Gamma Spectrometer / Samples (Volume 1)

Supplemental Material, Technical Activity Supporting Documentation: Experimental Data for Gamma Spectrometer / Samples, Volume 1 (06/07/1992 through 07/14/1992)

Final Summary

MESA-3-GAMI

Sample #	MESA-ECP-3									
Weight(kg)	3.5692	Geometry	full			Counting Time(min)		5500		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	7677	6147	0.22875	0.00976	271.875	1.303	4.1	25.92	±	113.52
Th-234	62 kev									
62	9020	6666	0.3742	0.01249	295.9	3.023	5.7	8.75	±	33.74
(93Kev)										
93	11547	6016	0.95625	0.01996	271.625	7.122	6.8	2.86	±	12.53
Ra-226										
295	6646	4959	0.07625	0.00564	1267.625	4.933	18	7.27	±	3.16
352	6667	4211	0.0122	0.0029	2388.9	4.251	35	8.18	±	1.38
609	4877	2484	0.0102	0.0026	2336.9	2.305	43	12.01	±	2.09
183.7	9104	5593	0.46375	0.0139	960.375	13.15	3.3	11.27	±	7.44
Th-228	583 kev									
228	4363	2478	0.2004	0.00914	782.8	0.79	86	5.87	±	5.26
Ra-228										
338	5550	4394	0.08375	0.00591	695.375	3.898	12	7.57	±	8.11
911	3313	1722	0.2104	0.00936	433.8	1.511	29	5.04	±	10.96
964	4675	3567	0.17083	0.00844	168.435	1.623	21.8	2.43	±	21.78
Ra-226 weighted average =			9.14	±	1.07	U (ppm)=		12.23	±	1.43
Ra-228 weighted average =			6.33	±	6.25	Th (ppm) =		23.42	±	23.1
210PB/234Th av =			3.81	±	11.66	U (ppm)=		5.1	±	15.6
	63&92kev									
Th-0228& ra-228			6.06	±	4.02	Th (ppm) =		22.42	±	14.9

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	3.80607		average=	5.81
	weighted error=	11.6583		std.=	4.16

data	±	err	error^2	1/error^2	data/error^2
25.92	±	114	12996	7.69E-05	0.00199
8.75	±	33.7	1135.69	0.000881	0.0077
2.86	±	12.5	156.25	0.0064	0.0183
	±		0	0	0

Sample #	MESA-ECP-2									
Weight(kg)	3.53	Geometry	full				Counting Time(min)	4335		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	5878	4961	0.22875	0.00976	-74.63125	1.303	4.1	-9.13	±	#NUM!
Th-234	62 kev									
62	7346	5304	0.3742	0.01249	419.843	3.023	5.7	15.92	±	28.32
(93Kev)										
93	9043	4640	0.95625	0.01996	257.65625	7.122	6.8	3.48	±	12.86
Ra-226										
295	5257	3956	0.07625	0.00564	970.45625	4.933	18	7.14	±	3.62
352	5368	3157	0.0122	0.0029	2158.113	4.251	35	9.48	±	1.45
609	4092	1995	0.0102	0.0026	2052.783	2.305	43	13.53	±	2.23
183.7	7188	4468	0.46375	0.0139	709.64375	13.15	3.3	10.69	±	8.65
Th-228	583 kev									
228	3422	1965	0.2004	0.00914	588.266	0.79	86	5.66	±	6.07
Ra-228										
338	4416	3522	0.08375	0.00591	530.94375	3.898	12	7.42	±	9.28
911	2665	1343	0.2104	0.00936	409.916	1.511	29	6.11	±	11.27
964	3815	2890	0.17083	0.00844	184.45195	1.623	21.8	3.41	±	20.81

Ra-226 weighted average =	10.33	±	1.1423	U (ppm)=		13.83	±	1.53
Ra-228 weighted average =	6.52	±	6.7737	Th (ppm) =		24.13	±	25.1
210PB/234Th av =	5.61	±	11.709	U (ppm)=		7.505	±	15.7
63&92kev								

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	5.60665		average=	3.48
	weighted error=	11.7093		std.=	####

data	±	err	error^2	1/error^2	data/error^2
15.92	±	28.32	802.022	0.001247	0.01985
3.48	±	12.86	165.38	0.006047	0.02104
	±		0	0	0
	±		0	0	0

Sample #	NOPI-ECP-34									
Weight(kg)	3.9812	Geometry	full				Counting Time(min)	4446		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	6370	5114	0.22875	0.00976	238.9775	1.303	4.1	25.27	±	121.09
Th-234	62 kev									
62	7470	5479	0.3742	0.01249	327.3068	3.023	5.7	10.73	±	32.08
(93Kev)										
93	9430	5026	0.95625	0.01996	152.5125	7.122	6.8	1.78	±	16.72
Ra-226										
295	5061	4168	0.07625	0.00564	553.9925	4.933	18	3.52	±	4.78
352	5068	3321	0.0122	0.0029	1692.7588	4.251	35	6.43	±	1.63
609	3737	2129	0.0102	0.0026	1562.6508	2.305	43	8.91	±	2.55
183.7	7302	4544	0.46375	0.0139	696.1675	13.15	3.3	9.06	±	8.73
Th-228	583 kev									
228	3648	2110	0.2004	0.00914	647.0216	0.79	86	5.38	±	5.79
Ra-228										
338	4664	3602	0.08375	0.00591	689.6475	3.898	12	8.33	±	8.14
911	2877	1413	0.2104	0.00936	528.5616	1.511	29	6.81	±	9.93
964	4136	2895	0.17083	0.00844	481.48982	1.623	21.8	7.69	±	12.88

Ra-226 weighted average =		6.92	±	1.3052	U (ppm)=		9.265	±	1.75
Ra-228 weighted average =		7.71	±	5.6558	Th (ppm) =		28.54	±	20.9
210PB/234Th av =		3.69	±	14.827	U (ppm)=		4.942	±	19.8
63&92kev									
Ra-228 av&Th228 =		6.57	±	4.0459	Th (ppm) =		24.32	±	15

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		3.69188		average=	1.78				
	weighted error=		14.827		std.=	####				
data	±	err	error^2	1/error^2	data/error^2					
10.73	±	32.08	1029.13	0.000972	0.01043					
1.78	±	16.72	279.558	0.003577	0.00637					
	±		0	0	0					
	±		0	0	0					

NOP1-48

Sample #	22.5/10.4									
Weight(kg)	3.8036	Geometry	full			Counting Time(min)		592		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	5219	3766	0.22875	0.00976	1317.58	1.303	4.1	1095.30	±	51.57
Th-234	62 kev									
62	7950	4832	0.3742	0.01249	2896.4736	3.023	5.7	746.52	±	10.78
(93Kev)										
93	9251	3778	0.95625	0.01996	4906.9	7.122	6.8	449.97	±	2.95
Ra-226										
295	14937	1562	0.07625	0.00564	13329.86	4.933	18	666.69	±	0.98
352	23653	1336	0.0122	0.0029	22309.7776	4.251	35	665.92	±	0.45
609	15852	706	0.0102	0.0026	15139.9616	2.305	43	678.37	±	0.82
183.7	9662	2726	0.46375	0.0139	6661.46	13.15	3.3	681.73	±	2.82
Th-228	583 kev									
228	743	542	0.2004	0.00914	82.3632	0.79	86	5.38	±	16.22
Ra-228										
338	1463	1395	0.08375	0.00591	18.42	3.898	12	1.75	±	49.81
911	555	400	0.2104	0.00936	30.4432	1.511	29	3.09	±	41.36
964	1002	765	0.17083	0.00844	135.86864	1.623	21.8	17.05	±	24.25
Ra-226 weighted average =			668.73	±	0.3629	U (ppm)=		895.16	±	0.49
Ra-228 weighted average =			11.72	±	19.287	Th (ppm) =		43.36	±	71.4
210PB/234Th av =			472.53	±	2.84	U (ppm)=		632.53	±	3.8
	63&92kev									
Ra-228 av&Th228 =			8.01	±	12.41	Th (ppm) =		29.637	±	45.9

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	8.00947		average=	8.508
	weighted error=	12.4128		std.=	7.49

data	±	err	error^2	1/error^2	data/error^2
1.7488	±	49.812	2481.21	0.000403	0.0007
3.0854	±	41.361	1710.74	0.000585	0.0018
17.054	±	24.247	587.937	0.001701	0.02901
5.3838	±	16.218	263.036	0.003802	0.02047

NOP1-74

Sample #	20.1/7.7									
Weight(kg)	4.1689	Geometry	full				Counting Time(min)	79		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	471	377	0.22875	0.00976	75.92875	1.303	4.1	431.55	±	214.82
Th-234	62 kev									
62	813	430	0.3742	0.01249	353.4382	3.023	5.7	622.80	±	30.87
(93Kev)										
93	921	359	0.95625	0.01996	486.45625	7.122	6.8	304.99	±	9.36
Ra-226										
295	1301	163	0.07625	0.00564	1131.97625	4.933	18	387.08	±	3.35
352	2064	132	0.0122	0.0029	1931.0362	4.251	35	394.08	±	1.53
609	1349	70	0.0102	0.0026	1278.1942	2.305	43	391.57	±	2.82
183.7	911	293	0.46375	0.0139	581.36375	13.15	3.3	406.78	±	9.56
Th-228	583 kev									
228	106	58	0.2004	0.00914	32.1684	0.79	86	14.38	±	25.95
Ra-228										
338	155	144	0.08375	0.00591	4.38375	3.898	12	2.85	±	102.11
911	74	51	0.2104	0.00936	6.3784	1.511	29	4.42	±	90.36
964	106	85	0.17083	0.00844	7.50443	1.623	21.8	6.44	±	103.17
Ra-226 weighted average =			392.85	±	1.2375	U (ppm)=		525.87	±	1.66
Ra-228 weighted average =			4.54	±	56.58	Th (ppm) =		16.80	±	209
210PB/234Th av =			331.92	±	8.95	U (ppm)=		444.31	±	12
	63&92kev									
Ra-228 av&Th228 =			12.67	±	23.59	Th (ppm) =		46.879	±	87.3

Calculation of weighted average (up to 200 data sets can be in

	weighted average=	12.6678		average=	8.412
	weighted error=	23.5887		std.=	5.263

data	±	err	error^2	1/error^2	data/error^2
2.85	±	102.11	10425.8	9.59E-05	0.00027
4.4198	±	90.361	8165.13	0.000122	0.00054
6.4401	±	103.17	10644.7	9.39E-05	0.00061
14.377	±	25.951	673.472	0.001485	0.02135

W OP1-75

Sample #	19.65/7.55									
Weight(kg)	4.1683	Geometry	full				Counting Time(min)	134		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	537	375	0.22875	0.00976	131.3475	1.303	4.1	440.18	±	163.33
Th-234	62 kev									
62	691	454	0.3742	0.01249	186.8572	3.023	5.7	194.15	±	42.46
(93Kev)										
93	829	381	0.95625	0.01996	319.8625	7.122	6.8	118.25	±	11.55
Ra-226										
295	1329	208	0.07625	0.00564	1110.7825	4.933	18	223.97	±	3.38
352	1999	178	0.0122	0.0029	1819.3652	4.251	35	218.93	±	1.58
609	1160	88	0.0102	0.0026	1070.6332	2.305	43	193.39	±	3.08
183.7	873	255	0.46375	0.0139	555.8575	13.15	3.3	229.33	±	9.77
Th-228	583 kev									
228	152	82	0.2004	0.00914	43.1464	0.79	86	11.37	±	22.41
Ra-228										
338	206	163	0.08375	0.00591	31.7775	3.898	12	12.16	±	37.92
911	99	70	0.2104	0.00936	0.8064	1.511	29	0.33	±	254.13
964	150	106	0.17083	0.00844	21.10878	1.623	21.8	10.68	±	61.52
Ra-226 weighted average =			215.38	±	1.2867	U (ppm)=		288.31	±	1.72
Ra-228 weighted average =			11.57	±	32.023	Th (ppm) =		42.81	±	118
210PB/234Th av =			124.95	±	11.12	U (ppm)=		167.26	±	14.9
	63&92kev									
Ra-228 av&Th228 =			11.46	±	18.361	Th (ppm) =		42.413	±	67.9
Calculation of weighted average (up to 200 data sets can be in										
	weighted average=		124.947		average=	279.2				
	weighted error=		11.1192		std.=	227.6				
data	±	err	error^2	1/error^2	data/error^2					
194.15	±	42.46	1802.85	0.000555	0.10769					
118.25	±	11.55	133.403	0.007496	0.88642					
440.18	±	163.33	26676.7	3.75E-05	0.0165					
			0	0	0					

NOP1-100

Sample #	4.0/7.55									
Weight(kg)	4.2033	Geometry	full			Counting Time(min)		1370		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2142	1799	0.22875	0.00976	29.6125	1.303	4.1	9.63	±	343.98
Th-234	62 kev									
62	2652	1969	0.3742	0.01249	170.346	3.023	5.7	17.17	±	44.47
(93Kev)										
93	3290	1719	0.95625	0.01996	260.9375	7.122	6.8	9.36	±	12.78
Ra-226										
295	2332	1318	0.07625	0.00564	909.5375	4.933	18	17.79	±	3.73
352	2836	1068	0.0122	0.0029	1751.286	4.251	35	20.44	±	1.61
609	2026	683	0.0102	0.0026	1329.026	2.305	43	23.29	±	2.77
183.7	2419	1525	0.46375	0.0139	258.6625	13.15	3.3	10.35	±	14.33
Th-228	583 kev									
228	1182	699	0.2004	0.00914	208.452	0.79	86	5.33	±	10.19
Ra-228										
338	1523	1137	0.08375	0.00591	271.2625	3.898	12	10.07	±	12.98
911	931	381	0.2104	0.00936	261.752	1.511	29	10.37	±	14.11
964	1265	872	0.17083	0.00844	158.9629	1.623	21.8	7.80	±	22.42

Ra-226 weighted average =	20.66	±	1.3	U (ppm)=	27.655	±	1.74
Ra-228 weighted average =	9.84	±	8.79	Th (ppm) =	36.41	±	32.5
210PB/234Th av =	9.96	±	12.28	U (ppm)=	13.332	±	16.4
63&92kev							
Ra-228 av&Th228 =	7.91	±	6.66	Th (ppm) =	29.267	±	24.6

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	9.9554		average=	13.27						
	weighted error=	12.275		std.=	5.523						
data	±	err	error^2	1/error^2	data/error^2						
9.63	±	343.98	118322	8.45E-06	8.1E-05						
17.17	±	44.47	1977.58	0.000506	0.00868						
9.36	±	12.78	163.328	0.006123	0.05731						
			0	0	0						

NOP1-73

Sample #	20.65/7.55									
Weight(kg)	4.3369	Geometry	full			Counting Time(min)		201		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	954	716	0.22875	0.00976	192.02125	1.303	4.1	412.33	±	135.08
Th-234	62 kev									
62	1545	921	0.3742	0.01249	548.7858	3.023	5.7	365.35	±	24.77
(93Kev)										
93	2034	771	0.95625	0.01996	1070.79375	7.122	6.8	253.64	±	6.31
Ra-226										
295	2323	325	0.07625	0.00564	1982.67375	4.933	18	256.15	±	2.53
352	3758	274	0.0122	0.0029	3481.5478	4.251	35	268.43	±	1.14
609	2510	161	0.0102	0.0026	2346.9498	2.305	43	271.64	±	2.08
183.7	1909	1391	0.46375	0.0139	424.78625	13.15	3.3	112.29	±	11.18
Th-228	583 kev									
228	205	118	0.2004	0.00914	46.7196	0.79	86	7.89	±	21.53
Ra-228										
338	335	304	0.08375	0.00591	14.16625	3.898	12	3.47	±	56.80
911	149	97	0.2104	0.00936	9.7096	1.511	29	2.54	±	73.24
964	242	183	0.17083	0.00844	24.66317	1.623	21.8	8.00	±	56.91
Ra-226 weighted average =			266.15	±	0.9265	U (ppm)=		356.27	±	1.24
Ra-228 weighted average =			4.99	±	35.24	Th (ppm) =		18.46	±	130
210PB/234Th av =			260.76	±	6.11	U (ppm)=		349.05	±	8.18
	63&92kev									
Ra-228 av&Th228 =			7.10	±	18.38	Th (ppm) =		26.27	±	68

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	7.10125		average=	6.142
	weighted error=	18.3753		std.=	3.118

data	±	err	error^2	1/error^2	data/error^2
3.47	±	56.8	3226.26	0.00031	0.00108
2.5419	±	73.238	5363.81	0.000186	0.00047
7.9965	±	56.912	3238.93	0.000309	0.00247
7.8886	±	21.534	463.714	0.002157	0.01701

NOP1-78

Sample #	18.35/7.9									
Weight(kg)	4.3342	Geometry	full			Counting Time(min)		1164		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	3931	3023	0.22875	0.00976	641.735	1.303	4.1	238.10	±	73.89
Th-234	62 kev									
62	5400	3599	0.3742	0.01249	1365.4312	3.023	5.7	157.07	±	15.71
(93Kev)										
93	6066	2740	0.95625	0.01996	2212.925	7.122	6.8	90.57	±	4.39
Ra-226										
295	9350	1449	0.07625	0.00564	7812.245	4.933	18	174.39	±	1.27
352	13795	1355	0.0122	0.0029	12425.7992	4.251	35	165.54	±	0.60
609	8858	747	0.0102	0.0026	8099.1272	2.305	43	161.97	±	1.12
183.7	6361	2241	0.46375	0.0139	3580.195	13.15	3.3	163.53	±	3.85
Th-228	583 kev									
228	1053	684	0.2004	0.00914	135.7344	0.79	86	3.96	±	12.63
Ra-228										
338	1622	1255	0.08375	0.00591	269.515	3.898	12	11.42	±	13.02
911	749	480	0.2104	0.00936	24.0944	1.511	29	1.09	±	46.49
964	1216	886	0.17083	0.00844	131.15388	1.623	21.8	7.35	±	24.68
Ra-226 weighted average =			166.13	±	0.4844	U (ppm)=		222.38	±	0.65
Ra-228 weighted average =			9.99	±	11.18	Th (ppm) =		36.96	±	41.4
210PB/234Th av =			95.85	±	4.22	U (ppm)=		128.3	±	5.65
	63&92kev									
Ra-228 av&Th228 =			7.34	±	8.37	Th (ppm) =		27.158	±	31
Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		7.34065		average=	4.133				
	weighted error=		8.37216		std.=	3.132				
data	±	err	error^2	1/error^2	data/error^2					
11.42	±	13.022	169.579	0.005897	0.06735					
1.0899	±	46.492	2161.52	0.000463	0.0005					
7.3476	±	24.679	609.072	0.001642	0.01206					
3.9601	±	12.634	159.61	0.006265	0.02481					

WOP1-76

Sample #	19.0/7.8									
Weight(kg)	4.335	Geometry	full				Counting Time(min)	173		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	730	567	0.22875	0.00976	123.42625	1.303	4.1	308.07	±	168.49
Th-234	62 kev									
62	1202	715	0.3742	0.01249	422.2634	3.023	5.7	326.76	±	28.24
(93Kev)										
93	1303	560	0.95625	0.01996	577.56875	7.122	6.8	159.02	±	8.59
Ra-226										
295	1962	283	0.07625	0.00564	1665.80875	4.933	18	250.15	±	2.76
352	3001	215	0.0122	0.0029	2783.8894	4.251	35	249.49	±	1.27
609	1983	110	0.0102	0.0026	1871.2354	2.305	43	251.74	±	2.33
183.7	1288	428	0.46375	0.0139	779.77125	13.15	3.3	239.60	±	8.25
Th-228	583 kev									
228	171	126	0.2004	0.00914	10.3308	0.79	86	2.03	±	45.79
Ra-228										
338	244	240	0.08375	0.00591	-10.48875	3.898	12	-2.99	±	-66.01
911	100	85	0.2104	0.00936	-21.3992	1.511	29	-6.51	±	-49.33
964	208	179	0.17083	0.00844	-0.55359	1.623	21.8	-0.21	±	-379.87
Ra-226 weighted average =			249.86	±	1.0259	U (ppm)=		334.46	±	1.37
Ra-228 weighted average =			-5.20	±	39.31	Th (ppm) =		-19.24	±	145
210PB/234Th av =			173.55	±	8.21	U (ppm)=		232.31	±	11
	63&92kev									
Ra-228 av&Th228 =			2.03	±	45.79	Th (ppm) =		7.511	±	169

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		-2.1317		average=	-1.56				
	weighted error=		29.8253		std.=	4.428				
data	±	err	error^2	1/error^2	data/error^2					
-2.99	±	-66.011	4357.43	0.000229	-0.0007					
-6.512	±	-49.333	2433.76	0.000411	-0.0027					
-0.209	±	-379.87	144298	6.93E-06	-1E-06					
2.0276	±	45.794	2097.08	0.000477	0.00097					

NOP1-77

Sample #	18.6/7.7									
Weight(kg)	4.5742	Geometry	full			Counting Time(min)		215		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	658	486	0.22875	0.00976	122.81875	1.303	4.1	233.77	±	168.90
Th-234	62 kev									
62	954	595	0.3742	0.01249	278.547	3.023	5.7	164.37	±	34.77
(93Kev)										
93	1031	511	0.95625	0.01996	314.40625	7.122	6.8	66.01	±	11.65
Ra-226										
295	1460	263	0.07625	0.00564	1180.60625	4.933	18	135.20	±	3.28
352	2271	242	0.0122	0.0029	2026.377	4.251	35	138.49	±	1.49
609	1555	120	0.0102	0.0026	1432.807	2.305	43	146.99	±	2.67
183.7	1054	388	0.46375	0.0139	566.29375	13.15	3.3	132.69	±	9.68
Th-228	583 kev									
228	181	124	0.2004	0.00914	13.914	0.79	86	2.08	±	39.46
Ra-228										
338	312	241	0.08375	0.00591	52.99375	3.898	12	11.52	±	29.37
911	124	89	0.2104	0.00936	-10.236	1.511	29	-2.38	±	-71.33
964	206	173	0.17083	0.00844	-3.72845	1.623	21.8	-1.07	±	-146.37
Ra-226 weighted average =			139.68	±	1.2001	U (ppm)=		186.98	±	1.61
Ra-228 weighted average =			9.15	±	26.7	Th (ppm) =		33.86	±	98.8
210PB/234Th av =			76.61	±	11.02	U (ppm)=		102.55	±	14.8
	63&92kev									
Ra-228 av&Th228 =			6.93	±	22.11	Th (ppm) =		25.641	±	81.8

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	6.93237		average=	-0.46
	weighted error=	22.1136		std.=	2.291

data	±	err	error^2	1/error^2	data/error^2
11.52	±	29.367	862.441	0.00116	0.01336
-2.375	±	-71.33	5087.97	0.000197	-0.0005
-1.072	±	-146.37	21425	4.67E-05	-5E-05
2.08		39.46	1557.09	0.000642	0.00134

NOP1-42

Sample #	22.8/10.8									
Weight(kg)	4.2218	Geometry	full			Counting Time(min)		106		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1116	909	0.22875	0.00976	182.7525	1.303	4.1	764.42	±	138.47
Th-234	62 kev									
62	1745	1088	0.3742	0.01249	617.3348	3.023	5.7	800.58	±	23.36
(93Kev)										
93	2012	835	0.95625	0.01996	1075.6375	7.122	6.8	496.31	±	6.30
Ra-226										
295	3566	321	0.07625	0.00564	3236.9175	4.933	18	814.60	±	1.98
352	5688	279	0.0122	0.0029	5407.7068	4.251	35	812.18	±	0.91
609	3813	145	0.0102	0.0026	3666.9188	2.305	43	826.72	±	1.67
183.7	2197	623	0.46375	0.0139	1524.8425	13.15	3.3	785.20	±	5.90
Th-228	583 kev									
228	167	150	0.2004	0.00914	-4.2424	0.79	86	-1.40	±	-71.46
Ra-228										
338	327	284	0.08375	0.00591	34.1225	3.898	12	16.30	±	36.60
911	113	105	0.2104	0.00936	-14.3024	1.511	29	-7.29	±	-60.34
964	217	170	0.17083	0.00844	28.89202	1.623	21.8	18.25	±	52.58
Ra-226 weighted average =			814.91	±	0.7352	U (ppm)=		1090.8	±	0.98
Ra-228 weighted average =			12.13	±	26.89	Th (ppm) =		44.88	±	99.5
210PB/234Th av =			517.42	±	6.08	U (ppm)=		692.62	±	8.14
	63&92kev									
Ra-228 av&Th228 =			10.45	±	25.17	Th (ppm) =		38.665	±	93.1

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	10.4476		average=	3.186
	weighted error=	25.1679		std.=	13.37

data	±	err	error^2	1/error^2	data/error^2
16.301	±	36.598	1339.41	0.000747	0.01217
-7.294	±	-60.344	3641.38	0.000275	-0.002
18.247	±	52.582	2764.85	0.000362	0.0066
-1.395	±	-71.461	5106.66	0.000196	-0.0003

WOP1-110

Sample #	16.0/14.4									
Weight(kg)	4.1264	Geometry	full			Counting Time(min)		110		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	ntensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1454	1076	0.22875	0.00976	352.8375	1.303	4.1	1455.07	±	99.65
Th-234	62 kev									
62	2586	1447	0.3742	0.01249	1097.838	3.023	5.7	1403.66	±	17.52
(93Kev)										
93	3135	1166	0.95625	0.01996	1863.8125	7.122	6.8	847.87	±	4.78
Ra-226										
295	4129	386	0.07625	0.00564	3734.6125	4.933	18	926.61	±	1.84
352	6402	354	0.0122	0.0029	6046.658	4.251	35	895.35	±	0.86
609	4489	131	0.0102	0.0026	4356.878	2.305	43	968.44	±	1.53
183.7	3204	673	0.46375	0.0139	2479.9875	13.15	3.3	1259.06	±	4.63
Th-228	583 kev									
228	183	150	0.2004	0.00914	10.956	0.79	86	3.55	±	44.47
Ra-228										
338	420	360	0.08375	0.00591	50.7875	3.898	12	23.92	±	30.00
911	145	94	0.2104	0.00936	27.856	1.511	29	14.01	±	43.24
964	239	198	0.17083	0.00844	22.2087	1.623	21.8	13.83	±	59.97

Ra-226 weighted average =	922.42	±	0.68659	U (ppm)=	1234.751	± 0.92
Ra-228 weighted average =	3.55	±	44.47	Th (ppm) =	13.14	± 165
210PB/234Th av =	887.59	±	4.61	U (ppm)=	1188.128	± 6.17
63&92kev						
Ra-228 av&Th228 =	8.93	±	31	Th (ppm) =	33.041	± 115

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		8.92666		average=	14				
	weighted error=		31.001		std.=	####				
data	±	err	error^2	1/error^2	data/error^2					
3.55	±	44.47	1977.58	0.000506	0.0018					
14.01	±	43.24	1869.7	0.000535	0.00749					
	±		0	0	0					
			0	0	0					

NOP1-ECP-2.55/7.65

WOP1-101

Sample #	2.55/7.65									
Weight(kg)	4.8387	Geometry	full			Counting Time(min)		1374		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2200	1809	0.22875	0.00976	76.6975	1.303	4.1	21.59	±	213.74
Th-234	62 kev									
62	2816	2093	0.3742	0.01249	208.8492	3.023	5.7	18.23	±	40.16
(93Kev)										
93	3483	1766	0.95625	0.01996	403.1125	7.122	6.8	12.52	±	10.28
Ra-226										
295	2590	1423	0.07625	0.00564	1062.2325	4.933	18	17.99	±	3.46
352	3177	1122	0.0122	0.0029	2038.2372	4.251	35	20.61	±	1.49
609	2376	592	0.0102	0.0026	1769.9852	2.305	43	26.86	±	2.40
183.7	2840	1598	0.46375	0.0139	604.8075	13.15	3.3	20.96	±	9.37
Th-228	583 kev									
228	1338	706	0.2004	0.00914	356.6504	0.79	86	7.90	±	7.79
Ra-228										
338	1583	1213	0.08375	0.00591	254.9275	3.898	12	8.20	±	13.39
911	955	459	0.2104	0.00936	206.9104	1.511	29	7.10	±	15.87
964	1312	883	0.17083	0.00844	194.27958	1.623	21.8	8.26	±	20.28
Ra-226 weighted average =			21.82	±	1.1794	U (ppm)=		29.208	±	1.58
Ra-228 weighted average =			7.85	±	9.1365	Th (ppm) =		29.04	±	33.8
210PB/234Th av =			12.89	±	9.95	U (ppm)=		17.255	±	13.3
	63&92kev									
Ra-228 av&Th228 =			7.79	±	5.9278	Th (ppm) =		28.815	±	21.9

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		12.89		average=	17.06				
	weighted error=		9.94811		std.=	6.413				
data	±	err	error^2	1/error^2	data/error^2					
18.23	±	40.16	1612.83	0.00062	0.0113					
12.52	±	10.28	105.678	0.009463	0.11847					
21.59	±	213.74	45684.8	2.19E-05	0.00047					
			0	0	0					

NOP1-104

Sample #	24.0/10.5									
Weight(kg)	4.6065	Geometry	full			Counting Time(min)		10		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	3511	2700	0.22875	0.00976	808.7125	1.303	4.1	32862.06	±	65.82
Th-234	62 kev									
62	6311	3628	0.3742	0.01249	2679.258	3.023	5.7	33754.41	±	11.21
(93Kev)										
93	7894	3468	0.95625	0.01996	4416.4375	7.122	6.8	19796.58	±	3.11
Ra-226										
295	12447	997	0.07625	0.00564	11449.2375	4.933	18	27991.22	±	1.05
352	20360	867	0.0122	0.0029	19492.878	4.251	35	28441.06	±	0.48
609	13374	400	0.0102	0.0026	12973.898	2.305	43	28415.81	±	0.89
183.7	8226	1971	0.46375	0.0139	6250.3625	13.15	3.3	31267.59	±	2.91
Th-228	583 kev									
228	331	270	0.2004	0.00914	58.996	0.79	86	188.51	±	19.16
Ra-228										
338	817	814	0.08375	0.00591	2.1625	3.898	12	10.04	±	145.38
911	237	228	0.2104	0.00936	6.896	1.511	29	34.16	±	86.90
964	431	423	0.17083	0.00844	6.2917	1.623	21.8	38.60	±	112.68

Ra-226 weighted average =	28425.10	±	0.38843	U (ppm)=	38049.8	±	0.52
Ra-228 weighted average =	31.10	±	62.2	Th (ppm) =	115.07	±	230
210PB/234Th av =	20819.00	±	2.99681	U (ppm)=	27868.3	±	4.01
63&92kev							
Ra-228 av&Th228 =	174.86	±	18.31	Th (ppm) =	646.982	±	67.7

Calculation of weighted average (up to 200 data sets can be input)

	weighted averag	174.868		average=	87.09					
	weighted error=	18.3109		std.=	87.86					
data	± err	error^2	1/error^2	data/error^2						
10.036	± 145.4	21134.8	4.73E-05	0.00047						
34.164	± 86.9	7552.28	0.000132	0.00452						
38.603	± 112.7	12696.4	7.88E-05	0.00304						
188.51	19.16	367.106	0.002724	0.5135						

NOP1-103

Sample #	26.75/11.25									
Weight(kg)	4.0734	Geometry	full			Counting Time(min)		15		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	854	559	0.22875	0.00976	291.56875	1.303	4.1	8932.32	±	####
Th-234	62 kev									
62	1343	752	0.3742	0.01249	585.387	3.023	5.7	5560.09	±	23.99
(93Kev)										
93	1612	417	0.95625	0.01996	1180.65625	7.122	6.8	3989.92	±	6.01
Ra-226										
295	2457	197	0.07625	0.00564	2258.85625	4.933	18	4163.48	±	2.37
352	4037	184	0.0122	0.0029	3852.817	4.251	35	4238.10	±	1.08
609	2575	85	0.0102	0.0026	2489.847	2.305	43	4111.35	±	2.02
183.7	1787	417	0.46375	0.0139	1363.04375	13.15	3.3	5140.69	±	6.24
Th-228	583 kev									
228	75	66	0.2004	0.00914	5.994	0.79	86	14.44	±	60.12
Ra-228										
338	192	173	0.08375	0.00591	17.74375	3.898	12	62.08	±	50.75
911	57	43	0.2104	0.00936	10.844	1.511	29	40.50	±	69.30
964	100	78	0.17083	0.00844	19.43755	1.623	21.8	89.91	±	64.11
Ra-226 weighted average =			4221.90	±	0.875	U (ppm)=		5651.4	±	1.2
Ra-228 weighted average =			64.79	±	34.508	Th (ppm) =		239.73	±	128
210PB/234Th av =			4096.30	±	5.82	U (ppm)=		5483.3	±	7.8
	63&92kev									
Ra-228 av&Th228 =			52.32	±	29.93	Th (ppm) =		193.58	±	111

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	52.317		average=	48.28
	weighted error=	29.9282		std.=	38.33

data	±	err	error^2	1/error^2	data/error^2
62.083	±	50.752	2575.78	0.000388	0.0241
40.502	±	69.302	4802.7	0.000208	0.00843
89.912	±	64.107	4109.68	0.000243	0.02188
14.44		60.12	3614.41	0.000277	0.004

WDPF-10-2

Sample #	26.85/11.65								
Weight(kg)	5.4715	Geometry	full			Counting Time(min)		10	
time of background minutes			2400						
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activ (dpm	
Pb-210	45 kev								
210	15275	13465	0.22875	0.00976	1807.7125	1.303	4.1	61843.59	±
Th-234	62 kev								
62	25272	16961	0.3742	0.01249	8307.258	3.023	5.7	88112.66	±
(93Kev)									
93	38389	25584	0.95625	0.01996	12795.4375	7.122	6.8	48287.85	±
Ra-226									
295	69215	6450	0.07625	0.00564	62764.2375	4.933	18	129188.02	±
352	113037	6541	0.0122	0.0029	106495.878	4.251	35	130817.92	±
609	77064	3194	0.0102	0.0026	73869.898	2.305	43	136213.99	±
183.7	40750	11073	0.46375	0.0139	29672.3625	13.15	3.3	124970.07	±
Th-228	583 kev								
228	1973	1772	0.2004	0.00914	198.996	0.79	86	535.32	±
Ra-228									
338	5193	4988	0.08375	0.00591	204.1625	3.898	12	797.71	±
911	1306	1313	0.2104	0.00936	-9.104	1.511	29	-37.97	±
964	2796	2498	0.17083	0.00844	296.2917	1.623	21.8	1530.52	±
Ra-226 weighted average =			131610.00	±	0.1679	U (ppm)=		176173	±
Ra-228 weighted average =			1106.00	±	11	Th (ppm) =		4092.20	±
210PB/234Th av =			51340.00	±	1.76	U (ppm)=		68724	±
	63&92kev								
Ra-228 av&Th228 =			807.00	±	7.55	Th (ppm) =		2985.9	±

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		806.8292		average=	676			
	weighted error=		7.549927		std.=	793.6			
data	±	err	error^2	1/error^2	data/error^2				
797.71	±	14.962	223.8607	0.004467	3.56343				
-37.97	±	-75.635	5720.616	0.000175	-0.0066				
1530.5	±	16.42	269.6066	0.003709	5.67685				
535.32		10.43	108.7849	0.009192	4.9209				

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g)
44.03
6.37
1.83
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0.21
0.37
1.34
10.43
14.96
-75.63
16.42
0.22
40.7
2.36
27.9

NOP1-107

Sample #	19.6/14.5									
Weight(kg)	4.9996	Geometry	full				Counting Time(min)	10		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	11185	9789	0.22875	0.00976	1393.7125	1.303	4.1	52180.67	±	50.14
Th-234	62 kev									
62	19556	12787	0.3742	0.01249	6765.258	3.023	5.7	78530.09	±	7.06
(93Kev)										
93	29503	17613	0.95625	0.01996	11880.4375	7.122	6.8	49066.64	±	1.89
Ra-226										
295	48804	4215	0.07625	0.00564	44588.2375	4.933	18	100438.78	±	0.53
352	79581	4090	0.0122	0.0029	75490.878	4.251	35	101484.58	±	0.24
609	53225	1966	0.0102	0.0026	51258.898	2.305	43	103441.45	±	0.45
183.7	30852	7737	0.46375	0.0139	23110.3625	13.15	3.3	106520.16	±	1.52
Th-228	583 kev									
228	1261	1196	0.2004	0.00914	62.996	0.79	86	185.46	±	18.54
Ra-228										
338	3521	3378	0.08375	0.00591	142.1625	3.898	12	607.89	±	17.93
911	854	907	0.2104	0.00936	-55.104	1.511	29	-251.53	±	####
964	1847	1650	0.17083	0.00844	195.2917	1.623	21.8	1104.01	±	20.22
Ra-226 weighted average =			101793.00	±	0.19502	U (ppm)=		136260	±	0.3
Ra-228 weighted average =			653.80	±	12.3	Th (ppm) =		2419.06	±	46
210PB/234Th av =			51039.00	±	1.82571	U (ppm)=		68321	±	2.4
	63&92kev									
Ra-228 av&Th228 =			510.71	±	10.25	Th (ppm) =		1889.6	±	38

