AM24101	LIQUID		
2	BLNK				@AM24101	LIQUID		
3	SAMPLE	S95T002411	0		@AM24101	LIQUID	95000135	AN-101 GRAB
	Analytes Requested: AM24101 , AM24101E, AM24101T							
4	DUP	S95T002411	0		@AM24101	LIQUID		
5	SAMPLE	S95T002412	0		@AM24101	LIQUID	95000135	AN-101 GRAB
	Analytes Requested: AM24101 , AM24101E, AM24101T							
6	DUP	S95T002412	0		@AM24101	LIQUID		
7	SAMPLE	S95T002413	0		@AM24101	LIQUID	95000135	AN-101 GRAB
	Analytes Requested: AM24101 , AM24101E, AM24101T							
8	DUP	S95T002413	0		@AM24101	LIQUID		

Final page for worklist # 2500

G Lewis 9.25.95
Analyst Signature **Date**

M B Blum 9/26/95
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

						STD
Type	Date Counted		SEP-25-95	Am 241 AEA Frac.	(C241)	0.364
STD	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.577
Work List	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0
2500	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		21598
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		116.55
LIQUID	Detector Number		1	Am 243 cpm		184.44
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002647	Standard Book No		104B43	AEA Count Time	(min)	480
Rerun	Standard Value in µCi/mL		0.03067	Am 241 µCi/L =		2.6445E+01
0				Cm 243/244 µCi/L =	<	4.0625E+00
Sample Prep						
N/A						
Sample Number						
WRKLST#2500						
Instrument Code						
AL10539						
Prepared By						
MCB						
Chemist						
LLF						
Analyst						
AKL						
Date Complete						
09/26/95						
Analysis Date						
09/25/95						
Analysis Time						
02:00 PM						
Sample Point						
AN-101 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	=	2.64E-02	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	1.1%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 4.06E-03	4.06E-03
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	89.4%	4.06E-03

Analyst:	AKL	Date:	09/26/95
Signature of Chemist:	LLF	Date:	26 Sep 95

STANDARD.WB1 REV 1.2 953103ML

WORKBOOK PAGE: BLANK2

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

						BLNK
Type	Date Counted		SEP-25-95	Am 241 AEA Frac.	(C241)	0.011
BLNK	Sample Volume in mL	(SS)	0.100	Am 243 AEA Frac.	(C243)	0.935
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2500	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		13247
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	2
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		1.97
LIQUID	Detector Number		2	Am 243 cpm		174.43
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002647				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =	<	2.4879E-01
0				Cm 243/244 µCi/L =	<	2.4879E-01
Sample Prep						
N/A						
Sample Number						
WRKLST#2500						
Instrument Code						
AL10540						
Prepared By						
MCB						
Chemist						
LLF						
Analyst						
AKL						
Date Complete						
09/26/95						
Analysis Date						
09/25/95						
Analysis Time						
02:00 PM						
Sample Point						
AN-101 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

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

Am 241 µCi/mL	=	< 2.49E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	6.4%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241 2.49E-04
Cm 243/244 µCi/mL		< 2.49E-04	
Relative Counting Error	=	100.0%	Cm 243/244 2.49E-04
Am 243 Tracer Recovery	=	89.2%	

Analyst:	AKL	Date:	09/26/95
Signature of Chemist: LLFitts	LLF	Date:	26 Sep 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		SEP-25-95	Am 241 AEA Frac.	(C241)	0.011
SAMPLE	Sample Volume in mL	(SS)	0.100	Am 243 AEA Frac.	(C243)	0.927
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2500	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		13633
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		2.33
LIQUID	Detector Number		3	Am 243 cpm		195.56
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002647				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =	<	2.4755E-01
0				Cm 243/244 µCi/L =	<	2.4755E-01
Sample Prep						
N/A						
Sample Number						
S95T002411						
Instrument Code						
AL10541						
Prepared By						
MCB						
Chemist						
LLF						
Analyst						
AKL						
Date Complete						
09/26/95						
Analysis Date						
09/25/95						
Analysis Time						
02:00 PM						
Sample Point						
AN-101 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

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

Am 241 µCi/mL	=	< 2.48E-04
Relative Counting Error	=	5.9%

NOTE: Cm-243/244 Result is a LESS THAN Value.

Cm 243/244 µCi/mL		< 2.48E-04
Relative Counting Error	=	100.0%
Am 243 Tracer Recovery	=	90.4%

DETECTION LEVELS in µCi/mL
Am 241
2.48E-04
Cm 243/244
2.48E-04

Analyst:	AKL	Date:	09/26/95
Signature of Chemist:	LLF	Date:	26 Sep 95

SAMPLE.WB1 REV 1.2 953103ML

228

WORKBOOK PAGE: DUP4

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

						DUP
Type	Date Counted		SEP-25-95	Am 241 AEA Frac.	(C241)	0
DUP	Sample Volume in mL	(SS)	0.100	Am 243 AEA Frac.	(C243)	0.982
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2500	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		13975
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		1	Am 243 cpm		203.19
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002647				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =	<	2.1561E-01
0				Cm 243/244 µCi/L =	<	2.1561E-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))
S95T002411	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	NOTE: Am-241 Result is a LESS THAN Value.
LLF	Am 241 µCi/mL = < 2.16E-04
Analyst	Relative Counting Error = 100.0%
AKL	
Date Complete	NOTE: Cm-243/244 Result is a LESS THAN Value.
09/26/95	Cm 243/244 µCi/mL < 2.16E-04
Analysis Date	Relative Counting Error = 100.0%
09/25/95	Am 243 Tracer Recovery = 98.0%
Analysis Time	
02:00 PM	
Sample Point	
AN-101 GRAB	

DETECTION LEVELS in µCi/mL	
Am 241	2.16E-04
Cm 243/244	2.16E-04

Analyst:	AKL	Date:	09/26/95
Signature of Chemist: [signature]	LLF	Date:	26 Sep 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		SEP-25-95	Am 241 AEA Frac.	(C241)		0.022
SAMPLE	Sample Volume in mL	(SS)	0.100	Am 243 AEA Frac.	(C243)		0.948
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2500	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts			13547
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)		2
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm			4.06
LIQUID	Detector Number		2	Am 243 cpm			175.23
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002647				AEA Count Time	(min)		480
Rerun				Am 241 µCi/L =		<	2.3663E-01
0				Cm 243/244 µCi/L =		<	2.3663E-01
Sample Prep							
N/A							
Sample Number							
S95T002412							
Instrument Code							
AL10540							
Prepared By							
MCB							
Chemist							
LLF							
Analyst							
AKL							
Date Complete							
09/26/95							
Analysis Date							
09/25/95							
Analysis Time							
02:00 PM							
Sample Point							
AN-101 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

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

Am 241 µCi/mL	=	< 2.37E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	4.5%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241 2.37E-04
Cm 243/244 µCi/mL		< 2.37E-04	
Relative Counting Error	=	100.0%	Cm 243/244 2.37E-04
Am 243 Tracer Recovery	=	92.5%	

Analyst:	AKL	Date:	09/26/95
Signature of Chemist: [signature]	LLF	Date:	26 Sep 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP6

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

							DUP
Type	Date Counted		SEP-25-95	Am 241 AEA Frac.	(C241)		0.061
DUP	Sample Volume in mL	(SS)	0.100	Am 243 AEA Frac.	(C243)		0.943
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2500	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts			14080
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			10.33
LIQUID	Detector Number		3	Am 243 cpm			160.68
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002647				AEA Count Time	(min)		480
Rerun				Am 241 µCi/L =			2.6848E-01
0				Cm 243/244 µCi/L =		<	2.3154E-01
Sample Prep							
N/A							
Sample Number							
S95T002412							
Instrument Code							
AL10541							
Prepared By							
MCB							
Chemist							
LLF							
Analyst							
AKL							
Date Complete							
09/26/95							
Analysis Date							
09/25/95							
Analysis Time							
02:00 PM							
Sample Point							
AN-101 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	=	2.68E-04
Relative Counting Error	=	2.9%
NOTE: Cm-243/244 Result is a LESS THAN Value.		
Cm 243/244 µCi/mL		< 2.32E-04
Relative Counting Error	=	100.0%
Am 243 Tracer Recovery	=	95.0%

DETECTION LEVELS in µCi/mL
Am 241
2.32E-04
Cm 243/244
2.32E-04

Analyst:	AKL	Date:	09/26/95
Signature of Chemist:	LLF	Date:	26 Sep 95

SAMPLE.WB1 REV 1.2 953103ML

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WORKBOOK PAGE: SAM7

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

							SAMPLE
Type	Date Counted		SEP-25-95	Am 241 AEA Frac.	(C241)		0.024
SAMPLE	Sample Volume in mL	(SS)	0.100	Am 243 AEA Frac.	(C243)		0.937
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)		0
2500	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts			13863
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			4.94
LIQUID	Detector Number		1	Am 243 cpm			191.76
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm			0
95002647				AEA Count Time	(min)		480
Rerun				Am 241 µCi/L =		<	2.3875E-01
0				Cm 243/244 µCi/L =		<	2.3875E-01
Sample Prep							
N/A							
Sample Number							
S95T002413							
Instrument Code							
AL10539							
Prepared By							
MCB							
Chemist							
LLF							
Analyst							
AKL							
Date Complete							
09/26/95							
Analysis Date							
09/25/95							
Analysis Time							
02:00 PM							
Sample Point							
AN-101 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

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

Am 241 µCi/mL	=	< 2.39E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	4.1%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 2.39E-04	2.39E-04
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	92.8%	2.39E-04

Analyst:	AKL	Date:	09/26/95
Signature of Chemist: LLF	LLF	Date:	26 Sep 95

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP8

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

						DUP
Type	Date Counted		SEP-25-95	Am 241 AEA Frac.	(C241)	0.128
DUP	Sample Volume in mL	(SS)	0.100	Am 243 AEA Frac.	(C243)	0.917
Work List	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
2500	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		13415
Test Code	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24101	Tracer Book No.		114B43	Background in cpm	(Bkg)	2
Matrix	Am-243 Tracer Value	(dpm/mL)	9214	Am 241 cpm		25.58
LIQUID	Detector Number		2	Am 243 cpm		182.55
Batch Number	Detector Efficiency	(DetEff)	0.5000	Cm 243/244 cpm		0
95002647				AEA Count Time	(min)	480
Rerun				Am 241 µCi/L =		5.7934E-01
0				Cm 243/244 µCi/L =	<	2.5540E-01
Sample Prep						
N/A						
Sample Number						
S95T002413						
Instrument Code						
AL10540						
Prepared By						
MCB						
Chemist						
LLF						
Analyst						
AKL						
Date Complete						
09/26/95						
Analysis Date						
09/25/95						
Analysis Time						
02:00 PM						
Sample Point						
AN-101 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	=	5.79E-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		< 2.55E-04	2.55E-04
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	88.6%	2.55E-04

Analyst:	AKL	Date:	09/26/95
Signature of Chemist: [signature]	LLF	Date:	26 Sep 95

SAMPLE.WB1 REV 1.2 953103ML

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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
2500-STD
File ID: 10a2367.CNF

Counted on: 9/25/95 @18:41
Detector: AEA10
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	3171.0	3171.0	304.935	304.935	14.000	6.858	7.000	2.436
2	5232.0	5232.0	258.754	258.738	12.000	5.519	6.000	1.929