Calculation of weighted average (up to 200 data sets can be input)

	weighted averag		510.714		average=	346				
	weighted error=		10.2476		std.=	691.9				
data	±	err	error^2	1/error^2	data/error^2					
607.89	±	17.93	321.491	0.003111	1.89085					
-251.5	±	-30.7	945.131	0.001058	-0.2661					
1104	±	20.22	409.04	0.002445	2.69903					
185.46		18.54	343.732	0.002909	0.53955					

NOP1-106

Sample #	23.3/9.8									
Weight(kg)	4.1698	Geometry	full			Counting Time(min)		120		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	476	360	0.22875	0.00976	88.55	1.303	4.1	331.26	±	198.92
Th-234	62 kev									
62	642	425	0.3742	0.01249	172.096	3.023	5.7	199.60	±	44.24
(93Kev)										
93	829	274	0.95625	0.01996	440.25	7.122	6.8	181.67	±	9.84
Ra-226										
295	1238	191	0.07625	0.00564	1037.85	4.933	18	233.59	±	3.50
352	1851	179	0.0122	0.0029	1670.536	4.251	35	224.39	±	1.64
609	1271	92	0.0102	0.0026	1177.776	2.305	43	237.48	±	2.94
183.7	829	274	0.46375	0.0139	499.35	13.15	3.3	229.97	±	10.31
Th-228	583 kev									
228	111	66	0.2004	0.00914	20.952	0.79	86	6.16	±	32.16
Ra-228										
338	160	149	0.08375	0.00591	0.95	3.898	12	0.41	±	219.34
911	83	54	0.2104	0.00936	3.752	1.511	29	1.71	±	117.82
964	129	115	0.17083	0.00844	-6.4996	1.623	21.8	-3.67	±	-110.86
Ra-226 weighted average =			228.40	±	1.3147	U (ppm)=		305.736	±	1.76
Ra-228 weighted average =			-0.96	±	75.768	Th (ppm) =		-3.54	±	280
210PB/234Th av =			182.87	±	9.6	U (ppm)=		244.79	±	12.9
	63&92kev									
Ra-228 av&Th228 =			5.07	±	29.6	Th (ppm) =		18.759	±	110

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		5.0732724		average=	1.4				
	weighted error=		29.603649		std.=	4.923				
data	±	err	error^2	1/error^2	data/error^2					
0.4059	±	219.34	48109.432	2.08E-05	8.4E-06					
1.7112	±	117.82	13880.728	7.2E-05	0.00012					
-3.671	±	-110.86	12290.324	8.14E-05	-0.0003					
6.16		32.16	1034.2656	0.000967	0.00596					

NOP1-108

Sample #	18.55/16.2									
Weight(kg)	4.2545	Geometry	full			Counting Time(min)		10		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	574	444	0.22875	0.00976	127.7125	1.303	4.1	5618.97	±	165.64
Th-234	62 kev									
62	1095	528	0.3742	0.01249	563.258	3.023	5.7	7683.27	±	24.45
(93Kev)										
93	1324	501	0.95625	0.01996	813.4375	7.122	6.8	3947.89	±	7.24
Ra-226										
295	2020	165	0.07625	0.00564	1854.2375	4.933	18	4908.32	±	2.62
352	3132	137	0.0122	0.0029	2994.878	4.251	35	4731.20	±	1.23
609	2106	62	0.0102	0.0026	2043.898	2.305	43	4846.98	±	2.23
183.7	918	301	0.46375	0.0139	612.3625	13.15	3.3	3316.81	±	9.31
Th-228	583 kev									
228	48	52	0.2004	0.00914	-6.004	0.79	86	-20.77	±	-60.07
Ra-228										
338	238	151	0.08375	0.00591	86.1625	3.898	12	432.96	±	23.03
911	39	36	0.2104	0.00936	0.896	1.511	29	4.81	±	241.09
964	91	64	0.17083	0.00844	25.2917	1.623	21.8	168.02	±	56.20
Ra-226 weighted average =			4763.30	±	0.9905	U (ppm)=		6376.2	±	1.33
Ra-228 weighted average =			4.81	±	241.09	Th (ppm) =		17.80	±	892
210PB/234Th av =			4249.00	±	6.924	U (ppm)=		5687.7	±	9.27
	63&92kev									
Ra-228 av&Th228 =			-19.24	±	58.93	Th (ppm) =		-71.19	±	218
Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		-19.242		average=	-20.8				
	weighted error=		58.9268		std.=	####				
data	±	err	error^2	1/error^2	data/error^2					
4.81	±	241.09	58124.4	1.72E-05	8.3E-05					
-20.77	±	-60.77	3692.99	0.000271	-0.0056					
	±		0	0	0					
	±		0	0	0					

NOP1-10.5

Sample #	25.2/9.5									
Weight(kg)	4.2649	Geometry	full			Counting Time(min)		16		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	ntensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	5298	4064	0.22875	0.00976	1230.34	1.303	4.1	33749.55	±	53.37
Th-234	62 kev									
62	9268	5418	0.3742	0.01249	3844.0128	3.023	5.7	32692.11	±	9.36
(93Kev)										
93	11565	5193	0.95625	0.01996	6356.7	7.122	6.8	19234.99	±	2.59
Ra-226										
295	18909	1392	0.07625	0.00564	17515.78	4.933	18	28907.93	±	0.85
352	30628	1359	0.0122	0.0029	29268.8048	4.251	35	28828.17	±	0.39
609	20427	582	0.0102	0.0026	19844.8368	2.305	43	29341.30	±	0.72
183.7	12047	2972	0.46375	0.0139	9067.58	13.15	3.3	30621.25	±	2.42
Th-228	583 kev									
228	461	451	0.2004	0.00914	6.7936	0.79	86	14.65	±	56.47
Ra-228										
338	1291	1165	0.08375	0.00591	124.66	3.898	12	390.55	±	19.15
911	339	319	0.2104	0.00936	16.6336	1.511	29	55.63	±	55.96
964	656	586	0.17083	0.00844	67.26672	1.623	21.8	278.61	±	34.46
Ra-226 weighted average =			28968.00	±	0.31531	U (ppm)=		38776.56	±	0.42
Ra-228 weighted average =			55.63	±	55.96	Th (ppm) =		205.83	±	207
210PB/234Th av =			20221.00	±	2.49	U (ppm)=		27067.83	±	3.33
	63&92kev									
Ra-228 av&Th228 =			35.33	±	39.75	Th (ppm) =		130.721	±	147

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		35.3259		average=	55.63				
	weighted error=		39.7488		std.=	####				
data	±	err	error^2	1/error^2	data/error^2					
14.65	±	56.47	3188.86	0.000314	0.00459					
55.63	±	55.96	3131.52	0.000319	0.01776					
	±		0	0	0					
			0	0	0					

W of 1-50

Sample #	22.25									
Weight(kg)	4.2881	Geometry	full				Counting Time(min)	185		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	617	443	0.22875	0.00976	131.68125	1.303	4.1	310.71	±	163.12
Th-234	62 kev									
62	913	577	0.3742	0.01249	266.773	3.023	5.7	195.16	±	35.53
(93Kev)										
93	1133	476	0.95625	0.01996	480.09375	7.122	6.8	124.96	±	9.42
Ra-226										
295	1577	284	0.07625	0.00564	1278.89375	4.933	18	181.56	±	3.15
352	2343	211	0.0122	0.0029	2129.743	4.251	35	180.44	±	1.46
609	1593	123	0.0102	0.0026	1468.113	2.305	43	186.72	±	2.63
183.7	1097	387	0.46375	0.0139	624.20625	13.15	3.3	181.32	±	9.22
Th-228	583 kev									
228	210	131	0.2004	0.00914	41.926	0.79	86	7.78	±	22.73
Ra-228										
338	254	252	0.08375	0.00591	-13.49375	3.898	12	-3.64	±	-58.20
911	129	85	0.2104	0.00936	5.076	1.511	29	1.46	±	101.29
964	202	164	0.17083	0.00844	6.39645	1.623	21.8	2.28	±	111.75

Ra-226 weighted average =		181.86	±	1.1734	U (ppm)=		243.44	±	1.57
Ra-228 weighted average =		-1.59	±	45.99	Th (ppm) =		-5.88	±	170
210PB/234Th av =		129.57	±	9.1054	U (ppm)=		173.44	±	12.2
	63&92kev								
Ra-228 av&Th228 =		5.94	±	20.38	Th (ppm) =		21.978	±	75.4

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		5.9414		average=	3.84				
	weighted error=		20.3772		std.=	3.437				
data	±	err	error^2	1/error^2	data/error^2					
-3.64	±	-58.2	3387.24	0.000295	-0.0011					
1.46	±	101.29	10259.7	9.75E-05	0.00014					
2.28	±	111.75	12488.1	8.01E-05	0.00018					
7.78		22.73	516.653	0.001936	0.01506					

NOP1-52

Sample #	22.5/12.4									
Weight(kg)	4.1924	Geometry	full			Counting Time(min)		10		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	3165	2436	0.22875	0.00976	726.7125	1.303	4.1	32446.78	±	69.44
Th-234	62 kev									
62	5629	3109	0.3742	0.01249	2516.258	3.023	5.7	34832.08	±	11.57
(93Kev)										
93	6761	2919	0.95625	0.01996	3832.4375	7.122	6.8	18875.63	±	3.34
Ra-226										
295	10687	780	0.07625	0.00564	9906.2375	4.933	18	26611.07	±	1.13
352	17388	729	0.0122	0.0029	16658.878	4.251	35	26706.92	±	0.52
609	11579	339	0.0102	0.0026	11239.898	2.305	43	27049.56	±	0.95
183.7	7301	1654	0.46375	0.0139	5642.3625	13.15	3.3	31014.06	±	3.07
Th-228	583 kev									
228	289	282	0.2004	0.00914	4.996	0.79	86	17.54	±	65.85
Ra-228										
338	785	731	0.08375	0.00591	53.1625	3.898	12	271.09	±	29.32
911	174	165	0.2104	0.00936	6.896	1.511	29	37.54	±	86.90
964	389	356	0.17083	0.00844	31.2917	1.623	21.8	210.96	±	50.53

Ra-226 weighted average =	26481.00	±	0.419	U (ppm)=	35447	± 0.56
Ra-228 weighted average =	167.14	±	43.68	Th (ppm) =	618.42	± 162
210PB/234Th av =	######	±	3.209	U (ppm)=	26910	± 4.3
63&92kev	20103					
Ra-228 av&Th228 =	24.84	±	52.48	Th (ppm) =	91.908	± 194

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	167.141		average=	37.54						
	weighted error=	43.6821		std.=	####						
data	± err	error^2	1/error^2	data/error^2							
210.96	± 50.53	2553.28	0.000392	0.08262							
37.54	± 86.9	7551.61	0.000132	0.00497							
	±	0	0	0							
		0	0	0							

NOP1-53

Sample #	22.8/12.95									
Weight(kg)	4.2498	Geometry	full				Counting Time(min)	59		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4132	2894	0.22875	0.00976	1224.50375	1.303	4.1	9141.37	±	53.49
Th-234	62 kev									
62	6934	3939	0.3742	0.01249	2972.9222	3.023	5.7	6880.98	±	10.64
(93Kev)										
93	8429	3239	0.95625	0.01996	5133.58125	7.122	6.8	4227.55	±	2.88
Ra-226										
295	12880	957	0.07625	0.00564	11918.5013	4.933	18	5353.25	±	1.03
352	20885	930	0.0122	0.0029	19954.2802	4.251	35	5348.80	±	0.48
609	13807	363	0.0102	0.0026	13443.3982	2.305	43	5409.40	±	0.87
183.7	9222	1997	0.46375	0.0139	7197.63875	13.15	3.3	6615.00	±	2.72
Th-228	583 kev									
228	362	302	0.2004	0.00914	48.1764	0.79	86	28.28	±	21.21
Ra-228										
338	874	851	0.08375	0.00591	18.05875	3.898	12	15.40	±	50.31
911	241	224	0.2104	0.00936	4.5864	1.511	29	4.17	±	106.56
964	504	438	0.17083	0.00844	55.92103	1.623	21.8	63.03	±	37.80

Ra-226 weighted average =	5386.70	±	0.3852	U (ppm)=	7210.6	± 0.52
Ra-228 weighted average =	56.45	±	35.63	Th (ppm) =	208.87	± 132
210PB/234Th av =	4421.40	±	2.78	U (ppm)=	5918.5	± 3.72
63&92kev						
Ra-228 av&Th228 =	35.65	±	18.22	Th (ppm) =	131.91	± 67.4

Calculation of weighted average (up to 200 data sets can be input)

weighted average=	35.6524		average=	45.66	
weighted error=	18.2246		std.=	24.57	

data	±	err	error^2	1/error^2	data/error^2
4.17	±	106.56	11355	8.81E-05	0.00037
63.03	±	37.8	1428.84	0.0007	0.04411
28.28	±	21.21	449.864	0.002223	0.06286
	±		0	0	0

W0P1-109

Sample #	17.1/15.2									
Weight(kg)	4.3189	Geometry	full				Counting Time(min)	92		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2524	1926	0.22875	0.00976	576.955	1.303	4.1	2718.02	±	77.93
Th-234	62 kev									
62	4282	2453	0.3742	0.01249	1794.5736	3.023	5.7	2621.12	±	13.70
(93Kev)										
93	5405	2012	0.95625	0.01996	3305.025	7.122	6.8	1717.52	±	3.59
Ra-226										
295	7794	629	0.07625	0.00564	7157.985	4.933	18	2028.83	±	1.33
352	12528	618	0.0122	0.0029	11908.8776	4.251	35	2014.42	±	0.62
609	8183	237	0.0102	0.0026	7945.0616	2.305	43	2017.42	±	1.13
183.7	5572	1253	0.46375	0.0139	4276.335	13.15	3.3	2480.11	±	3.52
Th-228	583 kev									
228	294	264	0.2004	0.00914	11.5632	0.79	86	4.28	±	43.28
Ra-228										
338	589	546	0.08375	0.00591	35.295	3.898	12	18.99	±	35.98
911	184	153	0.2104	0.00936	11.6432	1.511	29	6.69	±	66.88
964	343	306	0.17083	0.00844	21.28364	1.623	21.8	15.14	±	61.26
Ra-226 weighted average =			2027.00	±	0.4981	U (ppm)=		2713.3	±	0.67
Ra-228 weighted average =			11.29	±	45.17	Th (ppm) =		41.77	±	167
210PB/234Th av =			1775.60	±	3.4727	U (ppm)=		2376.8	±	4.65
	63&92kev									
Ra-228 av&Th228 =			7.63	±	31.25	Th (ppm) =		28.231	±	116

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	7.63254		average=	9.71
	weighted error=	31.2516		std.=	7.679

data	±	err	error^2	1/error^2	data/error^2
6.69	±	66.88	4472.93	0.000224	0.0015
15.14	±	61.26	3752.79	0.000266	0.00403
4.28	±	43.28	1873.16	0.000534	0.00228
	±		0	0	0

wop1-51

Sample #	22.6/11.9									
Weight(kg)	4.3048	Geometry	full			Counting Time(min)		51		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	725	459	0.22875	0.00976	254.33375	1.303	4.1	2168.47	±	117.37
Th-234	62 kev									
62	1107	612	0.3742	0.01249	475.9158	3.023	5.7	1258.04	±	26.60
(93Kev)										
93	1299	521	0.95625	0.01996	729.23125	7.122	6.8	685.85	±	7.65
Ra-226										
295	2002	179	0.07625	0.00564	1819.11125	4.933	18	933.15	±	2.64
352	3226	172	0.0122	0.0029	3053.3778	4.251	35	934.76	±	1.22
609	2216	80	0.0102	0.0026	2135.4798	2.305	43	981.37	±	2.18
183.7	1375	332	0.46375	0.0139	1019.34875	13.15	3.3	1069.94	±	7.22
Th-228	583 kev									
228	96	56	0.2004	0.00914	29.7796	0.79	86	19.97	±	26.97
Ra-228										
338	167	126	0.08375	0.00591	36.72875	3.898	12	35.77	±	35.28
911	71	35	0.2104	0.00936	25.2696	1.511	29	26.27	±	45.40
964	104	80	0.17083	0.00844	15.28767	1.623	21.8	19.68	±	72.29

Ra-226 weighted average =	946.41	±	0.9783	U (ppm)=	1266.9	±	1.31
Ra-228 weighted average =	30.58	±	25.99	Th (ppm) =	113.15	±	96.2
210PB/234Th av =	729.56	±	7.352	U (ppm)=	976.59	±	9.84
63&92kev							
Ra-228 av&Th228 =	25.47	±	18.72	Th (ppm) =	94.239	±	69.3

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	25.4679		average=	21.97						
	weighted error=	18.7162		std.=	3.724						
data	± err	error^2	1/error^2	data/error^2							
35.77	± 35.28	1244.68	0.000803	0.02874							
26.27	± 45.4	2061.16	0.000485	0.01275							
19.68	± 72.29	5225.84	0.000191	0.00377							
19.97	± 26.97	727.381	0.001375	0.02745							

NOP1-98

Sample #	6.2/8.1									
Weight(kg)	4.3018	Geometry	full			Counting Time(min)		1234		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1944	1585	0.22875	0.00976	76.7225	1.303	4.1	27.05	±	213.70
Th-234	62 kev									
62	2410	1731	0.3742	0.01249	217.2372	3.023	5.7	23.75	±	39.37
(93Kev)										
93	2942	1537	0.95625	0.01996	224.9875	7.122	6.8	8.75	±	13.77
Ra-226										
295	2020	1169	0.07625	0.00564	756.9075	4.933	18	16.06	±	4.09
352	2479	966	0.0122	0.0029	1497.9452	4.251	35	18.97	±	1.74
609	1769	579	0.0102	0.0026	1177.4132	2.305	43	22.38	±	2.94
183.7	2391	1378	0.46375	0.0139	440.7325	13.15	3.3	19.13	±	10.98
Th-228	583 kev									
228	1108	577	0.2004	0.00914	283.7064	0.79	86	7.87	±	8.74
Ra-228										
338	1116	1000	0.08375	0.00591	12.6525	3.898	12	0.51	±	60.10
911	818	379	0.2104	0.00936	179.3664	1.511	29	7.71	±	17.04
964	1181	903	0.17083	0.00844	67.19578	1.623	21.8	3.58	±	34.48
Ra-226 weighted average =			19.40	±	1.3947	U (ppm)=		25.972	±	1.87
Ra-228 weighted average =			6.51	±	14.806	Th (ppm) =		24.09	±	54.8
210PB/234Th av =			10.39	±	12.998	U (ppm)=		13.901	±	17.4
	63&92kev									
Ra-228 av&Th228 =			7.52	±	7.5264	Th (ppm) =		27.82	±	27.8
Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		10.385		average=	8.75				
	weighted error=		12.9979		std.=	####				
data	±	err	error^2	1/error^2	data/error^2					
23.75	±	39.37	1550	0.000645	0.01532					
8.75	±	13.77	189.613	0.005274	0.04615					
	±		0	0	0					
			0	0	0					

NOP1-79

Sample #	18.05/7.9									
Weight(kg)	5.0362	Geometry	full			Counting Time(min)		242		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1112	399	0.22875	0.00976	657.6425	1.303	4.1	1010.05	±	72.99
Th-234	62 kev									
62	1778	1097	0.3742	0.01249	590.4436	3.023	5.7	281.16	±	23.88
(93Kev)										
93	2016	855	0.95625	0.01996	929.5875	7.122	6.8	157.49	±	6.77
Ra-226										
295	2987	447	0.07625	0.00564	2521.5475	4.933	18	233.00	±	2.24
352	4848	359	0.0122	0.0029	4486.0476	4.251	35	247.39	±	1.00
609	3154	175	0.0102	0.0026	2976.5316	2.305	43	246.41	±	1.85
183.7	2011	662	0.46375	0.0139	1236.7725	13.15	3.3	233.85	±	6.55
Th-228	583 kev									
228	298	175	0.2004	0.00914	74.5032	0.79	86	9.00	±	17.05
Ra-228										
338	464	363	0.08375	0.00591	80.7325	3.898	12	14.16	±	23.79
911	201	112	0.2104	0.00936	38.0832	1.511	29	7.13	±	36.98
964	310	212	0.17083	0.00844	56.65914	1.623	21.8	13.14	±	37.55

Ra-226 weighted average =	245.10	±	0.8125	U (ppm)=		328.09	±	1.09
Ra-228 weighted average =	12.33	±	17.657	Th (ppm) =		45.63	±	65.3
210PB/234Th av =	166.69	±	6.5133	U (ppm)=		223.13	±	8.72
63&92kev								
Ra-228 av&Th228 =	10.61	±	12.265	Th (ppm) =		39.25	±	45.4

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	166.69		average=	157.5
	weighted error=	6.51331		std.=	####

data	±	err	error^2	1/error^2	data/error^2
281.16	±	23.88	570.254	0.001754	0.49304
157.49	±	6.77	45.8329	0.021818	3.43618
	±		0	0	0
			0	0	0

W OP1-80

Sample #	17.4/7.85									
Weight(kg)	4.9433	Geometry	full			Counting Time(min)		209		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	804	438	0.22875	0.00976	318.19125	1.303	4.1	576.50	±	104.94
Th-234	62 kev									
62	801	539	0.3742	0.01249	183.7922	3.023	5.7	103.24	±	42.81
(93Kev)										
93	931	428	0.95625	0.01996	303.14375	7.122	6.8	60.59	±	11.86
Ra-226										
295	1295	258	0.07625	0.00564	1021.06375	4.933	18	111.30	±	3.52
352	1902	213	0.0122	0.0029	1686.4502	4.251	35	109.71	±	1.64
609	1256	117	0.0102	0.0026	1136.8682	2.305	43	111.02	±	2.99
183.7	983	363	0.46375	0.0139	523.07625	13.15	3.3	116.67	±	10.08
Th-228	583 kev									
228	166	137	0.2004	0.00914	-12.8836	0.79	86	-1.84	±	-41.01
Ra-228										
338	275	249	0.08375	0.00591	8.49625	3.898	12	1.76	±	73.34
911	140	87	0.2104	0.00936	9.0264	1.511	29	1.99	±	75.96
964	223	161	0.17083	0.00844	26.29653	1.623	21.8	7.19	±	55.12
Ra-226 weighted average =			110.31	±	1.3197	U (ppm)=		147.66	±	1.77
Ra-228 weighted average =			4.41	±	38.114	Th (ppm) =		16.33	±	141
210PB/234Th av =			31.91	±	6.6358	U (ppm)=		42.711	±	8.88
	63&92kev									
Ra-228 av&Th228 =			1.52	±	27.92	Th (ppm) =		5.624	±	103

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	1.51569		average=	2.447
	weighted error=	27.9185		std.=	4.532

data	±	err	error^2	1/error^2	data/error^2
1.76	±	73.34	5378.76	0.000186	0.00033
1.99	±	75.96	5769.92	0.000173	0.00034
7.19	±	55.12	3038.21	0.000329	0.00237
-1.84	±	-41.01	1681.82	0.000595	-0.0011

WOP1-81

Sample #	17.0/7.5									
Weight(kg)	4.7879	Geometry	full			Counting Time(min)		1116		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2845	2335	0.22875	0.00976	254.715	1.303	4.1	89.23	±	117.29
Th-234	62 kev									
62	3513	2587	0.3742	0.01249	508.3928	3.023	5.7	55.22	±	25.74
(93Kev)										
93	5763	2267	0.95625	0.01996	2428.825	7.122	6.8	93.86	±	4.19
Ra-226										
295	5348	1286	0.07625	0.00564	3976.905	4.933	18	83.82	±	1.79
352	7753	1095	0.0122	0.0029	6644.3848	4.251	35	83.58	±	0.82
609	5338	616	0.0102	0.0026	4710.6168	2.305	43	88.95	±	1.47
183.7	5094	1737	0.46375	0.0139	2839.455	13.15	3.3	122.46	±	4.32
Th-228	583 kev									
228	1015	634	0.2004	0.00914	157.3536	0.79	86	4.33	±	11.73
Ra-228										
338	1358	1165	0.08375	0.00591	99.535	3.898	12	3.98	±	21.43
911	709	401	0.2104	0.00936	73.1936	1.511	29	3.13	±	26.67
964	1146	825	0.17083	0.00844	130.35372	1.623	21.8	6.90	±	24.76
Ra-226 weighted average =			85.59	±	0.6571	U (ppm)=		114.56	±	0.88
Ra-228 weighted average =			4.66	±	13.848	Th (ppm) =		17.26	±	51.2
210PB/234Th av =			56.78	±	25.142	U (ppm)=		76.01	±	33.7
	63&92kev									
Ra-228 av&Th228 =			4.47	±	8.9506	Th (ppm) =		16.538	±	33.1

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	56.7827		average=	55.22
	weighted error=	25.1417		std.=	####

data	±	err	error^2	1/error^2	data/error^2
89.23	±	117.29	13756.9	7.27E-05	0.00649
55.22	±	25.74	662.548	0.001509	0.08334
	±		0	0	0
	±		0	0	0

NOP1-32

Sample #	16.4/7.9									
Weight(kg)	4.5758	Geometry	full			Counting Time(min)		224		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	791	622	0.22875	0.00976	117.76	1.303	4.1	215.06	±	172.49
Th-234	62 kev									
62	1025	678	0.3742	0.01249	263.1792	3.023	5.7	149.01	±	35.77
(93Kev)										
93	1186	536	0.95625	0.01996	435.8	7.122	6.8	87.79	±	9.89
Ra-226										
295	1739	323	0.07625	0.00564	1398.92	4.933	18	153.71	±	3.01
352	2566	273	0.0122	0.0029	2290.2672	4.251	35	150.18	±	1.40
609	1729	131	0.0102	0.0026	1595.7152	2.305	43	157.07	±	2.53
183.7	1227	444	0.46375	0.0139	679.12	13.15	3.3	152.68	±	8.84
Th-228	583 kev									
228	194	148	0.2004	0.00914	1.1104	0.79	86	0.16	±	139.68
Ra-228										
338	328	281	0.08375	0.00591	28.24	3.898	12	5.89	±	40.23
911	148	93	0.2104	0.00936	7.8704	1.511	29	1.75	±	81.35
964	279	144	0.17083	0.00844	96.73408	1.623	21.8	26.67	±	28.74
Ra-226 weighted average =			152.08	±	1.1254	U (ppm)=		203.57	±	1.51
Ra-228 weighted average =			5.08	±	36.06	Th (ppm) =		18.80	±	133
210PB/234Th av =			92.14	±	9.5324	U (ppm)=		123.34	±	12.8
	63&92kev									
Ra-228 av&Th228 =			4.77	±	34.9	Th (ppm) =		17.649	±	129

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	5.07648		average=	1.75
	weighted error=	36.0614		std.=	####

data	±	err	error^2	1/error^2	data/error^2
5.89	±	40.23	1618.45	0.000618	0.00364
1.75	±	81.35	6617.82	0.000151	0.00026
	±		0	0	0
	±		0	0	0

NOP1-54

Sample #	22.6/13.6									
Weight(kg)	5.3152	Geometry	full			Counting Time(min)		80		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	910	648	0.22875	0.00976	243.7	1.303	4.1	1072.80	±	119.91
Th-234	62 kev									
62	1317	846	0.3742	0.01249	441.064	3.023	5.7	601.98	±	27.63
(93Kev)										
93	1380	652	0.95625	0.01996	651.5	7.122	6.8	316.37	±	8.09
Ra-226										
295	2677	263	0.07625	0.00564	2407.9	4.933	18	637.74	±	2.30
352	4228	257	0.0122	0.0029	3970.024	4.251	35	627.52	±	1.07
609	2856	116	0.0102	0.0026	2739.184	2.305	43	649.94	±	1.93
183.7	1712	652	0.46375	0.0139	1022.9	13.15	3.3	554.35	±	7.21
Th-228	583 kev									
228	133	128	0.2004	0.00914	-11.032	0.79	86	-3.82	±	-44.31
Ra-228										
338	245	210	0.08375	0.00591	28.3	3.898	12	14.23	±	40.19
911	91	70	0.2104	0.00936	4.168	1.511	29	2.24	±	111.78
964	164	135	0.17083	0.00844	15.3336	1.623	21.8	10.19	±	72.18
Ra-226 weighted average =			632.37	±	0.8606	U (ppm)=		846.49	±	1.15
Ra-228 weighted average =			12.28	±	33.5	Th (ppm) =		45.45	±	124
210PB/234Th av =			338.92	±	7.764	U (ppm)=		453.68	±	10.4
	63&92kev									
Ra-228 av&Th228 =			6.43	±	26.722	Th (ppm) =		23.777	±	98.9

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	338.922		average=	316.4				
	weighted error=	7.76404		std.=	####				
data	± err	error^2	1/error^2	data/error^2					
601.98	± 27.63	763.417	0.00131	0.78853					
316.37	± 8.09	65.4481	0.015279	4.83391					
	±	0	0	0					
	±	0	0	0					

D081-55

Sample #	22.1/14.65									
Weight(kg)	4.3862	Geometry	full			Counting Time(min)		936		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	6233	4476	0.22875	0.00976	1542.89	1.303	4.1	703.5	±	47.65
Th-234	62 kev									
62	8409	5514	0.3742	0.01249	2544.7488	3.023	5.7	359.7	±	11.50
(93Kev)										
93	9293	4307	0.95625	0.01996	4090.95	7.122	6.8	205.8	±	3.23
Ra-226										
295	17716	2001	0.07625	0.00564	15643.63	4.933	18	429.13	±	0.90
352	27372	1733	0.0122	0.0029	25627.5808	4.251	35	419.55	±	0.42
609	18169	907	0.0102	0.0026	17252.4528	2.305	43	423.98	±	0.77
183.7	11592	3310	0.46375	0.0139	7847.93	13.15	3.3	440.51	±	2.60
Th-228	583 kev									
228	1063	776	0.2004	0.00914	99.4256	0.79	86	3.56	±	14.76
Ra-228										
338	1959	1732	0.08375	0.00591	148.61	3.898	12	7.74	±	17.54
911	857	565	0.2104	0.00936	95.0656	1.511	29	5.28	±	23.41
964	1341	1128	0.17083	0.00844	53.10312	1.623	21.8	3.66	±	38.79
Ra-226 weighted average =			422.11	±	0.34	U (ppm)=		565	±	0.46
Ra-228 weighted average =			6.49	±	13.2	Th (ppm) =		24.0	±	48.8
210PB/234Th av =			219.05	±	3.1	U (ppm)=		293.2	±	4.15
	63&92kev									
Ra-228 av&Th228 =			5.19	±	9.84	Th (ppm) =		19.2	±	36.4

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	422.113		average=	428				
	weighted error=	0.33829		std.=	11.05				
data	± err	error^2	1/error^2	data/error^2					
429.13	± 0.9	0.81	1.234568	529.79					
419.55	± 0.42	0.1764	5.668934	2378.4					
423.98	± 0.77	0.5929	1.686625	715.095					
440.51	± 2.6	6.76	0.147929	65.1642					

WOP1-85

Sample #	14.45/7.95									
Weight(kg)	4.3926	Geometry	full				Counting Time(min)	124		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	486	163	0.22875	0.00976	294.635	1.303	4.1	1012.54	±	109.05
Th-234	62 kev									
62	528	387	0.3742	0.01249	94.5992	3.023	5.7	100.79	±	59.67
(93Kev)										
93	593	295	0.95625	0.01996	179.425	7.122	6.8	68.02	±	15.42
Ra-226										
295	1065	172	0.07625	0.00564	883.545	4.933	18	182.68	±	3.79
352	1706	144	0.0122	0.0029	1560.4872	4.251	35	192.56	±	1.70
609	1146	83	0.0102	0.0026	1061.7352	2.305	43	196.67	±	3.10
183.7	674	279	0.46375	0.0139	337.495	13.15	3.3	142.79	±	12.54
Th-228	583 kev									
228	114	64	0.2004	0.00914	25.1504	0.79	86	6.80	±	29.35
Ra-228										
338	201	169	0.08375	0.00591	21.615	3.898	12	8.48	±	45.98
911	97	55	0.2104	0.00936	15.9104	1.511	29	6.67	±	57.21
964	136	108	0.17083	0.00844	6.81708	1.623	21.8	3.54	±	108.25

Ra-226 weighted average =	191.46	±	1.3787	U (ppm)=		256.29	±	1.85
Ra-228 weighted average =	7.35	±	34.023	Th (ppm) =		27.20	±	126
210PB/234Th av =	70.07	±	14.93	U (ppm)=		93.797	±	20
63&92kev								
Ra-228 av&Th228 =	7.04	±	22.224	Th (ppm) =		26.031	±	82.2

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	70.0714		average=	68.02					
	weighted error=	14.9295		std.=	####					
data	± err	error^2	1/error^2	data/error^2						
100.79	± 59.67	3560.51	0.000281	0.02831						
68.02	± 15.42	237.776	0.004206	0.28607						
	±	0	0	0						
	±	0	0	0						

WOP1-83

Sample #	15.6/7.7									
Weight(kg)	4.4958	Geometry	full			Counting Time(min)		73		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	555	125	0.22875	0.00976	413.30125	1.303	4.1	2357.27	±	92.07
Th-234	62 kev									
62	853	515	0.3742	0.01249	310.6834	3.023	5.7	549.38	±	32.93
(93Kev)										
93	1018	432	0.95625	0.01996	516.19375	7.122	6.8	324.77	±	9.09
Ra-226										
295	1547	184	0.07625	0.00564	1357.43375	4.933	18	465.81	±	3.06
352	1914	169	0.0122	0.0029	1744.1094	4.251	35	357.18	±	1.61
609	1655	79	0.0102	0.0026	1575.2554	2.305	43	484.26	±	2.54
183.7	1058	291	0.46375	0.0139	733.14625	13.15	3.3	514.78	±	8.51
Th-228	583 kev									
228	120	77	0.2004	0.00914	28.3708	0.79	86	12.72	±	27.63
Ra-228										
338	174	145	0.08375	0.00591	22.88625	3.898	12	14.91	±	44.69
911	69	44	0.2104	0.00936	9.6408	1.511	29	6.70	±	73.50
964	120	82	0.17083	0.00844	25.52941	1.623	21.8	21.99	±	55.94
Ra-226 weighted average =			407.79	±	1.2296	U (ppm)=		545.87	±	1.65
Ra-228 weighted average =			6.70	±	73.5	Th (ppm) =		24.79	±	272
210PB/234Th av =			340.67	±	8.7623	U (ppm)=		456.02	±	11.7
	63&92kev									
Ra-228 av&Th228 =			11.98	±	25.86	Th (ppm) =		44.326	±	95.7
Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		11.9746		average=	12.72				
	weighted error=		25.863		std.=	####				
data	±	err	error^2	1/error^2	data/error^2					
6.7	±	73.5	5402.25	0.000185	0.00124					
12.72	±	27.63	763.417	0.00131	0.01666					
	±		0	0	0					
	±		0	0	0					

WOP1-84

Sample #	15.0/7.6									
Weight(kg)	4.6885	Geometry	full			Counting Time(min)		208		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1157	883	0.22875	0.00976	226.42	1.303	4.1	434.60	±	124.40
Th-234	62 kev									
62	1700	1141	0.3742	0.01249	481.1664	3.023	5.7	286.34	±	26.46
(93Kev)										
93	1921	887	0.95625	0.01996	835.1	7.122	6.8	176.82	±	7.15
Ra-226										
295	3147	363	0.07625	0.00564	2768.14	4.933	18	319.67	±	2.14
352	4971	375	0.0122	0.0029	4593.4624	4.251	35	316.58	±	0.99
609	3304	189	0.0102	0.0026	3112.8784	2.305	43	322.05	±	1.81
183.7	2154	668	0.46375	0.0139	1389.54	13.15	3.3	328.35	±	6.18
Th-228	583 kev									
228	248	192	0.2004	0.00914	14.3168	0.79	86	2.16	±	38.90
Ra-228										
338	406	370	0.08375	0.00591	18.58	3.898	12	4.07	±	49.60
911	183	110	0.2104	0.00936	29.2368	1.511	29	6.84	±	42.21
964	272	232	0.17083	0.00844	4.46736	1.623	21.8	1.29	±	133.72
Ra-226 weighted average =			318.27	±	0.7981	U (ppm)=		426.04	±	1.07
Ra-228 weighted average =			5.44	±	31.255	Th (ppm) =		20.12	±	116
210PB/234Th av =			44.15	±	6.9024	U (ppm)=		59.092	±	9.24
	63&92kev									
Ra-228 av&Th228 =			4.15	±	24.365	Th (ppm) =		15.36	±	90.2

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	44.1447		average=	26.46
	weighted error=	6.90244		std.=	####

data	±	err	error^2	1/error^2	data/error^2
286.34	±	26.46	700.132	0.001428	0.40898
26.46	±	7.15	51.1225	0.019561	0.51758
	±		0	0	0
	±		0	0	0

NOP1-AE

Sample #	13.95/8.0									
Weight(kg)	4.8979	Geometry	full			Counting Time(min)		125		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1724	1283	0.22875	0.00976	412.40625	1.303	4.1	1260.89	±	92.17
Th-234	62 kev									
62	2589	1618	0.3742	0.01249	924.225	3.023	5.7	876.08	±	19.09
(93Kev)										
93	3071	940	0.95625	0.01996	2011.46875	7.122	6.8	678.39	±	4.60
Ra-226										
295	5508	496	0.07625	0.00564	5002.46875	4.933	18	920.20	±	1.59
352	8784	468	0.0122	0.0029	8314.475	4.251	35	912.76	±	0.74
609	5833	220	0.0102	0.0026	5611.725	2.305	43	924.78	±	1.35
183.7	3935	940	0.46375	0.0139	2937.03125	13.15	3.3	1105.48	±	4.25
Th-228	583 kev									
228	236	198	0.2004	0.00914	12.95	0.79	86	3.11	±	40.90
Ra-228										
338	455	440	0.08375	0.00591	4.53125	3.898	12	1.58	±	100.43
911	196	110	0.2104	0.00936	59.7	1.511	29	22.25	±	29.54
964	307	247	0.17083	0.00844	38.64625	1.623	21.8	17.84	±	45.46

Ra-226 weighted average =	919.90	±	0.5949	U (ppm)=		1231.4	±	0.8
Ra-228 weighted average =	1.58	±	100.43	Th (ppm) =		5.85	±	372
210PB/234Th av =	689.24	±	4.472	U (ppm)=		922.62	±	5.99
63&92kev								
Ra-228 av&Th228 =	2.89	±	37.88	Th (ppm) =		10.693	±	140

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	2.89235		average=	3.11
	weighted error=	37.8793		std.=	####

data	±	err	error^2	1/error^2	data/error^2
1.58	±	100.43	10086.2	9.91E-05	0.00016
3.11	±	40.9	1672.81	0.000598	0.00186
	±		0	0	0
			0	0	0

NOP1.99

Sample #	5.2/7.5									
Weight(kg)	4.7356	Geometry	full			Counting Time(min)		2230		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	3578	2847	0.22875	0.00976	220.8875	1.303	4.1	39.15	±	125.95
Th-234	62 kev									
62	4407	3240	0.3742	0.01249	332.534	3.023	5.7	18.27	±	31.83
(93Kev)										
93	5436	2938	0.95625	0.01996	365.5625	7.122	6.8	7.15	±	10.80
Ra-226										
295	3810	2157	0.07625	0.00564	1482.9625	4.933	18	15.81	±	2.92
352	4575	1838	0.0122	0.0029	2709.794	4.251	35	17.25	±	1.29
609	3141	1024	0.0102	0.0026	2094.254	2.305	43	20.01	±	2.20
183.7	4377	2469	0.46375	0.0139	873.8375	13.15	3.3	19.07	±	7.80
Th-228	583 kev									
228	1996	1064	0.2004	0.00914	485.108	0.79	86	6.76	±	6.68
Ra-228										
338	2514	1933	0.08375	0.00591	394.2375	3.898	12	7.98	±	10.77
911	1665	729	0.2104	0.00936	466.808	1.511	29	10.09	±	10.56
964	2235	1454	0.17083	0.00844	400.0491	1.623	21.8	10.71	±	14.13

Ra-226 weighted average =	17.71	±	1.0307	U (ppm)=	23.704	±	1.38
Ra-228 weighted average =	9.42	±	6.6523	Th (ppm) =	34.86	±	24.6
210PB/234Th av =	8.30	±	10.227	U (ppm)=	11.108	±	13.7
63&92kev							
Ra-228 av&Th228 =	8.09	±	4.7136	Th (ppm) =	29.933	±	17.4

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		8.29803		average=	7.15				
	weighted error=		10.2273		std.=	####				
data	±	err	error^2	1/error^2	data/error^2					
18.27	±	31.83	1013.15	0.000987	0.01803					
7.15	±	10.8	116.64	0.008573	0.0613					
	±		0	0	0					
	±		0	0	0					

NOP1-72

Sample #	22.7/25.25									
Weight(kg)	4.185	Geometry	full			Counting Time(min)		591		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1117	886	0.22875	0.00976	95.80875	1.303	4.1	72.51	±	191.24
Th-234	62 kev									
62	1434	998	0.3742	0.01249	214.8478	3.023	5.7	50.41	±	39.59
(93Kev)										
93	1723	1146	0.95625	0.01996	11.85625	7.122	6.8	0.99	±	59.97
Ra-226										
295	1606	609	0.07625	0.00564	951.93625	4.933	18	43.35	±	3.65
352	2180	514	0.0122	0.0029	1658.7898	4.251	35	45.08	±	1.65
609	1454	298	0.0102	0.0026	1149.9718	2.305	43	46.91	±	2.98
183.7	1501	770	0.46375	0.0139	456.92375	13.15	3.3	42.57	±	10.78
Th-228	583 kev									
228	524	303	0.2004	0.00914	102.5636	0.79	86	6.10	±	14.53
Ra-228										
338	691	544	0.08375	0.00591	97.50375	3.898	12	8.43	±	21.65
911	411	196	0.2104	0.00936	90.6536	1.511	29	8.36	±	23.97
964	588	407	0.17083	0.00844	80.03947	1.623	21.8	9.15	±	31.59

Ra-226 weighted average =	45.18	±	1.3321	U (ppm)=	60.474	± 1.78
Ra-228 weighted average =	8.55	±	14.321	Th (ppm) =	31.65	± 53
210PB/234Th av =	35.41	±	33.04	U (ppm)=	47.398	± 44.2
63&92kev						
Ra-228 av&Th228 =	7.34	±	10.2	Th (ppm) =	27.174	± 37.7

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	35.4095		average=	0.99						
	weighted error=	33.0397		std.=	####						
data	±	err	error^2	1/error^2	data/error^2						
50.41	±	39.59	1567.37	0.000638	0.03216						
0.99	±	59.97	3596.4	0.000278	0.00028						
	±		0	0	0						
	±		0	0	0						

WOP1-71

Sample #	22.5/24.6									
Weight(kg)	4.5768	Geometry	full			Counting Time(min)		965		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1794	1353	0.22875	0.00976	220.25625	1.303	4.1	93.3	±	126.13
Th-234	62 kev									
62	2251	1566	0.3742	0.01249	323.897	3.023	5.7	42.6	±	32.25
(93Kev)										
93	2664	1363	0.95625	0.01996	378.21875	7.122	6.8	17.7	±	10.62
Ra-226										
295	2475	1048	0.07625	0.00564	1353.41875	4.933	18	34.51	±	3.06
352	3191	855	0.0122	0.0029	2324.227	4.251	35	35.37	±	1.39
609	2234	461	0.0102	0.0026	1763.157	2.305	43	40.28	±	2.40
183.7	2362	1241	0.46375	0.0139	673.48125	13.15	3.3	35.14	±	8.88
Th-228	583 kev									
228	918	512	0.2004	0.00914	212.614	0.79	86	7.09	±	10.09
Ra-228										
338	1172	882	0.08375	0.00591	209.18125	3.898	12	10.13	±	14.78
911	679	328	0.2104	0.00936	147.964	1.511	29	7.65	±	18.76
964	970	718	0.17083	0.00844	87.14905	1.623	21.8	5.58	±	30.28

Ra-226 weighted average =	36.31	±	1.11	U (ppm)=	48.6	± 1.49
Ra-228 weighted average =	8.72	±	10.84	Th (ppm) =	32.3	± 40.1
210PB/234Th av =	20.60	±	10.06	U (ppm)=	27.58	± 13.5
63&92kev						
Ra-228 av&Th228 =	7.85	±	7.39	Th (ppm) =	29.05	± 27.3

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	36.3046		average=	36.93					
	weighted error=	1.11066		std.=	2.903					
data	± err	error^2	1/error^2	data/error^2						
34.51	± 3.06	9.3636	0.106797	3.68555						
35.37	± 1.39	1.9321	0.517572	18.3065						
40.28	± 2.4	5.76	0.173611	6.99306						
35.14	± 8.88	78.8544	0.012682	0.44563						

NOP1-10

Sample #	22.8/23.75									
Weight(kg)	4.7437	Geometry	full			Counting Time(min)		341		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	846	639	0.22875	0.00976	128.99625	1.303	4.1	149.27	±	164.81
Th-234	62 kev									
62	1067	744	0.3742	0.01249	195.3978	3.023	5.7	70.10	±	41.52
(93Kev)										
93	1353	627	0.95625	0.01996	399.91875	7.122	6.8	51.05	±	10.33
Ra-226										
295	1494	406	0.07625	0.00564	1061.99875	4.933	18	73.94	±	3.46
352	2155	335	0.0122	0.0029	1815.8398	4.251	35	75.45	±	1.58
609	1540	201	0.0102	0.0026	1335.5218	2.305	43	83.30	±	2.76
183.7	1227	535	0.46375	0.0139	533.86125	13.15	3.3	76.05	±	9.97
Th-228	583 kev									
228	337	206	0.2004	0.00914	62.6636	0.79	86	5.70	±	18.59
Ra-228										
338	446	362	0.08375	0.00591	55.44125	3.898	12	7.33	±	28.71
911	269	123	0.2104	0.00936	74.2536	1.511	29	10.48	±	26.48
964	372	287	0.17083	0.00844	26.74697	1.623	21.8	4.67	±	54.65
Ra-226 weighted average =			76.91	±	1.2645	U (ppm)=		102.95	±	1.69
Ra-228 weighted average =			8.54	±	18.337	Th (ppm) =		31.60	±	67.8
210PB/234Th av =			52.16	±	10.024	U (ppm)=		69.821	±	13.4
	63&92kev									
Ra-228 av&Th228 =			7.14	±	13.055	Th (ppm) =		26.418	±	48.3

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	52.1604		average=	51.05
	weighted error=	10.0244		std.=	####

data	±	err	error^2	1/error^2	data/error^2
70.1	±	41.52	1723.91	0.00058	0.04066
51.05	±	10.33	106.709	0.009371	0.4784
	±		0	0	0
			0	0	0

NOP1-169

Sample #	22.7/23.0									
Weight(kg)	5.1163	Geometry	full			Counting Time(min)		156		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1476	1151	0.22875	0.00976	289.315	1.303	4.1	678.52	±	110.05
Th-234	62 kev									
62	2618	1398	0.3742	0.01249	1161.6248	3.023	5.7	844.64	±	17.03
(93Kev)										
93	3419	1252	0.95625	0.01996	2017.825	7.122	6.8	522.03	±	4.60
Ra-226										
295	4257	420	0.07625	0.00564	3825.105	4.933	18	539.73	±	1.82
352	6605	382	0.0122	0.0029	6221.0968	4.251	35	523.87	±	0.85
609	4318	173	0.0102	0.0026	4143.4088	2.305	43	523.77	±	1.57
183.7	3181	807	0.46375	0.0139	2301.655	13.15	3.3	664.54	±	4.80
Th-228	583 kev									
228	249	189	0.2004	0.00914	28.7376	0.79	86	5.30	±	27.46
Ra-228										
338	421	373	0.08375	0.00591	34.935	3.898	12	9.36	±	36.17
911	168	115	0.2104	0.00936	20.1776	1.511	29	5.77	±	50.80
964	296	204	0.17083	0.00844	65.35052	1.623	21.8	23.14	±	34.96
Ra-226 weighted average =			528.95	±	0.6844	U (ppm)=		708.05	±	0.92
Ra-228 weighted average =			8.15	±	29.46	Th (ppm) =		30.16	±	109
210PB/234Th av =			92.14	±	9.5324	U (ppm)=		123.34	±	12.8
	63&92kev									
Ra-228 av&Th228 =			6.63	±	20.09	Th (ppm) =		24.531	±	74.3

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		6.62583		average=	5.535				
	weighted error=		20.0884		std.=	0.332				
data	±	err	error^2	1/error^2	data/error^2					
9.36	±	36.17	1308.27	0.000764	0.00715					
5.77	±	50.8	2580.64	0.000388	0.00224					
5.3	±	27.46	754.052	0.001326	0.00703					
	±		0	0	0					

NOP1-68

Sample #	22.6/22.4									
Weight(kg)	4.2954	Geometry	full			Counting Time(min)		888		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1807	1359	0.22875	0.00976	244.87	1.303	4.1	120.2	±	119.62
Th-234	62 kev									
62	2127	1493	0.3742	0.01249	301.7104	3.023	5.7	45.9	±	33.41
(93Kev)										
93	2622	1314	0.95625	0.01996	458.85	7.122	6.8	24.8	±	9.64
Ra-226										
295	2539	973	0.07625	0.00564	1498.29	4.933	18	44.24	±	2.91
352	3489	752	0.0122	0.0029	2726.1664	4.251	35	48.04	±	1.29
609	2415	435	0.0102	0.0026	1970.9424	2.305	43	52.13	±	2.27
183.7	2284	1150	0.46375	0.0139	722.19	13.15	3.3	43.63	±	8.58
Th-228	583 kev									
228	920	492	0.2004	0.00914	250.0448	0.79	86	9.65	±	9.31
Ra-228										
338	1073	831	0.08375	0.00591	167.63	3.898	12	9.40	±	16.51
911	618	310	0.2104	0.00936	121.1648	1.511	29	7.25	±	20.73
964	909	674	0.17083	0.00844	83.30296	1.623	21.8	6.17	±	30.97

Ra-226 weighted average =	48.35	±	1.04	U (ppm)=	64.72	±	1.39
Ra-228 weighted average =	8.21	±	11.92	Th (ppm) =	30.4	±	44.1
210PB/234Th av =	26.98	±	9.23	U (ppm)=	36.12	±	12.4
63&92kev							
Ra-228 av&Th228 =	9.10	±	7.34	Th (ppm) =	33.67	±	27.2

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	48.3476		average=	47.93						
	weighted error=	1.03882		std.=	4.251						
data	±	err	error^2	1/error^2	data/error^2						
44.24	±	2.91	8.4681	0.11809	5.22431						
48.04	±	1.29	1.6641	0.600925	28.8685						
52.13	±	2.27	5.1529	0.194065	10.1166						
43.63	±	8.58	73.6164	0.013584	0.59267						

NOP1-87

Sample #	13.5/7.75									
Weight(kg)	4.4529	Geometry	full			Counting Time(min)		142		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	628	427	0.22875	0.00976	168.5175	1.303	4.1	498.87	±	144.19
Th-234	62 kev									
62	818	561	0.3742	0.01249	203.8636	3.023	5.7	187.11	±	40.65
(93Kev)										
93	944	376	0.95625	0.01996	432.2125	7.122	6.8	141.14	±	9.93
Ra-226										
295	1475	239	0.07625	0.00564	1225.1725	4.933	18	218.21	±	3.22
352	2392	199	0.0122	0.0029	2191.2676	4.251	35	232.92	±	1.44
609	1570	114	0.0102	0.0026	1454.5516	2.305	43	232.09	±	2.65
183.7	1030	370	0.46375	0.0139	594.1475	13.15	3.3	216.53	±	9.45
Th-228	583 kev									
228	159	111	0.2004	0.00914	19.5432	0.79	86	4.55	±	33.29
Ra-228										
338	224	201	0.08375	0.00591	11.1075	3.898	12	3.76	±	64.15
911	113	60	0.2104	0.00936	23.1232	1.511	29	8.35	±	47.46
964	174	125	0.17083	0.00844	24.74214	1.623	21.8	11.06	±	56.82
Ra-226 weighted average =			230.57	±	1.17	U (ppm)=		308.64	±	1.57
Ra-228 weighted average =			8.07	±	31.68	Th (ppm) =		29.86	±	117
210PB/234Th av =			145.30	±	9.63	U (ppm)=		194.5	±	12.9
	63&92kev									
Ra-228 av&Th228 =			6.40	±	22.95	Th (ppm) =		23.68	±	84.9

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		230.571		average=	227.2				
	weighted error=		1.16857		std.=	9.233				
data	±	err	error^2	1/error^2	data/error^2					
218.21	±	3.22	10.3684	0.096447	21.0457					
232.92	±	1.44	2.0736	0.482253	112.326					
232.09	±	2.65	7.0225	0.142399	33.0495					
216.53	±	9.45	89.3025	0.011198	2.42468					

NOP1-88

Sample #	12.95/7.9									
Weight(kg)	4.25	Geometry	full			Counting Time(min)		191		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	6789	5326	0.22875	0.00976	1419.30875	1.303	4.1	3272.85	±	49.69
Th-234	62 kev									
62	11766	6761	0.3742	0.01249	4933.5278	3.023	5.7	3527.14	±	8.26
(93Kev)										
93	14247	5420	0.95625	0.01996	8644.35625	7.122	6.8	2198.87	±	2.22
Ra-226										
295	23049	1846	0.07625	0.00564	21188.4363	4.933	18	2939.63	±	0.77
352	36552	1614	0.0122	0.0029	34935.6698	4.251	35	2892.59	±	0.36
609	24686	720	0.0102	0.0026	23964.0518	2.305	43	2978.51	±	0.65
183.7	14575	3616	0.46375	0.0139	10870.4238	13.15	3.3	3085.92	±	2.21
Th-228	583 kev									
228	1468	787	0.2004	0.00914	642.7236	0.79	86	116.54	±	5.81
Ra-228										
338	1822	1569	0.08375	0.00591	237.00375	3.898	12	62.42	±	13.89
911	509	408	0.2104	0.00936	60.8136	1.511	29	17.10	±	29.26
964	997	784	0.17083	0.00844	180.37147	1.623	21.8	62.80	±	21.04

Ra-226 weighted average =	2919.50	±	0.289	U (ppm)=	3908	±	0.39
Ra-228 weighted average =	17.10	±	29.26	Th (ppm) =	63.27	±	108
210PB/234Th av =	2288.40	±	2.1439	U (ppm)=	3063.3	±	2.87
63&92kev							
Ra-228 av&Th228 =	102.99	±	5.1141	Th (ppm) =	381.06	±	18.9

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	2288.35		average=	2199					
	weighted error=	2.14392		std.=	####					
data	± err	error^2	1/error^2	data/error^2						
3527.1	± 8.26	68.2276	0.014657	51.6967						
2198.9	± 2.22	4.9284	0.202906	446.163						
	±	0	0	0						
		0	0	0						

NOP1-95

Sample #	9.0/7.5									
Weight(kg)	4.3514	Geometry	full			Counting Time(min)		1440		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2766	2226	0.22875	0.00976	210.6	1.303	4.1	62.91	±	128.99
Th-234	62 kev									
62	3725	2530	0.3742	0.01249	656.152	3.023	5.7	60.77	±	22.66
(93Kev)										
93	4461	2198	0.95625	0.01996	886	7.122	6.8	29.20	±	6.94
Ra-226										
295	3963	1536	0.07625	0.00564	2317.2	4.933	18	41.65	±	2.34
352	5354	1224	0.0122	0.0029	4112.432	4.251	35	44.11	±	1.05
609	3819	745	0.0102	0.0026	3059.312	2.305	43	49.26	±	1.82
183.7	3959	1836	0.46375	0.0139	1455.2	13.15	3.3	53.52	±	6.04
Th-228	583 kev									
228	1368	758	0.2004	0.00914	321.424	0.79	86	7.55	±	8.21
Ra-228										
338	1754	1335	0.08375	0.00591	298.4	3.898	12	10.18	±	12.38
911	1010	479	0.2104	0.00936	228.024	1.511	29	8.30	±	15.11
964	1423	1039	0.17083	0.00844	138.0048	1.623	21.8	6.22	±	24.06

Ra-226 weighted average =	45.07	±	0.8395	U (ppm)=	60.332	± 1.12
Ra-228 weighted average =	8.99	±	8.8974	Th (ppm) =	33.25	± 32.9
210PB/234Th av =	31.91	±	6.6358	U (ppm)=	42.711	± 8.88
63&92kev						
Ra-228 av&Th228 =	8.21	±	6.0337	Th (ppm) =	30.38	± 22.3

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	31.9073		average=	29.2
	weighted error=	6.63576		std.=	####

data	±	err	error^2	1/error^2	data/error^2
60.77	±	22.66	513.476	0.001948	0.11835
29.2	±	6.94	48.1636	0.020763	0.60627
	±		0	0	0
			0	0	0

NOP1-91

Sample #	11.55/7.8									
Weight(kg)	6.6537	Geometry	full			Counting Time(min)		1112		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2975	2149	0.22875	0.00976	571.63	1.303	4.1	144.62	±	78.29
Th-234	62 kev									
62	3234	2492	0.3742	0.01249	325.8896	3.023	5.7	25.56	±	32.15
(93Kev)										
93	3395	2046	0.95625	0.01996	285.65	7.122	6.8	7.97	±	12.22
Ra-226										
295	5850	1255	0.07625	0.00564	4510.21	4.933	18	68.65	±	1.68
352	8448	1060	0.0122	0.0029	7374.4336	4.251	35	66.99	±	0.78
609	5851	671	0.0102	0.0026	5168.6576	2.305	43	70.48	±	1.40
183.7	3928	1864	0.46375	0.0139	1548.31	13.15	3.3	48.22	±	5.86
Th-228	583 kev									
228	1157	666	0.2004	0.00914	268.1552	0.79	86	5.33	±	8.99
Ra-228										
338	1482	1138	0.08375	0.00591	250.87	3.898	12	7.25	±	13.50
911	876	422	0.2104	0.00936	220.0352	1.511	29	6.79	±	15.38
964	1184	904	0.17083	0.00844	90.03704	1.623	21.8	3.44	±	29.79
Ra-226 weighted average =			67.71	±	0.63	U (ppm)=		90.637	±	0.84
Ra-228 weighted average =			6.67	±	9.6	Th (ppm) =		24.68	±	35.5
210PB/234Th av =			12.99	±	11.3	U (ppm)=		17.388	±	15.1
	63&92kev									
Ra-228 av&Th228 =			5.96	±	6.56	Th (ppm) =		22.052	±	24.3

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	67.7082		average=	61.9
	weighted error=	0.62779		std.=	11.97

data	±	err	error^2	1/error^2	data/error^2
68.65	±	1.68	2.8224	0.354308	24.3233
66.99	±	0.78	0.6084	1.643655	110.108
70.48	±	1.4	1.96	0.510204	35.9592
48.22	±	5.86	34.3396	0.029121	1.40421

NOP1-94

Sample #	9.7/7.35									
Weight(kg)	4.921	Geometry	full			Counting Time(min)		1440		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2259	1800	0.22875	0.00976	129.6	1.303	4.1	34.23	±	164.43
Th-234	62 kev									
62	2770	2026	0.3742	0.01249	205.152	3.023	5.7	16.80	±	40.52
(93Kev)										
93	3364	1761	0.95625	0.01996	226	7.122	6.8	6.59	±	13.74
Ra-226										
295	2393	1403	0.07625	0.00564	880.2	4.933	18	13.99	±	3.80
352	2910	1119	0.0122	0.0029	1773.432	4.251	35	16.82	±	1.60
609	1990	694	0.0102	0.0026	1281.312	2.305	43	18.24	±	2.82
183.7	2744	1594	0.46375	0.0139	482.2	13.15	3.3	15.68	±	10.49
Th-228	583 kev									
228	1412	717	0.2004	0.00914	406.424	0.79	86	8.44	±	7.30
Ra-228										
338	1688	1303	0.08375	0.00591	264.4	3.898	12	7.98	±	13.15
911	967	504	0.2104	0.00936	160.024	1.511	29	5.15	±	18.04
964	1381	968	0.17083	0.00844	167.0048	1.623	21.8	6.66	±	21.87
Ra-226 weighted average =			16.77	±	1.3	U (ppm)=		22.45	±	1.74
Ra-228 weighted average =			6.93	±	9.56	Th (ppm) =		25.64	±	35.4
210PB/234Th av =			7.73	±	12.97	U (ppm)=		10.35	±	17.4
	63&92kev									
Ra-228 av&Th228 =			7.89	±	5.8	Th (ppm) =		29.19	±	21.5

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	16.7733		average=	16.91
	weighted error=	1.29672		std.=	1.283

data	±	err	error^2	1/error^2	data/error^2
13.99	±	3.8	14.44	0.069252	0.96884
16.82	±	1.6	2.56	0.390625	6.57031
18.24	±	2.82	7.9524	0.125748	2.29365
15.68	±	10.49	110.04	0.009088	0.14249

W op1-87

Sample #	12.5/7.75									
Weight(kg)	4.2264	Geometry	full			Counting Time(min)		212		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	6038	4463	0.22875	0.00976	1526.505	1.303	4.1	3189.07	±	47.91
Th-234	62 kev									
62	9780	5703	0.3742	0.01249	3997.6696	3.023	5.7	2589.33	±	9.18
(93Kev)										
93	11616	4527	0.95625	0.01996	6886.275	7.122	6.8	1586.96	±	2.49
Ra-226										
295	19034	1495	0.07625	0.00564	17522.835	4.933	18	2202.49	±	0.85
352	30147	1383	0.0122	0.0029	28761.4136	4.251	35	2157.47	±	0.40
609	19924	607	0.0102	0.0026	19314.8376	2.305	43	2174.93	±	0.73
183.7	12444	2918	0.46375	0.0139	9427.685	13.15	3.3	2424.71	±	2.37
Th-228	583 kev									
228	647	496	0.2004	0.00914	108.5152	0.79	86	17.83	±	14.13
Ra-228										
338	1466	1308	0.08375	0.00591	140.245	3.898	12	33.46	±	18.05
911	461	412	0.2104	0.00936	4.3952	1.511	29	1.12	±	108.85
964	854	664	0.17083	0.00844	153.78404	1.623	21.8	48.51	±	22.79

Ra-226 weighted average =	2172.20	±	0.32	U (ppm)=	2907.7	± 0.43
Ra-228 weighted average =	1.12	±	108.85	Th (ppm) =	4.14	± 403
210PB/234Th av =	1659.40	±	2.4	U (ppm)=	2221.3	± 3.21
63&92kev						
Ra-228 av&Th228 =	17.55	±	14	Th (ppm) =	64.935	± 51.8

Calculation of weighted average (up to 200 data sets can be input)

weighted average=	2172.19		average=	2252	
weighted error=	0.32127		std.=	149.5	

data	±	err	error^2	1/error^2	data/error^2
2202.5	±	0.85	0.7225	1.384083	3048.43
2157.5	±	0.4	0.16	6.25	13484.2
2174.9	±	0.73	0.5329	1.876525	4081.31
2424.7	±	2.37	5.6169	0.178034	431.681

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Sample #	11.9/7.9									
Weight(kg)	4.346	Geometry	full			Counting Time(min)		150		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	31687	24242	0.22875	0.00976	7410.6875	1.303	4.1	21278.90	±	21.74
Th-234	62 kev									
62	57320	31775	0.3742	0.01249	25488.87	3.023	5.7	22691.15	±	3.64
(93Kev)										
93	71705	28692	0.95625	0.01996	42869.5625	7.122	6.8	13578.67	±	1.00
Ra-226										
295	109758	8136	0.07625	0.00564	101610.563	4.933	18	17553.93	±	0.35
352	176136	7510	0.0122	0.0029	168624.17	4.251	35	17385.20	±	0.16
609	116507	3195	0.0102	0.0026	113310.47	2.305	43	17536.77	±	0.30
183.7	67048	16738	0.46375	0.0139	50240.4375	13.15	3.3	17759.58	±	1.03
Th-228	583 kev									
228	2710	2538	0.2004	0.00914	141.94	0.79	86	32.05	±	12.35
Ra-228										
338	6770	6968	0.08375	0.00591	-210.5625	3.898	12	-69.05	±	-14.73
911	1950	1900	0.2104	0.00936	18.44	1.511	29	6.46	±	53.14
964	4090	3445	0.17083	0.00844	619.3755	1.623	21.8	268.53	±	11.36

Ra-226 weighted average =	17443.00	±	0.13	U (ppm)=	23349	±	0.17
Ra-228 weighted average =	6.46	±	53.14	Th (ppm) =	23.90	±	197
210PB/234Th av =	14232.00	±	0.96332	U (ppm)=	19051	±	1.29
63&92kev							
Ra-228 av&Th228 =	30.74	±	12.02	Th (ppm) =	113.74	±	44.5

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	30.73866		average=	6.46					
	weighted error=	12.02941		std.=	####					
data	± err	error^2	1/error^2	data/error^2						
32.05	± 12.35	152.5225	0.006556	0.21013						
6.46	± 53.14	2823.86	0.000354	0.00229						
	±	0	0	0						
	±	0	0	0						

NOP1.92

Sample #	10.8/7.8									
Weight(kg)	4.4324	Geometry	full			Counting Time(min)		1112		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1913	1635	0.22875	0.00976	23.63	1.303	4.1	8.97	±	385.07
Th-234	62 kev									
62	2539	1809	0.3742	0.01249	313.8896	3.023	5.7	36.96	±	32.76
(93Kev)										
93	3180	1644	0.95625	0.01996	472.65	7.122	6.8	19.80	±	9.50
Ra-226										
295	2769	1199	0.07625	0.00564	1485.21	4.933	18	33.94	±	2.92
352	3795	943	0.0122	0.0029	2838.4336	4.251	35	38.71	±	1.26
609	2291	501	0.0102	0.0026	1778.6576	2.305	43	36.41	±	2.39
183.7	2703	1381	0.46375	0.0139	806.31	13.15	3.3	37.70	±	8.12
Th-228	583 kev									
228	1088	551	0.2004	0.00914	314.1552	0.79	86	9.38	±	8.30
Ra-228										
338	1170	1000	0.08375	0.00591	76.87	3.898	12	3.33	±	24.38
911	766	350	0.2104	0.00936	182.0352	1.511	29	8.43	±	16.91
964	1131	720	0.17083	0.00844	221.03704	1.623	21.8	12.67	±	19.01

Ra-226 weighted average =	37.67	±	1.03	U (ppm)=	50.425	±	1.38
Ra-228 weighted average =	8.83	±	11.22	Th (ppm) =	32.67	±	41.5
210PB/234Th av =	21.12	±	9.12	U (ppm)=	28.271	±	12.2
63&92kev							
Ra-228 av&Th228 =	9.18	±	6.67	Th (ppm) =	33.966	±	24.7

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	37.6673		average=	37.61					
	weighted error=	1.03285		std.=	1.153					
data	± err	error^2	1/error^2	data/error^2						
33.94	± 2.92	8.5264	0.117283	3.98058						
38.71	± 1.26	1.5876	0.629882	24.3827						
36.41	± 2.39	5.7121	0.175067	6.37419						
37.7	± 8.12	65.9344	0.015167	0.57178						

NOP1-93

Sample #	10.3/7.7									
Weight(kg)	4.3809	Geometry	full			Counting Time(min)		1697		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	3521	2611	0.22875	0.00976	521.81125	1.303	4.1	131.38	±	81.94
Th-234	62 kev									
62	4608	3054	0.3742	0.01249	918.9826	3.023	5.7	71.74	±	19.14
(93Kev)										
93	5612	2691	0.95625	0.01996	1298.24375	7.122	6.8	36.06	±	5.73
Ra-226										
295	5089	1819	0.07625	0.00564	3140.60375	4.933	18	47.58	±	2.01
352	6945	1505	0.0122	0.0029	5419.2966	4.251	35	48.99	±	0.91
609	4813	907	0.0102	0.0026	3888.6906	2.305	43	52.77	±	1.62
183.7	4911	2169	0.46375	0.0139	1955.01625	13.15	3.3	60.60	±	5.21
Th-228	583 kev									
228	1613	917	0.2004	0.00914	355.9212	0.79	86	7.05	±	7.80
Ra-228										
338	1962	1613	0.08375	0.00591	206.87625	3.898	12	5.95	±	14.86
911	1178	595	0.2104	0.00936	225.9512	1.511	29	6.94	±	15.18
964	1690	1222	0.17083	0.00844	178.10149	1.623	21.8	6.77	±	21.18

Ra-226 weighted average =	49.80	±	0.73	U (ppm)=	66.662	±	0.98
Ra-228 weighted average =	6.50	±	9.49	Th (ppm) =	24.05	±	35.1
210PB/234Th av =	39.41	±	5.48	U (ppm)=	52.754	±	7.34
63&92kev							
Ra-228 av&Th228 =	6.83	±	6.03	Th (ppm) =	25.271	±	22.3

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	49.801		average=	54.12						
	weighted error=	0.73069		std.=	5.922						
data	± err	error^2	1/error^2	data/error^2							
47.58	± 2.01	4.0401	0.247519	11.7769							
48.99	± 0.91	0.8281	1.207584	59.1595							
52.77	± 1.62	2.6244	0.381039	20.1075							
60.6	± 5.21	27.1441	0.03684	2.23253							

NOP1-96

Sample #	8.15/8.0									
Weight(kg)	5.1922	Geometry	full			Counting Time(min)		1320		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2094	1780	0.22875	0.00976	12.05	1.303	4.1	3.29	±	539.24
Th-234	62 kev									
62	2629	1957	0.3742	0.01249	178.056	3.023	5.7	15.08	±	43.49
(93Kev)										
93	3205	1719	0.95625	0.01996	223.75	7.122	6.8	6.74	±	13.80
Ra-226										
295	2259	1332	0.07625	0.00564	826.35	4.933	18	13.58	±	3.92
352	2775	1103	0.0122	0.0029	1655.896	4.251	35	16.24	±	1.65
609	1993	675	0.0102	0.0026	1304.536	2.305	43	19.20	±	2.79
183.7	2614	1476	0.46375	0.0139	525.85	13.15	3.3	17.68	±	10.05
Th-228	583 kev									
228	1372	645	0.2004	0.00914	462.472	0.79	86	9.93	±	6.84
Ra-228										
338	1602	1211	0.08375	0.00591	280.45	3.898	12	8.75	±	12.77
911	1006	451	0.2104	0.00936	277.272	1.511	29	9.23	±	13.71
964	1342	889	0.17083	0.00844	227.5044	1.623	21.8	9.38	±	18.74
Ra-226 weighted average =			16.62	±	1.32	U (ppm)=		22.248	±	1.77
Ra-228 weighted average =			9.05	±	8.36	Th (ppm) =		33.49	±	30.9
210PB/234Th av =			7.50	±	13.15	U (ppm)=		10.04	±	17.6
	63&92kev									
Ra-228 av&Th228 =			9.58	±	5.29	Th (ppm) =		35.446	±	19.6

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	16.6279		average=	17.71
	weighted error=	1.32366		std.=	1.48

data	±	err	error^2	1/error^2	data/error^2
13.58	±	3.92	15.3664	0.065077	0.88375
16.24	±	1.65	2.7225	0.367309	5.96511
19.2	±	2.79	7.7841	0.128467	2.46657
17.68	±	10.05	101.003	0.009901	0.17505

NOP1-59

Sample #	22.25/17.15									
Weight(kg)	4.3939	Geometry	full			Counting Time(min)		1260		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2721	2003	0.22875	0.00976	429.775	1.303	4.1	145.3	±	90.29
Th-234	62 kev									
62	3082	2248	0.3742	0.01249	362.508	3.023	5.7	38.0	±	30.48
(93Kev)										
93	3669	1860	0.95625	0.01996	604.125	7.122	6.8	22.5	±	8.40
Ra-226										
295	3778	1401	0.07625	0.00564	2280.925	4.933	18	46.40	±	2.36
352	5133	1130	0.0122	0.0029	3987.628	4.251	35	48.41	±	1.06
609	3560	681	0.0102	0.0026	2866.148	2.305	43	52.23	±	1.88
183.7	3499	1671	0.46375	0.0139	1243.675	13.15	3.3	51.77	±	6.53
Th-228	583 kev									
228	1242	703	0.2004	0.00914	286.496	0.79	86	7.62	±	8.70
Ra-228										
338	1550	1281	0.08375	0.00591	163.475	3.898	12	6.31	±	16.72
911	900	434	0.2104	0.00936	200.896	1.511	29	8.28	±	16.10
964	1284	935	0.17083	0.00844	133.7542	1.623	21.8	6.83	±	24.44
Ra-226 weighted average =			48.99	±	0.85	U (ppm)=		65.58	±	1.14
Ra-228 weighted average =			7.24	±	10.48	Th (ppm) =		26.8	±	38.8
210PB/234Th av =			24.57	±	8.07	U (ppm)=		32.89	±	10.8
	63&92kev									
Ra-228 av&Th228 =			7.46	±	6.69	Th (ppm) =		27.6	±	24.8