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	0.364	5.487	5.486	0.001	0.03	116.55	0.8	533.0	0.240E-03
	Am241		5.479	5.486	-.007				408.3	0.184E-03
2	Am243	0.577	5.270	5.274	-.004	0.03	184.44	0.7	613.4	0.276E-03
Totals:		0.941	<--valid peaks only-->				300.99			

DETECTOR CALIBRATION
Energy(MEV) = 4.083 + (0.0046)*Channel
Energy range (MeV): 4.083 TO 6.439
Efficiency = 0.3037 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	153504.0	100.000
Smoothed	153504.0	100.000
Composite fit	144483.9	94.124
Residuals	9020.1	5.876

Analyzed by: _____
SEH

Spectrum 10a2367.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 34052.5

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1.........2.......
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Raw Data Dump for AEA Spectrum: 10a2367.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.	2.	1.	0.	1.	4.
31	1.	2.	3.	1.	1.	1.	0.	1.	0.	3.
41	0.	0.	2.	1.	1.	2.	0.	2.	1.	0.
51	1.	1.	1.	0.	1.	2.	1.	1.	2.	3.
61	3.	1.	2.	1.	3.	1.	1.	0.	0.	1.
71	1.	1.	1.	1.	0.	3.	0.	0.	4.	1.
81	1.	0.	2.	2.	1.	1.	0.	1.	1.	0.
91	2.	2.	1.	3.	3.	1.	6.	2.	2.	1.
101	1.	1.	1.	1.	2.	2.	3.	3.	3.	1.
111	1.	4.	3.	3.	0.	5.	3.	3.	0.	3.
121	1.	0.	3.	3.	1.	3.	4.	3.	0.	7.
131	5.	4.	7.	4.	4.	10.	1.	2.	3.	3.
141	6.	5.	5.	5.	6.	6.	8.	9.	5.	6.
151	14.	9.	6.	7.	8.	6.	6.	8.	4.	6.
161	8.	10.	8.	14.	14.	18.	20.	18.	13.	15.
171	20.	11.	14.	22.	25.	16.	16.	22.	20.	27.
181	24.	30.	30.	34.	31.	34.	28.	39.	46.	58.
191	51.	62.	50.	69.	61.	67.	73.	95.	83.	79.
201	98.	110.	123.	115.	122.	123.	151.	142.	150.	167.
211	187.	209.	211.	197.	205.	220.	264.	262.	256.	314.
221	314.	293.	339.	327.	378.	373.	455.	460.	488.	553.
231	563.	605.	602.	683.	728.	782.	830.	884.	939.	1044.
241	1123.	1242.	1354.	1388.	1572.	1752.	1932.	2150.	2476.	2635.
251	2894.	3148.	3370.	3877.	4261.	4767.	5248.	5749.	5946.	5764.
261	4988.	3476.	2257.	1465.	965.	787.	684.	672.	642.	603.
271	612.	546.	537.	466.	437.	397.	436.	409.	366.	393.
281	430.	499.	498.	584.	548.	600.	623.	683.	752.	811.
291	954.	1029.	1129.	1259.	1383.	1602.	1726.	1895.	2042.	2282.
301	2581.	2734.	3087.	3417.	3653.	3421.	3006.	2385.	1648.	1234.
311	901.	764.	580.	506.	418.	374.	250.	190.	120.	70.
321	21.	14.	3.	1.	1.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
341	0.	0.	1.	0.	1.	0.	1.	1.	1.	0.
351	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
361	0.	1.	0.	0.	0.	0.	2.	2.	1.	0.
371	0.	1.	1.	0.	2.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
421	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.
431	0.	0.	0.	0.	1.	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.	1.	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
2500-BLNK
File ID: 11a3367.CNF

Counted on: 9/25/95 @18:42
Detector: AEA11
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	12.1	12.1	304.900	304.900	16.000	8.532	8.000	0.427
2	5083.3	5083.3	259.663	259.663	12.000	5.611	6.000	2.074

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	0.011	5.487	5.483	0.004	0.04	1.97	6.4	19.5	0.877E-05
	Am241		5.479	5.483	-.004				14.9	0.671E-05
2	Am243	0.935	5.270	5.274	-.004	0.03	174.43	0.7	1251.4	0.564E-03
Totals:		0.946	<--valid peaks only-->				176.40			

DETECTOR CALIBRATION
Energy(MEV) = 4.080 + (0.0046)*Channel
Energy range (MeV): 4.080 TO 6.435
Efficiency = 0.1408 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	89510.0	100.000
Smoothed	89510.0	100.000
Composite fit	84682.6	94.607
Residuals	4827.4	5.393

Analyzed by: SEH

Spectrum 11a3367.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 34943.9

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1
1
1
1
1
1
1
1
2.
1.2.
1......2
1................2
1.........................................2.
1.............................................................2
1..............2...
1..
1
1
1
1
1
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Raw Data Dump for AEA Spectrum: 11a3367.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.	1.	0.	0.	0.	0.	1.
31	0.	0.	0.	1.	2.	1.	0.	0.	1.	0.
41	0.	0.	0.	0.	3.	0.	0.	0.	1.	1.
51	0.	1.	1.	1.	1.	2.	2.	0.	2.	3.
61	1.	0.	0.	2.	0.	0.	0.	1.	0.	0.
71	1.	1.	0.	2.	0.	2.	4.	0.	1.	0.
81	1.	1.	0.	2.	5.	1.	3.	3.	0.	3.
91	1.	2.	2.	1.	4.	2.	1.	1.	4.	1.
101	3.	2.	2.	2.	1.	2.	0.	6.	1.	3.
111	1.	5.	1.	4.	1.	3.	2.	2.	2.	5.
121	4.	3.	3.	5.	8.	2.	3.	3.	5.	4.
131	0.	6.	3.	5.	5.	5.	5.	2.	6.	6.
141	6.	1.	3.	8.	4.	8.	5.	5.	7.	5.
151	5.	7.	6.	5.	9.	10.	9.	16.	13.	11.
161	8.	10.	10.	14.	17.	17.	11.	23.	11.	10.
171	21.	15.	18.	18.	13.	20.	19.	19.	25.	39.
181	20.	24.	33.	35.	33.	24.	24.	43.	50.	41.
191	45.	42.	33.	46.	47.	47.	56.	67.	54.	60.
201	65.	70.	73.	77.	74.	115.	89.	89.	106.	90.
211	114.	102.	104.	115.	123.	130.	163.	143.	150.	145.
221	172.	180.	190.	221.	217.	256.	264.	267.	305.	303.
231	339.	380.	433.	468.	485.	534.	591.	661.	707.	756.
241	847.	987.	1103.	1153.	1288.	1456.	1636.	1860.	2102.	2422.
251	2566.	2836.	3217.	3375.	3744.	4268.	4573.	5198.	5466.	5803.
261	5460.	4616.	3480.	2322.	1412.	823.	631.	490.	449.	393.
271	384.	345.	309.	247.	233.	146.	100.	78.	46.	20.
281	8.	6.	2.	2.	0.	0.	1.	1.	0.	3.
291	2.	5.	4.	6.	6.	9.	6.	7.	7.	10.
301	6.	6.	11.	12.	17.	13.	6.	12.	7.	8.
311	5.	5.	3.	0.	1.	2.	1.	1.	0.	0.
321	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.
341	0.	0.	3.	0.	0.	1.	0.	0.	3.	1.
351	1.	0.	0.	1.	1.	1.	0.	3.	0.	2.
361	3.	1.	1.	1.	2.	1.	3.	2.	2.	1.
371	1.	2.	1.	1.	0.	0.	1.	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.	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.								

Em Bueler

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
S95T2411-SAM
File ID: 12a1217.CNF

Counted on: 9/25/95 @18:43
Detector: AEA12
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	30.3	30.3	299.826	299.826	16.000	9.821	8.000	1.235
2	5769.0	5769.0	254.229	254.228	14.000	6.078	7.000	2.387

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	Am241	0.011	5.479	5.485	-.006	0.05	2.33	5.9	8.8	0.395E-05
	Pu238		5.487	5.485	0.002				11.5	0.516E-05
2	Am243	0.927	5.270	5.276	-.006	0.03	195.56	0.6	698.8	0.315E-03
Totals:		0.938	<--valid peaks only-->				197.90			

DETECTOR CALIBRATION
Energy(MEV) = 4.106 + (0.0046)*Channel
Energy range (MeV): 4.106 TO 6.461
Efficiency = 0.2827 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	101240.0	100.000
Smoothed	101240.0	100.000
Composite fit	95006.5	93.843
Residuals	6233.5	6.157

Analyzed by: _____
SEH

Spectrum 12a1217.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 40229.4

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Raw Data Dump for AEA Spectrum: 12a1217.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.	2.	1.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	2.	1.	0.	0.
41	0.	0.	0.	1.	1.	0.	2.	1.	0.	2.
51	0.	1.	0.	1.	1.	1.	1.	0.	2.	2.
61	0.	1.	1.	1.	0.	2.	2.	1.	1.	1.
71	0.	0.	1.	1.	1.	1.	1.	0.	2.	1.
81	2.	0.	3.	0.	2.	1.	1.	3.	0.	2.
91	1.	2.	1.	1.	1.	4.	0.	1.	2.	1.
101	0.	3.	3.	1.	6.	1.	3.	2.	6.	3.
111	1.	0.	0.	4.	6.	0.	4.	5.	3.	2.
121	4.	3.	0.	4.	4.	2.	3.	13.	3.	5.
131	5.	4.	4.	5.	11.	6.	3.	7.	6.	8.
141	11.	6.	8.	8.	10.	16.	7.	7.	11.	9.
151	18.	12.	15.	17.	8.	15.	8.	15.	14.	19.
161	9.	18.	12.	21.	26.	28.	19.	18.	24.	28.
171	28.	21.	34.	34.	35.	37.	24.	46.	32.	52.
181	41.	34.	48.	50.	53.	39.	45.	68.	51.	62.
191	59.	50.	68.	71.	68.	82.	89.	95.	82.	98.
201	103.	111.	74.	108.	121.	115.	131.	133.	144.	143.
211	156.	162.	160.	172.	196.	205.	193.	229.	233.	226.
221	256.	280.	307.	367.	369.	356.	406.	423.	499.	529.
231	553.	634.	698.	758.	802.	937.	1028.	1157.	1248.	1427.
241	1578.	1859.	2102.	2421.	2643.	3007.	3395.	3653.	3996.	4614.
251	5111.	5560.	6050.	6544.	6396.	5854.	4732.	3496.	2327.	1469.
261	956.	715.	589.	526.	485.	443.	437.	360.	306.	224.
271	166.	131.	71.	46.	27.	7.	4.	3.	4.	2.
281	2.	7.	5.	3.	7.	12.	15.	12.	11.	12.
291	11.	15.	18.	18.	25.	25.	29.	30.	30.	35.
301	34.	26.	20.	23.	17.	12.	10.	16.	7.	6.
311	3.	3.	1.	1.	1.	0.	0.	0.	0.	0.
321	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
341	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
351	0.	1.	0.	0.	1.	1.	0.	2.	0.	1.
361	0.	2.	1.	0.	0.	2.	1.	0.	2.	1.
371	0.	1.	1.	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.	1.	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.	2.	1.	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
S95T2411-DUP
File ID: 9a9103.CNF