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	48.9905		average=	50.8
	weighted error=	0.85252		std.=	2.085

data	±	err	error^2	1/error^2	data/error^2
46.4	±	2.36	5.5696	0.179546	8.33094
48.41	±	1.06	1.1236	0.889996	43.0847
52.23	±	1.88	3.5344	0.282933	14.7776
51.77	±	6.53	42.6409	0.023452	1.21409

NOP1-58

Sample #	22.5/16.55									
Weight(kg)	4.3441	Geometry	full			Counting Time(min)		30		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1874	1423	0.22875	0.00976	444.1375	1.303	4.1	6379.2	±	88.82
Th-234	62 kev									
62	3208	1805	0.3742	0.01249	1391.774	3.023	5.7	6197.8	±	15.56
(93Kev)										
93	3861	1521	0.95625	0.01996	2311.3125	7.122	6.8	3662.1	±	4.29
Ra-226										
295	5956	466	0.07625	0.00564	5487.7125	4.933	18	4742.27	±	1.52
352	9640	394	0.0122	0.0029	9245.634	4.251	35	4768.22	±	0.70
609	6461	174	0.0102	0.0026	6286.694	2.305	43	4867.01	±	1.27
183.7	4144	973	0.46375	0.0139	3157.0875	13.15	3.3	5582.46	±	4.10
Th-228	583 kev									
228	191	169	0.2004	0.00914	15.988	0.79	86	18.06	±	36.81
Ra-228										
338	416	412	0.08375	0.00591	1.4875	3.898	12	2.44	±	175.29
911	121	107	0.2104	0.00936	7.688	1.511	29	13.46	±	82.31
964	253	183	0.17083	0.00844	64.8751	1.623	21.8	140.70	±	35.09
Ra-226 weighted average =			4799.40	±	0.56	U (ppm)=		6424	±	0.75
Ra-228 weighted average =			11.47	±	74.5	Th (ppm) =		42.4	±	276
210PB/234Th av =			3846.70	±	4.13	U (ppm)=		5149	±	5.53
	63&92kev									
Ra-228 av&Th228 =			16.77	±	33	Th (ppm) =		62.05	±	122

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		16.7669		average=	10.25				
	weighted error=		33.0019		std.=	11.05				
data	±	err	error^2	1/error^2	data/error^2					
13.46	±	82.31	6774.94	0.000148	0.00199					
2.44	±	175.29	30726.6	3.25E-05	7.9E-05					
18.06	±	36.81	1354.98	0.000738	0.01333					
	±		0	0	0					

NOP1-57

Sample #	22.6/15.85									
Weight(kg)	4.6753	Geometry	full			Counting Time(min)		27		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	3143	2421	0.22875	0.00976	715.82375	1.303	4.1	10614.6	±	69.96
Th-234	62 kev									
62	5558	3149	0.3742	0.01249	2398.8966	3.023	5.7	11028.7	±	11.85
(93Kev)										
93	6699	2713	0.95625	0.01996	3960.18125	7.122	6.8	6477.9	±	3.28
Ra-226										
295	10886	839	0.07625	0.00564	10044.9413	4.933	18	8961.70	±	1.12
352	17655	764	0.0122	0.0029	16890.6706	4.251	35	8993.21	±	0.52
609	11737	319	0.0102	0.0026	11417.7246	2.305	43	9125.72	±	0.94
183.7	7126	1662	0.46375	0.0139	5451.47875	13.15	3.3	9951.79	±	3.12
Th-228	583 kev									
228	282	258	0.2004	0.00914	18.5892	0.79	86	21.68	±	34.14
Ra-228										
338	712	688	0.08375	0.00591	21.73875	3.898	12	36.82	±	45.85
911	203	189	0.2104	0.00936	8.3192	1.511	29	15.04	±	79.12
964	406	361	0.17083	0.00844	40.38759	1.623	21.8	90.43	±	44.47

Ra-226 weighted average =	9032.20	±	0.42	U (ppm)=	12091	± 0.56
Ra-228 weighted average =	15.04	±	79.12	Th (ppm) =	55.6	± 293
210PB/234Th av =	6809.50	±	3.16	U (ppm)=	9115	± 4.23
63&92kev						
Ra-228 av&Th228 =	20.64	±	31.34	Th (ppm) =	76.37	± 116

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	20.6378		average=	15.04					
	weighted error=	31.3463		std.=	####					
data	± err	error^2	1/error^2	data/error^2						
21.68	± 34.14	1165.54	0.000858	0.0186						
15.04	± 79.12	6259.97	0.00016	0.0024						
	±	0	0	0						
	±	0	0	0						

NOP1-36

Sample #	22.35/15.3									
Weight(kg)	3.8727	Geometry	full			Counting Time(min)		70		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1852	1357	0.22875	0.00976	478.9875	1.303	4.1	3307.38	±	85.53
Th-234	62 kev									
62	2921	1767	0.3742	0.01249	1127.806	3.023	5.7	2414.40	±	17.28
(93Kev)										
93	3418	1404	0.95625	0.01996	1947.0625	7.122	6.8	1483.05	±	4.68
Ra-226										
295	6161	472	0.07625	0.00564	5683.6625	4.933	18	2361.20	±	1.49
352	9678	418	0.0122	0.0029	9259.146	4.251	35	2295.62	±	0.70
609	6486	201	0.0102	0.0026	6284.286	2.305	43	2338.86	±	1.27
183.7	3843	928	0.46375	0.0139	2882.5375	13.15	3.3	2450.32	±	4.29
Th-228	583 kev									
228	216	192	0.2004	0.00914	9.972	0.79	86	5.41	±	46.61
Ra-228										
338	468	398	0.08375	0.00591	64.1375	3.898	12	50.58	±	26.69
911	140	121	0.2104	0.00936	4.272	1.511	29	3.60	±	110.41
964	294	221	0.17083	0.00844	61.0419	1.623	21.8	63.64	±	36.18

Ra-226 weighted average =	2316.10	±	0.56	U (ppm)=		3100	±	0.75
Ra-228 weighted average =	3.60	±	110.41	Th (ppm) =		13.3	±	409
210PB/234Th av =	1551.60	±	4.51	U (ppm)=		2077	±	6.04
63&92kev								
Ra-228 av&Th228 =	5.14	±	42.9	Th (ppm) =		19.02	±	159

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	5.13622		average=	3.6				
	weighted error=	42.9405		std.=	####				
data	± err	error^2	1/error^2	data/error^2					
5.41	± 46.61	2172.49	0.00046	0.00249					
3.6	± 110.41	12190.4	8.2E-05	0.0003					
	±	0	0	0					
	±	0	0	0					

NOP1 '91

Sample #	7.45/7.9									
Weight(kg)	4.9265	Geometry	full			Counting Time(min)		1089		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1869	1491	0.22875	0.00976	128.89125	1.303	4.1	44.97	±	164.88
Th-234	62 kev									
62	2328	1649	0.3742	0.01249	271.4962	3.023	5.7	29.37	±	35.22
(93Kev)										
93	2941	1491	0.95625	0.01996	408.64375	7.122	6.8	15.73	±	10.21
Ra-226										
295	2176	1119	0.07625	0.00564	973.96375	4.933	18	20.45	±	3.61
352	2802	962	0.0122	0.0029	1826.7142	4.251	35	22.88	±	1.57
609	1858	574	0.0102	0.0026	1272.8922	2.305	43	23.94	±	2.83
183.7	2400	1366	0.46375	0.0139	528.97625	13.15	3.3	22.72	±	10.02
Th-228	583 kev									
228	1057	543	0.2004	0.00914	295.7644	0.79	86	8.11	±	8.56
Ra-228										
338	1257	1014	0.08375	0.00591	151.79625	3.898	12	6.05	±	17.35
911	816	354	0.2104	0.00936	232.8744	1.511	29	9.91	±	14.95
964	1083	737	0.17083	0.00844	159.96613	1.623	21.8	8.43	±	22.35
Ra-226 weighted average =			22.79	±	1.27	U (ppm)=		30.51	±	1.7
Ra-228 weighted average =			8.30	±	10.1	Th (ppm) =		30.71	±	37.4
210PB/234Th av =			16.89	±	9.79	U (ppm)=		22.61	±	13.1
	63&92kev									
Ra-228 av&Th228 =			8.19	±	6.53	Th (ppm) =		30.3	±	24.2

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	22.7898		average=	23.18
	weighted error=	1.27283		std.=	0.663

data	±	err	error^2	1/error^2	data/error^2
20.45	±	3.61	13.0321	0.076734	1.5692
22.88	±	1.57	2.4649	0.405696	9.28232
23.94	±	2.83	8.0089	0.124861	2.98917
22.72	±	10.02	100.4	0.00996	0.22629

NOP1-60

Sample #	22.85/17.85									
Weight(kg)	4.3865	Geometry	full			Counting Time(min)		340		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	841	633	0.22875	0.00976	130.225	1.303	4.1	163.44	±	164.03
Th-234	62 kev									
62	1145	732	0.3742	0.01249	285.772	3.023	5.7	111.20	±	34.33
(93Kev)										
93	1312	675	0.95625	0.01996	311.875	7.122	6.8	43.18	±	11.69
Ra-226										
295	1606	399	0.07625	0.00564	1181.075	4.933	18	89.19	±	3.28
352	2327	308	0.0122	0.0029	2014.852	4.251	35	90.80	±	1.50
609	1549	199	0.0102	0.0026	1346.532	2.305	43	91.09	±	2.75
183.7	1314	522	0.46375	0.0139	634.325	13.15	3.3	98.01	±	9.15
Th-228	583 kev									
228	316	190	0.2004	0.00914	57.864	0.79	86	5.71	±	19.35
Ra-228										
338	465	363	0.08375	0.00591	73.525	3.898	12	10.54	±	24.93
911	248	147	0.2104	0.00936	29.464	1.511	29	4.51	±	42.04
964	377	280	0.17083	0.00844	38.9178	1.623	21.8	7.38	±	45.31
Ra-226 weighted average =			90.76	±	1.21	U (ppm)=		121.5	±	1.62
Ra-228 weighted average =			8.68	±	19.38	Th (ppm) =		32.12	±	71.7
210PB/234Th av =			50.76	±	11.04	U (ppm)=		67.95	±	14.8
	63&92kev									
Ra-228 av&Th228 =			7.19	±	13.69	Th (ppm) =		26.6	±	50.7

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		90.763		average=	93.3				
	weighted error=		1.21128		std.=	4.082				
data	±	err	error^2	1/error^2	data/error^2					
89.19	±	3.28	10.7584	0.092951	8.29027					
90.8	±	1.5	2.25	0.444444	40.3556					
91.09	±	2.75	7.5625	0.132231	12.045					
98.01	±	9.15	83.7225	0.011944	1.17065					

NOP1-67

Sample #	22.7/21.8									
Weight(kg)	3.9343	Geometry	full			Counting Time(min)		1065		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2986	2295	0.22875	0.00976	447.38125	1.303	4.1	199.86	±	88.50
Th-234	62 kev									
62	4951	2606	0.3742	0.01249	1946.477	3.023	5.7	269.60	±	13.15
(93Kev)										
93	6275	2481	0.95625	0.01996	2775.59375	7.122	6.8	136.78	±	3.92
Ra-226										
295	4893	1331	0.07625	0.00564	3480.79375	4.933	18	93.56	±	1.91
352	7015	1001	0.0122	0.0029	6001.007	4.251	35	96.26	±	0.87
609	4738	582	0.0102	0.0026	4145.137	2.305	43	99.81	±	1.57
183.7	4951	1719	0.46375	0.0139	2738.10625	13.15	3.3	150.59	±	4.40
Th-228	583 kev									
228	1094	614	0.2004	0.00914	266.574	0.79	86	9.36	±	9.01
Ra-228										
338	1441	1117	0.08375	0.00591	234.80625	3.898	12	11.98	±	13.95
911	763	371	0.2104	0.00936	167.924	1.511	29	9.15	±	17.61
964	1095	850	0.17083	0.00844	63.06605	1.623	21.8	4.25	±	35.59

Ra-226 weighted average =	97.97	±	0.7	U (ppm)=	131.1	±	0.94	
Ra-228 weighted average =	10.32	±	10.45	Th (ppm) =	38.18	±	38.7	
210PB/234Th av =	147.71	±	3.75	U (ppm)=	197.7	±	5.02	
63&92kev								
Ra-228 av&Th228 =	9.77	±	6.82	Th (ppm) =	36.15	±	25.2	

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	97.9682		average=	115.6
	weighted error=	0.69798		std.=	30.39

data	±	err	error^2	1/error^2	data/error^2
93.56	±	1.91	3.6481	0.274115	25.6462
96.26	±	0.87	0.7569	1.321178	127.177
99.81	±	1.57	2.4649	0.405696	40.4925
150.59	±	4.4	19.36	0.051653	7.77841

NOP1-166

Sample #	22.4/21.4									
Weight(kg)	4.0291	Geometry	full			Counting Time(min)		358		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1059	809	0.22875	0.00976	168.1075	1.303	4.1	218.16	±	144.37
Th-234	62 kev									
62	1686	984	0.3742	0.01249	568.0364	3.023	5.7	228.55	±	24.35
(93Kev)										
93	2239	866	0.95625	0.01996	1030.6625	7.122	6.8	147.54	±	6.43
Ra-226										
295	1745	483	0.07625	0.00564	1234.7025	4.933	18	96.40	±	3.21
352	2685	359	0.0122	0.0029	2321.6324	4.251	35	108.18	±	1.39
609	1736	197	0.0102	0.0026	1535.3484	2.305	43	107.39	±	2.57
183.7	1866	645	0.46375	0.0139	1054.9775	13.15	3.3	168.54	±	7.09
Th-228	583 kev									
228	363	223	0.2004	0.00914	68.2568	0.79	86	6.97	±	17.82
Ra-228										
338	482	369	0.08375	0.00591	83.0175	3.898	12	12.30	±	23.46
911	287	136	0.2104	0.00936	75.6768	1.511	29	11.97	±	26.23
964	412	281	0.17083	0.00844	69.84286	1.623	21.8	13.69	±	33.82
Ra-226 weighted average =			108.10	±	1.13	U (ppm)=		144.7	±	1.51
Ra-228 weighted average =			12.48	±	15.53	Th (ppm) =		46.18	±	57.5
210PB/234Th av =			152.94	±	6.21	U (ppm)=		204.7	±	8.31
	63&92kev									
Ra-228 av&Th228 =			10.10	±	11.71	Th (ppm) =		37.37	±	43.3

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	108.101		average=	128
	weighted error=	1.12801		std.=	35.08

data	±	err	error^2	1/error^2	data/error^2
96.4	±	3.21	10.3041	0.097049	9.3555
108.18	±	1.39	1.9321	0.517572	55.9909
107.39	±	2.57	6.6049	0.151403	16.2591
168.54	±	7.09	50.2681	0.019893	3.35282

NOP1-65

Sample #	22.85/20.85									
Weight(kg)	4.065	Geometry	full			Counting Time(min)		1112		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2008	1488	0.22875	0.00976	265.63	1.303	4.1	110.00	±	114.85
Th-234	62 kev									
62	2351	1699	0.3742	0.01249	235.8896	3.023	5.7	30.29	±	37.79
(93Kev)										
93	2762	1450	0.95625	0.01996	248.65	7.122	6.8	11.36	±	13.09
Ra-226										
295	2496	1200	0.07625	0.00564	1211.21	4.933	18	30.18	±	3.24
352	3157	964	0.0122	0.0029	2179.4336	4.251	35	32.41	±	1.44
609	2191	569	0.0102	0.0026	1610.6576	2.305	43	35.95	±	2.51
183.7	2542	1362	0.46375	0.0139	664.31	13.15	3.3	33.87	±	8.94
Th-228	583 kev									
228	1055	550	0.2004	0.00914	282.1552	0.79	86	9.19	±	8.76
Ra-228										
338	1198	1028	0.08375	0.00591	76.87	3.898	12	3.64	±	24.38
911	755	367	0.2104	0.00936	154.0352	1.511	29	7.78	±	18.39
964	1097	719	0.17083	0.00844	188.03704	1.623	21.8	11.76	±	20.61
Ra-226 weighted average =			32.90	±	1.16	U (ppm)=		44.04	±	1.55
Ra-228 weighted average =			8.12	±	11.96	Th (ppm) =		30.04	±	44.3
210PB/234Th av =			14.50	±	12.3	U (ppm)=		19.41	±	16.5
	63&92kev									
Ra-228 av&Th228 =			8.82	±	7.07	Th (ppm) =		32.63	±	26.2

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	32.9011		average=	34.08
	weighted error=	1.15566		std.=	1.779

data	±	err	error^2	1/error^2	data/error^2
30.18	±	3.24	10.4976	0.09526	2.87494
32.41	±	1.44	2.0736	0.482253	15.6298
35.95	±	2.51	6.3001	0.158728	5.70626
33.87	±	8.94	79.9236	0.012512	0.42378

WOP1-61

Sample #	22.30/18.30									
Weight(kg)	3.8736	Geometry	full			Counting Time(min)		1266		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2215	1688	0.22875	0.00976	237.4025	1.303	4.1	90.62	±	121.49
Th-234	62 kev									
62	2701	1937	0.3742	0.01249	290.2628	3.023	5.7	34.35	±	34.06
(93Kev)										
93	3385	1694	0.95625	0.01996	480.3875	7.122	6.8	20.23	±	9.42
Ra-226										
295	2431	1303	0.07625	0.00564	1031.4675	4.933	18	23.69	±	3.51
352	3111	1105	0.0122	0.0029	1990.5548	4.251	35	27.28	±	1.51
609	2125	588	0.0102	0.0026	1524.0868	2.305	43	31.36	±	2.58
183.7	2667	1475	0.46375	0.0139	604.8925	13.15	3.3	28.42	±	9.37
Th-228	583 kev									
228	1179	603	0.2004	0.00914	322.2936	0.79	86	9.67	±	8.20
Ra-228										
338	1403	1116	0.08375	0.00591	180.9725	3.898	12	7.89	±	15.89
911	826	403	0.2104	0.00936	156.6336	1.511	29	7.29	±	18.23
964	1248	887	0.17083	0.00844	144.72922	1.623	21.8	8.34	±	23.49
Ra-226 weighted average =			27.77	±	1.21	U (ppm)=		37.17	±	1.62
Ra-228 weighted average =			7.78	±	10.67	Th (ppm) =		28.79	±	39.5
210PB/234Th av =			21.62	±	9.05	U (ppm)=		28.94	±	12.1
	63&92kev									
Ra-228 av&Th228 =			8.97	±	6.5	Th (ppm) =		33.19	±	24.1

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		27.771		average=	29.02				
	weighted error=		1.21146		std.=	2.105				
data	±	err	error^2	1/error^2	data/error^2					
23.69	±	3.51	12.3201	0.081168	1.92287					
27.28	±	1.51	2.2801	0.438577	11.9644					
31.36	±	2.58	6.6564	0.150231	4.71126					
28.42	±	9.37	87.7969	0.01139	0.3237					

NOP1-62

Sample #	22.65/18.85									
Weight(kg)	3.5694	Geometry	full			Counting Time(min)		1426		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	3469	2717	0.22875	0.00976	425.8025	1.303	4.1	156.59	±	90.71
Th-234	62 kev									
62	4722	3064	0.3742	0.01249	1124.3908	3.023	5.7	128.20	±	17.31
(93Kev)										
93	5649	2642	0.95625	0.01996	1643.3875	7.122	6.8	66.67	±	5.09
Ra-226										
295	6145	1648	0.07625	0.00564	4388.2675	4.933	18	97.09	±	1.70
352	8789	1400	0.0122	0.0029	7371.6028	4.251	35	97.34	±	0.78
609	5886	835	0.0102	0.0026	5036.4548	2.305	43	99.83	±	1.42
183.7	5302	2130	0.46375	0.0139	2510.6925	13.15	3.3	113.67	±	4.60
Th-228	583 kev									
228	1298	783	0.2004	0.00914	229.2296	0.79	86	6.63	±	9.72
Ra-228										
338	1774	1433	0.08375	0.00591	221.5725	3.898	12	9.31	±	14.36
911	978	488	0.2104	0.00936	189.9696	1.511	29	8.52	±	16.56
964	1455	1055	0.17083	0.00844	156.39642	1.623	21.8	8.68	±	22.60

Ra-226 weighted average =	98.10	±	0.63	U (ppm)=	131.3	±	0.84	
Ra-228 weighted average =	8.92	±	9.78	Th (ppm) =	33.00	±	36.2	
210PB/234Th av =	71.81	±	4.88	U (ppm)=	96.12	±	6.53	
63&92kev								
Ra-228 av&Th228 =	7.77	±	6.89	Th (ppm) =	28.75	±	25.5	

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	98.0981		average=	103.6					
	weighted error=	0.62834		std.=	8.798					
data	±	err	error^2	1/error^2	data/error^2					
97.09	±	1.7	2.89	0.346021	33.5952					
97.34	±	0.78	0.6084	1.643655	159.993					
99.83	±	1.42	2.0164	0.495933	49.509					
113.67	±	4.6	21.16	0.047259	5.37193					

WOP1-64

Sample #	22.85/20.10									
Weight(kg)	4.208	Geometry	full			Counting Time(min)		337		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2660	1945	0.22875	0.00976	637.91125	1.303	4.1	842.03	±	74.11
Th-234	62 kev									
62	4409	2553	0.3742	0.01249	1729.8946	3.023	5.7	707.95	±	13.95
(93Kev)										
93	5691	2054	0.95625	0.01996	3314.74375	7.122	6.8	482.65	±	3.59
Ra-226										
295	7222	857	0.07625	0.00564	6339.30375	4.933	18	503.45	±	1.41
352	11650	725	0.0122	0.0029	10920.8886	4.251	35	517.60	±	0.64
609	7560	363	0.0102	0.0026	7193.5626	2.305	43	511.80	±	1.19
183.7	5677	1383	0.46375	0.0139	4137.71625	13.15	3.3	672.38	±	3.58
Th-228	583 kev									
228	488	397	0.2004	0.00914	23.4652	0.79	86	2.44	±	30.39
Ra-228										
338	836	719	0.08375	0.00591	88.77625	3.898	12	13.38	±	22.69
911	338	238	0.2104	0.00936	29.0952	1.511	29	4.68	±	42.31
964	571	442	0.17083	0.00844	71.43029	1.623	21.8	14.24	±	33.44
Ra-226 weighted average =			517.83	±	0.52	U (ppm)=		693.2	±	0.7
Ra-228 weighted average =			12.18	±	17.16	Th (ppm) =		45.07	±	63.5
210PB/234Th av =			497.40	±	3.47	U (ppm)=		665.8	±	4.64
	63&92kev									
Ra-228 av&Th228 =			9.82	±	14.94	Th (ppm) =		36.33	±	55.3

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=		517.832		average=	567.3				
	weighted error=		0.51788		std.=	91.08				
data	±	err	error^2	1/error^2	data/error^2					
503.45	±	1.41	1.9881	0.502993	253.232					
517.6	±	0.64	0.4096	2.441406	1263.67					
511.8	±	1.19	1.4161	0.706165	361.415					
672.38	±	3.58	12.8164	0.078025	52.4625					

Sample #	PB-ESC-1									
Weight(kg)	3.4998	Geometry	full			Counting Time(min)		2972		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4033	3338	0.22875	0.00976	15.155	1.303	4.1	2.73	±	480.83
Th-234	62 kev									
62	4819	3537	0.3742	0.01249	169.8776	3.023	5.7	9.48	±	44.53
(93Kev)										
93	6339	3489	0.95625	0.01996	8.025	7.122	6.8	0.16	±	72.89
Ra-226										
295	3422	2787	0.07625	0.00564	408.385	4.933	18	4.42	±	5.57
352	3384	2266	0.0122	0.0029	1081.7416	4.251	35	6.99	±	2.04
609	2559	1436	0.0102	0.0026	1092.6856	2.305	43	10.60	±	3.05
183.7	4827	3120	0.46375	0.0139	328.735	13.15	3.3	7.28	±	12.71
Th-228	583 kev									
228	2306	1339	0.2004	0.00914	371.4112	0.79	86	5.26	±	7.64
Ra-228										
338	2937	2385	0.08375	0.00591	303.095	3.898	12	6.23	±	12.28
911	1714	981	0.2104	0.00936	107.6912	1.511	29	2.36	±	21.99
964	2616	1941	0.17083	0.00844	167.29324	1.623	21.8	4.55	±	21.85

Ra-226 weighted average =	7.79	±	1.61	U (ppm)=		10.43	±	2.16
Ra-228 weighted average =	5.16	±	9.63	Th (ppm) =		19.09	±	35.6
210PB/234Th av =	6.92	±	37.88	U (ppm)=		9.263	±	50.7
63&92kev								
Ra-228 av&Th228 =	5.22	±	5.98	Th (ppm) =		19.31	±	22.1

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	7.78497		average=	8.29					
	weighted error=	1.60911		std.=	2.006					
data	± err	error^2	1/error^2	data/error^2						
4.42	± 5.57	31.0249	0.032232	0.14247						
6.99	± 2.04	4.1616	0.240292	1.67964						
10.6	± 3.05	9.3025	0.107498	1.13948						
7.28	± 12.71	161.544	0.00619	0.04507						

Sample #	ESC-ECP-1									
Weight(kg)	3.4998	Geometry	full			Counting Time(min)		3366		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4922	3895	0.22875	0.00976	257.0275	1.303	4.1	40.84	±	116.76
Th-234	62 kev									
62	5737	4205	0.3742	0.01249	272.4428	3.023	5.7	13.42	±	35.16
(93Kev)										
93	7109	3915	0.95625	0.01996	-24.7375	7.122	6.8	-0.43	±	-41.52
Ra-226										
295	3845	3139	0.07625	0.00564	449.3425	4.933	18	4.30	±	5.31
352	3785	2696	0.0122	0.0029	1047.9348	4.251	35	5.98	±	2.08
609	2861	1669	0.0102	0.0026	1157.6668	2.305	43	9.91	±	2.97
183.7	5497	3542	0.46375	0.0139	394.0175	13.15	3.3	7.71	±	11.61
Th-228	583 kev									
228	3124	1610	0.2004	0.00914	839.4536	0.79	86	10.49	±	5.08
Ra-228										
338	3684	2948	0.08375	0.00591	454.0975	3.898	12	8.24	±	10.03
911	2159	1044	0.2104	0.00936	406.7936	1.511	29	7.88	±	11.31
964	3173	2175	0.17083	0.00844	422.98622	1.623	21.8	10.15	±	13.74

Ra-226 weighted average =	7.01	±	1.61	U (ppm)=	9.384	±	2.16
Ra-228 weighted average =	8.56	±	6.59	Th (ppm) =	31.67	±	24.4
210PB/234Th av =	9.30	±	26.14	U (ppm)=	12.45	±	35
63&92kev							
Ra-228 av&Th228 =	9.77	±	4.02	Th (ppm) =	36.15	±	14.9

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	7.00941		average=	7.867
	weighted error=	1.60666		std.=	1.97

data	±	err	error^2	1/error^2	data/error^2
4.3	±	5.31	28.1961	0.035466	0.1525
5.98	±	2.08	4.3264	0.231139	1.38221
9.91	±	2.97	8.8209	0.113367	1.12347
7.71	±	11.61	134.792	0.007419	0.0572

Sample #	PUE-ECP-1									
Weight(kg)	3.1755	Geometry	full			Counting Time(min)		4170		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	5996	4747	0.22875	0.00976	295.1125	1.303	4.1	41.72	±	108.96
Th-234	62 kev									
62	6738	5101	0.3742	0.01249	76.586	3.023	5.7	3.36	±	66.32
(93Kev)										
93	8596	4789	0.95625	0.01996	-180.5625	7.122	6.8	-2.82	±	-15.37
Ra-226										
295	4925	4038	0.07625	0.00564	569.0375	4.933	18	4.84	±	4.72
352	4606	3293	0.0122	0.0029	1262.126	4.251	35	6.41	±	1.89
609	3419	1896	0.0102	0.0026	1480.466	2.305	43	11.28	±	2.62
183.7	6785	4399	0.46375	0.0139	452.1625	13.15	3.3	7.87	±	10.84
Th-228	583 kev									
228	3270	2015	0.2004	0.00914	419.332	0.79	86	4.66	±	7.19
Ra-228										
338	4215	3547	0.08375	0.00591	318.7625	3.898	12	5.15	±	11.97
911	2396	1273	0.2104	0.00936	245.632	1.511	29	4.23	±	14.56
964	3614	2653	0.17083	0.00844	248.6389	1.623	21.8	5.31	±	17.92
Ra-226 weighted average =			7.77	±	1.44	U (ppm)=		10.4	±	1.93
Ra-228 weighted average =			4.89	±	8.22	Th (ppm) =		18.09	±	30.4
210PB/234Th av =			-1.69	±	14.8	U (ppm)=		-2.26	±	19.8
	63&92kev									
Ra-228 av&Th228 =			4.76	±	5.41	Th (ppm) =		17.61	±	20

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	7.76987		average=	8.52
	weighted error=	1.44485		std.=	2.499

data	±	err	error^2	1/error^2	data/error^2
4.84	±	4.72	22.2784	0.044887	0.21725
6.41	±	1.89	3.5721	0.279947	1.79446
11.28	±	2.62	6.8644	0.145679	1.64326
7.87	±	10.84	117.506	0.00851	0.06698

Sample #	NOP1-ECP-8/5914									
Weight(kg)	3.2311	Geometry	full			Counting Time(min)		3356		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4860	3872	0.22875	0.00976	220.315	1.303	4.1	38.03	±	126.11
Th-234	62 kev									
62	5687	4226	0.3742	0.01249	205.1848	3.023	5.7	10.98	±	40.51
(93Kev)										
93	8096	4466	0.95625	0.01996	420.825	7.122	6.8	8.01	±	10.07
Ra-226										
295	4073	3219	0.07625	0.00564	598.105	4.933	18	6.21	±	4.60
352	4196	2557	0.0122	0.0029	1598.0568	4.251	35	9.91	±	1.68
609	3018	1610	0.0102	0.0026	1373.7688	2.305	43	12.78	±	2.72
183.7	5672	3556	0.46375	0.0139	559.655	13.15	3.3	11.89	±	9.74
Th-228	583 kev									
228	2961	1568	0.2004	0.00914	720.4576	0.79	86	9.78	±	5.48
Ra-228										
338	3472	2795	0.08375	0.00591	395.935	3.898	12	7.81	±	10.74
911	2099	1091	0.2104	0.00936	301.8976	1.511	29	6.35	±	13.13
964	3074	2179	0.17083	0.00844	321.69452	1.623	21.8	8.38	±	15.76
Ra-226 weighted average =			10.34	±	1.35	U (ppm)=		13.84	±	1.81
Ra-228 weighted average =			7.48	±	7.35	Th (ppm) =		27.68	±	27.2
210PB/234Th av =			8.36	±	9.74	U (ppm)=		11.19	±	13
	63&92kev									
Ra-228 av&Th228 =			8.96	±	4.39	Th (ppm) =		33.15	±	16.2

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	10.3375		average=	11.53
	weighted error=	1.35176		std.=	1.469

data	±	err	error^2	1/error^2	data/error^2
6.21	±	4.6	21.16	0.047259	0.29348
9.91	±	1.68	2.8224	0.354308	3.5112
12.78	±	2.72	7.3984	0.135164	1.7274
11.89	±	9.74	94.8676	0.010541	0.12533

Sample #	NOP1-ECP-36									
Weight(kg)	3.9259	Geometry	full			Counting Time(min)		5640		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	7950	6420	0.22875	0.00976	239.85	1.303	4.1	20.28	±	120.87
Th-234	62 kev									
62	9236	6935	0.3742	0.01249	190.512	3.023	5.7	4.99	±	42.05
(93Kev)										
93	13151	6986	0.95625	0.01996	771.75	7.122	6.8	7.20	±	7.43
Ra-226										
295	4802	3884	0.07625	0.00564	487.95	4.933	18	2.48	±	5.10
352	6076	4237	0.0122	0.0029	1770.192	4.251	35	5.37	±	1.60
609	4372	2697	0.0102	0.0026	1617.472	2.305	43	7.37	±	2.51
183.7	9108	5751	0.46375	0.0139	741.45	13.15	3.3	7.72	±	8.46
Th-228	583 kev									
228	4891	2701	0.2004	0.00914	1059.744	0.79	86	7.04	±	4.52
Ra-228										
338	5933	4684	0.08375	0.00591	776.65	3.898	12	7.50	±	7.67
911	3684	1683	0.2104	0.00936	814.344	1.511	29	8.39	±	8.00
964	5260	3622	0.17083	0.00844	674.5188	1.623	21.8	8.61	±	10.88
Ra-226 weighted average =			5.77	±	1.29	U (ppm)=		7.724	±	1.73
Ra-228 weighted average =			8.07	±	4.93	Th (ppm) =		29.86	±	18.2
210PB/234Th av =			7.18	±	7.3	U (ppm)=		9.611	±	9.77
	63&92kev									
Ra-228 av&Th228 =			7.51	±	3.33	Th (ppm) =		27.79	±	12.3

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		5.76746		average=	6.82				
	weighted error=		1.28909		std.=	1.268				
data	±	err	error^2	1/error^2	data/error^2					
2.48	±	5.1	26.01	0.038447	0.09535					
5.37	±	1.6	2.56	0.390625	2.09766					
7.37	±	2.51	6.3001	0.158728	1.16982					
7.72	±	8.46	71.5716	0.013972	0.10786					

Sample #	NOP1-ECP-35									
Weight(kg)	3.6829	Geometry	full			Counting Time(min)		2824		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4173	3201	0.22875	0.00976	326.01	1.303	4.1	58.67	±	103.67
Th-234	62 kev									
62	4732	3596	0.3742	0.01249	79.2592	3.023	5.7	4.42	±	65.19
(93Kev)										
93	4784	2912	0.95625	0.01996	-828.45	7.122	6.8	-16.45	±	-7.17
Ra-226										
295	3329	2678	0.07625	0.00564	435.67	4.933	18	4.72	±	5.40
352	3514	2207	0.0122	0.0029	1272.5472	4.251	35	8.22	±	1.88
609	2462	1408	0.0102	0.0026	1025.1952	2.305	43	9.95	±	3.15
183.7	4784	2912	0.46375	0.0139	562.37	13.15	3.3	12.46	±	9.72
Th-228	583 kev									
228	2458	1379	0.2004	0.00914	513.0704	0.79	86	7.26	±	6.50
Ra-228										
338	2874	2244	0.08375	0.00591	393.49	3.898	12	8.09	±	10.78
911	1705	893	0.2104	0.00936	217.8304	1.511	29	4.78	±	15.46
964	2575	1907	0.17083	0.00844	185.57608	1.623	21.8	5.04	±	20.75

Ra-226 weighted average =	8.45	±	1.52	U (ppm)=		11.31	±	2.03
Ra-228 weighted average =	6.70	±	8.13	Th (ppm) =		24.79	±	30.1
210PB/234Th av =	-15.85	±	7.11	U (ppm)=		-21.2	±	9.52
63&92kev								
Ra-228 av&Th228 =	7.04	±	5.08	Th (ppm) =		26.05	±	18.8

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	6.70482		average=	4.91					
	weighted error=	8.13474		std.=	0.184					
data	± err	error^2	1/error^2	data/error^2						
8.09	± 10.78	116.208	0.008605	0.06962						
4.78	± 15.46	239.012	0.004184	0.02						
5.04	± 20.75	430.563	0.002323	0.01171						
	±	0	0	0						

NOP1-ECP-8/5915 DUPLicate

Sample #	NOP1-ECP-8/5915									
Weight(kg)	3.6934	Geometry	full			Counting Time(min)		2876		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4148	3305	0.22875	0.00976	185.115	1.303	4.1	32.62	±	137.58
Th-234	62 kev									
62	4714	3462	0.3742	0.01249	175.8008	3.023	5.7	9.60	±	43.77
(93Kev)										
93	6597	3657	0.95625	0.01996	189.825	7.122	6.8	3.69	±	14.99
Ra-226										
295	3754	2654	0.07625	0.00564	880.705	4.933	18	9.34	±	3.79
352	3718	2248	0.0122	0.0029	1434.9128	4.251	35	9.08	±	1.77
609	2677	1399	0.0102	0.0026	1248.6648	2.305	43	11.86	±	2.86
183.7	4814	2950	0.46375	0.0139	530.255	13.15	3.3	11.50	±	10.01
Th-228	583 kev									
228	2120	1300	0.2004	0.00914	243.6496	0.79	86	3.38	±	9.43
Ra-228										
338	2749	2295	0.08375	0.00591	213.135	3.898	12	4.29	±	14.64
911	1616	866	0.2104	0.00936	144.8896	1.511	29	3.11	±	18.96
964	2432	1797	0.17083	0.00844	143.69292	1.623	21.8	3.82	±	23.58
Ra-226 weighted average =			9.81	±	1.39	U (ppm)=		13.13	±	1.86
Ra-228 weighted average =			3.84	±	10.4	Th (ppm) =		14.21	±	38.5
210PB/234Th av =			4.61	±	14.11	U (ppm)=		6.171	±	18.9
	63&92kev									
Ra-228 av&Th228 =			3.59	±	6.98	Th (ppm) =		13.28	±	25.8

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	9.81337		average=	10.81
	weighted error=	1.38536		std.=	1.512

data	±	err	error^2	1/error^2	data/error^2
9.34	±	3.79	14.3641	0.069618	0.65023
9.08	±	1.77	3.1329	0.319193	2.89827
11.86	±	2.86	8.1796	0.122255	1.44995
11.5	±	10.01	100.2	0.00998	0.11477

Sample #	NOP1-ECP-16									
Weight(kg)	4.1992	Geometry	full			Counting Time(min)		4266		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	5828	4628	0.22875	0.00976	224.1525	1.303	4.1	23.42	±	125.03
Th-234	62 kev									
62	6669	4900	0.3742	0.01249	172.6628	3.023	5.7	5.59	±	44.17
(93Kev)										
93	9617	5079	0.95625	0.01996	458.6375	7.122	6.8	5.29	±	9.64
Ra-226										
295	4830	3908	0.07625	0.00564	596.7175	4.933	18	3.75	±	4.61
352	4869	3122	0.0122	0.0029	1694.9548	4.251	35	6.36	±	1.63
609	3423	1992	0.0102	0.0026	1387.4868	2.305	43	7.81	±	2.71
183.7	6973	4289	0.46375	0.0139	705.6425	13.15	3.3	9.08	±	8.67
Th-228	583 kev									
228	3328	1940	0.2004	0.00914	533.0936	0.79	86	4.38	±	6.37
Ra-228										
338	3989	3476	0.08375	0.00591	155.7225	3.898	12	1.86	±	17.13
911	2442	1365	0.2104	0.00936	179.4336	1.511	29	2.29	±	17.04
964	3588	2813	0.17083	0.00844	46.23922	1.623	21.8	0.73	±	41.56
Ra-226 weighted average =			6.55	±	1.32	U (ppm)=		8.768	±	1.77
Ra-228 weighted average =			1.97	±	11.6	Th (ppm) =		7.289	±	42.9
210PB/234Th av =			5.41	±	9.39	U (ppm)=		7.242	±	12.6
	63&92kev									
Ra-228 +Th-228 average =			3.82	±	5.58	Th (ppm) =		14.13	±	20.6
Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		3.82197		average=	1.627				
	weighted error=		5.5836		std.=	0.806				
data	±	err	error^2	1/error^2	data/error^2					
4.38	±	6.37	40.5769	0.024645	0.10794					
1.86	±	17.13	293.437	0.003408	0.00634					
2.29	±	17.04	290.362	0.003444	0.00789					
0.73	±	41.56	1727.23	0.000579	0.00042					

Sample #	NOP1-ECP-34									
Weight(kg)	3.9812	Geometry	full			Counting Time(min)		2880		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4130	3102	0.22875	0.00976	369.2	1.303	4.1	60.27	±	97.42
Th-234	62 kev									
62	4876	3542	0.3742	0.01249	256.304	3.023	5.7	12.97	±	36.25
(93Kev)										
93	6861	3769	0.95625	0.01996	338	7.122	6.8	6.09	±	206.49
Ra-226										
295	3357	2669	0.07625	0.00564	468.4	4.933	18	4.60	±	5.20
352	3350	2213	0.0122	0.0029	1101.864	4.251	35	6.46	±	2.02
609	2381	1397	0.0102	0.0026	954.624	2.305	43	8.40	±	3.27
183.7	4736	2953	0.46375	0.0139	447.4	13.15	3.3	8.99	±	10.89
Th-228	583 kev									
228	2562	1398	0.2004	0.00914	586.848	0.79	86	7.53	±	6.08
Ra-228										
338	3040	2345	0.08375	0.00591	453.8	3.898	12	8.46	±	10.04
911	1905	974	0.2104	0.00936	325.048	1.511	29	6.47	±	12.66
964	2732	1866	0.17083	0.00844	374.0096	1.623	21.8	9.22	±	14.61
Ra-226 weighted average =			6.81	±	1.61	U (ppm)=		9.116	±	2.16
Ra-228 weighted average =			8.04	±	6.92	Th (ppm) =		29.75	±	25.6
210PB/234Th av =			18.39	±	33.52	U (ppm)=		24.62	±	44.9
	63&92kev									

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	6.80889		average=	7.95
	weighted error=	1.61373		std.=	1.324

data	±	err	error^2	1/error^2	data/error^2
4.6	±	5.2	27.04	0.036982	0.17012
6.46	±	2.02	4.0804	0.245074	1.58318
8.4	±	3.27	10.6929	0.09352	0.78557
8.99	±	10.89	118.592	0.008432	0.07581

Sample #	NOP1-ECP-8/5915									
Weight(kg)	3.6934	Geometry	full			Counting Time(min)		3945		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	5807	4557	0.22875	0.00976	347.58125	1.303	4.1	44.65	±	100.40
Th-234	62 kev									
62	6904	4978	0.3742	0.01249	449.781	3.023	5.7	17.91	±	27.36
(93Kev)										
93	9254	5202	0.95625	0.01996	279.59375	7.122	6.8	3.96	±	206.49
Ra-226										
295	4662	3837	0.07625	0.00564	524.19375	4.933	18	4.05	±	4.92
352	4555	3027	0.0122	0.0029	1479.871	4.251	35	6.83	±	1.75
609	3349	1919	0.0102	0.0026	1389.761	2.305	43	9.62	±	2.71
183.7	6459	4203	0.46375	0.0139	426.50625	13.15	3.3	6.75	±	11.16
Th-228	583 kev									
228	3608	1889	0.2004	0.00914	928.422	0.79	86	9.38	±	4.83
Ra-228										
338	4278	3283	0.08375	0.00591	664.60625	3.898	12	9.75	±	8.29
911	2643	1219	0.2104	0.00936	593.972	1.511	29	9.30	±	9.36
964	3715	2684	0.17083	0.00844	357.07565	1.623	21.8	6.93	±	14.96
Ra-226 weighted average =			7.35	±	1.4	U (ppm)=		9.839	±	1.87
Ra-228 weighted average =			9.29	±	3.69	Th (ppm) =		34.37	±	13.7
210PB/234Th av =			19.50	±	26.18	U (ppm)=		26.1	±	35
	63&92kev									
Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		19.5044		average=	10.94				
	weighted error=		26.1843		std.=	9.864				
data	±	err	error^2	1/error^2	data/error^2					
44.65	±	100.4	10080.2	9.92E-05	0.00443					
17.91	±	27.36	748.57	0.001336	0.02393					
3.96	±	206.49	42638.1	2.35E-05	9.3E-05					
	±		0	0	0					

Sample #	NOP-ECP-2/5920									
Weight(kg)	3.4787	Geometry	full			Counting Time(min)		3210		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4260	3353	0.22875	0.00976	172.7125	1.303	4.1	28.95	±	142.43
Th-234	62 kev									
62	5089	3681	0.3742	0.01249	206.818	3.023	5.7	10.75	±	40.35
(93Kev)										
93	7106	4104	0.95625	0.01996	-67.5625	7.122	6.8	-1.25	±	206.49
Ra-226										
295	3564	2933	0.07625	0.00564	386.2375	4.933	18	3.90	±	5.73
352	3675	2380	0.0122	0.0029	1255.838	4.251	35	7.56	±	1.90
609	2681	1482	0.0102	0.0026	1166.258	2.305	43	10.54	±	2.95
183.7	5152	3134	0.46375	0.0139	529.3625	13.15	3.3	10.92	±	10.02
Th-228	583 kev									
228	2333	1554	0.2004	0.00914	135.716	0.79	86	1.79	±	12.63
Ra-228										
338	3123	2577	0.08375	0.00591	277.1625	3.898	12	5.31	±	12.84
911	1770	962	0.2104	0.00936	132.616	1.511	29	2.71	±	19.82
964	2754	2158	0.17083	0.00844	47.6357	1.623	21.8	1.21	±	40.95
Ra-226 weighted average =			8.17	±	1.52	U (ppm)=		10.94	±	2.03
Ra-228 weighted average =			4.33	±	10.42	Th (ppm) =		16.02	±	38.6
210PB/234Th av =			11.65	±	38.15	U (ppm)=		15.59	±	51.1
	63&92kev									

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		4.32563		average=	1.96				
	weighted error=		10.4215		std.=	1.061				
data	±	err	error^2	1/error^2	data/error^2					
5.31	±	12.84	164.866	0.006066	0.03221					
2.71	±	19.82	392.832	0.002546	0.0069					
1.21	±	40.95	1676.9	0.000596	0.00072					
	±		0	0	0					

Sample #	NOP1-ECP-15									
Weight(kg)	3.9966	Geometry	full			Counting Time(min)		4135		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	5848	4660	0.22875	0.00976	242.11875	1.303	4.1	27.42	±	120.30
Th-234	62 kev									
62	6844	4933	0.3742	0.01249	363.683	3.023	5.7	12.77	±	30.43
(93Kev)										
93	13786	5124	0.95625	0.01996	4707.90625	7.122	6.8	58.82	±	3.01
Ra-226										
295	4977	3820	0.07625	0.00564	841.70625	4.933	18	5.74	±	3.88
352	5272	3104	0.0122	0.0029	2117.553	4.251	35	8.61	±	1.46
609	3831	1933	0.0102	0.0026	1855.823	2.305	43	11.33	±	2.34
183.7	7030	4302	0.46375	0.0139	810.39375	13.15	3.3	11.30	±	8.09
Th-228	583 kev									
228	3066	1953	0.2004	0.00914	284.346	0.79	86	2.53	±	8.73
Ra-228										
338	3815	3385	0.08375	0.00591	83.69375	3.898	12	1.08	±	23.37
911	2309	1260	0.2104	0.00936	178.996	1.511	29	2.47	±	17.06
964	3598	2673	0.17083	0.00844	218.61795	1.623	21.8	3.74	±	19.12
Ra-226 weighted average =			9.08	±	1.17	U (ppm)=		12.15	±	1.57
Ra-228 weighted average =			2.59	±	11.18	Th (ppm) =		9.583	±	41.4
210PB/234Th av =			58.36	±	2.98	U (ppm)=		78.12	±	3.99
	63&92kev									

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	9.08338		average=	10.41				
	weighted error=	1.16764		std.=	1.562				
data	± err	error^2	1/error^2	data/error^2					
5.74	± 3.88	15.0544	0.066426	0.38128					
8.61	± 1.46	2.1316	0.469131	4.03922					
11.33	± 2.34	5.4756	0.182628	2.06918					
11.3	± 8.09	65.4481	0.015279	0.17266					

Sample #	NOP1-ECP-7									
Weight(kg)	3.3984	Geometry	full			Counting Time(min)		2899		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4101	3361	0.22875	0.00976	76.85375	1.303	4.1	14.60	±	213.52
Th-234	62 kev									
62	4887	3616	0.3742	0.01249	186.1942	3.023	5.7	10.97	±	42.53
(93Kev)										
93	6858	3926	0.95625	0.01996	159.83125	7.122	6.8	3.35	±	16.33
Ra-226										
295	3356	2856	0.07625	0.00564	278.95125	4.933	18	3.19	±	6.74
352	3416	2230	0.0122	0.0029	1150.6322	4.251	35	7.85	±	1.98
609	2550	1359	0.0102	0.0026	1161.4302	2.305	43	11.89	±	2.96
183.7	4837	3032	0.46375	0.0139	460.58875	13.15	3.3	10.77	±	10.74
Th-228	583 kev									
228	2514	1374	0.2004	0.00914	559.0404	0.79	86	8.35	±	6.23
Ra-228										
338	3007	2362	0.08375	0.00591	402.20875	3.898	12	8.73	±	10.66
911	1811	902	0.2104	0.00936	299.0504	1.511	29	6.93	±	13.20
964	2622	1863	0.17083	0.00844	263.76383	1.623	21.8	7.57	±	17.40

Ra-226 weighted average =	8.81	±	1.58	U (ppm)=		11.79	±	2.11
Ra-228 weighted average =	7.94	±	7.49	Th (ppm) =		29.38	±	27.7
210PB/234Th av =	4.38	±	15.2	U (ppm)=		5.863	±	20.3
63&92kev								

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	8.80985		average=	10.17
	weighted error=	1.58135		std.=	2.086

data	±	err	error^2	1/error^2	data/error^2
3.19	±	6.74	45.4276	0.022013	0.07022
7.85	±	1.98	3.9204	0.255076	2.00235
11.89	±	2.96	8.7616	0.114134	1.35706
10.77	±	10.74	115.348	0.008669	0.09337

Sample #	NOP1-ECP-19									
Weight(kg)	3.9352	Geometry	full			Counting Time(min)		2637		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	3783	2860	0.22875	0.00976	319.78625	1.303	4.1	57.68	±	104.67
Th-234	62 kev									
62	4215	3099	0.3742	0.01249	129.2346	3.023	5.7	7.23	±	51.05
(93Kev)										
93	5981	3163	0.95625	0.01996	296.36875	7.122	6.8	5.90	±	11.99
Ra-226										
295	3375	2442	0.07625	0.00564	731.92875	4.933	18	7.94	±	4.16
352	3636	1998	0.0122	0.0029	1605.8286	4.251	35	10.40	±	1.68
609	2614	1180	0.0102	0.0026	1407.1026	2.305	43	13.68	±	2.69
183.7	4570	2645	0.46375	0.0139	702.09125	13.15	3.3	15.59	±	8.70
Th-228	583 kev									
228	1727	1182	0.2004	0.00914	16.5452	0.79	86	0.23	±	36.19
Ra-228										
338	2299	2180	0.08375	0.00591	-101.84875	3.898	12	-2.10	±	-21.18
911	1271	769	0.2104	0.00936	-52.8248	1.511	29	-1.16	±	-31.40
964	2064	1692	0.17083	0.00844	-78.47871	1.623	21.8	-2.14	±	-31.90
Ra-226 weighted average =			11.07	±	1.33	U (ppm)=		14.82	±	1.78
Ra-228 weighted average =			-1.56	±	14.16	Th (ppm) =		-5.77	±	52.4
210PB/234Th av =			6.60	±	11.6	U (ppm)=		8.835	±	15.5
	63&92kev									
Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		-1.5603		average=	-1.02				
	weighted error=		14.1568		std.=	1.191				
data	±	err	error^2	1/error^2	data/error^2					
-2.1	±	-21.18	448.592	0.002229	-0.0047					
-1.16	±	-31.4	985.96	0.001014	-0.0012					
-2.14	±	-31.9	1017.61	0.000983	-0.0021					
0.23	±	36.19	1309.72	0.000764	0.00018					

Sample #	NOP1-ECP-13									
Weight(kg)	4.1487	Geometry	full			Counting Time(min)		3035		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	4152	3254	0.22875	0.00976	203.74375	1.303	4.1	30.29	±	131.14
Th-234	62 kev									
62	4686	3387	0.3742	0.01249	163.303	3.023	5.7	7.53	±	45.41
(93Kev)										
93	6627	3711	0.95625	0.01996	13.78125	7.122	6.8	0.23	±	55.62
Ra-226										
295	3354	2798	0.07625	0.00564	324.58125	4.933	18	2.90	±	6.25
352	3290	2308	0.0122	0.0029	944.973	4.251	35	5.04	±	2.19
609	2528	1397	0.0102	0.0026	1100.043	2.305	43	8.81	±	3.04
183.7	4754	3047	0.46375	0.0139	299.51875	13.15	3.3	5.48	±	13.32
Th-228	583 kev									
228	2088	1421	0.2004	0.00914	58.786	0.79	86	0.69	±	19.20
Ra-228										
338	2695	2606	0.08375	0.00591	-165.18125	3.898	12	-2.80	±	-16.63
911	1538	965	0.2104	0.00936	-65.564	1.511	29	-1.19	±	-28.18
964	2517	2018	0.17083	0.00844	-19.46905	1.623	21.8	-0.44	±	-64.05
Ra-226 weighted average =			6.06	±	1.7	U (ppm)=		8.112	±	2.28
Ra-228 weighted average =			-1.26	±	11.3	Th (ppm) =		-4.66	±	41.8
210PB/234Th av =			6.44	±	34.2	U (ppm)=		8.621	±	45.8
	63&92kev									

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		6.43652		average=	3.91				
	weighted error=		34.1987		std.=	5.119				
data	±	err	error^2	1/error^2	data/error^2					
30.29	±	131.14	17197.7	5.81E-05	0.00176					
7.53	±	45.41	2062.07	0.000485	0.00365					
0.29	±	56.62	3205.82	0.000312	9E-05					
	±		0	0	0					

Sample #	NOP1-ECP-33									
Weight(kg)	3.604	Geometry	full			Counting Time(min)		2400		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	5469	4030	0.22875	0.00976	890	1.303	4.1	192.60	±	62.74
Th-234	62 kev									
62	6120	4454	0.3742	0.01249	767.92	3.023	5.7	51.52	±	20.94
(93Kev)										
93	6952	3316	0.95625	0.01996	1341	7.122	6.8	32.01	±	5.64
Ra-226										
295	8417	2614	0.07625	0.00564	5620	4.933	18	73.17	±	1.50
352	11746	2284	0.0122	0.0029	9432.72	4.251	35	73.30	±	0.69
609	8111	1260	0.0102	0.0026	6826.52	2.305	43	79.63	±	1.22
183.7	6952	3316	0.46375	0.0139	2523	13.15	3.3	67.22	±	4.59
Th-228	583 kev									
228	2342	1299	0.2004	0.00914	562.04	0.79	86	9.56	±	6.21
Ra-228										
338	2902	2307	0.08375	0.00591	394	3.898	12	9.74	±	10.77
911	1685	822	0.2104	0.00936	358.04	1.511	29	9.45	±	12.06
964	2493	1698	0.17083	0.00844	385.008	1.623	21.8	12.58	±	14.40
Ra-226 weighted average =			74.50	±	0.55	U (ppm)=		99.73	±	0.74
Ra-228 weighted average =			9.89	±	4.64	Th (ppm) =		36.59	±	17.2
210PB/234Th av =			34.52	±	5.42	U (ppm)=		46.21	±	7.26
	63&92kev									

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		34.5207		average=	41.77				
	weighted error=		5.42552		std.=	13.8				
data	±	err	error^2	1/error^2	data/error^2					
192.6	±	62.74	3936.31	0.000254	0.04893					
51.52	±	20.94	438.484	0.002281	0.1175					
32.01	±	5.64	31.8096	0.031437	1.0063					
	±		0	0	0					

Sample #	MESA-ECP-1									
Weight(kg)	3.7811	Geometry	full			Counting Time(min)		6720		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	9889	7756	0.22875	0.00976	595.8	1.303	4.1	43.89	±	76.69
Th-234	62 kev									
62	11177	8217	0.3742	0.01249	445.376	3.023	5.7	10.17	±	27.50
(93Kev)										
93	16107	8336	0.95625	0.01996	1345	7.122	6.8	10.93	±	5.63
Ra-226										
295	8575	6232	0.07625	0.00564	1830.6	4.933	18	8.11	±	2.63
352	9114	5157	0.0122	0.0029	3875.016	4.251	35	10.25	±	1.08
609	6494	3160	0.0102	0.0026	3265.456	2.305	43	12.97	±	1.77
183.7	11439	6862	0.46375	0.0139	1460.6	13.15	3.3	13.25	±	6.03
Th-228	583 kev									
228	5531	3238	0.2004	0.00914	946.312	0.79	86	5.48	±	4.78
Ra-228										
338	6786	5605	0.08375	0.00591	618.2	3.898	12	5.20	±	8.60
911	4161	2100	0.2104	0.00936	647.112	1.511	29	5.81	±	8.97
964	6027	4490	0.17083	0.00844	389.0224	1.623	21.8	4.33	±	14.33

Ra-226 weighted average =	10.73	±	0.86	U (ppm)=		14.36	±	1.15
Ra-228 weighted average =	5.32	±	5.7	Th (ppm) =		19.68	±	21.1
210PB/234Th av =	11.07	±	5.5	U (ppm)=		14.82	±	7.36
63&92kev								

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	11.0692		average=	10.55					
	weighted error=	5.50139		std.=	0.537					
data	± err	error^2	1/error^2	data/error^2						
43.89	± 76.69	5881.36	0.00017	0.00746						
10.17	± 27.5	756.25	0.001322	0.01345						
10.93	± 5.63	31.6969	0.031549	0.34483						
	±	0	0	0						

Sample #	PUE1-ECP-2A									
Weight(kg)	4.1436	Geometry	full			Counting Time(min)		2804		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	3122	2393	0.22875	0.00976	87.585	1.303	4.1	14.11	±	200.01
Th-234	62 kev									
62	4036	3003	0.3742	0.01249	-16.2568	3.023	5.7	-0.81	±	-143.94
(93Kev)										
93	5899	3163	0.95625	0.01996	54.675	7.122	6.8	0.97	±	27.93
Ra-226										
295	2882	2509	0.07625	0.00564	159.195	4.933	18	1.54	±	8.93
352	2624	2100	0.0122	0.0029	489.7912	4.251	35	2.83	±	3.04
609	1970	1294	0.0102	0.0026	647.3992	2.305	43	5.62	±	3.97
183.7	4280	2740	0.46375	0.0139	239.645	13.15	3.3	4.75	±	14.89
Th-228	583 kev									
228	1742	1248	0.2004	0.00914	-67.9216	0.79	86	-0.86	±	-17.86
Ra-228										
338	2444	2214	0.08375	0.00591	-4.835	3.898	12	-0.09	±	-97.23
911	1387	849	0.2104	0.00936	-51.9616	1.511	29	-1.02	±	-31.66
964	2210	1836	0.17083	0.00844	-105.00732	1.623	21.8	-2.55	±	-27.58
Ra-226 weighted average =			3.73	±	2.3	U (ppm)=		4.993	±	3.08
Ra-228 weighted average =			-1.81	±	20.34	Th (ppm) =		-6.7	±	75.3
210PB/234Th av =			1.15	±	27.2	U (ppm)=		1.539	±	36.4
	63&92kev									

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		3.72825		average=	4.4				
	weighted error=		2.30202		std.=	1.428				
data	±	err	error^2	1/error^2	data/error^2					
1.54	±	8.93	79.7449	0.01254	0.01931					
2.83	±	3.04	9.2416	0.108206	0.30622					
5.62	±	3.97	15.7609	0.063448	0.35658					
4.75	±	14.89	221.712	0.00451	0.02142					

Sample #	NOP1-ECP-9/5911									
Weight(kg)	3.5869	Geometry	full			Counting Time(min)		1680		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2680	2078	0.22875	0.00976	217.7	1.303	4.1	67.62	±	####
Th-234	62 kev									
62	3203	2246	0.3742	0.01249	328.344	3.023	5.7	31.62	±	32.03
(93Kev)										
93	4327	2259	0.95625	0.01996	461.5	7.122	6.8	15.81	±	9.61
Ra-226										
295	2460	1648	0.07625	0.00564	683.9	4.933	18	12.78	±	4.31
352	2840	1399	0.0122	0.0029	1420.504	4.251	35	15.84	±	1.78
609	2029	779	0.0102	0.0026	1232.864	2.305	43	20.64	±	2.87
183.7	3113	1802	0.46375	0.0139	531.9	13.15	3.3	20.34	±	9.99
Th-228	583 kev									
228	1496	814	0.2004	0.00914	345.328	0.79	86	8.43	±	7.92
Ra-228										
338	1919	1389	0.08375	0.00591	389.3	3.898	12	13.81	±	10.84
911	1079	505	0.2104	0.00936	220.528	1.511	29	8.35	±	15.37
964	1565	1096	0.17083	0.00844	182.0056	1.623	21.8	8.54	±	20.95
Ra-226 weighted average =			16.77	±	1.41	U (ppm)=		22.45	±	1.9
Ra-228 weighted average =			11.47	±	8.16	Th (ppm) =		42.44	±	30
210PB/234Th av =			17.38	±	9.18	U (ppm)=		23.26	±	12
	63&92kev									

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		11.4721		average=	8.445				
	weighted error=		8.15907		std.=	0.134				
data	±	err	error^2	1/error^2	data/error^2					
13.81	±	10.84	117.506	0.00851	0.11753					
8.35	±	15.37	236.237	0.004233	0.03535					
8.54	±	20.95	438.903	0.002278	0.01946					
	±		0	0	0					

Sample #	COL-ECP-1/5913									
Weight(kg)	4.0652	Geometry	full			Counting Time(min)		1430		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1993	1664	0.22875	0.00976	1.8875	1.303	4.1	0.61	±	####
Th-234	62 kev									
62	2237	1606	0.3742	0.01249	95.894	3.023	5.7	9.57	±	59.26
(93Kev)										
93	3212	1778	0.95625	0.01996	66.5625	7.122	6.8	2.36	±	25.31
Ra-226										
295	1516	1322	0.07625	0.00564	84.9625	4.933	18	1.65	±	12.22
352	1577	1099	0.0122	0.0029	460.554	4.251	35	5.32	±	3.13
609	1161	657	0.0102	0.0026	489.414	2.305	43	8.49	±	4.56
183.7	2355	1445	0.46375	0.0139	246.8375	13.15	3.3	9.78	±	14.67
Th-228	583 kev									
228	1036	700	0.2004	0.00914	49.428	0.79	86	1.25	±	20.94
Ra-228										
338	1414	1171	0.08375	0.00591	123.2375	3.898	12	4.53	±	19.26
911	784	453	0.2104	0.00936	30.128	1.511	29	1.18	±	41.58
964	1269	937	0.17083	0.00844	87.7131	1.623	21.8	4.26	±	30.18
Ra-226 weighted average =			6.24	±	2.49	U (ppm)=		8.353	±	3.3
Ra-228 weighted average =			4.02	±	15.12	Th (ppm) =		14.87	±	56
Pb-210/234Th av =			3.47	±	23.27	U (ppm)=		4.645	±	31
	63&92kev									

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		3.47139		average=	5.965				
	weighted error=		23.2722		std.=	5.098				
data	±	err	error^2	1/error^2	data/error^2					
0.61	±	1300	1690000	5.92E-07	3.6E-07					
9.57	±	59.26	3511.75	0.000285	0.00273					
2.36	±	25.31	640.596	0.001561	0.00368					
	±		0	0	0					

Sample #	NOP-ECP-1/5909									
Weight(kg)	3.389	Geometry	full				Counting Time(min)	1782		
time of background minutes			2400							
Nuclides	Total	Bkgd(1)	Blank(2)	Eblank	Net counts	c. eff.	intensity	Activity		
	Counts		(cpm)	cpm		(%)	(%)	(dpm/g)		
Pb-210	45 kev									
210	2555	2021	0.22875	0.00976	126.3675	1.303	4.1	39.17	±	166.52
Th-234	62 kev									
62	2872	2274	0.3742	0.01249	-68.8244	3.023	5.7	-6.61	±	#####
(93Kev)										
93	4091	2198	0.95625	0.01996	188.9625	7.122	6.8	6.46	±	15.02
Ra-226										
295	2010	1661	0.07625	0.00564	213.1225	4.933	18	3.97	±	7.71
352	1996	1415	0.0122	0.0029	559.2596	4.251	35	6.22	±	2.84
609	1513	803	0.0102	0.0026	691.8236	2.305	43	11.56	±	3.84
183.7	2850	1824	0.46375	0.0139	199.5975	13.15	3.3	7.62	±	16.31
Th-228	583 kev									
228	1585	840	0.2004	0.00914	387.8872	0.79	86	9.45	±	7.47
Ra-228										
338	1840	1493	0.08375	0.00591	197.7575	3.898	12	7.00	±	15.20
911	1067	561	0.2104	0.00936	131.0672	1.511	29	4.95	±	19.93
964	1605	1168	0.17083	0.00844	132.58094	1.623	21.8	6.20	±	24.55
Ra-226 weighted average =			7.77	±	2.17	U (ppm)=		10.4	±	2.9
Ra-228 weighted average =			6.24	±	10.84	Th (ppm) =		23.09	±	40.1
Pb-210/234Th av =			6.72	±	14.96	U (ppm)=		8.995	±	20
	92 kev									
Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		7.77171		average=	8.467				
	weighted error=		2.16991		std.=	2.769				
data	±	err	error^2	1/error^2	data/error^2					
3.97	±	7.71	59.4441	0.016823	0.06679					
6.22	±	2.84	8.0656	0.123983	0.77118					
11.56	±	3.84	14.7456	0.067817	0.78396					
7.62	±	16.31	266.016	0.003759	0.02864					

Sample #	NOPi-ECP-4/5918									
Weight(kg)	3.8043	Geometry	full			Counting Time(min)		1260		
time of background minutes			2400							
Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	1798	1394	0.22875	0.00976	115.775	1.303	4.1	45.21	±	173.97
Th-234	62 kev									
62	2400	1572	0.3742	0.01249	356.508	3.023	5.7	43.16	±	30.74
(93Kev)										
93	3297	1653	0.95625	0.01996	439.125	7.122	6.8	18.92	±	9.85
Ra-226										
295	1732	1200	0.07625	0.00564	435.925	4.933	18	10.24	±	5.39
352	1931	985	0.0122	0.0029	930.628	4.251	35	13.05	±	2.20
609	1414	612	0.0102	0.0026	789.148	2.305	43	16.61	±	3.59
183.7	2307	1364	0.46375	0.0139	358.675	13.15	3.3	17.24	±	12.17
Th-228	583 kev									
228	975	649	0.2004	0.00914	73.496	0.79	86	2.26	±	17.17
Ra-228										
338	1228	1048	0.08375	0.00591	74.475	3.898	12	3.32	±	24.77
911	701	402	0.2104	0.00936	33.896	1.511	29	1.61	±	39.20
964	1113	864	0.17083	0.00844	33.7542	1.623	21.8	1.99	±	48.65
Ra-226 weighted average =			13.97	±	1.74	U (ppm)=		18.7	±	2.33
Ra-228 weighted average =			2.14	±	14.96	Th (ppm) =		7.918	±	55.4
Pb-210/234Th av =			43.22	±	30.27	U (ppm)=		57.85	±	40.5
	62 Kev									

Calculation of weighted average (up to 200 data sets can be input)										
	weighted average=		43.2221		average=	43.16				
	weighted error=		30.2711		std.=	####				
data	±	err	error^2	1/error^2	data/error^2					
45.21	±	173.97	30265.6	3.3E-05	0.00149					
43.16	±	30.74	944.948	0.001058	0.04567					
	±		0	0	0					
	±		0	0	0					

Sample Summary Sheet

7/14/92

OCL

Sample sheet		MESA-ECP-3		DATE	7/12/92	TIME (MIN)	5500
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	7677	6142	1535	
			95-97				
234 Th	63	122-127	119-121	9020	66666	2354	
			128-130				
234 Th	92	182-186	180-181	11547	6016	5531	
			187-189				
226Ra/235U	186	367-372	364-366	9104	5593	3511	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	6646	4959	1687	
			593-596				
228 Ac	338	671-678	667-670	5550	4394	1160	
			679-682				
214 Pb	352	698-705	694-697	6667	4211	2456	
			706-709				
208 Tl	583	1160-1167	1156-1159	4363	2478	1885	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	4877	2484	2393	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	3313	1722	1591	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	4675	3567	1108	
228Ac	969		1942-1950				
mass =	3.5692g						

7/8/92

O.C.L

Sample sheet		MESA-ECP-2		DATE	7/8/92	TIME (MIN)	4335
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	5878	4961	917	
			95-97				
234 Th	63	122-127	119-121	7346	5304	2042	
			128-130				
234 Th	92	182-186	180-181	9043	4640	4403	
			187-189				
226Ra/235U	186	367-372	364-366	7188	4468	2720	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	5257	3956	1319	
			593-596				
228 Ac	338	671-678	667-670	4416	3522	894	
			679-682				
214 Pb	352	698-705	694-697	5368	3157	2211	
			706-709				
208 Tl	583	1160-1167	1156-1159	3422	1965	1457	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	4092	1995	2097	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	26665	1343	1322	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	3815	2890	925	
228Ac	969		1942-1950				
mass =	3.5300g						

7/6/92
OCL

Sample sheet	NOPI-ECP-34/792			DATE	6/26/92	TIME (MIN)	4446
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	6370	5114	1256	
			95-97				
234 Th	63	122-127	119-121	7470	5479	1991	
			128-130				
234 Th	92	182-186	180-181	9430	5026	4404	
			187-189				
226Ra/235U	186	367-372	364-366	7302	4544	2758	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	5061	4168	893	
			593-596				
228 Ac	338	671-678	667-670	4664	3602	1062	
			679-682				
214 Pb	352	698-705	694-697	5068	3321	1747	
			706-709				
208 Tl	583	1160-1167	1156-1159	3648	2110	1538	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	3737	2129	1608	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	2877	1413	1464	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	4136	2895	1241	
228Ac	969		1942-1950				
mass =	3.9812 g						

7/1/92
OCL

Sample sheet		22.5/10.4		DATE	7/1/92	TIME (MIN)	592
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	5219	3766	1453	
			95-97				
234 Th	63	122-127	119-121	7950	4832	3118	
			128-130				
234 Th	92	182-186	180-181	9251	3778	5473	
			187-189				
226Ra/235U	186	367-372	364-366	9662	2726	6936	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	14937	1562	13375	
			593-596				
228 Ac	338	671-678	667-670	1463	7/1/92 OCL ~~193~~ 1395	68	
			679-682				
214 Pb	352	698-705	694-697	23653	1336	22317	
			706-709				
208 Tl	583	1160-1167	1156-1159	743	~~688~~ 542	~~55~~ 201	BW 2 7/6/92
			1168-1171				
214 Bi	609	1213-1220	1209-1212	15852	706	15146	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	555	400	155	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1002	765	237	
228Ac	969		1942-1950				
mass = 3.8036 g							

7/1/92
OCL

Sample sheet		20.1/7.7		DATE	6/30/92	TIME (MIN)	79
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	471	377	94	
			95-97				
234 Th	63	122-127	119-121	813	430	383	
			128-130				
234 Th	92	182-186	180-181	921	359	562	
			187-189				
226Ra/235U	186	367-372	364-366	911	293	618	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1301	163	1138	
			593-596				
228 Ac	338	671-678	667-670	155	144	11	
			679-682				
214 Pb	352	698-705	694-697	2064	132	1932	
			706-709				
208 Tl	583	1160-1167	1156-1159	106	~~78~~ 58	~~28~~ 48 7/6/92 BW	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1349	70	1279	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	74	51	23	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	106	85	21	
228Ac	969		1942-1950				
mass =	4.1689g						

7/1/92
OCL

Sample sheet		19.65/7.55		DATE	6/30/92	TIME (MIN)	134
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	537	375	162	
			95-97				
234 Th	63	122-127	119-121	691	454	237	
			128-130				
234 Th	92	182-186	180-181	829	381	448	
			187-189				
226Ra/235U	186	367-372	364-366	873	255	618	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1329	208	1121	
			593-596				
228 Ac	338	671-678	667-670	206	163	43	
			679-682				
214 Pb	352	698-705	694-697	1999	178	1821	
			706-709				
208 Tl	583	1160-1167	1156-1159	152	82	70	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1160	88	1072	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	99	70	29	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	150	106	44	
228Ac	969		1942-1950				
mass =	4.1683g						

7/1/92

OCL

STANDARD SUMMARY SHEET U/Th 8/5915				DATE	6/26/92	TIME (MIN)	1370
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			2142	1799	343	
234 Th	63			2052	1969	683	
234 Th	92			3290	1719	1571	
226Ra/235U	186			2419	1525	894	
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295			2332	1318	1014	
228 Ac	338			1523	1137	386	
214 Pb	352			2836	1068	1768	
208 Tl	583			1182	699	483	
214 Bi	609			2026	683	1343	
228 Ac	911			931	381	550	
228 Ac	964			1265	872	393	
228Ac	969						

7/2/92
OCL

Sample sheet		20.65/7.55		*DATE*	7/1/92	*TIME (MIN)*	201
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	954	716	238	
			95-97				
234 Th	63	122-127	119-121	1545	921	624	
			128-130				
234 Th	92	182-186	180-181	2034	771	1263	
			187-189				
226Ra/235U	186	367-372	364-366	1909	518	1391	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2323	325	1998	
			593-596				
228 Ac	338	671-678	667-670	335	~~319~~ 304	~~16~~ 31	BWL 7/6/92
			679-682				
214 Pb	352	698-705	694-697	3758	274	3484	
			706-709				
208 Tl	583	1160-1167	1156-1159	205	~~143~~ 118	~~62~~ 62	BWL 7/6/92
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2510	161	2349	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	149	97	52	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	242	183	59	
228Ac	969		1942-1950				
MASS =	4.3369						