Counted on: 9/25/95 @18:43
Detector: AEA9
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?	24.4	24.4	303.121	303.121	16.000	7.976	8.000	0.890
2	4612.3	4612.3	257.029	257.028	14.000	6.433	7.000	1.631

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		????		5.485			2.02	6.3		
2	Am243	0.982	5.270	5.273	-.0030	3.03	203.19	0.6	829.9	0.374E-03
Totals:		0.982	<--valid peaks only-->				203.19			

DETECTOR CALIBRATION
Energy(MEV) = 4.091 + (0.0046)*Channel
Energy range (MeV): 4.091 TO 6.446
Efficiency = 0.2473 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	99291.0	100.000
Smoothed	99291.0	100.000
Composite fit	98503.4	99.207
Residuals	787.6	0.793

Analyzed by: _____
SEH

Spectrum 9a9103.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 29907.5

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Raw Data Dump for AEA Spectrum: 9a9103.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.	1.	0.	1.	0.	0.	1.
31	0.	0.	1.	0.	1.	1.	1.	1.	0.	1.
41	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
51	0.	1.	1.	1.	1.	0.	1.	1.	0.	1.
61	1.	2.	1.	0.	0.	1.	0.	0.	1.	4.
71	0.	0.	1.	1.	2.	0.	1.	0.	0.	2.
81	0.	0.	0.	1.	1.	2.	0.	3.	0.	0.
91	0.	2.	2.	2.	3.	3.	1.	1.	0.	2.
101	1.	1.	1.	1.	1.	0.	3.	0.	4.	0.
111	1.	2.	6.	1.	3.	0.	3.	3.	2.	4.
121	0.	0.	4.	1.	2.	4.	0.	3.	0.	1.
131	3.	1.	4.	1.	3.	1.	1.	2.	1.	4.
141	3.	4.	5.	3.	3.	3.	5.	5.	4.	5.
151	6.	6.	12.	1.	7.	8.	4.	11.	11.	11.
161	4.	10.	7.	6.	11.	8.	17.	16.	12.	14.
171	12.	19.	17.	21.	17.	20.	17.	18.	21.	20.
181	27.	33.	46.	28.	36.	35.	28.	39.	53.	31.
191	39.	41.	45.	58.	77.	65.	74.	65.	74.	91.
201	81.	91.	113.	105.	110.	125.	135.	140.	162.	156.
211	167.	166.	201.	203.	216.	229.	255.	274.	274.	352.
221	335.	328.	416.	456.	406.	526.	488.	568.	630.	633.
231	723.	800.	816.	904.	1018.	1109.	1207.	1306.	1340.	1518.
241	1704.	1785.	1922.	2109.	2375.	2490.	2701.	3006.	3296.	3486.
251	3502.	3773.	4070.	4179.	4524.	4866.	4986.	4964.	4661.	3884.
261	2838.	1687.	1089.	737.	529.	497.	453.	378.	347.	335.
271	271.	232.	187.	100.	98.	59.	24.	21.	6.	9.
281	8.	6.	8.	4.	10.	7.	6.	10.	18.	14.
291	9.	10.	10.	13.	16.	15.	25.	19.	32.	22.
301	21.	26.	29.	19.	29.	21.	17.	14.	10.	7.
311	2.	2.	5.	2.	3.	2.	2.	1.	1.	0.
321	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
341	0.	0.	0.	0.	0.	1.	0.	0.	2.	1.
351	0.	1.	1.	1.	1.	0.	1.	2.	1.	0.
361	1.	1.	0.	0.	1.	0.	1.	2.	2.	1.
371	1.	0.	0.	1.	2.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	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.	1.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
441	0.	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.	1.	2.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

EM Barela

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
S95T2412-SAM
File ID: 8a8015.CNF

Counted on: 9/25/95 @18:44
Detector: AEA8
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	81.4	81.4	304.429	304.429	16.000	9.805	8.000	2.320
2	4459.3	4459.3	258.378	258.376	18.000	10.249	9.000	3.994

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	Am241	0.022	5.479	5.478	0.001	0.05	4.06	4.4	19.1	0.861E-05
	Pu238		5.487	5.478	0.009				24.9	0.112E-04
2	Am243	0.948	5.270	5.266	0.004	0.05	175.23	0.7	783.9	0.353E-03
Totals:		0.970	<--valid peaks only-->				179.28			

DETECTOR CALIBRATION
Energy(MEV) = 4.078 + (0.0046)*Channel
Energy range (MeV): 4.078 TO 6.433
Efficiency = 0.2258 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	88705.0	100.000
Smoothed	88705.0	100.000
Composite fit	86065.7	97.025
Residuals	2639.3	2.975

Analyzed by: _____
SEH

Spectrum 8a8015.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 31210.3

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Raw Data Dump for AEA Spectrum: 8a8015.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
21	0.	2.	1.	0.	0.	0.	3.	1.	1.	1.
31	1.	1.	0.	0.	0.	0.	2.	0.	0.	0.
41	0.	1.	1.	1.	0.	0.	0.	0.	0.	0.
51	1.	0.	3.	1.	0.	1.	3.	0.	1.	0.
61	1.	0.	1.	1.	3.	1.	0.	1.	0.	0.
71	1.	0.	2.	0.	1.	2.	0.	2.	0.	0.
81	2.	0.	2.	0.	0.	1.	0.	0.	1.	0.
91	1.	0.	4.	2.	0.	2.	1.	2.	1.	1.
101	3.	2.	0.	0.	1.	2.	3.	2.	0.	3.
111	0.	1.	1.	2.	0.	2.	0.	1.	2.	1.
121	1.	2.	1.	4.	0.	1.	4.	0.	3.	1.
131	2.	2.	0.	0.	3.	1.	1.	1.	3.	1.
141	1.	0.	3.	4.	0.	2.	2.	2.	1.	3.
151	1.	2.	4.	2.	2.	2.	3.	3.	3.	7.
161	3.	4.	5.	4.	3.	6.	4.	7.	6.	4.
171	9.	9.	4.	6.	7.	7.	8.	5.	12.	12.
181	8.	10.	12.	15.	16.	12.	19.	8.	15.	20.
191	17.	28.	18.	24.	22.	31.	30.	30.	35.	42.
201	44.	44.	45.	55.	60.	66.	79.	52.	58.	80.
211	73.	100.	93.	66.	96.	113.	145.	138.	136.	157.
221	170.	180.	174.	182.	194.	238.	225.	246.	298.	311.
231	329.	357.	373.	446.	482.	544.	571.	608.	692.	782.
241	895.	942.	1067.	1225.	1325.	1519.	1723.	1988.	2188.	2487.
251	2790.	3215.	3497.	3849.	4125.	4487.	4730.	4856.	4842.	4444.
261	4187.	3480.	2915.	2374.	1878.	1450.	1020.	826.	574.	491.
271	389.	355.	286.	253.	170.	156.	107.	92.	51.	49.
281	30.	20.	24.	11.	12.	16.	9.	16.	26.	27.
291	26.	30.	40.	38.	37.	33.	45.	67.	58.	55.
301	70.	89.	84.	82.	94.	83.	66.	66.	59.	40.
311	34.	23.	21.	22.	8.	13.	10.	6.	6.	2.
321	0.	2.	0.	1.	0.	0.	1.	1.	0.	0.
331	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
341	0.	0.	2.	1.	0.	1.	0.	0.	0.	0.
351	1.	0.	0.	1.	0.	2.	3.	1.	2.	0.
361	3.	2.	2.	7.	2.	1.	3.	4.	8.	5.
371	4.	5.	5.	6.	6.	4.	5.	3.	1.	1.
381	2.	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.	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	1.	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.	1.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

Em Bulla

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
S95T2412-DUP
File ID: 7a7841.CNF

Counted on: 9/25/95 @18:45
Detector: AEA7
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	60.4	60.4	301.561	301.561	26.000	19.120	13.000	0.956
2	3046.9	3046.9	254.377	254.367	22.000	22.312	11.000	7.788

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	Am241	0.061	5.479	5.490	-.011	0.09	10.33	2.8	230.0	0.104E-03
	Pu238		5.487	5.490	-.003				300.3	0.135E-03
2	Pu239	0.943	5.147	5.269	-.122	0.10	160.68	0.7	3361.4	0.151E-02
	Am243		5.270	5.269	0.001				3395.4	0.153E-02
Totals:		1.003	<--valid peaks only-->				171.01			

DETECTOR CALIBRATION
Energy(MEV) = 4.073 + (0.0047)*Channel
Energy range (MeV): 4.073 TO 6.479
Efficiency = 0.0478 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	81811.0	100.000
Smoothed	81810.9	100.000
Composite fit	82096.1	100.348
Residuals	-285.1	-0.348

Analyzed by: SEH

Spectrum 7a7841.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 23178.9

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Raw Data Dump for AEA Spectrum: 7a7841.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.	3.
21	0.	0.	1.	1.	2.	0.	0.	1.	0.	1.
31	3.	1.	2.	0.	1.	1.	0.	0.	1.	1.
41	2.	3.	2.	0.	0.	2.	0.	0.	0.	0.
51	3.	2.	0.	0.	1.	0.	0.	0.	1.	0.
61	2.	1.	1.	0.	0.	4.	2.	0.	3.	0.
71	4.	0.	2.	1.	1.	0.	2.	2.	2.	1.
81	0.	2.	0.	2.	1.	2.	1.	1.	3.	1.
91	0.	2.	2.	0.	1.	1.	0.	3.	1.	2.
101	2.	0.	2.	2.	3.	1.	1.	2.	5.	3.
111	1.	1.	0.	1.	4.	0.	3.	3.	4.	2.
121	1.	3.	2.	3.	1.	3.	2.	2.	4.	8.
131	3.	1.	5.	2.	2.	3.	4.	3.	5.	2.
141	3.	4.	2.	4.	4.	2.	3.	3.	6.	4.
151	6.	4.	5.	12.	3.	9.	8.	2.	5.	8.
161	6.	4.	6.	8.	4.	11.	9.	7.	11.	13.
171	11.	10.	11.	12.	16.	12.	10.	22.	20.	19.
181	20.	17.	18.	18.	23.	21.	25.	31.	24.	37.
191	51.	44.	40.	42.	40.	43.	61.	47.	42.	63.
201	49.	62.	49.	63.	65.	78.	80.	84.	86.	99.
211	97.	101.	114.	133.	146.	147.	153.	167.	189.	180.
221	216.	224.	253.	260.	275.	323.	329.	394.	386.	430.
231	527.	565.	614.	646.	745.	882.	870.	988.	1114.	1255.
241	1385.	1511.	1669.	1894.	1956.	2171.	2307.	2542.	2731.	2934.
251	2947.	3057.	3299.	3181.	3293.	2982.	2939.	2878.	2633.	2470.
261	2287.	1958.	1814.	1538.	1304.	1125.	944.	798.	650.	494.
271	435.	361.	250.	236.	150.	152.	107.	103.	68.	61.
281	48.	40.	33.	24.	26.	35.	36.	36.	24.	27.
291	45.	40.	40.	51.	46.	47.	60.	55.	60.	41.
301	72.	67.	53.	57.	45.	37.	42.	36.	37.	25.
311	37.	29.	30.	8.	10.	11.	7.	3.	8.	4.
321	7.	6.	2.	1.	1.	0.	2.	0.	0.	1.
331	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	3.	0.	1.	0.	1.
351	1.	0.	0.	2.	4.	2.	1.	4.	3.	2.
361	4.	5.	2.	5.	2.	0.	4.	3.	2.	3.
371	3.	6.	2.	3.	0.	1.	2.	0.	0.	2.
381	1.	0.	1.	1.	0.	1.	0.	0.	0.	0.
391	0.	1.	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.	1.	0.	0.	0.	1.	1.
431	0.	2.	0.	0.	1.	1.	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.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
511	3.	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
S95T2413-SAM
File ID: 6a6235.CNF