7/2/92
OCL

Sample sheet		18.35/7.9		DATE	7/2/92	TIME (MIN)	1164
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	3931	3023	908	
			95-97				
234 Th	63	122-127	119-121	5400	3599	1801	
			128-130				
234 Th	92	182-186	180-181	60666	2740	3926	
			187-189				
226Ra/235U	186	367-372	364-366	63611	2241	4120	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	9350	1449	7901	
			593-596				
228 Ac	338	671-678	667-670	1622	1255	367	
			679-682				
214 Pb	352	698-705	694-697	13795	1355	12440	
			706-709				
208 Tl	583	1160-1167	1156-1159	1053	~~774~~	~~279~~	BWL
			1168-1171		684	369	7/6/92
214 Bi	609	1213-1220	1209-1212	8858	747	8111	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	749	~~491~~	~~258~~	BWL
			1824-1828		480	269	7/6/92
228 Ac	964	1924-1941	1915-1923	1216	886	330	
228Ac	969		1942-1950				

MASS = 4.3342 g

7/2/92
OCL

Sample sheet		19.0/7.8		DATE	6/26/92	TIME (MIN)	173
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	730	567	163	
			95-97				
234 Th	63	122-127	119-121	1202	715	487	
			128-130				
234 Th	92	182-186	180-181	1303	560	743	
			187-189				
226Ra/235U	186	367-372	364-366	1288	428	860	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1962	283	1679	
			593-596				
228 Ac	338	671-678	667-670	244	240	4	7/6/92 BWL
			679-682				
214 Pb	352	698-705	694-697	3001	215	2786	
			706-709				
208 Tl	583	1160-1167	1156-1159	171	~~134~~	~~37~~	7/6/92
			1168-1171		126	45	BWL
214 Bi	609	1213-1220	1209-1212	1983	110	1873	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	100	~~97~~	3	BWL
			1824-1828		85	15	7/6/92
228 Ac	964	1924-1941	1915-1923	208	179	29	
228Ac	969		1942-1950				
mass =	4.3354 g						

7/1/92
OCL

Sample sheet		18.6/7.7		DATE	6/30/92	TIME (MIN)	215
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	658	486	172	
			95-97				
234 Th	63	122-127	119-121	954	595	359	
			128-130				
234 Th	92	182-186	180-181	1031	511	520	
			187-189				
226Ra/235U	186	367-372	364-366	1054	388	6666	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1460	263	1197	
			593-596				
228 Ac	338	671-678	667-670	312	241	71	
			679-682				
214 Pb	352	698-705	694-697	2271	242	2029	
			706-709				
208 Tl	583	1160-1167	1156-1159	181	~~140~~	~~41~~	BWL
			1168-1171		124	57	7/15/92
214 Bi	609	1213-1220	1209-1212	1555	120	1435	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	~~120~~	~~93~~	27	
			1824-1828	124	89	35	BWL 7/15/92
228 Ac	964	1924-1941	1915-1923	206	173	33	
228Ac	969		1942-1950				
mass =	4.5742 g						

7/1/92
OCL

Sample sheet		22.8/10.8		DATE	6/30/92	TIME (MIN)	106
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1116	909	207	
			95-97				
234 Th	63	122-127	119-121	1745	1088	657	
			128-130				
234 Th	92	182-186	180-181	2012	835	1177	
			187-189				
226Ra/235U	186	367-372	364-366	2197	623	1574	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	3566	321	3245	
			593-596				
228 Ac	338	671-678	667-670	292	284	8	
			679-682				
214 Pb	352	698-705	694-697	5688	279	5409	
			706-709				
208 Tl	583	1160-1167	1156-1159	167 ~~164~~	~~459~~	~~5~~	
			1168-1171	7/1/92 OCL	150	17	
214 Bi	609	1213-1220	1209-1212	3813	145	3668	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	~~111~~	107	4	
			1824-1828	113	105	8	
228 Ac	964	1924-1941	1915-1923	217	170	47	
228Ac	969		1942-1950				
mass =	4.2218	g					

7/1/92

7/1/92ate

6/30/92
OCL

Sample sheet		16.0/14.4		DATE	6/30/92	TIME (MIN)	110
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1454	1076	378	
			95-97				
234 Th	63	122-127	119-121	2586	1447	1139	
			128-130				
234 Th	92	182-186	180-181	3135	1166	1969	
			187-189				
226Ra/235U	186	367-372	364-366	3204	673	2531	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	4129	386	3743	
			593-596				
228 Ac	338	671-678	667-670	420	360	60	
			679-682				
214 Pb	352	698-705	694-697	6402	354	6048	
			706-709				
208 Tl	583	1160-1167	1156-1159	183	~~168~~ 150	~~45~~ 33	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	4489	131	4358	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	145	94	51	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	239	198	41	
228Ac	969		1942-1950				
mass =	4.1264g						

PD WL 7/15/92

6/30/92
OCL

Sample sheet		2.55/7.65		DATE	6/30/92	TIME (MIN)	1374
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	2200	1809	391	
			95-97				
234 Th	63	122-127	119-121	2816	2093	723	
			128-130				
234 Th	92	182-186	180-181	3483	1766	1717	
			187-189				
226Ra/235U	186	367-372	364-366	2840	1598	1242	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2590	1423	1167	
			593-596				
228 Ac	338	671-678	667-670	1583	1213	370	
			679-682				
214 Pb	352	698-705	694-697	3177	1122	2055	
			706-709				
208 Tl	583	1160-1167	1156-1159	1338	706	632	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2376	592	1784	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	955	459	496	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1312	883	429	
228Ac	969		1942-1950				
mass = 4.8387 g							

6/30/92

OCL

Sample sheet		24.0/10.5		DATE	6/29/92	TIME (MIN)	10
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	3511	2700	811	
			95-97				
234 Th	63	122-127	119-121	6311	3628	2683	
			128-130				
234 Th	92	182-186	180-181	7894	3468	4426	
			187-189				
226Ra/235U	186	367-372	364-366	8223	1971	6252	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	12447	997	11450	
			593-596				
228 Ac	338	671-678	667-670	~~1634~~	~~834~~	~~800~~	
			679-682	817	814	3	BWL 7/5/92
214 Pb	352	698-705	694-697	20360	867	19493	
			706-709				
208 Tl	583	1160-1167	1156-1159	~~6662~~	~~351~~	~~311~~	
			1168-1171	339	270	61	BWL 7/5/92
214 Bi	609	1213-1220	1209-1212	13374	400	12974	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	~~464~~	~~233~~	~~231~~	
			1824-1828	237	228	9	BWL 7/5/92
228 Ac	964	1924-1941	1915-1923	431	423	8	
228Ac	969		1942-1950				
mass = 4.6065 g							

6/30/92

OCL

Sample sheet		26.75/11.25		*DATE*	6/29/92	*TIME (MIN)*	15
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	
210 Pb	45	89-94	86-88	854	559	295	
			95-97				
234 Th	63	122-127	119-121	1343	752	591	
			128-130				
234 Th	92	182-186	180-181	1612	627	985	
			187-189				
226Ra/235U	186	367-372	364-366	1787	417	1370	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2457	197	2260	
			593-596				
228 Ac	338	671-678	667-670	192	173	19	
			679-682				
214 Pb	352	698-705	694-697	4037	184	3853	
			706-709				
208 Tl	583	1160-1167	1156-1159	~~150~~	~~90~~	~~60~~	
			1168-1171	75	66	9	BWL 7/5/92
214 Bi	609	1213-1220	1209-1212	2575	85	2490	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	57	43	14	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	100	78	22	
228Ac	969		1942-1950				
mass =	4.0734 g						

6/30/92

OCL

Sample sheet		26.85/11.65		DATE	6/29/92	TIME (MIN)	10
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	15275	13465	1810	
			95-97				
234 Th	63	122-127	119-121	25272	16961	8311	
			128-130				
234 Th	92	182-186	180-181	39389	25584	13805	
			187-189				
226Ra/235U	186	367-372	364-366	40750	11073	29677	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	69215	6450	62765	
			593-596				
228 Ac	338	671-678	667-670	5193	4988	205	
			679-682				
214 Pb	352	698-705	694-697	113037	6541	106496	
			706-709				
208 Tl	583	1160-1167	1156-1159	~~3940~~	~~2303~~	1643	BWL 7/5/92
			1168-1171	1973	1772	201	
214 Bi	609	1213-1220	1209-1212	77064	3194	73870	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	1306	1313	-7	BWL 7/5/92
			1824-1828				
228 Ac	964	1924-1941	1915-1923	2796	2498	298	
228Ac	969		1942-1950				
mass =	5.4715 g						

6/30/92

OCL

Sample sheet		19.6/14.5		DATE	6/29/92	TIME (MIN)	10	
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM	
210 Pb	45	89-94	86-88	11185	9789	1396		
			95-97					
234 Th	63	122-127	119-121	19556	12787	6769		
			128-130					
234 Th	92	182-186	180-181	29503	17613	11890		
			187-189					
226Ra/235U	186	367-372	364-366	30852	7737	23115		
			373-375					
212 Pb	238							
224 Ra	239							
214 Pb	242							
214 Pb	295	585-592	581-584	48804	4215	44589		
			593-596					
228 Ac	338	671-678	667-670	3521	3378	143		
			679-682					
214 Pb	352	698-705	694-697	79581	4090	75491		
			706-709					
208 Tl	583	1160-1167	1156-1159	~~2522~~	~~1575~~	~~947~~		
			1168-1171	1261	1196	65	BWL 7/5/92	
214 Bi	609	1213-1220	1209-1212	53225	1966	51259		
			1221-1224					
228 Ac	911	1816-1823	1813-1815	854	907	-53	BWL 7/5/92	
			1824-1828					
228 Ac	964	1924-1941	1915-1923	1847	1650	197		
228Ac	969		1942-1950					
mass =	4.9996g							

6/30/92
OCL

Sample sheet		23.3/9.8		DATE	6/29/92	TIME (MIN)	120
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	476	360	116	
			95-97				
234 Th	63	122-127	119-121	642	425	217	
			128-130				
234 Th	92	182-186	180-181	677	316	361	
			187-189				
226Ra/235U	186	367-372	364-366	829	274	555	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1238	191	1047	
			593-596				
228 Ac	338	671-678	667-670	160	149	11	
			679-682				
214 Pb	352	698-705	694-697	1851	179	1672	
			706-709				
208 Tl	583	1160-1167	1156-1159	111	~~91~~	~~20~~	BWL
			1168-1171		66	45	7/5/92
214 Bi	609	1213-1220	1209-1212	1271	92	1179	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	83	54	29	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	129	115	14	
228Ac	969		1942-1950				
mass =	4.1698g						

6/30/92
OCL

Sample sheet		18.55/16.2		DATE	6/29/92	TIME (MIN)	10
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	574	444	130	
			95-97				
234 Th	63	122-127	119-121	1095	528	567	
			128-130				
234 Th	92	182-186	180-181	1324	501	823	
			187-189				
226Ra/235U	186	367-372	364-366	918	301	617	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2020	165	1855	
			593-596				
228 Ac	338	671-678	667-670	238	151	87	
			679-682				
214 Pb	352	698-705	694-697	3132	137	2995	
			706-709				
208 Tl	583	1160-1167	1156-1159	~~96~~	~~61~~	~~35~~	BWL 7/15/92
			1168-1171	48	52	-4	
214 Bi	609	1213-1220	1209-1212	2106	62	2044	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	39	36	3	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	91	64	27	
228Ac	969		1942-1950				
mass = 4.2545g							

6/30/92
OCL

Sample sheet		25.2/9.5		DATE	6/29/92	TIME (MIN)	16
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	5298	4064	1234	
			95-97				
234 Th	63	122-127	119-121	9268	5418	3850	
			128-130				
234 Th	92	182-186	180-181	11565	5193	6372	
			187-189				
226Ra/235U	186	367-372	364-366	12047	2972	9075	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	18909	1392	17517	
			593-596				
228 Ac	338	671-678	667-670	1291	1165	126 ignore ^{223}Ra peak	
			679-682				
214 Pb	352	698-705	694-697	30628	1359	29269	
			706-709				
208 Tl	583	1160-1167	1156-1159	~~922~~	~~614~~	~~308~~	7/2/92 BWL
			1168-1171	461	451	10	
214 Bi	609	1213-1220	1209-1212	20427	582	19845	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	~~343~~	~~315~~	~~28~~	7/2/92
			1824-1828	339	319	20	BWL
228 Ac	964	1924-1941	1915-1923	656	586	70	
228Ac	969		1942-1950				
mass = 4.2649 g							

6/30/92
OCL

Sample sheet		22.25/11.45		DATE	6/26/92	TIME (MIN)	185
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	617	443	174	
			95-97				
234 Th	63	122-127	119-121	913	577	336	
			128-130				
234 Th	92	182-186	180-181	1133	476	657	
			187-189				
226Ra/235U	186	367-372	364-366	1097	387	710	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1577	284	1293	
			593-596				
228 Ac	338	671-678	667-670	~~508~~	~~250~~	~~252~~	
			679-682	254	252	2	BWL 7/2/92
214 Pb	352	698-705	694-697	2343	211	2132	
			706-709				
208 Tl	583	1160-1167	1156-1159	210	131	79	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1593	123	1470	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	129	85	44	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	202	164	38	
228Ac	969		1942-1950				
mass = 4.2881 g							

6/29/92
OCL

Sample sheet		22.5/12.4		DATE	6/25/92	TIME (MIN)	10	
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM	
210 Pb	45	89-94	86-88	3165	2436	729		
			95-97					
234 Th	63	122-127	119-121	5629	3109	2520		
			128-130					
234 Th	92	182-186	180-181	6761	2912	3849		
			187-189					
226Ra/235U	186	367-372	364-366	7301	1654	5641		
			373-375					
212 Pb	238							
224 Ra	239							
214 Pb	242							
214 Pb	295	585-592	581-584	10687	780	9907		
			593-596					
228 Ac	338	671-678	667-670	785	731	52	ignore ^{223}Ra peak	
			679-682					
214 Pb	352	698-705	694-697	17388	729	16659		
			706-709					
208 Tl	583	1160-1167	1156-1159	~~570~~	335	243		
			1168-1171	289	282	7	BWL 7/2/92	
214 Bi	609	1213-1220	1209-1212	11579	339	11240		
			1221-1224					
				1745	165	BWL 7/2/92		
228 Ac	911	1816-1823	1813-1815	~~348~~	~~184~~	~~167~~ 9		
			1824-1828		adjust Bkg.			
228 Ac	964	1924-1941	1915-1923	389	356	33		
228Ac	969		1942-1950					
mass =	4.1924g							

6/29/92
OCL

Sample sheet		22.8/12.95		DATE	6/25/92	TIME (MIN)	59
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	4132	2894	1238	
			95-97				
234 Th	63	122-127	119-121	6934	3939	2995	
			128-130				
234 Th	92	182-186	180-181	8429	3239	5190	
			187-189				
226Ra/235U	186	367-372	364-366	9222	1997	7225	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584				
			593-596	12880	957	11923	
228 Ac	338	671-678	667-670	874	851	23	
			679-682				
214 Pb	352	698-705	694-697	20885	930	19955	
			706-709				
208 Tl	583	1160-1167	1156-1159	~~724~~	406	318	PWL 7/2/92
			1168-1171	362	302	60	
214 Bi	609	1213-1220	1209-1212	13807	363	13444	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	241	224	17	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	504	438	66	
228Ac	969		1942-1950				
mass =	4.2498 g						

6/29/92

OCL

Sample sheet		17.1/15.2		DATE	6/25/92	TIME (MIN)	92
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	2524	1926	598	
			95-97				
234 Th	63	122-127	119-121	4282	2453	1829	
			128-130				
234 Th	92	182-186	180-181	5405	2012	3393	
			187-189				
226Ra/235U	186	367-372	364-366	5572	1253	4319	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	7794	629	7165	
			593-596				
228 Ac	338	671-678	667-670	589	546	43	
			679-682				
214 Pb	352	698-705	694-697	12528	618	11910	
			706-709				
208 Tl	583	1160-1167	1156-1159	294	264	30	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	8183	237	7946	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	184	153	31	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	343	306	37	
228Ac	969		1942-1950				
mass =	4.3189	g					

6/25/92
OCL

Sample sheet		22.6/11.9		DATE	6/25/92		51
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	725	459	2666	
			95-97				
234 Th	63	122-127	119-121	1107	612	495	
			128-130				
234 Th	92	182-186	180-181	1299	521	778	
			187-189				
226Ra/235U	186	367-372	364-366	1375	332	1043	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2002	179	1823	
			593-596				
228 Ac	338	671-678	667-670	167	126	41	
			679-682				
214 Pb	352	698-705	694-697	3226	172	3054	
			706-709				
208 Tl	583	1160-1167	1156-1159	96	~~75~~ 56	~~21~~ 40 BWL 7/2/92	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2216	80	2136	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	71	35	36	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	104	~~95~~ 80	~~9~~ 24 BWL 7/2/92	
228Ac	969		1942-1950				
mass =	4.3048g						

5/25/92
OCL

Sample sheet		6.2/8.1		DATE	6/25/92		1234
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1944	1585	359	
			95-97				
234 Th	63	122-127	119-121	2410	1731	679	
			128-130				
234 Th	92	182-186	180-181	2942	1537	1405	
			187-189				
226Ra/235U	186	367-372	364-366	2391	1378	1013	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2020	1169	851	
			593-596				
228 Ac	338	671-678	667-670	1116	1000	116	
			679-682				
214 Pb	352	698-705	694-697	2479	966	1513	
			706-709				
208 Tl	583	1160-1167	1156-1159	1108	577	531	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1769	579	1190	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	818	379	439	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1181	903	278	
228Ac	969		1942-1950				
mass =	4.3018						

6/25/92ate

6/29/92

OCL

Sample sheet		18.05/7.9		DATE	6/24/92	TIME (MIN)	242
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1112	399	713	
			95-97				
234 Th	63	122-127	119-121	1778	1097	681	
			128-130				
234 Th	92	182-186	180-181	2016	855	1161	
			187-189				
226Ra/235U	186	367-372	364-366	2011	662	1349	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2987	447	2540	
			593-596				
228 Ac	338	671-678	667-670	464	363	101	
			679-682				
214 Pb	352	698-705	694-697	4848	359	4489	
			706-709				
208 Tl	583	1160-1167	1156-1159	298	175	123	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	3154	175	2979	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	201	112	89	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	310	212	98	
228Ac	969		1942-1950				
mass =	5.0362g						

6/25/92

OCL

Sample sheet		17.4/7.85		DATE	6/25/92		209
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	804	438	366	
			95-97				
234 Th	63	122-127	119-121	801	539	262	
			128-130				
234 Th	92	182-186	180-181	931	428	503	
			187-189				
226Ra/235U	186	367-372	364-366	983	363	620	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1295	258	1037	
			593-596				
228 Ac	338	671-678	667-670	275	249	26	
			679-682				
214 Pb	352	698-705	694-697	1902	213	1689	
			706-709				
208 Tl	583	1160-1167	1156-1159	~~158~~	145	13	
			1168-1171	166	137	29	BWL 7/1/92
214 Bi	609	1213-1220	1209-1212	1256	117	1139	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	140	87	53	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	223	161	67	
228Ac	969		1942-1950				
mass =	4.9433g						

6/24/92
OCL

Sample sheet		17.0/7.5		DATE	6/24/92	TIME (MIN)	1116
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	2845	2335	510	
			95-97				
234 Th	63	122-127	119-121	3513	2587	926	
			128-130				
234 Th	92	182-186	180-181	5763	2267	3496	
			187-189				
226Ra/235U	186	367-372	364-366	5094	1737	3357	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	5348	1286	4062	
			593-596				
228 Ac	338	671-678	667-670	1358	1165	193	
			679-682				
214 Pb	352	698-705	694-697	7753	1095	6658	
			706-709				
208 Tl	583	1160-1167	1156-1159	1015	634	381	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	5338	616	4277	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	709	401	308	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1146	825	321	
228Ac	969		1942-1950				
mass =	4.7879g						

Sample sheet		16.4/7.9		DATE	6/23/92	TIME (MIN)	224
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	791	622	169	
			95-97				
234 Th	63	122-127	119-121	1025	678	347	
			128-130				
234 Th	92	182-186	180-181	1186	536	650	
			187-189				
226Ra/235U	186	367-372	364-366	1227	444	783	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1739	323	1416	
			593-596				
228 Ac	338	671-678	667-670	328	281	47	
			679-682				
214 Pb	352	698-705	694-697	2566	273	2293	
			706-709				
208 Tl	583	1160-1167	1156-1159	194	148	46	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1729	131	1598	
			1221-1224				
				6/25/92 ocl		6/25/92 ocl	
228 Ac	911	1816-1823	1813-1815	~~117~~ 137	104	~~13~~ 33	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	279	144	135	
228Ac	969		1942-1950				
mass =	4.5758 g						

6/23/92

OCL

Sample sheet		22.6/13.6		*DATE*	6/23/92	*TIME (MIN)*	80
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	910	648	262	
			95-97				
234 Th	63	122-127	119-121	1317	846	471	
			128-130				
234 Th	92	182-186	180-181	1380	652	728	
			187-189				
226Ra/235U	186	367-372	364-366	1712	652	728	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2677	263	2414	
			593-596				
228 Ac	338	671-678	667-670	245	210	35	
			679-682				
214 Pb	352	698-705	694-697	4228	257	3971	
			706-709				
208 Tl	583	1160-1167	1156-1159	133	128	5	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2856	116	2740	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	91	70	21	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	164	135	29	
228Ac	969		1942-1950				
mass	= 5.3152 g						

6/23/92
OCL

Sample sheet		22.1/14.65		DATE	6/23/92	TIME (MIN)	936
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	6233	4476	1757	
			95-97				
234 Th	63	122-127	119-121	8409	5514	2895	
			128-130				
234 Th	92	182-186	180-181	9293	4307	4986	
			187-189				
226Ra/235U	186	367-372	364-366	11592	3310	8282	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	17716	2001	15715	
			593-596				
228 Ac	338	671-678	667-670	1959	1732	227	
			679-682				
214 Pb	352	698-705	694-697	27372	1733	25639	
			706-709				
208 Tl	583	1160-1167	1156-1159	1063	916	147	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	18169	907	17262	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	857	565	292	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1341	1128	213	
228Ac	969		1942-1950				
mass =	4.3862 g						

6/23/92

OCL

Sample sheet		14.45/7.95		DATE	6/22/92	TIME (MIN)	124
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	486	323	163	
			95-97				
234 Th	63	122-127	119-121	528	387	141	
			128-130				
234 Th	92	182-186	180-181	593	295	298	
			187-189				
226Ra/235U	186	367-372	364-366	674	279	395	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1065	172	893	
			593-596				
228 Ac	338	671-678	667-670	201	169	32	
			679-682				
214 Pb	352	698-705	694-697	1706	144	1562	
			706-709				
208 Tl	583	1160-1167	1156-1159	114	64	50	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1146	83	1063	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	97	55	42	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	136	108	28	
228Ac	969		1942-1950				
mass =	4.3926	g					

6/23/92

OCL

Sample sheet		15.6/7.7		DATE	6/22/92	TIME (MIN)	73
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	555	430	125	
			95-97				
234 Th	63	122-127	119-121	853	515	338	
			128-130				
234 Th	92	182-186	180-181	1018	432	586	
			187-189				
226Ra/235U	186	367-372	364-366	1058	291	767	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1547	184	1363	
			593-596				
228 Ac	338	671-678	667-670	174	145	29	
			679-682				
214 Pb	352	698-705	694-697	1914	169	1745	
			706-709				
208 Tl	583	1160-1167	1156-1159	120	77	43	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1655	79	1576	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	69	44	25	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	120	82	38	
228Ac	969		1942-1950				
mass =	4.4958 g						

6/23/92
OCL

Sample sheet		15.0/7.6		DATE	6/22/92	TIME (MIN)	208
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1157	883	274	
			95-97				
234 Th	63	122-127	119-121	1700	1141	559	
			128-130				
234 Th	92	182-186	180-181	1921	887	1034	
			187-189				
226Ra/235U	186	367-372	364-366	2154	668	1486	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	3147	363	2784	
			593-596				
228 Ac	338	671-678	667-670	406	370	36	
			679-682				
214 Pb	352	698-705	694-697	4971	375	4596	
			706-709				
208 Tl	583	1160-1167	1156-1159	248	192	56	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	3304	189	3115	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	183	110	73	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	272	232	40	
228Ac	969		1942-1950				
mass =	4.6885 g						

6/23/92

OCL

Sample sheet		13.95/8.0		DATE	6/22/92	TIME (MIN)	125
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1724	1283	441	
			95-97				
234 Th	63	122-127	119-121	2589	1618	971	
			128-130				
234 Th	92	182-186	180-181	3071	1302	1769	
			187-189				
226Ra/235U	186	367-372	364-366	3935	940	2995	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	5508	496	5012	
			593-596				
228 Ac	338	671-678	667-670	455	440	15	
			679-682				
214 Pb	352	698-705	694-697	8784	468	8316	
			706-709				
208 Tl	583	1160-1167	1156-1159	236	198	38	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	5833	220	5613	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	196	110	86	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	307	247	60	
228Ac	969		1942-1950				
mass =	4.8979 g						

6/24/92
OCL

Sample sheet		5.2/7.5		*DATE*	6/22/92	*TIME (MIN)*	2230
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	3578	2847	731	
			95-97				
234 Th	63	122-127	119-121	4407	3240	1167	
			128-130				
234 Th	92	182-186	180-181	5436	2938	2498	
			187-189				
226Ra/235U	186	367-372	364-366	4377	2469	1908	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	3810	2157	1653	
			593-596				
228 Ac	338	671-678	667-670	2514	1933	581	
			679-682				
214 Pb	352	698-705	694-697	4575	1838	2737	
			706-709				
208 Tl	583	1160-1167	1156-1159	1996	1064	932	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	3141	1024	2117	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	1665	729	936	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	2235	1454	781	
228Ac	969		1942-1950				
mass =	4.7356						

6/24/92
OCL

Sample sheet		22.7/25.25		DATE	6/20/92	TIME (MIN)	591
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1117	886	231	
			95-97				
234 Th	63	122-127	119-121	1434	998	436	
			128-130				
234 Th	92	182-186	180-181	1723	1146	577	
			187-189				
226Ra/235U	186	367-372	364-366	1501	770	731	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1606	609	997	
			593-596				
228 Ac	338	671-678	667-670	691	544	147	
			679-682				
214 Pb	352	698-705	694-697	2180	514	1666	
			706-709				
208 Tl	583	1160-1167	1156-1159	524	303	221	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1454	298	1156	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	411	196	215	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	588	407	181	
228Ac	969		1942-1950				
mass =	4.1850 g						

6/23/92

OCL

Sample sheet		22.5/24.6		DATE	6/20/92	TIME (MIN)	965
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1794	1353	441	
			95-97				
234 Th	63	122-127	119-121	2251	1566	685	
			128-130				
234 Th	92	182-186	180-181	2664	1363	1301	
			187-189				
226Ra/235U	186	367-372	364-366	2362	1241	1121	
			373-375	1			
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2475	1048	1427	
			593-596				
228 Ac	338	671-678	667-670	1172	882	290	
			679-682				
214 Pb	352	698-705	694-697	3191	855	2336	
			706-709				
208 Tl	583	1160-1167	1156-1159	918	512	406	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2234	461	1773	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	679	328	351	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	970	718	252	
228Ac	969		1942-1950				
mass =	4.5768 g						

6/23/92

OCL

Sample sheet		22.8/23.75		*DATE*	6/19/92	*TIME (MIN)*	341
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	846	639	207	
			95-97				
234 Th	63	122-127	119-121	1067	744	323	
			128-130				
234 Th	92	182-186	180-181	1353	627	726	
			187-189				
226Ra/235U	186	367-372	364-366	1227	535	692	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1494	406	1088	
			593-596				
228 Ac	338	671-678	667-670	446	362	84	
			679-682				
214 Pb	352	698-705	694-697	2155	335	1820	
			706-709				
208 Tl	583	1160-1167	1156-1159	337	206	131	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1540	201	1339	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	269	123	146	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	330	287	43	
228Ac	969		1942-1950				
mass =	4.7437 g						

6/24/92
OCL

Sample sheet		22.7/23.0		*DATE*	6/19/92	*TIME (MIN)*	156
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1476	1151	325	
			95-97				
234 Th	63	122-127	119-121	2618	1398	1220	
			128-130				
234 Th	92	182-186	180-181	3419	1252	2167	
			187-189				
226Ra/235U	186	367-372	364-366	3181	807	2374	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	4257	420	3837	
			593-596				
228 Ac	338	671-678	667-670	421	373	48	
			679-682				
214 Pb	352	698-705	694-697	6605	382	6223	
			706-709				
208 Tl	583	1160-1167	1156-1159	249	189	60	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	4318	173	4145	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	168	115	53	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	296	204	92	
228Ac	969		1942-1950				
mass =	5.1163 g						

OCL

6/23/92

Sample sheet		22.6/22.4		*DATE*	6/19/92	*TIME (MIN)*	888
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	1807	1359	448	
			95-97				
234 Th	63	122-127	119-121	2127	1493	634	
			128-130				
234 Th	92	182-186	180-181	2622	1314	1308	
			187-189				
226Ra/235U	186	367-372	364-366	2284	1150	1134	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2539	973	1566	
			593-596				
228 Ac	338	671-678	667-670	1073	831	242	
			679-682				
					od 6/23/92		
214 Pb	352	698-705	694-697	3489	~~3489~~	2737	
			706-709		752		
208 Tl	583	1160-1167	1156-1159	920	492	428	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2415	435	1980	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	618	310	308	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	909	674	235	
228Ac	969		1942-1950				
mass =	4.2954 g						

6/23/92

OCL

6/23/92
BWL 13.5

Sample sheet		~~13.55~~/7.75		*DATE*	6/18/92	*TIME (MIN)*	142
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	628	427	201	
			95-97				
234 Th	63	122-127	119-121	818	561	257	
			128-130				
234 Th	92	182-186	180-181	944	376	568	
			187-189				
226Ra/235U	186	367-372	364-366	1030	370	660	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1475	239	1236	
			593-596				
228 Ac	338	671-678	667-670	224	201	23	
			679-682				
214 Pb	352	698-705	694-697	2392	199	2193	
			706-709				
208 Tl	583	1160-1167	1156-1159	159	111	148	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1570	114	1456	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	113	60	53	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	174	125	49	
228Ac	969		1942-1950				
mass =	4.4529	g					

6/23/92

OCL

Sample sheet		12.95/7.9		DATE	6/18/92	TIME (MIN)	191
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	6789	5326	1463	
			95-97				
234 Th	63	122-127	119-121	11766	6761	5005	
			128-130				
234 Th	92	182-186	180-181	14247	5420	8827	
			187-189				
226Ra/235U	186	367-372	364-366	14575	3616	10959	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	23049	1846	21203	
			593-596				
228 Ac	338	671-678	667-670	1822	1569	253	
			679-682				
214 Pb	352	698-705	694-697	36552	1614	34938	
			706-709				
				1468	787		
X 208 Tl	583	1160-1167	1156-1159				
			1168-1171				
214 Bi	609	1213-1220	1209-1212	24686	720	23966	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	509	408	101	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	997	784	213	
228Ac	969		1942-1950				
mass =	4.2500g						

6/23/92
OCL

Sample sheet		9.0/7.5		DATE	6/18/92	TIME (MIN)	1440
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	2766	2226	540	
			95-97				
234 Th	63	122-127	119-121	3725	2530	1195	
			128-130				
234 Th	92	182-186	180-181	4461	2198	2263	
			187-189				
226Ra/235U	186	367-372	364-366	3959	1836	2123	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	3963	1536	2427	
			593-596				
228 Ac	338	671-678	667-670	1754	1335	419	
			679-682				
214 Pb	352	698-705	694-697	5354	1224	4130	
			706-709				
208 Tl	583	1160-1167	1156-1159	1368	758	610	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	3819	745	3074	
			1221-1224				
228 Ac	911	1816-1823	1813-1815	1010	479	531	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1423	1039	384	
228Ac	969		1942-1950				
mass =	4.3514g						

6/17/92

O.C.L.

Sample sheet		11.55/7.8		DATE	6/17/92	TIME (MIN)	1112
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	2975	2149	826	
			95-97				
234 Th	63	122-127	119-121	3234	2492	742	
			128-130				
234 Th	92	182-186	180-181	3395	2046	1349	
			187-189				
226Ra/235U	186	367-372	364-366	3928	1864	2064	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	5850	1255	~~490~~ 4595 JUNE 17, 1992 OCL	
			593-596				
228 Ac	338	671-678	667-670	1482	1138	344	
			679-682				
214 Pb	352	698-705	694-697	8448	1060	7338	
			706-709				
208 Tl	583	1160-1167	1156-1159	1157	666	491	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	5851	671	5180	
			1221-1224				
		6 6/17/92 OCL					
228 Ac	911	1817-1823	1813-1815	876	422	454	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1184	904	280	
228Ac	969		1942-1950				
mass =	6.6537	grams					

BWL
6/16/92

Sample sheet		9.7/7.35		DATE	6/16/92	TIME (MIN)	1440
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	~~1688~~ 6/16 ocl	~~1303~~ 6/16 ocl	~~385~~ 6/16 ocl	
			95-97				
				2259	1800	459	
234 Th	63	122-127	119-121	~~2910~~ 6/16 ocl	~~1119~~ 6/16 ocl	~~1791~~ 6/16 ocl	
			128-130				
				2770	2026	744	
234 Th	92	182-186	180-181	~~1412~~ 6/16 ocl	~~717~~ 6/16 ocl	~~695~~ 6/16 ocl	
			187-189				
				3364	1761	1603	
226Ra/235U	186	367-372	364-366	~~1990~~ 6/16 ocl	~~694~~ 6/16 ocl	~~1296~~ 6/16 ocl	
			373-375				
				2744	1594	1150	
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2393	1403	990	
			593-596				
228 Ac	338	671-678	667-670	1688	1303	385	
			679-682				
214 Pb	352	698-705	694-697	2910	1119	1791	
			706-709				
208 Tl	583	1160-1167	1156-1159	1412	717	695	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1990	694	1296	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	967	504	463	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1381	968	413	
228Ac	969		1942-1950				
mass =	4.9120	grams					

6/18/92
OCL

Sample sheet		12.5/7.75		DATE	6/15/92	TIME (MIN)	212
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	6038	4463	1575	
			95-97				
234 Th	63	122-127	119-121	9780	5703	4077	
			128-130				
234 Th	92	182-186	180-181	11616	4527	7089	
			187-189				
226Ra/235U	186	367-372	364-366	12444	2918	9526	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	19034	1495	17539	
			593-596				
228 Ac	338	671-678	667-670	1466	1308	158	
			679-682				
214 Pb	352	698-705	694-697	30147	1383	28764	
			706-709				
					496	151	BWL 6/22/92
208 Tl	583	1160-1167	1156-1159	647	~~632~~	~~15~~	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	19924	607	19317	
			1221-1224				
		6 6/18/92 OCL					
228 Ac	911	1817-1823	1813-1815	461	412	49	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	854	664	190	
228Ac	969		1942-1950				
mass =	4.2264	grams					

6/16/92

OCL.