Counted on: 9/25/95 @18:46
Detector: AEA6
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	78.6	78.6	299.916	299.916	20.000	10.928	10.000	1.854
2	4474.9	4474.9	254.127	254.124	16.000	9.327	8.000	2.842
3?	13.9	13.9	156.398	156.203	140.000	1.000	70.000	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	Am241	0.024	5.479	5.475	0.004	0.05	4.94	4.0	21.3	0.960E-05
	Pu238		5.487	5.475	0.012				27.8	0.125E-04
2	Am243	0.937	5.270	5.265	0.005	0.04	191.76	0.6	785.8	0.354E-03
3		????		4.814			1.11	8.7		
Totals:		0.961	<--valid peaks only-->				196.70			

DETECTOR CALIBRATION

Energy(MEV) = 4.096 + (0.0046)*Channel
Energy range (MeV): 4.096 TO 6.451
Efficiency = 0.2465 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	98234.0	100.000
Smoothed	98234.4	100.000
Composite fit	94952.3	96.659
Residuals	3281.7	3.341

Analyzed by: _____
SEH

Spectrum 6a6235.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 32900.6

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3
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WHC-SD-WM-DP-148, REV. 0

Raw Data Dump for AEA Spectrum: 6a6235.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	2.	0.	0.
21	3.	1.	3.	1.	1.	1.	0.	0.	0.	0.
31	2.	0.	1.	1.	0.	0.	0.	2.	1.	2.
41	3.	0.	2.	2.	0.	1.	1.	2.	2.	0.
51	2.	2.	1.	1.	1.	2.	2.	1.	2.	2.
61	1.	3.	2.	1.	3.	0.	5.	2.	2.	4.
71	5.	0.	1.	1.	0.	4.	3.	3.	2.	0.
81	4.	2.	1.	2.	1.	3.	4.	4.	1.	2.
91	3.	6.	1.	2.	1.	4.	3.	2.	3.	5.
101	2.	1.	4.	3.	4.	3.	8.	5.	5.	7.
111	7.	4.	6.	2.	6.	7.	1.	3.	3.	3.
121	3.	4.	3.	7.	6.	7.	3.	3.	5.	10.
131	6.	9.	4.	5.	6.	6.	6.	11.	14.	9.
141	8.	6.	7.	5.	10.	8.	9.	14.	12.	10.
151	14.	14.	8.	14.	13.	19.	17.	15.	10.	12.
161	14.	15.	13.	16.	21.	17.	7.	16.	14.	18.
171	21.	20.	22.	25.	25.	33.	34.	33.	33.	37.
181	32.	47.	52.	41.	43.	44.	51.	43.	54.	50.
191	57.	62.	70.	67.	85.	86.	85.	100.	91.	114.
201	94.	112.	108.	121.	134.	144.	148.	164.	166.	196.
211	198.	221.	224.	242.	231.	270.	269.	293.	304.	334.
221	338.	382.	439.	422.	453.	510.	536.	604.	630.	670.
231	756.	794.	875.	920.	1074.	1098.	1297.	1355.	1424.	1603.
241	1727.	1964.	2097.	2287.	2575.	2854.	3053.	3394.	3626.	3992.
251	4325.	4569.	4650.	4868.	4711.	4480.	4020.	3338.	2657.	2070.
261	1504.	1070.	820.	653.	490.	443.	373.	334.	282.	232.
271	207.	162.	120.	79.	57.	38.	27.	20.	15.	16.
281	20.	28.	15.	23.	29.	33.	30.	39.	45.	38.
291	25.	57.	55.	66.	54.	70.	83.	77.	89.	82.
301	84.	78.	62.	68.	46.	40.	35.	28.	14.	12.
311	18.	9.	8.	4.	6.	3.	1.	0.	1.	1.
321	0.	1.	0.	0.	2.	2.	0.	0.	0.	0.
331	0.	0.	1.	1.	0.	0.	2.	0.	0.	1.
341	1.	1.	0.	0.	1.	0.	2.	1.	0.	1.
351	2.	1.	1.	2.	2.	0.	4.	3.	0.	5.
361	2.	3.	5.	4.	4.	4.	8.	8.	2.	6.
371	3.	4.	1.	1.	7.	1.	1.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.
431	0.	1.	0.	0.	0.	2.	0.	0.	0.	2.
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.	0.	0.	0.	1.	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	1.	0.								

Tim Baeb

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
S95T2413-DUP
File ID: 5a5024.CNF

Counted on: 9/25/95 @18:46
Detector: AEA5
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	66.9	66.9	302.195	302.195	20.000	17.298	10.000	0.254
2	3763.0	3763.0	256.314	256.311	22.000	17.795	11.000	6.307
3?	0.0	0.1	150.032	150.032	0.000	0.100	0.000	0.100

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	Am241	0.128	5.479	5.485	-.006	0.08	25.58	1.8	487.7	0.220E-03
	Pu238		5.487	5.485	0.002				636.7	0.287E-03
2	Pu239	0.917	5.147	5.269	-.122	0.08	182.55	0.7	3271.5	0.147E-02
	Am243		5.270	5.269	0.001				3304.6	0.149E-02
3		????		4.770			0.00	*****		
Totals:		1.045	<--valid peaks only-->				208.13			

DETECTOR CALIBRATION
Energy(MEV) = 4.065 + (0.0047)*Channel
Energy range (MeV): 4.065 TO 6.471
Efficiency = 0.0558 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	95596.0	100.000
Smoothed	95596.0	100.000
Composite fit	99907.7	104.510
Residuals	-4311.7	-4.510

Analyzed by: _____
SEH

Spectrum 5a5024.CNF

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1 Legend:  Raw = ....  Modeled Peaks = 1,2,.., etc     Display Max.:   26848.0

1
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1...............................2...
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1.......................2
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Raw Data Dump for AEA Spectrum: 5a5024.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	2.	1.	2.	3.
21	0.	1.	1.	0.	2.	2.	2.	1.	3.	0.
31	2.	1.	0.	0.	3.	0.	2.	1.	2.	0.
41	1.	3.	0.	0.	0.	2.	2.	2.	2.	1.
51	1.	3.	1.	1.	2.	1.	0.	2.	2.	0.
61	2.	1.	0.	0.	0.	2.	3.	1.	3.	0.
71	1.	2.	2.	4.	2.	0.	3.	1.	2.	2.
81	0.	1.	2.	2.	1.	1.	1.	4.	5.	1.
91	4.	5.	3.	1.	1.	2.	1.	2.	0.	3.
101	3.	3.	1.	3.	2.	5.	4.	2.	2.	3.
111	1.	3.	5.	5.	7.	8.	5.	6.	1.	3.
121	2.	6.	8.	1.	6.	4.	4.	5.	7.	8.
131	1.	6.	6.	6.	4.	9.	9.	9.	7.	11.
141	8.	12.	7.	13.	8.	7.	13.	13.	8.	20.
151	14.	11.	7.	12.	5.	11.	21.	12.	16.	11.
161	22.	21.	18.	22.	24.	21.	23.	18.	23.	27.
171	16.	22.	28.	25.	32.	26.	37.	27.	30.	39.
181	34.	40.	31.	26.	47.	34.	44.	54.	47.	57.
191	65.	50.	58.	69.	61.	62.	70.	64.	77.	83.
201	83.	103.	83.	93.	110.	98.	103.	113.	110.	126.
211	128.	131.	147.	139.	147.	171.	174.	163.	171.	210.
221	216.	226.	246.	261.	268.	277.	333.	322.	382.	410.
231	474.	534.	534.	560.	642.	771.	864.	928.	1050.	1149.
241	1300.	1484.	1561.	1822.	2044.	2171.	2460.	2697.	2970.	3156.
251	3331.	3523.	3840.	3799.	3980.	4077.	3909.	3810.	3611.	3390.
261	3188.	2792.	2534.	2112.	1756.	1529.	1198.	975.	785.	648.
271	528.	369.	328.	277.	201.	154.	124.	101.	87.	80.
281	45.	37.	28.	31.	36.	31.	28.	28.	28.	39.
291	31.	44.	54.	52.	54.	66.	64.	58.	69.	57.
301	72.	66.	75.	63.	65.	46.	43.	46.	46.	30.
311	35.	18.	23.	20.	18.	11.	12.	7.	6.	6.
321	1.	2.	1.	3.	1.	1.	1.	0.	1.	0.
331	0.	0.	1.	1.	0.	0.	0.	2.	1.	1.
341	0.	1.	1.	1.	2.	0.	1.	1.	0.	2.
351	4.	2.	0.	1.	1.	2.	3.	2.	3.	2.
361	2.	4.	4.	3.	6.	2.	8.	1.	1.	7.
371	4.	1.	4.	4.	7.	2.	1.	0.	6.	0.
381	1.	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.	1.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.
431	0.	0.	1.	0.	0.	1.	0.	0.	0.	1.
441	0.	0.	1.	0.	0.	1.	0.	1.	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.	1.	0.	1.	0.	3.	1.	1.
481	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
511	0.	0.								

WHC-SD-WM-DP-148, REV. 0

LABCORE Completed Worklist Report for Worklist# 2499

Analyst: rwk **Instrument:** PU01 **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	LIQUID	1.28E-01	1.31E-1	102.340	% Recovery
1	STD		0		@PU23901 PU23901E	LIQUID	1.00	2.81E+00	2.810	% Ct. Error
1	STD		0		@PU23901 PU23901T	LIQUID	100	4.48E+01	44.800	% Recovery
2	BLNK		0		@PU23901 PU23901	LIQUID	1	<1.59E-5		uCi/mL
2	BLNK		0		@PU23901 PU23901T	LIQUID	100	3.85E+01	38.500	% Recovery
2	BLNK		0		@PU23901 PU23901E	LIQUID	1.00	1.00E+02	100.000	% Ct. Error
3	SAMPLE	S95T002411	0		@PU23901 PU23901	LIQUID	N/A	8.16E-05	1.170e-005	uCi/mL
3	SAMPLE	S95T002411	0		@PU23901 PU23901T	LIQUID	N/A	7.43E+01	1.000e-007	% Recovery
3	SAMPLE	S95T002411	0		@PU23901 PU23901E	LIQUID	N/A	3.17E+00	0.000	% Ct. Error
4	DUP	S95T002411	0		@PU23901 PU23901	LIQUID	8.16E-5	8.25E-5	1.100	RPD
4	DUP	S95T002411	0		@PU23901 PU23901T	LIQUID	100	7.62E+01	76.200	% Recovery
4	DUP	S95T002411	0		@PU23901 PU23901E	LIQUID	1.00	2.80E+00	2.800	% Ct. Error
5	SAMPLE	S95T002412	0		@PU23901 PU23901	LIQUID	N/A	4.96E-05	8.670e-006	uCi/mL
5	SAMPLE	S95T002412	0		@PU23901 PU23901T	LIQUID	N/A	8.85E+01	1.000e-007	% Recovery
5	SAMPLE	S95T002412	0		@PU23901 PU23901E	LIQUID	N/A	3.44E+00	0.000	% Ct. Error
6	DUP	S95T002412	0		@PU23901 PU23901	LIQUID	4.96E-5	4.80E-5	3.280	RPD
6	DUP	S95T002412	0		@PU23901 PU23901T	LIQUID	100	1.01E+02	101.000	% Recovery
6	DUP	S95T002412	0		@PU23901 PU23901E	LIQUID	1.00	3.26E+00	3.260	% Ct. Error
7	SAMPLE	S95T002413	0		@PU23901 PU23901	LIQUID	N/A	4.86E-05	1.410e-005	uCi/mL
7	SAMPLE	S95T002413	0		@PU23901 PU23901T	LIQUID	N/A	5.35E+01	1.000e-007	% Recovery
7	SAMPLE	S95T002413	0		@PU23901 PU23901E	LIQUID	N/A	4.47E+00	0.000	% Ct. Error
8	DUP	S95T002413	0		@PU23901 PU23901	LIQUID	4.86E-5	4.82E-5	0.830	RPD
8	DUP	S95T002413	0		@PU23901 PU23901T	LIQUID	100	8.07E+01	80.700	% Recovery
8	DUP	S95T002413	0		@PU23901 PU23901E	LIQUID	1.00	3.53E+00	3.530	% Ct. Error

Final page for worklist# 2499

Analyst Signature **Date** **Analyst Signature** **Date**

2 Oct 95

Reviewer Signature **Date**

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

LABCORE Data Entry Template for Worklist# 2499

Analyst: RK **Instrument:** PU01 _____ **Book#** 104843

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	LIQUID		
2	BLNK				@PU23901	LIQUID		
3	SAMPLE	S95T002411	0		@PU23901	LIQUID	95000135	AN-101 GRAB
		Analytes Requested: PU23901 , PU23901E, PU23901T						
4	DUP	S95T002411	0		@PU23901	LIQUID		
5	SAMPLE	S95T002412	0		@PU23901	LIQUID	95000135	AN-101 GRAB
		Analytes Requested: PU23901 , PU23901E, PU23901T						
6	DUP	S95T002412	0		@PU23901	LIQUID		
7	SAMPLE	S95T002413	0		@PU23901	LIQUID	95000135	AN-101 GRAB
		Analytes Requested: PU23901 , PU23901E, PU23901T						
8	DUP	S95T002413	0		@PU23901	LIQUID		

Final page for worklist # 2499

Rob King 9/29/95
Analyst Signature **Date**

M C Brel man 10/2/95
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

						STD
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)	0.439
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)	0.564
2499	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		3608
Test Code	DIGEST DILUTION FACTOR	DDF	1.000	AT COUNT TIME (MIN)		30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)	6.000
Matrix	DETECTOR NUMBER		1	PU 236 cpm		17.970
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm		0.000
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		23.070
95002646	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L		1.3090E+02
0	PU-238 TRACER VALUE (dpm/mL		0.000			
Sample Prep	STANDARD BOOK NO		104B43			
N/A	STANDARD VALUE in µCi/mL		0.128			

Sample #	
WRKLST#2499	
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
MCB	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
RWK	

v RESULTS v

Date Complete				DETECTION LEVELS in µCi/mL
10/02/95	Pu 239/240 µCi/mL		1.31E-01	
Analysis Date	Relative Counting Error	=	2.8%	
09/29/95				Pu 239/240
Analysis Time				1.55E-02
06:00 AM				
Sample Point				
AN-101 GRAB	Pu 236 Tracer Recovery	=	44.8%	

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

STANDARD WB1 REV 1.2 943127ML

WORKBOOK PAGE: BLANK2

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

						BLNK
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)	0.986
BLNK	SAMPLE VOLUME in mL	SS	0.500	PU 238 AEA FRAC	(C238)	0.000
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.000
2499	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		1403
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm (Bkg)		3.000
Matrix	DETECTOR NUMBER		2	PU 236 cpm		14.990
LIQUID	EFFICIENCY FACTOR	EFF	0.5000	PU 238 cpm		0.000
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm		0.000
95002646	TRACER PREPARATION VALUE (dpm/mL)		2265.00	AEA COUNT TIME		480
Rerun	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2239.50	Pu 239/240 µCi/L =	<	1.593E-02
0	PU-238 TRACER VALUE	(dpm/mL)	0.00			

Sample Prep
N/A
Sample #
WRKLST#2499
Instrument Code
AL10540
Prepared By
MCB
Chemist
LLF
Analyst
RWK
Date Complete
10/02/95
Analysis Date
09/29/95
Analysis Time
06:00 AM
Sample Point
AN-101 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		< 1.59E-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		< 1.59E-05		1.59E-05
Relative Counting Error	=	100.0%		Pu 238
Pu 236 Tracer Recovery	=	38.5%		1.59E-05

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist: [signature]	LLF	Date:	2 Oct 95

BLANK.WB1 REV 1.2 943127ML

WORKBOOK PAGE: SAM3

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

							SAMPLE
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC		(C236)	0.697
SAMPLE	SAMPLE VOLUME in mL	SS	0.500	PU 238 AEA FRAC		(C238)	0.049
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC		(C239)	0.282
2499	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			3699
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm		(Bkg)	4.000
Matrix	DETECTOR NUMBER		3	PU 236 cpm			27.600
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			1.920
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			11.160
95002646	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L			8.1629E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000				
Sample Prep							
N/A							
Sample #							
S95T002411							
Instrument Code							
AL10541							
Prepared By							
MCB							
Chemist							
LLF							
Analyst							
RWK							
Date Complete							
10/02/95							
Analysis Date							
09/29/95							
Analysis Time							
06:00 AM							
Sample Point							
AN-101 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		8.16E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	3.2%	
			Pu 239/240
Pu 238 µCimL		1.42E-05	1.17E-05
Relative Counting Error	=	6.7%	Pu 238
Pu 236 Tracer Recovery	=	74.3%	1.17E-05

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

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WORKBOOK PAGE: DUP4

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

							DUP
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC		(C236)	0.702
DUP	SAMPLE VOLUME in mL	SS	0.500	PU 238 AEA FRAC		(C238)	0.044
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC		(C239)	0.287
2499	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			3767
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm		(Bkg)	4.000
Matrix	DETECTOR NUMBER		3	PU 236 cpm			36.160
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			2.210
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			14.380
95002646	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L			8.2485E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000				
Sample Prep							
N/A							
Sample #							
S95T002411							
Instrument Code							
AL10541							
Prepared By							
MCB							
Chemist							
LLF							
Analyst							
RWK							
Date Complete							
10/02/95							
Analysis Date							
09/29/95							
Analysis Time							
06:00 AM							
Sample Point							
AN-101 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		8.25E-05		Pu 239/240
Relative Counting Error	=	2.8%		1.13E-05
Pu 238 µCimL		1.26E-05		Pu 238
Relative Counting Error	=	6.2%		1.13E-05
Pu 236 Tracer Recovery	=	76.2%		

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: SAM5

WHC-SD-WM-DP-148, REV. 0

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

							SAMPLE
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)		0.789
SAMPLE	SAMPLE VOLUME in mL	SS	0.500	PU 238 AEA FRAC	(C238)		0.057
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.194
2499	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			3946
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)		6.000
Matrix	DETECTOR NUMBER		1	PU 236 cpm			34.190
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			2.470
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			8.420
95002646	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L			4.9608E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000				
Sample Prep							
N/A							

Sample # S95T002412

Instrument Code AL10539

Prepared By MCB

Chemist LLF

Analyst RWK

Date Complete 10/02/95

Analysis Date 09/29/95

Analysis Time 06:00 AM

Sample Point AN-101 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		4.96E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	3.4%	
			Pu 239/240
Pu 238 µCimL		1.46E-05	8.67E-06
Relative Counting Error	=	5.9%	Pu 238
Pu 236 Tracer Recovery	=	88.5%	8.67E-06

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

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WORKBOOK PAGE: DUP6

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

							DUP
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)		0.794
DUP	SAMPLE VOLUME in mL	SS	0.500	PU 238 AEA FRAC	(C238)		0.058
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.189
2499	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			4355
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)		3.000
Matrix	DETECTOR NUMBER		2	PU 236 cpm			39.150
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			2.870
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			9.320
95002646	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2239.505	Pu 239/240 µCi/L			4.8025E-02
0	PU-238 TRACER VALUE	(dpm/mL)	0.000				
Sample Prep							
N/A							

Sample #: S95T002412
Instrument Code: AL10540
Prepared By: MCB
Chemist: LLF
Analyst: RWK
Date Complete: 10/02/95
Analysis Date: 09/29/95
Analysis Time: 06:00 AM
Sample Point: AN-101 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		4.80E-05	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	3.3%	
			Pu 239/240
Pu 238 µCimL		1.47E-05	7.62E-06
Relative Counting Error	=	5.5%	Pu 238
Pu 236 Tracer Recovery	=	100.8%	7.62E-06

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

WORKBOOK PAGE: SAM7

WHC-SD-WM-DP-148, REV. 0

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

							SAMPLE
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)		0.805
SAMPLE	SAMPLE VOLUME in mL	SS	0.500	PU 238 AEA FRAC	(C238)		0.053
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.194
2499	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2323
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)		3.000
Matrix	DETECTOR NUMBER		2	PU 236 cpm			20.660
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			1.370
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			4.970
95002646	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L			4.8622E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000				
Sample Prep							
N/A							
Sample #	Decay Time = Date Counted - Tracer Preparation Date						
S95T002413	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)						
AL10640	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)						
MCB	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						
10/02/95	Pu 239/240 µCi/mL		4.86E-05				DETECTION
Analysis Date	Relative Counting Error	=	4.5%				LEVELS
09/29/95							in µCi/mL
Analysis Time	NOTE: Pu 238 Result is a LESS THAN Value.						Pu 239/240
06:00 AM	Pu 238 µCimL		< 1.41E-05				1.41E-05
Sample Point	Relative Counting Error	=	7.9%				Pu 238
AN-101 GRAB	Pu 236 Tracer Recovery	=	53.5%				1.41E-05

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

286

WORKBOOK PAGE: DUP8

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

							DUP
Type	DATE COUNTED		SEP-29-95	PU 236 AEA FRAC	(C236)		0.782
DUP	SAMPLE VOLUME in mL	SS	0.500	PU 238 AEA FRAC	(C238)		0.061
Work List	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)		0.187
2499	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			3585
Test Code	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23901	TRACER BOOK NO		117B43	BACKGROUND in cpm	(Bkg)		4.000
Matrix	DETECTOR NUMBER		3	PU 236 cpm			33.280
LIQUID	EFFICIENCY FACTOR	EFF	0.500	PU 238 cpm			2.610
Batch Number	TRACER PREPARATION DATE		09/12/95	PU 239 cpm			7.960
95002646	TRACER PREPARATION VALUE (dpm/mL)		2265.000	AEA COUNT TIME			480
Rerun	PU-236 DECAY CORR'D VALUE (dpm/mL)		2239.505	Pu 239/240 µCi/L			4.8246E-02
0	PU-238 TRACER VALUE (dpm/mL)		0.000				