Sample sheet		11.9/7.9		DATE	6/15/92	TIME (MIN)	150
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	31687	24242	7445	
			95-97				
234 Th	63	122-127	119-121	57320	31775	25545	
			128-130				
234 Th	92	182-186	180-181	71705	28692	43013	
			187-189				
226Ra/235U	186	367-372	364-366	67048	16738	50310	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	109758	8136	101622	
			593-596				
228 Ac	338	671-678	667-670	7336	6968	368	
			679-682				
214 Pb	352	698-705	694-697	176136	7510	168626	
			706-709				
208 Tl	583	1160-1167	1156-1159				
			1168-1171				
214 Bi	609	1213-1220	1209-1212	116507	3195	113312	
			1221-1224				
		6 ocl 6/17					
228 Ac	911	1817-1823	1813-1815	1950	1900	50	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	4090	3445	645	
228Ac	969		1942-1950				
mass =	4.3460 g						

6/15/92ate

JUNE 18, 1992
OCL

Sample sheet		10.8/7.8		DATE	6/15/92	TIME (MIN)	1112
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1913	1635	278	
			95-97				
234 Th	63	122-127	119-121	2539	1809	730	
			128-130				
234 Th	92	182-186	180-181	3180	1644	1536	
			187-189				
226Ra/235U	186	367-372	364-366	2703	1381	1322	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2769	1199	1570	
			593-596				
228 Ac	338	671-678	667-670	1170	1000	170	
			679-682				
214 Pb	352	698-705	694-697	3795	943	2852	
			706-709				
208 Tl	583	1160-1167	1156-1159	1088	551	537	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2291	501	1790	
			1221-1224				
		is 6/18/92 OCL					
228 Ac	911	1817-1823	1813-1815	7666	350	416	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1131	720	411	
228Ac	969		1942-1950				
mass =	4.4324	grams					

OCL
6/22/92

Sample sheet		10.3/7.7		DATE	6/15/92	TIME (MIN)	1697
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	3521	2611	910	
			95-97				
234 Th	63	122-127	119-121	4608	3054	1554	
			128-130				
234 Th	92	182-186	180-181	~~4911~~ OCL 6/22/92	~~2169~~ OCL 6/22/92	~~2921~~ OCL 6/22/92	
			187-189	5612	2691	2921	
						OCL 6/22/92	
226Ra/235U	186	367-372	364-366	4911	2169	~~29~~ 2742	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	5089	1819	3270	
			593-596				
228 Ac	338	671-678	667-670	1962	1613	349	
			679-682				
214 Pb	352	698-705	694-697	6945	1505	5440	
			706-709				
208 Tl	583	1160-1167	1156-1159	1613	917	696	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	4813	907	3906	
			1221-1224				
		6/22/92 OCL					
228 Ac	911	1817-1823	1813-1815	1178	595	583	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1690	1222	468	
228Ac	969		1942-1950				
MASS =	4.3809 g						

6/18/92
OCL

Sample sheet		8.15/8.0		DATE	6/15/92	TIME (MIN)	1320
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	2094	1780	314	
			95-97				
234 Th	63	122-127	119-121	2629	1957	672	
			128-130				
234 Th	92	182-186	180-181	3205	1719	1486	
			187-189				
226Ra/235U	186	367-372	364-366	2614	1476	1138	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2259	1332	927	
			593-596				
228 Ac	338	671-678	667-670	1602	1211	391	
			679-682				
214 Pb	352	698-705	694-697	2775	1103	1172	
			706-709				
208 Tl	583	1160-1167	1156-1159	1372	645	727	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1993	675	1318	
			1221-1224				
		6/18/92 OCL					
228 Ac	911	1817-1823	1813-1815	1006	451	555	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1342	889	453	
228Ac	969		1942-1950				
MASS =	5.1922 grams						

Sample sheet		22.25/17.15		*DATE*	6/12/92	*TIME (MIN)*	1260
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	2721	2003	718	
			95-97				
234 Th	63	122-127	119-121	3082	2248	834	
			128-130				
234 Th	92	182-186	180-181	3669	1860	1809	
			187-189				
226Ra/235U	186	367-372	364-366	3499	1671	1828	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	3778	1401	2377	
			593-596				
228 Ac	338	671-678	667-670	~~1728~~	1103	625 BWL 6/12/92	
			679-682	1550	1281	269	
214 Pb	352	698-705	694-697	5133	1130	4003	
			706-709				
208 Tl	583	1160-1167	1156-1159	1242	703	539	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	3560	681	2879	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	900	434	466	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1284	935	349	
228Ac	969		1942-1950				
mass =	4.3939	grams					

BWL
6/12/92

Sample sheet		22.5/16.55		DATE	6/11/92	TIME (MIN)	30
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1874	1423	451	
			95-97				
234 Th	63	122-127	119-121	3208	1805	1403	
			128-130				
234 Th	92	182-186	180-181	3861	1521	2340	
			187-189				
226Ra/235U	186	367-372	364-366	4144	973	3171	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	5956	466	5490	
			593-596				
228 Ac	338	671-678	667-670	416	412	4	
			679-682				
214 Pb	352	698-705	694-697	9640	394	9246	
			706-709				
208 Tl	583	1160-1167	1156-1159	191	169	22	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	6461	174	6287	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	121	107	14	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	253	183	70	
228Ac	969		1942-1950				
mass =	4.3441	grams					

BWL 6/11/92

Sample sheet		22.6/15.85		DATE	6/11/92	TIME (MIN)	27
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	~~5558~~	~~3149~~ BWL 6/11/92	~~2409~~	
			95-97	3143	2421	722	
234 Th	63	122-127	119-121	6 BWL 6/11/92			
			128-130	5558	3149	2409	
234 Th	92	182-186	180-181	6699	2713	3986	
			187-189				
226Ra/235U	186	367-372	364-366	7126	1662	5464	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	10886	839	10470	
			593-596				
228 Ac	338	671-678	667-670	712	688	24	
			679-682				
214 Pb	352	698-705	694-697	17655	764	16891	
			706-709				
208 Tl	583	1160-1167	1156-1159	282	258 ~~315~~ BWL	24 ~~-37~~ 6/22/92	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	11737	319	11418	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	203	189	14	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	406	361	45	
228Ac	969		1942-1950				
mass = 4.6753 gm							

Sample sheet		22.35/15.3		DATE	6/11/92	TIME (MIN)	70
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1852	1357	495	
			95-97				
234 Th	63	122-127	119-121	2921	1767	1154	
			128-130				
234 Th	92	182-186	180-181	3418	1404	2014	
			187-189				
226Ra/235U	186	367-372	364-366	3843	928	2915	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	6161	472	5689	
			593-596				
228 Ac	338	671-678	667-670	468 ~~521~~	398 ~~345~~	70 ~~176~~	
			679-682				
214 Pb	352	698-705	694-697	9678	418	9260	
			706-709				
208 Tl	583	1160-1167	1156-1159	216	192 ~~203~~ 6/22/92 BWL	24 ~~13~~	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	6486	201	6285	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	140	121	19	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	294	221	73	
228Ac	969		1942-1950				
mass =	3.8727	grams					

BWL
6/11/92

Sample sheet		7.45/7.9		DATE	6/11/92	TIME (MIN)	1089
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	1869	1491	378	
			95-97				
234 Th	63	122-127	119-121	2328	1649	679	
			128-130				
234 Th	92	182-186	180-181	2941	1491	1450	
			187-189				
226Ra/235U	186	367-372	364-366	2400	1366	1034	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2176	1119	1057	
			593-596				
228 Ac	338	671-678	667-670	1257	1014	243	
			679-682				
214 Pb	352	698-705	694-697	2802	962	1840	
			706-709				
208 Tl	583	1160-1167	1156-1159	1057	543	514	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	3006	574	2432	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	816	354	462	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1083	737	346	
228Ac	969		1942-1950				
mass	4.9265	grams					

BWL
6/11/92

Sample sheet		22.85/17.85		*DATE*	6/10/92	*TIME (MIN)*	340
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	841	633	208	
			95-97				
234 Th	63	122-127	119-121	1145	732	413	
			128-130				
234 Th	92	182-186	180-181	1312	675	637	
			187-189				
226Ra/235U	186	367-372	364-366	1314	522	792	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
				6/10/92 BWL			
214 Pb	295	585-592	581-584	20			
			593-596	1606	399	1207	
228 Ac	338	671-678	667-670	465	363	102	
			679-682				
214 Pb	352	698-705	694-697	2327	308	2019	
			706-709				
208 Tl	583	1160-1167	1156-1159	316	190	126	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1549	199	1350	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	248	147	101	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	377	280	97	
228Ac	969		1942-1950				

Sample sheet		22.7/21.8		*DATE*	6/10/92	*TIME (MIN)*	1065
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	2986	2295	691	
			95-97				
234 Th	63	122-127	119-121	4951	2606	2345	
			128-130				
234 Th	92	182-186	180-181	6275	2481	3794	
			187-189				
226Ra/235U	186	367-372	364-366	4951	1719	3232	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	4893	1331	3562	
			593-596				
228 Ac	338	671-678	667-670	1441	1117	324	
			679-682				
214 Pb	352	698-705	694-697	7015	1001	6014	
			706-709				
208 Tl	583	1160-1167	1156-1159	1094	614	480	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	4738	582	4156	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	763	371	392	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1095	850	245	
228Ac	969		1942-1950				
mass=	3.9343	grams					

BWL
6/10/92

Sample sheet		22.4/21.4		*DATE*	6/9/92	*TIME (MIN)*	358
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	1059	809	250	
			95-97				
234 Th	63	122-127	119-121	1686	984	702	
			128-130				
234 Th	92	182-186	180-181	2239	866	1373	
			187-189				
226Ra/235U	186	367-372	364-366	1866	645	1221	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	1745	483	1262	
			593-596				
228 Ac	338	671-678	667-670	482	369	114	
			679-682				
214 Pb	352	698-705	694-697	2685	359	2326	
			706-709				
208 Tl	583	1160-1167	1156-1159	363	223	140	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	1736	197	1539	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	287	136	151	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	412	281	131	
228Ac	969		1942-1950				

Sample #	22.5/19.55									
Weight(kg)	4.0248	Geometry	full			Counting Time(min)		997		
time of background minutes			2400							

Nuclides	Total Counts	Bkgd(1)	Blank(2) (cpm)	Eblank cpm	Net counts	c. eff. (%)	intensity (%)	Activity (dpm/g)		
Pb-210	45 kev									
210	2489	1878	0.22875	0.00976	382.93625	1.303	4.1	178.63	±	95.66
Th-234	62 kev									
62	3341	2228	0.3742	0.01249	739.9226	3.023	5.7	107.01	±	21.34
(93Kev)										
93	3899	1866	0.95625	0.01996	1079.61875	7.122	6.8	55.55	±	6.28
Ra-226										
295	4586	1179	0.07625	0.00564	3330.97875	4.933	18	93.49	±	1.95
352	6735	948	0.0122	0.0029	5774.8366	4.251	35	96.73	±	0.88
609	4431	608	0.0102	0.0026	3812.8306	2.305	43	95.87	±	1.63
183.7	3764	1506	0.46375	0.0139	1795.64125	13.15	3.3	103.12	±	5.44
Th-228	583 kev									
228	965	573	0.2004	0.00914	192.2012	0.79	86	7.05	±	10.62
Ra-228										
338	1235	1042	0.08375	0.00591	109.50125	3.898	12	5.83	±	20.43
911	731	386	0.2104	0.00936	135.2312	1.511	29	7.69	±	19.62
964	1055	730	0.17083	0.00844	154.68249	1.623	21.8	10.89	±	22.73

Ra-226 weighted average =	96.24	±	0.71	U (ppm)=		128.8	±	0.95
Ra-228 weighted average =	7.94	±	12.01	Th (ppm) =		29.38	±	44.4
210PB/234Th av =	60.12	±	6.01	U (ppm)=		80.48	±	8.04
63&92kev								
Ra-228 av&Th228 =	7.44	±	7.96	Th (ppm) =		27.53	±	29.5

Calculation of weighted average (up to 200 data sets can be input)

	weighted average=	96.2414		average=	98.57					
	weighted error=	0.71347		std.=	3.961					
data	± err	error^2	1/error^2	data/error^2						
93.49	± 1.95	3.8025	0.262985	24.5865						
96.73	± 0.88	0.7744	1.291322	124.91						
95.87	± 1.63	2.6569	0.376378	36.0834						
103.12	± 5.44	29.5936	0.033791	3.48454						

BWL 6/9/92

Sample sheet		22.5/19.55		DATE	6/9/92	TIME (MIN)	997
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	2489	1878	611	
			95-97				
234 Th	63	122-127	119-121	3341	2228	1113	
			128-130				
234 Th	92	182-186	180-181	3899	1866	2033	
			187-189				
226Ra/235U	186	367-372	364-366	3764	1506	2258	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
				BWL 6/9/92		BWL 6/9/92	
214 Pb	295	585-592	581-584	~~6944~~	1179	~~5765~~	
			593-596	4586		3407	
228 Ac	338	671-678	667-670	1235	1042	193	
			679-682				
214 Pb	352	698-705	694-697	6735	948	5787	
			706-709				
208 Tl	583	1160-1167	1156-1159	965	573	392	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	4431	608	3823	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	731	386	345	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1055	730	325	
228Ac	969		1942-1950				
mass =	4.0248	g					

Sample sheet		22.85/20.85		*DATE*	6/8/92	*TIME (MIN)*	1112
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	2008	1488	520	
			95-97				
234 Th	63	122-127	119-121	2351	1699	652	
			128-130				
234 Th	92	182-186	180-181	2762	1450	1312	
			187-189				
226Ra/235U	186	367-372	364-366	2542	1362	1180	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2496	1200	1296	
			593-596				
228 Ac	338	671-678	667-670	1198	1028	170	
			679-682				
214 Pb	352	698-705	694-697	3157	964	2193	
			706-709				
208 Tl	583	1160-1167	1156-1159	1055	550	505	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2191	569	1622	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	755	367	388	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1097	719	378	
228Ac	969		1942-1950				

BWL
6/7/92

Sample sheet		22.85/20.10		DATE	6/7/92	TIME (MIN)	337
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	2660	1945	715	
			95-97				
234 Th	63	122-127	119-121	4409	2553	1856	
			128-130				
234 Th	92	182-186	180-181	5691	2054	3637	
			187-189				
226Ra/235U	186	367-372	364-366	5677	1383	4294	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	7222	857	6365	
			593-596				
228 Ac	338	671-678	667-670	836	719	117	
			679-682				
214 Pb	352	698-705	694-697	11650	725	10925	
			706-709				
208 Tl	583	1160-1167	1156-1159	488	397	91	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	7560	363	7197	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	338	238	100	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	571	442	129	
228Ac	969		1942-1950				
mass=	4.2080	grams					

Sample sheet		22.30/18.30		*DATE*	6/61992	*TIME (MIN)*	1266
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45	89-94	86-88	2215	1688	527	
			95-97				
234 Th	63	122-127	119-121	2701	1937	764	
			128-130				
234 Th	92	182-186	180-181	3385	1694	1691	
			187-189				
226Ra/235U	186	367-372	364-366	2667	1475	1192	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	2431	1303	1128	
			593-596				
228 Ac	338	671-678	667-670	1403	1116	287	
			679-682				
214 Pb	352	698-705	694-697	3111	1105	2006	
			706-709				
208 Tl	583	1160-1167	1156-1159	1179	603	576	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2125	588	1537	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	826	403	423	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1248	887	361	
228Ac	969		1942-1950				
mass =	3.8736	grams					

BWL 6/7/92

Sample sheet		22.65/18.85		DATE	6/7/92	TIME (MIN)	1426
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	3469	2717	752	
			95-97				
234 Th	63	122-127	119-121	4722	3064	1658	
			128-130				
234 Th	92	182-186	180-181	5649	2642	3007	
			187-189				
226Ra/235U	186	367-372	364-366	5302	2130	3172	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	6145	1648	4497	
			593-596				
228 Ac	338	671-678	667-670	1774	1433	341	
			679-682				
214 Pb	352	698-705	694-697	8789	1400	7389	
			706-709				
208 Tl	583	1160-1167	1156-1159	1298	783	515	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	5886	835	5051	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	978	488	490	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	1455	1055	400	
228Ac	969		1942-1950				
mass =	3.5694	g					

BWL 6/7/92

Sample sheet		PB-ECP-1		DATE	6/5/92	TIME (MIN)	2972
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	4033	3338	695	
			95-97				
234 Th	63	122-127	119-121	4819	3537	1282	
			128-130				
234 Th	92	182-186	180-181	~~3489~~ BWL 6/7/92			
			187-189	6339	3489	2850	
226Ra/235U	186	367-372	364-366	4827	3120	1707	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	3422	2787	635	
			593-596				
228 Ac	338	671-678	667-670	2937	2385	552	
			679-682				
214 Pb	352	698-705	694-697	3384	2266	1118	
			706-709				
208 Tl	583	1160-1167	1156-1159	2306	1339	967	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2559	1436	1123	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	1714	981	733	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	2616	1941	675	
228Ac	969		1942-1950				
mass = 3,4998	grams						

BWL
6/7/92

BWL
6/3/92

Sample sheet		ESC-ECP-1		*DATE*	6/3/92	*TIME (MIN)*	3366
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	4922	3895	1027	
			95-97				
234 Th	63	122-127	119-121	5737	4205	1532	
			128-130				
234 Th	92	182-186	180-181	7109	3915	3194	
			187-189				
226Ra/235U	186	367-372	364-366	5497	3542	1955	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	3845	3139	706	
			593-596				
228 Ac	338	671-678	667-670	3684	2948	736	
			679-682				
214 Pb	352	698-705	694-697	3785	2696	1089	
			706-709				
208 Tl	583	1160-1167	1156-1159	3124	1610	1514	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	2861	1669	1192	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	2159	1044	1115	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	3173	2175	998	
228Ac	969		1942-1950				

BWL 6/1/92

Sample sheet		PUE1-ECP-1		DATE	6/1/92	TIME (MIN)	4170
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45	89-94	86-88	5996	4747	1249	
			95-97				
234 Th	63	122-127	119-121	6738	5101	1637	
			128-130				
234 Th	92	182-186	180-181	8596	4789	3807	
			187-189				
226Ra/235U	186	367-372	364-366	6785	4399	2386	
			373-375				
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295	585-592	581-584	4925	4038	887	
			593-596				
228 Ac	338	671-678	667-670	4215	3547	668	
			679-682				
214 Pb	352	698-705	694-697	4606	3293	1313	
			706-709				
208 Tl	583	1160-1167	1156-1159	3270	2015	1255	
			1168-1171				
214 Bi	609	1213-1220	1209-1212	3419	1896	1523	
			1221-1224				
228 Ac	911	1817-1823	1813-1815	2396	1273	1123	
			1824-1828				
228 Ac	964	1924-1941	1915-1923	3614	2653	961	
228Ac	969		1942-1950				
mass = 3.1755g							

Sample sheet		NOP1-ECP-8/5914		DATE	5/25/92	TIME (MIN)	3356
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			4860	3872	988	
234 Th	63			5687	4226	1461	
234 Th	92			8096	4466	3630	
				5/26/92 BWL			
226Ra/235U	186			~~922~~			
				5672	3556	2116	
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295			4073	3219	854	
228 Ac	338			3472	2795	677	
214 Pb	352			4196	2557	1639	
208 Tl	583			2961	1568	1393	
214 Bi	609			3018	1610	1408	
228 Ac	911			2099	1091	1008	
228 Ac	964			3074	2179	895	
228Ac	969						

SAMPLE SUMMARY SHEET			NOP1-ECP-36	DATE	5/23/92	TIME (MIN)	5640
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			7950	6420	1530	
234 Th	63			9236	6935	2301	
234 Th	92			13151	6986	6165	
226Ra/235U	186			9108	5751	3357	
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295			4802	3884	918	
228 Ac	338			5933	4684	1249	
214 Pb	352			6076	4237	1839	
208 Tl	583			4891	2701	2190	
214 Bi	609			4372	2697	1675	
228 Ac	911			3684	1683	2001	
228 Ac	964			5260	3622	1638	
228Ac	969						
mass	3.9259grams						

BWL

5/23/92ate

BWL

SAMPLE SUMMARY SHEET			NOP1-ECP-35	DATE	5/15/92	TIME (MIN)	2824
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			4173	3201	972	
234 Th	63			4732	3596	1136	
234 Th	92			6906	3610	3296	
226Ra/235U	186			4784	2912	1872	
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295			3329	2678	651	
228 Ac	338			2874	2244	630	
214 Pb	352			3514	2207	1307	
208 Tl	583			2458	1379	1079	
214 Bi	609			2462	1408	1054	
228 Ac	911			1705	893	812	
228 Ac	964			2575	1907	668	
228Ac	969						
mass=	3.6829 grams						

Duplicate

SAMPLE SUMMARY SHEET			NOP1-EG&G-8/5915	DATE	5/13/92	TIME (MIN)	2876
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			4148	3305	843	
234 Th	63			4714	3462	1252	
234 Th	92			6597	3657	2940	
226Ra/235U	186			4814	2930	1884	
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295			3854	2654	1100	
228 Ac	338			2749	2295	454	
214 Pb	352			3718	2248	1470	
208 Tl	583			2120	1300	820	
214 Bi	609			2677	1399	1278	
228 Ac	911			1616	866	750	
228 Ac	964			2432	1797	635	
228Ac	969						

NOR1-ECP-16 5/11/92

SAMPLE SUMMARY SHEET				DATE	5/11/92	TIME (MIN)	4266
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			5828	4628	1200	
234 Th	63			6669	4900	1769	
234 Th	92			9617	5079	4538	
226Ra/235U	186			6973	4289	2684	
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295			4830	3908	922	
228 Ac	338			3989	3476	513	
214 Pb	352			4869	3122	1747	
208 Tl	583			3328	1940	1388	
214 Bi	609			3423	1992	1431	
228 Ac	911			2442	1365	1077	
228 Ac	964			3588	2813	775	
228Ac	969						
MASS	4.1992g						

5/11/92ate

NOP1-ECP-34

SAMPLE SUMMARY SHEET				DATE	5/8/92	TIME (MIN)	2880
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			4130	3102	1028	
234 Th	63			4876	3542	1334	
234 Th	92			6861	3769	3092	
226Ra/235U	186			4736	2953	1783	
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295			3357	2669	688	
228 Ac	338			3040	2345	695	
214 Pb	352			3350	2213	1137	
208 Tl	583			2562	1398	1164	
214 Bi	609			2381	1397	984	
228 Ac	911			1905	974	931	
228 Ac	964			2732	1866	866	
228Ac	969						

NOP1-ECP-8/5915

SAMPLE SUMMARY SHEET				DATE	5/6/92	TIME (MIN)	3945
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Count	Net Count	CPM
210 Pb	45			5807	4557	1250	
234 Th	63			6904	4978	1926	
234 Th	92			9254	5202	4052	
226Ra/235U	186			6459	4203	2256	
212 Pb	238						
224 Ra	239						
214 Pb	242						
214 Pb	295			4662	3837	825	
228 Ac	338			4778	3283	995	
214 Pb	352			4555	3027	1529	
208 Tl	583			3608	1889	1719	
214 Bi	609			3349	1919	1430	
228 Ac	911			2643	1219	1424	
228 Ac	964			3715	2684	1031	
228Ac	969						
mass =	3.6934						

SAMPLE SUMMARY SHEET			NOR-ECR-2/5920	DATE	4/29	TIME (MIN)	3210
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			4260	3353	907	
234 Th	63			5089	3681	1408	
234 Th	92			7106	4104	3002	
226Ra/235U	186			5152	3134	2018	
212 Pb	238			11212	8226	2986	
224 Ra	239						
214 Pb	242						
214 Pb	295			3564	2933	631	
228 Ac	338			3123	2577	546	
214 Pb	352			3675	2380	1295	
208 Tl	583			2333	1554	779	
214 Bi	609			2681	1482	1199	
228 Ac	911			1770	962	808	
228 Ac	964			2754	2158	596	
228Ac	969						

mass= 3.4787

5/3/92ate

SAMPLE SUMMARY SHEET			NOR1-ECP-15	DATE	5/3/92	TIME (MIN)	4135
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Count	Net Count	CPM
210 Pb	45			5848	4660	1188	
234 Th	63			6044	4933	1911	
234 Th	92			13786	5124	8662	
226Ra/235U	186			7030	4302	2728	
212 Pb	238			14915	10548	4367	
224 Ra	239						
214 Pb	242						
214 Pb	295			4977	2920	1157	
228 Ac	338			3815	3385	430	
214 Pb	352			5272	3104	2168	
208 Tl	583			3066	1953	1113	
214 Bi	609			3831	1933	1898	
228 Ac	911			2309	1260	1049	
228 Ac	964			3598	2673	925	
228Ac	969						

mass= 3.9966g

SAMPLE SUMMARY SHEET			1081-68-7	DATE	4/21/92	TIME (MIN)	2899
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			4101	3361	740	
234 Th	63			4887	3616	1271	
234 Th	92			6858	3926	2932	
226Ra/235U	186			4837	3032	1805	
212 Pb	238			12029	7825	4204	
224 Ra	239						
214 Pb	242						
214 Pb	295			3356	2856	500	
228 Ac	338			3007	2362	645	
214 Pb	352			3416	2230	1186	
208 Tl	583			2514	1374	1140	
214 Bi	609			2550	1359	1191	
228 Ac	911			1811	902	909	
228 Ac	964			2622	1863	759	
228Ac	969						

SAMPLE SUMMARY SHEET			NOP1-ECP-13	*DATE*	4/19/92	*TIME (MIN)*	3035
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	**CPM**
210 Pb	45			4152	3254	898	
234 Th	63			4686	3387	1299	
234 Th	92			6627	3711	2916	
226Ra/235U	186			4754	3047	1707	
212 Pb	238			9780	7844	1936	
224 Ra	239						
214 Pb	242						
214 Pb	295			3354	2798	556	
228 Ac	338			2695	2606	89	
214 Pb	352			3290	2308	982	
208 Tl	583			2088	1421	667	
214 Bi	609			2528	1397	1131	
228 Ac	911			1538	965	573	
228 Ac	964			2517	2018	499	
228Ac	969						

BWL
4/16/92

SAMPLE SUMMARY SHEET			NOM-ECP-33	DATE	4/16/92	TIME (MIN)	2400
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			5469	4030	1439	
234 Th	63			6120	4454	1666	
234 Th	92			8040	4115	3925	
226Ra/235U	186			6952	3316	3636	
212 Pb	238			14314	7478	6836	
224 Ra	239						
214 Pb	242						
214 Pb	295			8417	2614	5803	
228 Ac	338			2902	2307	595	
214 Pb	352			11746	2284	9462	
208 Tl	583			2342	1299	1043	
214 Bi	609			8111	1260	6851	
228 Ac	911			1685	822	863	
228 Ac	964			2493	1698	795	
228Ac	969						
mass (g)	3.604						

SAMPLE SUMMARY SHEET			MESA-ECP-1	DATE	4/13/92	TIME (MIN) 6720	
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45		9889	7756	2133		
234 Th	63		11177	8217	2960		
234 Th	92		16107	8336	7771		
226Ra/235U	186		11439	6862	4577		
212 Pb	238		27152	17739	9413		
224 Ra	239						
214 Pb	242						
214 Pb	295		8575	6232	2342		
228 Ac	338		6786	5605	1181		
214 Pb	352		9114	5157	3957		
208 Tl	583		5531	3238	2293		
214 Bi	609		6494	3160	3334		
228 Ac	911		4161	2100	2061		
228 Ac	964		6027	4490	1537		
228Ac	969						
Mass =	3.7811						

SAMPLE SUMMARY SHEET			PUE1-EQ-2A	DATE	4/9/92	TIME (MIN) 2804	
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			3122	2393	729	
234 Th	63			4036	3003	1033	
234 Th	92			5899	3163	2736	
226Ra/235U	186			4280	2740	1540	
212 Pb	238						
224 Ra	239			8422	7196	1226	
214 Pb	242						
214 Pb	295			2882	2509	373	
228 Ac	338			2444	2214	230	
214 Pb	352			2624	2100	524	
208 Tl	583			1742	1248	494	
214 Bi	609			1970	1294	676	
228 Ac	911			1387	849	538	
228 Ac	964			2210	1836	374	
228Ac	969						
mass (g)	4.1436						

SAMPLE SUMMARY SHEET			NOP1-ECP-9/5911	DATE	4/7/92	TIME (MIN)	1680
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			2680	2078	602	
234 Th	63			3203	2246	957	
234 Th	92			4327	2259	2068	
226Ra/235U	186			3113	1802	1311	
212 Pb	238			BWL 4/8/92 ~~12~~			
224 Ra	239			7444	4619	2825	
214 Pb	242						
214 Pb	295			2460	1648	812	
228 Ac	338			1919	1389	527	
214 Pb	352			2840	1399	1441	
208 Tl	583			1496	814	682	
214 Bi	609			2029	779	1250	
228 Ac	911			1079	505	574	
228 Ac	964			1565	1096	469	
228Ac	969						
mass (g)	3.5869						

SAMPLE SUMMARY SHEET			NOP1-ECP-19	DATE	4/6/92	TIME (MIN) 2637	
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			3783	2860	923	
234 Th	63			4215	3099	1116	
234 Th	92			5981	3163	2818	
226Ra/235U	186			4570	2645	1925	
212 Pb	238			8158	6606	1552	
224 Ra	239						
214 Pb	242						
214 Pb	295			3375	2442	933	
228 Ac	338			2299	2180	119	
214 Pb	352			3636	1998	1638	
208 Tl	583			1727	1182	545	
214 Bi	609			2614	1180	1434	
228 Ac	911			1271	769	502	
228 Ac	964			2064	1692	372	
228Ac	969						
mass =	3.9352	(g)					

SAMPLE SUMMARY SHEET			COL-ECPI/5913	DATE	4/4/92	TIME (MIN)	1430
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			1993	1664	329	
234 Th	63			2237	1606	631	
234 Th	92			3212	1778	1434	
226Ra/235U	186			BWL 2355 ~~499~~ ~~3212~~ 4/4/92	1445 ~~1778~~	910 ~~1434~~	
212 Pb	238			BWL 4/4/92 ~~235~~			
224 Ra	239			5176	3585	1591	
214 Pb	242						
214 Pb	295			1516	1322	194	
228 Ac	338			1414	1171	243	
214 Pb	352			1577	1099	478	
208 Tl	583			1036	700	336	
214 Bi	609			1161	657	504	
228 Ac	911			784	453	331	
228 Ac	964			1269	937	332	
228Ac	969						

BWL
4/2/92

SAMPLE SUMMARY SHEET			NOP-ECP-1/5909	DATE	4/2/92	TIME (MIN)	1782
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			2555	2021	534	
234 Th	63			2872	2274	598	
234 Th	92			4091	2198	1893	
226Ra/235U	186			2850	1824	1026	
212 Pb	238			7100	4634	2466	
224 Ra	239						
214 Pb	242						
214 Pb	295			2010	1661	349	
228 Ac	338			1840	1493	347	
214 Pb	352			1996	1415	581	
208 Tl	583			1585	840	745	
214 Bi	609			1513	803	710	
228 Ac	911			1067	561	506	
228 Ac	964			1605	1168	437	
228Ac	969						

SAMPLE SUMMARY SHEET			NOPI-ECP-4/5818	DATE	4/2/92	TIME (MIN)	1260
Isotope	E. (Kev)	Channels	Back Chan.	Counts	Back Coun	Net Count	CPM
210 Pb	45			1798	1394	404	
234 Th	63			2400	1572	828	
234 Th	92			3297	1653	1694	
226Ra/235U	186			2307	1364	943	
212 Pb	238			8053	Bwc 4682		
224 Ra	239			4762	3291	1471	
214 Pb	242						
214 Pb	295			1732	1200	532	
228 Ac	338			1228	1048	180	
214 Pb	352			1931	985	946	
208 Tl	583			975	649	326	
214 Bi	609			1414	612	802	
228 Ac	911			701	402	299	
228 Ac	964			1113	864	249	
228Ac	969						

MCA OUTPUT

MCA #1 - Canberra S100 - MESA3.MCA - MESA-ECP-3

Tag Number:	14	Readout:	Sun 12 Jul 1992 @ 09:17:52
Report Group:	2/4	Acquire Started:	Wed 08 Jul 1992 @ 11:14:46
Group Size:	4096		

Elapsed Live Time:	5500.00 min.
Elapsed True Time:	5500.49 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 5500.00 min. Area = 10000 cts., Ch. 9348 to 9363
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

O.C.L.

7/13/92

mass = 3.5692 g

time = 5500 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	13819	1377	46.6
	49.5	0.04	10.45	1.29
2	60.5	15686	2188	63.3
	66.0	0.05	7.13	1.23
	Isotope:	TH-234 @	63.3	
3	89.0	24915	5663	92.8
	96.5	0.08	4.60	1.59
4	182.9	14697	3146	185.9
	188.4	0.04	4.95	1.41
	Isotope:	U-235 @	185.7	
5M	230.9	34977	8139	238.5
	248.4	0.11	6.48	1.54
	Isotope:	PB-212 @	238.6	
6	291.4	11605	1687	294.9
	298.9	0.04	10.54	1.45
	Isotope:	PB-214 @	295.2	
7	334.3	9944	1156	338.1
	341.8	0.03	14.23	1.72
	Isotope:	AC-228 @	338.3	
8	347.8	10878	2456	351.8
	355.3	0.03	7.01	1.55
	Isotope:	PB-214 @	351.9	
9	578.7	6841	1885	582.7
	586.2	0.02	7.24	1.70
	Isotope:	TL-208 @	583.2	
10	605.1	7361	2393	608.7
	612.6	0.02	5.92	1.64
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	5035	1609	910.2
	914.4	0.02	7.28	1.91
	Isotope:	AC-228 @	911.2	
12M	957.9	8242	1150	967.9
	975.4	0.02	23.12	1.81

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		1058	995	1100	1113
90	1326	1595	1452	1151	1040
95	1006	961	1022		

C = 7677
B = 6142
N = 1535

ROI # 2

Channel #		**** Data ****			
119					1094
120	1130	1135	1092	1297	1841
125	1997	1552	1241	1078	1088
130	1141				

C = 9020
B = 666666
N = 2354

ROI # 3

Channel #		**** Data ****			
176		1154	1325	1502	1318
180	1224	1333	2109	2910	2968
185	2099	1461	1185	1180	1094
190	1036	1017			

C = 11547
B = 6016
N = 5531

ROI # 4

Channel #		**** Data ****			
364					963
365	979	873	988	1378	1920
370	2105	1593	1120	1003	884
375	891				

C = 9104
B = 5593
N = 3511

ROI # 5

Channel #		**** Data ****			
460	787	796	749	756	803
465	836	809	796	807	852
470	828	839	834	1039	1842
475	2687	2500	1534	983	912
480	941	1096	1034	976	806
485	733	780	710	756	694
490	798	788	707	767	709
495	693				

ROI # 6

Channel #		**** Data ****			
581		600	590	633	614
585	639	721	881	1116	1126
590	838	715	610	599	643
595	636	644			

C = 6646
B = 4959
N = 1687

ROI # 7

Channel #		**** Data ****			
667			544	565	564

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	556	544	624	717	848
675	881	811	579	546	548
680	512	552	553		

C = 5550
B = 4394
N = 1160

ROI # 8
Channel # **** Data ****

694					540
695	540	534	522	497	602
700	828	1172	1297	1001	726
705	544	500	530	526	519

C = 6667
B = 4211
N = 2456

ROI # 9
Channel # **** Data ****

1156		339	309	297	323
1160	316	371	481	718	843
1165	729	535	370	313	294
1170	301	302			

C = 4363
B = 2478
N = 1885

ROI # 10
Channel # **** Data ****

1209					330
1210	334	306	305	390	469
1215	775	967	899	589	446
1220	342	285	288	315	321

C = 4877
B = 2484
N = 2393

ROI # 11
Channel # **** Data ****

1813				188	204
1815	250	214	305	440	590
1820	625	523	367	249	223
1825	217	217	204	219	

C = 3313
B = 1722
N = 1591

ROI # 12
Channel # **** Data ****

1915	218	210	206	199	216
1920	180	226	191	215	215
1925	216	257	270	256	203
1930	197	216	219	301	366
1935	444	381	318	246	220
1940	173	177	178	184	208
1945	185	208	191	178	186
1950	188				

C = 4675
B = 3567
N = 1108

MCA #1 - Canberra S100 - MESAECP2.MCA - MESA-ECP-2

Tag Number:	18	Readout:	Wed 08 Jul 1992 @ 11:13:10
Report Group:	2/4	Acquire Started:	Wed 08 Jul 1992 @ 11:12:15
Group Size:	4096		

Elapsed Live Time:	4335.00 min.
Elapsed True Time:	4335.39 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 4335.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

7/8/92

OCL

mass = 3.5300g

time = 4335 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	10839	956	46.6
	49.5	0.04	13.26	1.26
2	60.5	12650	1729	63.5
	66.0	0.05	8.09	1.27
	Isotope:	TH-234 @	63.3	
3	89.0	19465	4445	92.8
	96.5	0.07	5.18	1.57
4	182.9	11656	2431	185.7
	188.4	0.04	5.70	1.26
	Isotope:	U-235 @	185.7	
5M	230.9	27884	5326	238.5
	248.4	0.11	8.99	1.48
	Isotope:	PB-212 @	238.6	
6	291.4	9231	1319	295.1
	298.9	0.04	12.02	1.42
	Isotope:	PB-214 @	295.2	
7	334.3	7938	894	338.1
	341.8	0.03	16.44	1.32
	Isotope:	AC-228 @	338.3	
8	347.8	8525	2211	351.7
	355.3	0.03	6.89	1.58
	Isotope:	PB-214 @	351.9	
9	578.7	5387	1457	582.6
	586.2	0.02	8.31	1.62
	Isotope:	TL-208 @	583.2	
10	605.1	6087	2097	608.7
	612.6	0.02	6.14	1.75
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	4008	1300	910.4
	914.4	0.02	8.04	1.76
	Isotope:	AC-228 @	911.2	
12M	957.9	6705	815	968.1
	975.4	0.03	29.66	1.82

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		823	864	880
90	1071	1237	1095	847
95	854	761	779	

C = 5878
B = 4961
N = 917

ROI # 2
Channel # **** Data ****

119				
120	873	886	985	1053
125	1603	1295	992	863
130	911			

C = 7346
B = 5504
N = 2042

ROI # 3
Channel # **** Data ****

176		913	1042	1086
180	980	1056	1700	2284
185	1596	1106	876	886
190	805	846		

C = 9043
B = 4640
N = 4403

ROI # 4
Channel # **** Data ****

364				
365	703	792	810	1081
370	1712	1170	872	760
375	736			

C = 7188
B = 4469
N = 2720

ROI # 5
Channel # **** Data ****

460	669	714	627	597	629
465	649	600	639	649	663
470	677	664	645	815	1431
475	2131	1921	1204	808	736
480	794	823	838	770	645
485	601	590	603	587	602
490	583	574	625	577	579
495	625				