Sample Prep: N/A

Sample #: S95T002413

Instrument Code: AL10541

Prepared By: MCB

Chemist: LLF

Analyst: RWK

Date Complete: 10/02/95

Analysis Date: 09/29/95

Analysis Time: 06:00 AM

Sample Point: AN-101 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		4.82E-05		Pu 239/240
Relative Counting Error	=	3.5%		9.60E-06
Pu 238 µCimL		1.57E-05		Pu 238
Relative Counting Error	=	5.8%		9.60E-06
Pu 236 Tracer Recovery	=	80.7%		

Analyst:	RWK	Date:	02-Oct-95
Signature of Chemist:	LLF	Date:	2 Oct 95

SAMPLE.WB1 REV 1.2 943127ML

Raymond 9.29.95

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#2499
File ID: 19a1915.CNF

Counted on: 9/29/95 @11:50
Detector: AEA19
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	680.1	680.1	361.917	361.917	10.000	3.014	5.000	1.389
2?	10.8	10.8	304.602	304.513	12.000	2.421	6.000	1.094
3	972.6	972.6	230.039	230.039	12.000	3.740	6.000	2.416

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	0.439	5.755	5.750	0.005	0.01	17.97	2.1	1002.2	0.451E-03
2		????		5.486			0.28	17.9		
3	Pu239	0.564	5.147	5.143	0.004	0.02	23.07	1.9	1260.7	0.568E-03
	Pu240		5.144	5.143	0.001				1260.7	0.568E-03
Totals:		1.003	<--valid peaks only-->				41.04			

DETECTOR CALIBRATION

Energy(MEV) = 4.085 + (0.0046)*Channel
Energy range (MeV): 4.085 TO 6.440
Efficiency = 0.0183 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	19644.0	100.000
Smoothed	19644.0	100.000
Composite fit	19838.9	100.992
Residuals	-194.9	-0.992

Analyzed by: _____
ALJ

Spectrum 19a1915.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6405.2

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WHC-SD-WM-DP-148, REV. 0

Raw Data Dump for AEA Spectrum: 19a1915.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.
21	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
31	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.
41	0.	0.	0.	0.	0.	0.	0.	1.	1.	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.	1.	0.	0.	0.	0.	1.	0.	1.
91	0.	1.	0.	1.	1.	0.	0.	0.	0.	0.
101	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
121	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.
131	0.	1.	0.	0.	2.	0.	1.	0.	0.	0.
141	1.	0.	0.	0.	1.	2.	1.	1.	1.	0.
151	0.	2.	0.	0.	0.	2.	1.	0.	0.	1.
161	0.	0.	0.	0.	0.	0.	1.	0.	0.	2.
171	0.	0.	1.	0.	3.	2.	0.	0.	1.	1.
181	0.	0.	1.	0.	0.	0.	2.	1.	1.	0.
191	1.	0.	1.	2.	1.	1.	3.	2.	6.	1.
201	3.	1.	0.	4.	4.	4.	4.	7.	10.	18.
211	29.	41.	43.	55.	67.	102.	110.	152.	198.	246.
221	294.	322.	353.	466.	543.	682.	809.	997.	1074.	1126.
231	1125.	970.	640.	366.	132.	55.	17.	4.	0.	0.
241	0.	0.	1.	0.	0.	1.	0.	2.	0.	0.
251	0.	0.	1.	1.	1.	1.	2.	0.	0.	1.
261	0.	0.	1.	0.	0.	1.	0.	0.	1.	0.
271	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.
281	0.	0.	1.	0.	0.	0.	0.	2.	3.	1.
291	4.	0.	1.	4.	10.	9.	3.	5.	8.	6.
301	8.	9.	7.	17.	11.	11.	10.	5.	2.	0.
311	0.	0.	1.	0.	0.	0.	0.	3.	1.	0.
321	0.	1.	1.	1.	0.	1.	3.	5.	2.	0.
331	2.	2.	1.	7.	1.	3.	3.	5.	8.	9.
341	12.	19.	36.	41.	57.	59.	91.	139.	178.	207.
351	263.	328.	321.	354.	336.	335.	352.	460.	562.	617.
361	742.	813.	796.	640.	362.	130.	27.	6.	1.	0.
371	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	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.	1.	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 9.29.95

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#2499-BL
File ID: 20a2020.CNF

Counted on: 9/29/95 @11:50
Detector: AEA20
Geometry number: 1
Count time: 28807. 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	692.7	692.7	362.937	362.937	10.000	2.454	5.000	1.502

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	0.986	5.755	5.751	0.004	0.01	14.99	2.3	152.7	0.688E-04
Totals:		0.986	<--valid peaks only-->				14.99			

DETECTOR CALIBRATION
Energy(MEV) = 4.081 + (0.0046)*Channel
Energy range (MeV): 4.081 TO 6.437
Efficiency = 0.1002 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	7297.0	100.000
Smoothed	7297.0	99.999
Composite fit	7198.0	98.643
Residuals	99.0	1.357

Analyzed by: _____
ALJ

Spectrum 20a2020.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 3876.7

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 1
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Raw Data Dump for AEA Spectrum: 20a2020.CNF

1	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
11	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
31	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	1.	1.	0.	1.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
81	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
101	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.
111	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
121	0.	0.	0.	0.	0.	0.	2.	0.	1.	0.
131	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
141	0.	0.	0.	0.	1.	1.	0.	1.	0.	1.
151	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
161	0.	0.	0.	0.	0.	2.	0.	0.	1.	0.
171	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
181	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
191	0.	1.	0.	0.	0.	0.	0.	0.	1.	1.
201	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
211	0.	0.	0.	0.	1.	0.	0.	1.	0.	4.
221	0.	2.	2.	1.	1.	0.	2.	1.	1.	2.
231	2.	2.	2.	1.	0.	1.	0.	0.	0.	0.
241	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
251	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
261	0.	0.	1.	0.	2.	0.	0.	0.	1.	0.
271	0.	2.	0.	0.	0.	0.	0.	1.	0.	1.
281	1.	0.	1.	1.	0.	0.	1.	2.	1.	0.
291	0.	1.	1.	0.	1.	1.	0.	2.	3.	0.
301	4.	0.	4.	3.	4.	3.	0.	1.	1.	1.
311	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
321	0.	0.	0.	0.	0.	1.	0.	1.	2.	1.
331	4.	1.	1.	2.	1.	1.	1.	1.	7.	5.
341	5.	6.	8.	13.	17.	26.	36.	53.	73.	113.
351	151.	206.	311.	272.	268.	212.	238.	272.	324.	444.
361	635.	756.	907.	838.	592.	287.	74.	13.	2.	1.
371	1.	1.	2.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	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.	1.	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 9.29.95

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
S95T2411-SAM
File ID: 21a2128.CNF

Counted on: 9/29/95 @11:51
Detector: AEA21
Geometry number: 1
Count time: 28810. 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	882.7	882.7	359.951	359.951	12.000	3.975	6.000	1.514
2	64.0	64.0	302.065	301.976	12.000	3.826	6.000	1.539
3	397.9	397.9	227.949	227.949	12.000	4.876	6.000	2.537

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	0.697	5.755	5.749	0.006	0.02	27.60	1.7	258.4	0.116E-03
2	Pu238	0.049	5.487	5.482	0.005	0.02	1.92	6.7	24.5	0.110E-04
	Am241		5.479	5.482	-.003				18.8	0.846E-05
3	Pu239	0.282	5.147	5.141	0.006	0.02	11.16	2.7	102.4	0.461E-04
	Pu240		5.144	5.141	0.003				102.4	0.461E-04
Totals:		1.027	<--valid peaks only-->				40.68			

DETECTOR CALIBRATION
Energy(MEV) = 4.093 + (0.0046)*Channel
Energy range (MeV): 4.093 TO 6.448
Efficiency = 0.1090 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	19013.0	100.000
Smoothed	19012.8	99.999
Composite fit	19532.8	102.734
Residuals	-519.8	-2.734

Analyzed by: ALJ

Spectrum 21a2128.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 5568.5

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Raw Data Dump for AEA Spectrum: 21a2128.CNF

1	0.	0.	0.	0.	0.	0.	1.	0.	1.	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.	1.	0.
41	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
51	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
71	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	3.	0.	0.	0.
111	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.
121	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
131	0.	1.	0.	0.	0.	0.	1.	1.	1.	0.
141	0.	0.	0.	1.	1.	0.	2.	2.	1.	1.
151	0.	1.	1.	0.	1.	1.	0.	0.	0.	1.
161	2.	0.	1.	1.	1.	0.	1.	0.	0.	0.
171	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
181	0.	0.	1.	1.	0.	2.	0.	1.	0.	0.
191	2.	1.	2.	2.	2.	2.	1.	1.	5.	6.
201	2.	3.	9.	5.	10.	14.	10.	18.	18.	22.
211	35.	47.	43.	69.	79.	99.	118.	122.	160.	180.
221	198.	248.	270.	315.	375.	414.	424.	455.	423.	395.
231	297.	221.	98.	57.	21.	8.	2.	0.	0.	0.
241	0.	0.	0.	1.	1.	0.	0.	1.	0.	0.
251	0.	2.	1.	0.	1.	1.	1.	0.	0.	0.
261	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.
271	1.	0.	0.	3.	0.	0.	0.	1.	1.	0.
281	3.	4.	9.	5.	9.	14.	13.	10.	13.	17.
291	32.	29.	30.	43.	43.	47.	49.	60.	64.	60.
301	72.	77.	65.	64.	65.	37.	9.	0.	1.	1.
311	1.	0.	0.	1.	0.	0.	0.	4.	0.	2.
321	3.	1.	0.	2.	3.	3.	6.	4.	2.	2.
331	10.	11.	13.	10.	15.	13.	28.	36.	54.	62.
341	66.	75.	109.	156.	195.	224.	268.	360.	376.	451.
351	584.	576.	578.	578.	592.	686.	717.	875.	928.	1011.
361	969.	883.	608.	372.	145.	24.	1.	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.	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 9.29.95

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
S95T2411-DUP
File ID: 22a2277.CNF

Counted on: 9/29/95 @11:52
Detector: AEA22
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	1093.8	1093.8	362.142	362.142	12.000	3.760	6.000	1.343
2	75.5	75.5	303.338	303.246	12.000	3.334	6.000	1.340
3	485.8	485.8	228.778	228.778	12.000	5.011	6.000	2.352

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	0.702	5.755	5.761	-.006	0.02	35.16	1.5	4429.5	0.200E-02
	Cm243		5.779	5.761	0.018				5946.5	0.268E-02
2	Pu238	0.044	5.487	5.490	-.003	0.02	2.21	6.3	378.7	0.171E-03
	Am241		5.479	5.490	-.011				290.1	0.131E-03
3	Pu239	0.287	5.147	5.147	0.000	0.02	14.38	2.4	1774.8	0.799E-03
	Pu240		5.144	5.147	-.003				1774.8	0.799E-03
		---					---			
Totals:		1.033	<--valid peaks only-->				51.75			

DETECTOR CALIBRATION
Energy(MEV) = 4.095 + (0.0046)*Channel
Energy range (MeV): 4.095 TO 6.450
Efficiency = 0.0081 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	24057.0	100.000
Smoothed	24056.3	99.997
Composite fit	24842.4	103.265
Residuals	-785.4	-3.265

Analyzed by: ALJ

WHC-SD-WM-DP-148, REV. 0

Spectrum 22a2277.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: *6319.8*

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 3
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2
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1
 1
    1
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Raw Data Dump for AEA Spectrum: 22a2277.CNF

1	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
11	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.
51	0.	0.	1.	0.	0.	1.	0.	0.	0.	0.
61	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.
71	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
91	0.	2.	0.	0.	0.	1.	0.	1.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
111	1.	0.	1.	0.	0.	0.	0.	0.	1.	1.
121	0.	2.	1.	1.	0.	1.	0.	1.	1.	0.
131	0.	0.	0.	1.	0.	1.	1.	0.	0.	0.
141	1.	0.	1.	1.	2.	1.	0.	2.	2.	2.
151	0.	2.	1.	0.	3.	0.	0.	0.	1.	0.
161	0.	1.	0.	0.	1.	1.	1.	0.	1.	0.
171	0.	1.	0.	0.	1.	1.	0.	0.	0.	0.
181	1.	1.	2.	0.	0.	2.	0.	1.	1.	0.
191	0.	1.	0.	1.	0.	4.	3.	2.	2.	4.
201	4.	7.	3.	8.	12.	16.	18.	30.	14.	30.
211	41.	52.	65.	82.	91.	100.	153.	141.	193.	218.
221	263.	291.	310.	376.	462.	404.	514.	526.	558.	482.
231	490.	374.	237.	115.	65.	13.	4.	2.	0.	0.
241	1.	1.	1.	0.	0.	1.	1.	1.	3.	3.
251	3.	4.	3.	0.	3.	3.	3.	4.	2.	0.
261	0.	0.	0.	0.	2.	0.	0.	0.	2.	1.
271	2.	1.	1.	0.	0.	0.	2.	3.	2.	1.
281	2.	1.	1.	6.	6.	9.	13.	12.	20.	18.
291	18.	34.	36.	55.	40.	45.	50.	56.	61.	76.
301	64.	79.	100.	76.	76.	82.	39.	16.	5.	0.
311	1.	0.	2.	2.	1.	0.	2.	1.	1.	1.
321	3.	2.	1.	2.	5.	3.	3.	4.	5.	6.
331	7.	12.	10.	11.	11.	18.	23.	32.	33.	44.
341	67.	74.	90.	116.	153.	192.	276.	283.	340.	467.
351	506.	618.	676.	755.	715.	731.	712.	854.	933.	1045.
361	1121.	1226.	1234.	1147.	842.	455.	146.	28.	4.	1.
371	1.	2.	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.	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.								

Raymond 9-29-95

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
S95T2412-SAM
File ID: 23a2378.CNF

Counted on: 9/29/95 @11:52
Detector: AEA23
Geometry number: 1
Count time: 28809. 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	1135.4	1135.4	361.722	361.722	10.000	3.456	5.000	1.337
2	84.8	84.8	303.256	303.204	12.000	3.297	6.000	1.325
3	303.1	303.1	229.269	229.269	12.000	4.164	6.000	2.016

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	0.789	5.755	5.755	0.000	0.02	34.19	1.5	2684.0	0.121E-02
2	Pu238	0.057	5.487	5.486	0.001	0.02	2.47	5.9	264.3	0.119E-03
	Am241		5.479	5.486	-.007				202.4	0.912E-04
3	Pu239	0.194	5.147	5.145	0.002	0.02	8.42	3.1	647.5	0.292E-03
	Pu240		5.144	5.145	-.001				647.5	0.292E-03
		---					---			
Totals:		1.040	<--valid peaks only-->				45.08			

DETECTOR CALIBRATION
Energy(MEV) = 4.091 + (0.0046)*Channel
Energy range (MeV): 4.091 TO 6.446
Efficiency = 0.0130 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	20808.0	100.000
Smoothed	20808.0	100.000
Composite fit	21647.5	104.034
Residuals	-839.5	-4.034

Analyzed by: ALJ

WHC-SD-WM-DP-148, REV. 0

Spectrum 23a2378.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6055.4

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3
..3
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......................3.
.....3
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2
.2.
.....2
.2.
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 1
   1
....       1
...........................1
.......................................................................1...
.......................................................................1
..1..
```

Raw Data Dump for AEA Spectrum: 23a2378.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
31	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	1.	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.	1.	0.	0.	0.
71	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
81	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.
91	1.	1.	0.	0.	0.	0.	0.	1.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	0.	1.	0.	0.	0.	0.	2.	0.	0.	0.
121	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.
131	0.	0.	0.	0.	2.	0.	0.	0.	1.	1.
141	1.	0.	0.	2.	3.	4.	2.	1.	0.	1.
151	0.	0.	1.	1.	0.	1.	1.	1.	1.	1.
161	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
171	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
181	1.	1.	0.	0.	0.	0.	1.	1.	1.	0.
191	0.	1.	0.	1.	1.	2.	1.	1.	3.	2.
201	3.	3.	4.	3.	5.	10.	3.	10.	8.	13.
211	29.	15.	34.	45.	48.	53.	58.	97.	118.	110.
221	148.	154.	191.	217.	220.	241.	288.	301.	356.	346.
231	311.	238.	140.	81.	37.	15.	2.	0.	0.	1.
241	2.	2.	0.	0.	2.	0.	0.	1.	0.	1.
251	2.	1.	3.	2.	1.	0.	3.	2.	1.	0.
261	1.	0.	0.	0.	0.	1.	1.	2.	1.	0.
271	1.	0.	1.	0.	0.	2.	2.	1.	1.	1.
281	1.	4.	4.	3.	1.	15.	14.	11.	17.	23.
291	26.	33.	48.	49.	54.	54.	54.	58.	64.	77.
301	80.	82.	108.	88.	92.	72.	41.	13.	4.	0.
311	0.	0.	2.	0.	0.	2.	2.	0.	0.	4.
321	1.	1.	4.	3.	4.	1.	4.	6.	2.	9.
331	6.	3.	7.	16.	14.	19.	26.	18.	29.	34.
341	51.	60.	72.	100.	132.	191.	236.	275.	392.	458.
351	535.	627.	642.	707.	621.	670.	755.	878.	996.	1124.
361	1210.	1306.	1268.	1064.	679.	240.	38.	11.	0.	0.
371	1.	1.	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	1.	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.	1.	0.	0.	0.
431	0.	0.	0.	0.	1.	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 9.29.95

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
S95T2412-DUP
File ID: 24a2467.CNF

Counted on: 9/29/95 @11:53
Detector: AEA24
Geometry number: 1
Count time: 28807. 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	1255.9	1255.9	361.613	361.613	10.000	3.705	5.000	1.385
2	95.9	95.9	303.776	303.671	10.000	3.189	5.000	1.214
3	325.8	325.8	229.725	229.725	12.000	4.727	6.000	2.308

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	0.794	5.755	5.742	0.013	0.02	39.15	1.4	1997.7	0.900E-03
2	Pu238	0.058	5.487	5.476	0.011	0.01	2.87	5.5	199.4	0.898E-04
	Am241		5.479	5.476	0.003				152.7	0.688E-04
3	Pu239	0.189	5.147	5.136	0.011	0.02	9.32	2.9	466.0	0.210E-03
	Pu240		5.144	5.136	0.008				466.0	0.210E-03
Totals:		1.041	<--valid peaks only-->				51.35			

DETECTOR CALIBRATION
Energy(MEV) = 4.079 + (0.0046)*Channel
Energy range (MeV): 4.079 TO 6.434
Efficiency = 0.0200 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	23673.0	100.000
Smoothed	23673.0	100.000
Composite fit	24651.8	104.135
Residuals	-978.8	-4.135

Analyzed by: _____
ALJ

WHC-SD-WM-DP-148, REV. 0

Spectrum 24a2467.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6968.3

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3
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2
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1
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.........................................................................1
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Raw Data Dump for AEA Spectrum: 24a2467.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
21	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
41	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
71	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
81	1.	0.	0.	0.	0.	0.	1.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.
101	0.	1.	0.	0.	0.	0.	1.	1.	0.	0.
111	0.	0.	1.	0.	2.	0.	0.	2.	0.	0.
121	1.	0.	0.	0.	1.	1.	0.	0.	0.	0.
131	0.	1.	0.	0.	0.	0.	0.	1.	1.	3.
141	0.	1.	0.	0.	0.	2.	1.	0.	3.	4.
151	2.	1.	1.	0.	1.	2.	0.	1.	0.	1.
161	2.	0.	0.	0.	0.	0.	1.	1.	0.	0.
171	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
181	0.	0.	2.	0.	1.	0.	0.	0.	0.	1.
191	0.	0.	0.	1.	3.	3.	1.	3.	0.	2.
201	2.	1.	2.	3.	5.	6.	5.	5.	12.	17.
211	21.	25.	27.	56.	44.	52.	68.	73.	107.	122.
221	140.	175.	175.	229.	256.	256.	320.	330.	367.	359.
231	344.	334.	213.	137.	64.	42.	5.	2.	0.	0.
241	0.	0.	0.	2.	2.	0.	2.	2.	2.	0.
251	2.	2.	1.	1.	5.	2.	5.	4.	3.	4.
261	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.
271	1.	0.	0.	4.	0.	1.	2.	2.	3.	2.
281	4.	3.	6.	9.	7.	9.	18.	17.	28.	27.
291	22.	27.	40.	38.	63.	69.	74.	67.	55.	82.
301	105.	95.	99.	117.	98.	109.	58.	26.	5.	1.
311	3.	0.	2.	0.	1.	2.	3.	1.	1.	2.
321	3.	2.	4.	5.	2.	1.	3.	4.	7.	4.
331	14.	7.	12.	16.	14.	19.	25.	29.	35.	55.
341	61.	93.	119.	151.	169.	207.	263.	345.	408.	459.
351	585.	690.	791.	829.	786.	824.	865.	998.	1121.	1272.
361	1366.	1421.	1365.	1190.	745.	291.	56.	9.	3.	1.
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.								

Raymond 9.29.95

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
S95T2413-SAM
File ID: 25a2570.CNF

Counted on: 9/29/95 @11:54
Detector: AEA25
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	553.4	553.4	360.403	360.403	10.000	4.449	5.000	1.318
2	41.4	41.4	302.351	302.121	12.000	3.585	6.000	1.210
3	150.1	150.1	228.135	228.134	14.000	6.004	7.000	2.453

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	0.805	5.755	5.747	0.008	0.02	20.66	2.0	1121.4	0.505E-03
2	Pu238	0.053	5.487	5.479	0.008	0.02	1.37	8.6	101.0	0.455E-04
	Am241		5.479	5.479	0.000				77.4	0.349E-04
3	Pu239	0.194	5.147	5.139	0.008	0.03	4.97	4.0	264.6	0.119E-03
	Pu240		5.144	5.139	0.005				264.6	0.119E-03
		---					---			
Totals:		1.052	<--valid peaks only-->				27.00			

DETECTOR CALIBRATION

Energy(MEV) = 4.089 + (0.0046)*Channel
Energy range (MeV): 4.089 TO 6.444
Efficiency = 0.0188 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	12322.0	100.000
Smoothed	12322.5	100.004
Composite fit	12961.5	105.190
Residuals	-639.5	-5.190

Analyzed by: ALJ

Spectrum 25a2570.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 3634.8

```
3
...3
...........3.
....................3
....3


2
.2.
....2.
2.
 1
.  1
...     1
..........       1
...............................1..
.......................................................................1....
.............................................1
.1.
```

Raw Data Dump for AEA Spectrum: 25a2570.CNF

1	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
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.	0.	0.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
111	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
121	0.	0.	0.	0.	1.	0.	0.	1.	0.	0.
131	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
141	0.	2.	1.	2.	0.	3.	2.	1.	2.	1.
151	0.	1.	0.	1.	0.	2.	0.	0.	0.	0.
161	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
171	0.	0.	0.	1.	0.	2.	0.	0.	0.	0.
181	0.	0.	0.	0.	0.	1.	0.	1.	2.	0.
191	3.	1.	5.	1.	3.	5.	1.	8.	4.	2.
201	7.	6.	5.	5.	10.	10.	16.	11.	15.	20.
211	25.	24.	27.	28.	44.	46.	56.	67.	69.	85.
221	104.	116.	116.	115.	139.	164.	146.	163.	170.	145.
231	130.	102.	67.	41.	18.	12.	2.	1.	0.	0.
241	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
251	0.	1.	0.	1.	0.	0.	2.	1.	1.	1.
261	2.	0.	1.	1.	0.	0.	0.	2.	0.	1.
271	2.	2.	1.	3.	1.	2.	3.	5.	4.	2.
281	3.	3.	6.	7.	11.	10.	9.	15.	20.	18.
291	20.	24.	29.	31.	37.	27.	31.	39.	35.	44.
301	52.	55.	44.	51.	39.	41.	18.	2.	2.	1.
311	1.	1.	1.	2.	4.	4.	3.	1.	4.	3.
321	9.	2.	8.	13.	10.	12.	5.	7.	14.	14.
331	25.	22.	20.	30.	32.	44.	44.	48.	50.	68.
341	73.	92.	96.	141.	148.	174.	197.	244.	274.	326.
351	338.	381.	412.	413.	426.	455.	505.	515.	546.	576.
361	624.	585.	479.	369.	195.	60.	10.	1.	0.	0.
371	2.	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.								

Raymond 9.29.95

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
S95T2413-DUP
File ID: 26a2673.CNF

Counted on: 9/29/95 @11:55
Detector: AEA26
Geometry number: 1
Count time: 28807. 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	1101.5	1101.5	362.198	362.198	12.000	3.497	6.000	1.351
2	86.7	86.7	303.956	303.865	10.000	3.073	5.000	1.150
3	269.9	269.9	229.055	229.054	12.000	4.960	6.000	2.331

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	0.782	5.755	5.768	-.013	0.02	33.28	1.6	342.7	0.154E-03
	Cm243		5.779	5.768	0.011				460.0	0.207E-03
2	Pu238	0.061	5.487	5.500	-.013	0.01	2.61	5.7	36.5	0.165E-04
	Am241		5.479	5.500	-.021				28.0	0.126E-04
3	Pu239	0.187	5.147	5.156	-.009	0.02	7.96	3.2	80.3	0.362E-04
	Pu240		5.144	5.156	-.012				80.3	0.362E-04
		---					---			
Totals:		1.030	<--valid peaks only-->				43.85			

DETECTOR CALIBRATION
Energy(MEV) = 4.102 + (0.0046)*Channel
Energy range (MeV): 4.102 TO 6.458
Efficiency = 0.0991 CPM/DPM

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	20443.0	100.000
Smoothed	20443.0	100.000
Composite fit	21051.7	102.978
Residuals	-608.7	-2.978

Analyzed by: ALJ

Spectrum 26a2673.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 6271.1

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3
..3
........3.
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.....3
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2
.2
....2.
..2
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1
   1
....     1
.......................1
.............................................................1....
.......................................................................1
...1..
```

Raw Data Dump for AEA Spectrum: 26a2673.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
21	1.	0.	0.	0.	0.	1.	0.	1.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
41	1.	0.	0.	2.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
71	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
81	1.	1.	0.	0.	0.	1.	0.	0.	0.	0.
91	1.	0.	0.	0.	1.	0.	1.	0.	0.	0.
101	1.	1.	0.	0.	0.	0.	1.	0.	1.	0.
111	2.	1.	0.	0.	1.	2.	0.	1.	0.	2.
121	0.	0.	0.	0.	0.	1.	1.	0.	0.	0.
131	0.	0.	1.	1.	0.	0.	0.	1.	0.	0.
141	0.	2.	1.	2.	1.	0.	3.	1.	2.	3.
151	2.	0.	0.	0.	1.	1.	0.	0.	1.	2.
161	0.	1.	0.	0.	0.	0.	1.	1.	0.	2.
171	1.	0.	0.	1.	2.	0.	1.	1.	0.	2.
181	1.	1.	0.	1.	0.	0.	0.	1.	1.	1.
191	1.	2.	0.	0.	1.	0.	0.	0.	2.	2.
201	4.	3.	2.	6.	2.	8.	7.	10.	17.	16.
211	22.	18.	36.	46.	49.	61.	75.	87.	100.	110.
221	126.	145.	179.	204.	242.	237.	270.	289.	289.	320.
231	254.	223.	146.	78.	48.	11.	4.	3.	1.	0.
241	0.	2.	0.	0.	1.	1.	1.	1.	0.	2.
251	0.	0.	1.	1.	3.	2.	1.	1.	1.	0.
261	1.	1.	1.	0.	2.	0.	1.	1.	0.	1.
271	1.	0.	0.	0.	1.	2.	1.	1.	3.	1.
281	3.	3.	4.	8.	11.	12.	13.	15.	17.	24.
291	21.	33.	32.	32.	56.	54.	62.	55.	64.	79.
301	86.	96.	75.	103.	92.	104.	51.	19.	7.	1.
311	2.	1.	4.	0.	0.	2.	1.	1.	2.	5.
321	1.	4.	3.	2.	1.	1.	2.	6.	4.	3.
331	7.	3.	8.	11.	10.	17.	16.	26.	26.	33.
341	55.	60.	70.	96.	132.	182.	220.	277.	344.	382.
351	482.	576.	590.	666.	698.	699.	699.	763.	914.	1066.
361	1079.	1264.	1278.	1139.	844.	421.	111.	19.	4.	1.
371	1.	1.	1.	2.	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.	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.	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.								

DISTRIBUTION SHEET

To Distribution	From Production Planning and Control	Page 1 of 2
		Date: 10/30/95
Project Title/Work Order WHC-SD-WM-DP-148, Rev. 0, "60-Day Waste Compatibility Safety Issue and Final Results for Tank 241-AN-101, Grab Samples 1AN-95-1, 1AN-95-2 and 1AN-95-3"		EDT NO.: EDT-613463
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY	
Pacific Northwest Laboratory				
J. R. Gormsen	K7-28		X	
S. J. Harris	K7-22	X		
K. L. Silvers	P7-27		X	
U.S. Department of Energy, RL				
C. A. Babel	S7-54	X		
Westinghouse Hanford Company				
J. N. Appel	G3-21		X	
H. Babad	S7-30	X		
T. M. Blaak	S5-13			
R. J. Cash	S7-15	X		
R. A. Esch	T6-06	X		
G. D. Forehand	S7-31		X	
C. E. Golberg	H5-49		X	
V. W. Hall	T6-03	X		
D. C. Hetzer	S6-31		X	
L. Jensen	T6-07	X		
G. D. Johnson	S7-15	X		
J. M. Jones	S5-13	X		
N. W. Kirch	R2-11	X		
M. J. Kupfer	H5-49	X		
E. J. Lipke	S7-14	X		
N. G. McDuffie	S7-15	X		
J. E. Meacham	S7-15	X		
P. M. Morant	H4-25	X		
K. L. Powell	T6-06		X	
A. D. Rice	T6-06	X		
D. A. Reynolds	R2-11	X		
B. C. Simpson	R2-12		X	
D. A. Turner	S7-15	X		
J. A. Voogd	H5-03		X	
Central Files	A3-88	2		
EDMC	H6-08	X		
LTIC	T6-03		X	
TCRC	R2-12	X		
TFIC (Tank Farm Information Center)	R1-20		X	

DISTRIBUTION SHEET

To Distribution	From Production Planning and Control	Page 1 of 2
		Date: 10/30/95
Project Title/Work Order WHC-SD-WM-DP-148, Rev. 0, "60-Day Waste Compatibility Safety Issue and Final Results for Tank 241-AN-101, Grab Samples 1AN-95-1, 1AN-95-2 and 1AN-95-3"		EDT NO.: EDT-613463
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY
Pacific Northwest Laboratory			
J. R. Gormsen	K7-28		X
S. J. Harris	K7-22	X	
K. L. Silvers	P7-27		X
U.S. Department of Energy, RL			
C. A. Babel	S7-54	X	
Westinghouse Hanford Company			
J. N. Appel	G3-21		X
H. Babad	S7-30	X	
T. M. Blaak	S5-13		
R. J. Cash	S7-15	X	
R. A. Esch	T6-06	X	
G. D. Forehand	S7-31		X
C. E. Golberg	H5-49		X
V. W. Hall	T6-03	X	
D. C. Hetzer	S6-31		X
L. Jensen	T6-07	X	
G. D. Johnson	S7-15	X	
J. M. Jones	S5-13	X	
N. W. Kirch	R2-11	X	
M. J. Kupfer	H5-49	X	
E. J. Lipke	S7-14	X	
N. G. McDuffie	S7-15	X	
J. E. Meacham	S7-15	X	
P. M. Morant	H4-25	X	
K. L. Powell	T6-06		X
A. D. Rice	T6-06	X	
D. A. Reynolds	R2-11	X	
B. C. Simpson	R2-12		X
D. A. Turner	S7-15	X	
J. A. Voogd	H5-03		X
Central Files	A3-88	2	
EDMC	H6-08	X	
LTIC	T6-03		X
TCRC	R2-12	X	
TFIC (Tank Farm Information Center)	R1-20		X

DISTRIBUTION SHEET

To Distribution	From Production Planning and Control	Page 2 of 2
		Date: 10/30/95
Project Title/Work Order WHC-SD-WM-DP-148, Rev. 0, 60-Day Waste Compatibility Safety Issue and Final Results for Tank 241-AN-101, Grab Samples 1AN-95-1, 1AN-95-2 and 1AN-95-3"		EDT NO.: EDT-613463
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY	
Washington State Department of Ecology Single-Shell Tank Unit Manager A. B. Stone	B5-18	X		
Environmental Protection Agency Single-Shell Tank Unit Manager D. R. Einan	B5-01	X		
U. S. Department of Energy Jim Poppiti 12800 Middlebrook Rd. Trevion II, EM-36 Germantown, MD 20874			X	
Los Alamos Technical Associates A. T. DiCenso 309 Bradley Blvd. Richland, WA 99352		X		

DISTRIBUTION SHEET

To Distribution	From Production Planning and Control	Page 2 of 2
		Date: 10/30/95
Project Title/Work Order WHC-SD-WM-DP-148, Rev. 0, 60-Day Waste Compatibility Safety Issue and Final Results for Tank 241-AN-101, Grab Samples 1AN-95-1, 1AN-95-2 and 1AN-95-3"		EDT NO.: EDT-613463
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY	
Washington State Department of Ecology Single-Shell Tank Unit Manager A. B. Stone	B5-18	X		
Environmental Protection Agency Single-Shell Tank Unit Manager D. R. Einan	B5-01	X		
U. S. Department of Energy Jim Poppiti 12800 Middlebrook Rd. Trevion II, EM-36 Germantown, MD 20874			X	
Los Alamos Technical Associates A. T. DiCenso 309 Bradley Blvd. Richland, WA 99352		X		