ROI # 6
Channel # **** Data ****

581		533	511	491	456
585	470	558	697	929	884
590	696	544	497	502	503
595	466	494			

C = 5275
B = 3[illegible]
N = 13[illegible]

ROI # 7
Channel # **** Data ****

667			456	465	454

REGION OF INTEREST DATA

ROI # 7
Channel #

**** Data ****

670	438	448	527	534	709
675	745	572	466	415	431
680	428	441	409		

C = 4416
B = 3522
N = 894

ROI # 8
Channel #

**** Data ****

694					419
695	371	430	403	401	492
700	692	1023	1057	797	500
705	406	382	391	399	362

C = 5368
B = 3157
N = 2211

ROI # 9
Channel #

**** Data ****

1156		255	257	260	257
1160	248	286	417	551	670
1165	584	346	320	239	232
1170	250	215			

C = 3422
B = 1965
N = 1457

ROI # 10
Channel #

**** Data ****

1209					263
1210	249	265	253	309	448
1215	620	811	771	525	316
1220	292	255	250	236	224

C = 4092
B = 1995
N = 2097

ROI # 11
Channel #

**** Data ****

1813				173	182
1815	154	194	244	342	463
1820	519	409	283	211	183
1825	182	159	162	148	

C = 2665
B = 1343
N = 1322

ROI # 12
Channel #

**** Data ****

1915	160	170	191	175	183
1920	182	167	162	148	186
1925	178	219	200	199	160
1930	156	168	172	218	302
1935	360	353	262	204	165
1940	145	168	171	156	136
1945	132	144	158	130	163
1950	162				

C = 3815
B = 2890
N = 925

MCA #1 - Canberra S100 - NI34792.MCA - NOPI-ECP-34/792

Tag Number:	16	Readout:	Sun 05 Jul 1992 @ 10:56:18
Report Group:	2/4	Acquire Started:	Sun 05 Jul 1992 @ 10:55:11
Group Size:	4096		

Elapsed Live Time:	4446.00 min.
Elapsed True Time:	4446.40 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 4446.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

7/6/92

OCL

ocl 7/6/92

MASS = ~~3.6829 g~~ 3.9812 g

TIME = 4446 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	11484	1218	46.6
	49.5	0.04	10.80	1.34
2	60.5	12949	1810	63.5
	66.0	0.05	7.83	1.31
	Isotope:	TH-234 @	63.3	
3	89.0	20564	4580	92.9
	96.5	0.08	5.17	1.52
4	182.9	11846	2491	185.9
	188.4	0.04	5.61	1.50
	Isotope:	U-235 @	185.7	
5M	230.9	29917	7309	238.5
	248.4	0.11	6.64	1.48
	Isotope:	PB-212 @	238.6	
6	291.4	9229	893	295.1
	298.9	0.03	17.75	1.38
	Isotope:	PB-214 @	295.2	
7	334.3	8266	1062	338.3
	341.8	0.03	14.13	1.65
	Isotope:	AC-228 @	338.3	
8	347.8	8389	1747	351.6
	355.3	0.03	8.65	1.34
	Isotope:	PB-214 @	351.9	
9	578.7	6014	1794	582.7
	586.2	0.02	7.13	1.51
	Isotope:	TL-208 @	583.2	
10	605.1	5866	1608	608.7
	612.6	0.02	7.86	1.74
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	4290	1482	910.2
	914.4	0.02	7.29	1.84
	Isotope:	AC-228 @	911.2	
12M	957.9	7034	1202	968.1
	975.4	0.03	20.18	1.87

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(887	868	852) [892
90	1147	1335	1216	942 838]
95	(841	835	831)	

C = 6370
B = 5114
N = 1256

ROI # 2
Channel # **** Data ****

119				(948
120	873	923)	[945	1112 1517
125	1613	1281	1002]	(888 889
130	958)			

C = 7470
B = 5479
N = 1991

ROI # 3
Channel # **** Data ****

176		982	1060	1225 1129
180	(1020	1146)	[1682	2409 2459
185	1707	1173]	(976	993 891)
190	866	846		

C = 9430
B = 5026
N = 4404

ROI # 4
Channel # **** Data ****

364				[764
365	762	799)	[806	1168 1499
370	1660	1282	887]	(719 744
375	756)			

C = 7302
B = 4544
N =

ROI # 5
Channel # **** Data ****

460	665	659	636	691	632
465	693	639	648	619	665
470	657	671	691	937	1729
475	2664	2252	1449	883	793
480	871	875	781	802	665
485	616	585	619	653	653
490	558	593	595	581	602
495	595				

ROI # 6
Channel # **** Data ****

581		(519	558	536	539)
585	[521	533	652	838	814
590	661	549	493]	(458	519
595	524	515)			

C = 5061
B = 4168
N = 893

ROI # 7
Channel # **** Data ****

667			(514	440	454

REGION OF INTEREST DATA

ROI # 7
Channel #

**** Data ****

670	457)	[467	461	606	749
675	776	646	526	433]	(429
680	466	418	424)		

C = 4664
B = 3602 ~~4664~~ 7/6/92 ocd
N = 1062

ROI # 8
Channel #

**** Data ****

694					(397
695	429	433	(428)	[464	448
700	608	891	982	689	558
705	428]	(383	424	424	403)

C = ~~5496~~ 5068 ocd 9/6/92
B = ~~2893~~ 3321
N = ~~2603~~ 1747

ROI # 9
Channel #

**** Data ****

1156		(259	247	274	266)
1160	[261	300	417	678	840
1165	691	433	284]	(279	263
1170	264	258)			

C = 3648
B = 2110
N = 1538

ROI # 10
Channel #

**** Data ****

1209					(264
1210	286	268	275)	[291	404
1215	589	713	679	480	318
1220	263]	(240	293	255	248)

C = 3737
B = 2129
N = 1608

ROI # 11
Channel #

**** Data ****

1813				(167	162
1815	175)	[188	262	382	533
1820	563	467	299	183]	(197
1825	176	169	186	181)	

C = 2817
B = 1413
N = 1464

ROI # 12
Channel #

**** Data ****

1915	(149	168	185	181	145
1920	158	191	168	164)	[178
1925	212	214	213	259	156
1930	146	178	192	252	344
1935	424	400	296	218	159
1940	134	161]	(140	166	173
1945	135	162	160	162	146
1950	145)				

C = 4136
B = 2895
N = 1241

MCA #1 - Canberra S100 - 22501040.MCA - NOPI-ECP-22.5/10.4

Tag Number:	46	Readout:	Wed 01 Jul 1992 @ 07:04:08
Report Group:	2/4	Acquire Started:	Wed 01 Jul 1992 @ 07:02:58
Group Size:	4096		

Elapsed Live Time:	592.00 min.
Elapsed True Time:	592.15 min.
Dead Time:	0.02 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 592.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

7/1/92

OCL

mass = 3.8036 g

time = 592 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	8985	1305	46.6
	49.5	0.25	9.07	1.27
2	60.5	12682	2964	63.5
	66.0	0.36	4.92	1.39
	Isotope:	TH-234 @	63.3	
3	89.0	18106	5182	92.7
	96.5	0.51	4.28	1.40
4	182.9	12388	5647	186.0
	188.4	0.35	2.77	1.42
	Isotope:	U-235 @	185.7	
5M	230.9	16630	7428	241.9
	248.4	0.47	4.42	1.43
6	291.4	16499	13375	295.1
	298.9	0.46	1.58	1.53
	Isotope:	PB-214 @	295.2	
7	334.3	2858	68	338.1
	341.8	0.08	129.72	0.85
	Isotope:	AC-228 @	338.3	
8	347.8	24989	22317	351.8
	355.3	0.70	1.17	1.49
	Isotope:	PB-214 @	351.9	
9	578.7	1431	55	582.7
	586.2	0.04	113.49	1.51
	Isotope:	TL-208 @	583.2	
10	605.1	16558	15146	608.8
	612.6	0.47	1.40	1.66
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	955	139	910.6
	914.4	0.03	36.68	2.08
	Isotope:	AC-228 @	911.2	
12M	957.9	1767	170	968.1
	975.4	0.05	73.88	1.86

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		(671	627	639)	[747
90	921	1180	982	782	607]
95	(589	631	609)		

C = 5219
B = 3766
N = 1453

ROI # 2

Channel #		**** Data ****			
119					(812
120	801	862)	[873	1158	1751
125	1903	1391	874]	(743	766
130	748)				

C = 7950
B = 4832
N = 3118

ROI # 3

Channel #		**** Data ****			
176		822	1001	1186	1040
180	(741	841)	[1682	2652	2535
185	1493	889]	(811	738	647)
190	539	489			

C = 9251
B = 3778
N = 5473

ROI # 4

Channel #		**** Data ****			
364					(420
365	465	413)	[519	1004	1889
370	2714	2287	1249]	(614	419
375	395)				

C = 9662
B = 2726
N = 6936

ROI # 5

Channel #		**** Data ****			
460	244	270	284	280	266
465	268	273	284	282	384
470	386	417	322	289	388
475	424	446	363	274	332
480	724	1531	2408	1847	880
485	333	224	246	268	241
490	251	234	253	235	244
495	235				

ROI # 6

Channel #		**** Data ****			
581		(202	193	199	198)
585	[281	706	2239	4189	4249
590	2303	748	222]	(166	224
595	191	189)			

C = 14937
B = 1562
N = 13375

ROI # 7

Channel #		**** Data ****			
667			(163	180	172

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	168)	[146	146	183	232
675	216	189	196	155]	(173
680	195	174	170)		

C = 1463
B = 1395
N = 68

ROI # 8
Channel # **** Data ****

694					(180
695	186	190	207)	[274	805
700	2548	5650	7305	4862	1777
705	432]	(150	133	145	145)

C = 23653
B = 1336
N = 22317

ROI # 9
Channel # **** Data ****

1156		(84	102	113	118)
1160	[87	62	90	112	124
1165	126	84	58]	(63	79
1170	68	61)			

BKg = 2X

C = 743
B = ~~688~~ 542
N = 55 201

7/6/92 BWL

ROI # 10
Channel # **** Data ****

1209					(93
1210	76	81	134)	[322	1107
1215	2651	4336	4107	2279	841
1220	209]	(100	75	74	73)

C = 15852
B = 706
N = 15146

ROI # 11
Channel # **** Data ****

1813				(48	52
1815	50)	[47	73	66	69
1820	85	81	74	60]	(39
1825	62	39	60	50)	

C = 555
B = 400
N = 155

ROI # 12
Channel # **** Data ****

1915	(42	47	42	32	45
1920	39	37	44	45)	[50
1925	72	72	61	51	48
1930	47	43	50	52	75
1935	77	60	63	56	42
1940	37	46]	(48	44	36
1945	33	39	50	45	43
1950	54)				

C = 1002
B = 765
N = 237

MCA #1 - Canberra S100 - 20100770.MCA - NOPI-ECP-20.1/7.7

Tag Number:	44	Readout:	Tue 30 Jun 1992 @ 21:09:23
Report Group:	2/4	Acquire Started:	Tue 30 Jun 1992 @ 21:08:32
Group Size:	4096		

Elapsed Live Time:	79.00 min.
Elapsed True Time:	79.02 min.
Dead Time:	0.02 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 79.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/30/92
OCL

mass = 4.1689 g

time = 79.0 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	848	79	46.8
	49.5	0.18	45.24	1.06
2	60.5	1317	300	63.3
	66.0	0.28	15.64	1.20
	Isotope:	TH-234 @	63.3	
3	89.0	1765	537	92.7
	96.5	0.37	12.91	1.24
4	182.9	1204	529	186.0
	188.4	0.25	9.18	1.36
	Isotope:	U-235 @	185.7	
5M	230.9	1643	725	242.0
	248.4	0.35	14.28	1.29
6	291.4	1464	1138	295.2
	298.9	0.31	5.55	1.41
	Isotope:	PB-214 @	295.2	
7	334.3	299	11	337.9
	341.8	0.06	259.37	0.58
	Isotope:	AC-228 @	338.3	
8	347.8	2196	1932	351.8
	355.3	0.46	4.00	1.43
	Isotope:	PB-214 @	351.9	
9	578.7	184	28	583.3
	586.2	0.04	79.93	0.68
	Isotope:	TL-208 @	583.2	
10	605.1	1419	1279	608.9
	612.6	0.30	4.86	1.73
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	125	25	910.3
	914.4	0.03	73.79	2.10
	Isotope:	AC-228 @	911.2	
12M	957.9	191	-3	968.7
	975.4	0.04	1714.41	0.50
	Isotope:	RU-105 @	969.4	

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		(48	75	73)	[69
90	77	101	92	65	67]
95	(45	78	58)		

C = 471
B = 377
N = 94

ROI # 2

Channel #		**** Data ****			
119					(77
120	98	82)	[85	113	174
125	210	142	89]	(92	78
130	77)				

C = 813
B = 430
N = 383

ROI # 3

Channel #		**** Data ****			
176		75	93	110	102
180	(74	75)	[161	286	237
185	147	90]	(81	68	61)
190	62	43			

C = 921
B = 359
N = 562

ROI # 4

Channel #		**** Data ****			
364					(45
365	54	43)	[45	83	178
370	265	228	112]	(64	49
375	38)				

C = 911
B = 293
N = 618

ROI # 5

Channel #		**** Data ****			
460	16	35	29	24	21
465	23	30	27	29	29
470	41	33	32	34	44
475	63	76	44	26	46
480	66	125	233	163	85
485	32	19	25	23	22
490	27	21	26	21	28
495	25				

ROI # 6

Channel #		**** Data ****			
581		(17	19	16	25)
585	[20	63	174	341	392
590	208	77	26]	(19	20
595	15	32)			

C = 1301
B = 163
N = 1138

ROI # 7

Channel #		**** Data ****			
667			(17	12	13

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			
670	24	21	15	16	25
675	22	19	15	22	16
680	19	23	20		

C = 155
B = 144
N = 11

ROI # 8
Channel #

		**** Data ****			
694					15
695	20	26	21	27	70
700	219	477	656	422	150
705	43	18	11	11	10

C = 2064
B = 132
N = 1932

214 Pb peak

ROI # 9
Channel #

		**** Data ****			
1156		10	17	13	9
1160	9	13	8	16	5
1165	29	16	10	10	8
1170	6	5			

C = 106
B = 78 58
N = 28 46

7/6/92 BWL

ROI # 10
Channel #

		**** Data ****			
1209					9
1210	11	12	12	29	96
1215	218	365	324	215	79
1220	23	5	7	7	7

C = 1349
B = 70
N = 1279

ROI # 11
Channel #

		**** Data ****			
1813				4	6
1815	7	5	8	10	14
1820	11	12	12	2	6
1825	8	6	6	8	

C = 74
B = 51
N = 23

ROI # 12
Channel #

		**** Data ****			
1915	5	6	3	8	5
1920	6	6	2	3	2
1925	5	6	7	8	3
1930	6	4	6	7	6
1935	6	9	7	8	4
1940	7	5	6	6	1
1945	5	2	4	6	6
1950	5				

C = 106
B = 85
N = 21

MCA #1 - Canberra S100 - 19650755.MCA - NOPI-ECP-19.65/7.55

Tag Number:	42	Readout:	Tue 30 Jun 1992 @ 19:48:44
Report Group:	2/4	Acquire Started:	Tue 30 Jun 1992 @ 19:47:47
Group Size:	4096		

Elapsed Live Time:	134.00 min.
Elapsed True Time:	134.02 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 134.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

7/1/92

OCL

mass = 4.1683 g

time = 134.0 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	912	140	46.7
	49.5	0.11	27.12	0.69
2	60.5	1145	223	63.3
	66.0	0.14	19.39	1.58
	Isotope:	TH-234 @	63.3	
3	89.0	1690	432	92.9
	96.5	0.21	15.70	1.21
4	182.9	1177	424	186.0
	188.4	0.15	11.01	1.72
	Isotope:	U-235 @	185.7	
5M	230.9	1824	668	241.9
	248.4	0.23	16.97	1.47
6	291.4	1537	1121	295.2
	298.9	0.19	5.77	1.60
	Isotope:	PB-214 @	295.2	
7	334.3	369	43	337.4
	341.8	0.05	73.71	1.33
	Isotope:	AC-228 @	338.3	
8	347.8	2199	1799	351.8
	355.3	0.27	4.30	1.43
	Isotope:	PB-214 @	351.9	
9	578.7	234	70	582.7
	586.2	0.03	36.06	1.70
	Isotope:	TL-208 @	583.2	
10	605.1	1459	1283	608.9
	612.6	0.18	4.91	1.76
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	169	37	910.9
	914.4	0.02	57.97	0.61
	Isotope:	AC-228 @	911.2	
12M	957.9	256	72	970.4
	975.4	0.03	61.80	3.00

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(69	59	58)	[67
90	92	134	103	68	73]
95	(56	61	72)		

C = 537
B = 375
N = 162

ROI # 2
Channel # **** Data ****

119					(77
120	87	66)	[74	120	137
125	155	118	87]	(80	82
130	62)				

C = 691
B = 454
N = 237

ROI # 3
Channel # **** Data ****

176		86	87	119	91
180	(75	72)	[140	228	220
185	156	85]	(85	87	62)
190	58	39			

C = 829
B = 381
N = 448

ROI # 4
Channel # **** Data ****

364					(59
365	34	54)	[64	98	173
370	208	196	134]	(61	49
375	47)				

C = 873
B = 255
N = 618

ROI # 5
Channel # **** Data ****

460	28	32	30	38	27
465	26	23	32	29	40
470	45	49	40	31	56
475	78	71	47	50	43
480	88	144	203	170	56
485	37	29	37	27	32
490	28	29	28	29	36
495	36				

ROI # 6
Channel # **** Data ****

581		(26	21	26	29)
585	[30	68	189	348	359
590	224	80	31]	(21	29
595	27	29)			

C = 1329
B = 208
N = 1121

ROI # 7
Channel # **** Data ****

667			(24	27	13

REGION OF INTEREST DATA

ROI # 7

Channel #	**** Data ****			
670	23	27	33	32
675	31	16	21	5
680	20	17		

C = 206
B = 163
N = 43

ROI # 8

Channel #	**** Data ****			
694				23
695	31	22	29	73
700	454	621	390	176
705	32	25	21	22

C = 1999
B = 178
N = 1821

ROI # 9

Channel #	**** Data ****			
1156	11	19	6	12
1160	13	19	20	28
1165	18	15	10	9
1170	10			

C = 152
B = 82
N = 70

ROI # 10

Channel #	**** Data ****			
1209				8
1210	11	15	36	87
1215	353	359	213	66
1220	11	10	12	10

C = 1160
B = 88
N = 1072

ROI # 11

Channel #	**** Data ****			
1813			6	12
1815	8	8	15	17
1820	18	8	14	12
1825	6	8	11	

C = 99
B = 70
N = 29

ROI # 12

Channel #	**** Data ****			
1915	5	8	5	2	6
1920	6	5	5	5	9
1925	7	9	9	11	5
1930	4	9	10	4	10
1935	11	4	9	12	6
1940	12	9	11	8	7
1945	6	6	3	9	4
1950	5				

C = 150
B = 106
N = 44

NBP1-ECP-4.0/7.75

MCA #1 - Canberra S100 - 04000775.MCA - ~~NBP1 ECP-875915~~ 6/92

Tag Number: 15
Report Group: 2/4
Group Size: 4096

Readout: Fri 26 Jun 1992 @ 14:53:51
Acquire Started: Fri 26 Jun 1992 @ 14:52:23

Elapsed Live Time: 1370.00 min.
Elapsed True Time: 1370.13 min.
Dead Time: 0.01 %

MCA Mode: PHA+
Preset Conditions: Live Time = 1370.00 min.
Area = 10000 cts., Ch. 5252 to 5267

Calibration: 0.0000*Ch^2 + 0.4996*Ch + 1.083 keV

Area Statistics: Background Channels = 4
% Error Sigma = 1.65

Peak Statistics: Sensitivity Factor = 5.0
Expected FWHM (ch) = 2.7 - 6.0

Iso. Id. Criteria: Energy Window = +-1.000 keV
Iso. Library: C:\WINDOWS\S100\SPECTRAN.ISO

6/29/92

OCL

mass =

time = 1370 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3941	284	46.8
	49.5	0.05	26.70	0.89
2	60.5	4621	651	63.5
	66.0	0.06	13.02	1.40
	Isotope:	TH-234 @	63.3	
3	89.0	7126	1656	92.8
	96.5	0.09	8.41	1.52
4	182.9	4144	949	185.9
	188.4	0.05	8.77	1.43
	Isotope:	U-235 @	185.7	
5M	230.9	10178	2875	238.6
	248.4	0.12	9.68	1.62
	Isotope:	PB-212 @	238.6	
6	291.4	3650	1014	295.1
	298.9	0.04	9.83	1.62
	Isotope:	PB-214 @	295.2	
7	334.3	2660	386	338.3
	341.8	0.03	22.05	1.44
	Isotope:	AC-228 @	338.3	
8	347.8	3904	1768	351.8
	355.3	0.05	5.83	1.56
	Isotope:	PB-214 @	351.9	
9	578.7	1979	581	582.7
	586.2	0.02	12.63	1.60
	Isotope:	TL-208 @	583.2	
10	605.1	2709	1343	608.9
	612.6	0.03	6.39	1.56
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1358	508	910.4
	914.4	0.02	11.97	1.89
	Isotope:	AC-228 @	911.2	
12M	957.9	2210	496	968.3
	975.4	0.03	26.84	2.45

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		308	287	305
90	336	450	409	308
95	294	308	297	

C = 2142
B = 1799
N = 343

ROI # 2
Channel # **** Data ****

119				312
120	319	325	325	387
125	567	529	353	330
130	343			340

C = 2682
B = 1969
N = 683

ROI # 3
Channel # **** Data ****

176		330	428	397	406
180	346	375	589	856	831
185	600	414	380	316	302
190	274	282			

C = 3290
B = 1769
N = 1511

ROI # 4
Channel # **** Data ****

364					253
365	261	274	266	387	536
370	617	474	339	252	248
375	237				

C = 2419
B = 1525
N = 894

ROI # 5
Channel # **** Data ****

460	215	203	218	192	229
465	231	229	215	229	221
470	239	216	216	290	541
475	821	807	523	255	272
480	290	337	344	373	260
485	196	217	215	227	192
490	186	184	221	180	195
495	199				

ROI # 6
Channel # **** Data ****

581		156	172	159	168
585	151	184	332	481	456
590	347	216	165	165	168
595	162	168			

C = 2332
B = 1318
N = 1014

ROI # 7
Channel # **** Data ****

667			164	138	143

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	156	146	159	185	236
675	275	230	151	141	137
680	136	129	134		

C = 1523
B = 1137
N = 386

ROI # 8
Channel # **** Data ****

694					128
695	123	137	149	148	190
700	279	571	662	524	284
705	178	145	124	144	118

C = 2836
B = 1068
N = 1768

ROI # 9
Channel # **** Data ****

1156		95	81	93	101
1160	89	88	121	201	249
1165	268	166	98	75	75
1170	81	98			

C = 1182
B = 699
N = 483

ROI # 10
Channel # **** Data ****

1209					101
1210	82	91	87	111	177
1215	287	472	456	284	138
1220	101	80	89	76	77

C = 2026
B = 683
N = 1343

ROI # 11
Channel # **** Data ****

1813				52	51
1815	57	56	67	111	153
1820	182	174	114	74	58
1825	51	57	44	57	

C = 931
B = 381
N = 550

ROI # 12
Channel # **** Data ****

1915	39	60	47	54	41
1920	64	50	70	56	62
1925	62	48	84	81	51
1930	46	55	58	86	106
1935	126	121	110	90	59
1940	37	56	36	47	31
1945	45	51	43	39	49
1950	50				

C = 1265
B = 872
N = 393

MCA #1 - Canberra S100 - 22650755.MCA - NOPI-ECP-~~22.65~~ 20.65/7.55

7/2/92
OCL

Tag Number: 48
Report Group: 2/4
Group Size: 4096

Readout: Wed 01 Jul 1992 @ 10:26:47
Acquire Started: Wed 01 Jul 1992 @ 10:26:02

Elapsed Live Time: 201.00 min.
Elapsed True Time: 201.03 min.
Dead Time: 0.02 %

MCA Mode: PHA+
Preset Conditions: Live Time = 201.00 min.
Area = 10000 cts., Ch. 5252 to 5267

Calibration: 0.0000*Ch^2 + 0.4996*Ch + 1.083 keV

Area Statistics: Background Channels = 4
% Error Sigma = 1.65

Peak Statistics: Sensitivity Factor = 5.0
Expected FWHM (ch) = 2.7 - 6.0

Iso. Id. Criteria: Energy Window = +-1.000 keV
Iso. Library: C:\WINDOWS\S100\SPECTRAN.ISO

7/2/92

OCL

mass = 4.3369

time = 201.0 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1670	220	46.8
	49.5	0.14	23.11	0.99
2	60.5	2466	605	63.3
	66.0	0.20	10.69	1.17
	Isotope:	TH-234 @	63.3	
3	89.0	3738	1306	92.7
	96.5	0.31	7.72	1.35
4	182.9	2427	1158	186.0
	188.4	0.20	6.03	1.50
	Isotope:	U-235 @	185.7	
5M	230.9	3205	1279	241.9
	248.4	0.27	11.55	1.53
6	291.4	2648	1998	295.0
	298.9	0.22	4.25	1.47
	Isotope:	PB-214 @	295.2	
7	334.3	654	16	338.3
	341.8	0.05	263.73	0.63
	Isotope:	AC-228 @	338.3	
8	347.8	4032	3484	351.7
	355.3	0.33	3.01	1.57
	Isotope:	PB-214 @	351.9	
9	578.7	348	62	582.9
	586.2	0.03	49.65	1.37
	Isotope:	TL-208 @	583.2	
10	605.1	2671	2349	608.8
	612.6	0.22	3.63	1.67
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	246	48	910.2
	914.4	0.02	53.92	1.60
12M	957.9	425	43	968.3
	975.4	0.04	144.29	2.25

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86 /116 124 112) [137

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

90	153	220	190	140	114
95	123	134	107		

C = 954
B = 716
N = 238

ROI # 2
Channel #

**** Data ****

119					138
120	142	162	151	235	316
125	401	273	169	154	173
130	152				

C = 1545
B = 921
N = 624

ROI # 3
Channel #

**** Data ****

176		142	189	221	201
180	138	192	370	621	562
185	316	165	158	141	142
190	96	84			

C = 2034
B = 771
N = 1263

ROI # 4
Channel #

**** Data ****

364					83
365	89	80	109	202	416
370	522	441	219	109	93
375	64				

C = 1909
B = 518
N = 1391

ROI # 5
Channel #

**** Data ****

460	61	65	55	55	62
465	49	43	58	69	74
470	86	95	61	54	87
475	140	104	81	58	55
480	121	284	374	336	127
485	57	43	50	61	52
490	40	56	38	58	48
495	48				

ROI # 6
Channel #

**** Data ****

581		47	43	48	47
585	69	100	360	669	626
590	337	111	51	32	40
595	34	34			

C = 2323
B = 325
N = 1998

ROI # 7
Channel #

**** Data ****

667			43	36	29
670	44	42	31	49	47

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			
675	53	37	48	28	35
680	40	39	53		

C = 335
B = ~~319~~ 304 7/6/92
N = ~~40~~ 31 BW

BKg = 2x[667-670]

ROI # 8
Channel #

		**** Data ****			
694					36
695	35	40	41	50	137
700	451	926	1106	760	269
705	59	28	32	29	33

C = 3758
B = 274
N = 3484

ROI # 9
Channel #

		**** Data ****			
1156		16	22	23	23
1160	9	20	28	28	35
1165	39	23	23	20	10
1170	11	18			

C = 1205
B = 205 143 118 BW 7/6/92
N = 62 ~~60~~ 62

ROI # 10
Channel #

		**** Data ****			
1209					26
1210	23	17	28	57	163
1215	429	674	659	358	129
1220	41	21	13	15	18

C = 2510
B = 101
N = 2349

ROI # 11
Channel #

		**** Data ****			
1813				11	16
1815	15	13	12	21	28
1820	30	21	12	12	11
1825	15	12	4	13	

C = 149
B = 97
N = 52

ROI # 12
Channel #

		**** Data ****			
1915	8	16	12	11	5
1920	9	14	15	5	7
1925	9	19	20	16	15
1930	7	20	6	13	16
1935	19	15	13	17	9
1940	15	6	5	13	17
1945	6	9	9	6	12
1950	11				

C = 242
B = 183
N = 59

MCA #1 - Canberra S100 - 18350790.MCA - NOPI-ECP-18.35/7.9

Tag Number:	52	Readout:	Thu 02 Jul 1992 @ 08:48:05
Report Group:	2/4	Acquire Started:	Thu 02 Jul 1992 @ 08:47:39
Group Size:	4096		

Elapsed Live Time:	1164.00 min.
Elapsed True Time:	1164.16 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1164.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

7/2/92

DCL

mass = 4.3342 g

time = 1164 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	6954	872	46.6
	49.5	0.10	11.84	1.28
2	60.5	8999	1670	63.5
	66.0	0.13	7.22	1.24
	Isotope:	TH-234 @	63.3	
3	89.0	12613	2943	92.8
	96.5	0.18	6.30	1.36
4	182.9	8602	3363	186.0
	188.4	0.12	3.80	1.39
	Isotope:	U-235 @	185.7	
5M	230.9	14216	5077	241.9
	248.4	0.20	6.26	1.51
6	291.4	10983	7717	295.1
	298.9	0.16	2.24	1.54
	Isotope:	PB-214 @	295.2	
7	334.3	3069	175	338.1
	341.8	0.04	52.23	1.73
	Isotope:	AC-228 @	338.3	
8	347.8	15721	13011	351.8
	355.3	0.23	1.59	1.51
	Isotope:	PB-214 @	351.9	
9	578.7	1827	279	582.7
	586.2	0.03	25.28	1.58
	Isotope:	TL-208 @	583.2	
10	605.1	10041	8547	608.8
	612.6	0.14	1.93	1.69
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1240	252	910.2
	914.4	0.02	23.06	1.61
12M	957.9	2182	292	968.1
	975.4	0.03	46.96	2.15

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86	(555	523	507)	[553

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	685	863	777	574	479
95	459	502	477		

C = 3931
B = 3023
N = 908

ROI # 2
Channel # **** Data ****

119					630
120	578	604	614	782	1096
125	1281	954	673	568	611
130	608				

C = 5400
B = 3599
N = 1801

ROI # 3
Channel # **** Data ****

176		571	759	827	760
180	569	616	1034	1698	1626
185	1043	665	527	568	460
190	454	436			

C = 6066
B = 2140
N = 3926

ROI # 4
Channel # **** Data ****

364					347
365	378	397	431	677	1247
370	1744	1441	821	435	360
375	324				

C = 6361
B = 2241
N = 4120

ROI # 5
Channel # **** Data ****

460	260	262	258	270	262
465	265	275	285	291	335
470	379	317	317	310	424
475	614	559	422	307	313
480	546	1074	1427	1109	599
485	313	230	225	230	265
490	246	246	239	242	242
495	258				

ROI # 6
Channel # **** Data ****

581		187	214	229	195
585	252	480	1454	2512	2544
590	1379	488	241	204	212
595	189	203			

C = 9350
B = 1449
N = 7901

ROI # 7
Channel # **** Data ****

667			171	213	198
670	164	173	186	232	220

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****		
675	243	207	188	173
680	177	195	156	173

C = 1622
B = 1255
N = 367

ROI # 8

Channel #		**** Data ****		
694				186
695	180	194	164	244 571
700	1655	3439	4271	2766 1104
705	316	181	144	156 150

C = 13795
B = 1355
N = 12440

ROI # 9

Channel #		**** Data ****		
1156		114	101	122 95
1160	91	87	110	160 192
1165	182	133	98	93 72
1170	96	81		

C = 1053
B = 774 684 7/6/92 BWL
N = 279 369

ROI # 10

Channel #		**** Data ****		
1209				77
1210	93	101	111	240 693
1215	1669	2507	2233	1299 484
1220	169	97	78	108 82

C = 8858
B = 747
N = 8111

ROI # 11

Channel #		**** Data ****		
1813				59 Bkg = 2/3 x 87 58
1815	63	59	81	101 115
1820	141	108	77	67 56
1825	73	60	57	65

C = 749
B = 491 480 7/6/92 BW2
N = 258 269

ROI # 12

Channel #		**** Data ****		
1915	66	54	52	42 47
1920	47	66	48	57 60
1925	69	71	66	84 54
1930	70	61	48	75 78
1935	90	84	94	47 60
1940	46	59	52	59 58
1945	50	62	55	49 52
1950	50			

C = 1216
B = 886
N = 330

MCA #1 - Canberra S100 - 19000780.MCA - NOPI-ECP-19.0/7.8

Tag Number:	50	Readout:	Wed 01 Jul 1992 @ 13:21:23
Report Group:	2/4	Acquire Started:	Wed 01 Jul 1992 @ 13:20:15
Group Size:	4096		

Elapsed Live Time:	173.00 min.
Elapsed True Time:	173.03 min.
Dead Time:	0.02 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 173.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

7/2/92

OCL

mass = 4.3354 g

time = 173.0 mn.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1297	183	46.6
	49.5	0.12	24.59	1.54
2	60.5	1917	441	63.5
	66.0	0.18	12.85	1.72
	Isotope:	TH-234 @	63.3	
3	89.0	2603	683	92.8
	96.5	0.25	12.33	1.25
4	182.9	1716	719	186.0
	188.4	0.17	8.01	1.49
	Isotope:	U-235 @	185.7	
5M	230.9	2590	898	241.9
	248.4	0.25	15.17	1.49
6	291.4	2245	1679	295.1
	298.9	0.22	4.66	1.57
	Isotope:	PB-214 @	295.2	
7	334.3	517	-29	335.5
	341.8	0.05	129.37	0.79
8	347.8	3216	2786	351.7
	355.3	0.31	3.36	1.58
	Isotope:	PB-214 @	351.9	
9	578.7	306	38	582.7
	586.2	0.03	75.96	1.59
	Isotope:	TL-208 @	583.2	
10	605.1	2093	1873	608.8
	612.6	0.20	4.03	1.83
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	197	21	910.5
	914.4	0.02	110.28	0.62
	Isotope:	AC-228 @	911.2	
12M	957.9	387	77	967.6
	975.4	0.04	73.56	1.79

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86 (88 100 99) [95

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
90	140	157	137	120	81
95	96	92	92		

C = 730
B = 567
N = 163

ROI # 2

Channel #		**** Data ****			
119					115
120	142	112	143	182	250
125	252	249	126	107	125
130	114				

C = 1202
B = 715
N = 487

ROI # 3

Channel #		**** Data ****			
176		128	149	164	148
180	107	138	220	404	345
185	224	110	95	123	97
190	84	67			

C = 1303
B = 560
N = 743

ROI # 4

Channel #		**** Data ****			
364					77
365	73	77	76	138	259
370	346	308	161	73	67
375	61				

C = 1208
B = 428
N = 860

ROI # 5

Channel #		**** Data ****			
460	52	52	41	47	44
465	38	49	46	51	59
470	69	73	75	58	64
475	90	97	50	51	59
480	104	193	282	245	105
485	62	43	41	46	31
490	57	32	51	41	45
495	47				

ROI # 6

Channel #		**** Data ****			
581		38	32	42	40
585	33	110	319	546	543
590	294	85	32	30	33
595	31	37			

C = 1962
B = 283
N = 1679

ROI # 7

Channel #		**** Data ****			
667			35	38	35
670	45	26	32	39	19

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
675	40	30	34	24	27
680	33	31	29		

C = 244
B = 273
N =

240 7/6/92
4

ROI # 8

Channel #		**** Data ****			
694					30
695	31	27	32	50	114
700	336	773	853	593	207
705	75	27	22	18	28

C = 3001
B = 215
N = 2786

ROI # 9

Channel #		**** Data ****			
1156		16	17	19	19
1160	17	16	15	26	29
1165	27	21	21	18	17
1170	14	14			

C = 171
B = ~~134~~ 126
N = 37

45 7/6/92 BWL

ROI # 10

Channel #		**** Data ****			
1209					12
1210	10	11	15	48	141
1215	348	505	501	305	108
1220	27	14	14	14	20

C = 1983
B = 110
N = 1873

ROI # 11

Channel #		**** Data ****			
1813				15	7
1815	10	7	11	8	11
1820	21	15	13	14	16
1825	13	11	17	8	

7/6/92 BWL

C = ~~93~~ 100
B = ~~164~~ ~~97~~ 85
N = 3

15

ROI # 12

Channel #		**** Data ****			
1915	3	11	8	12	13
1920	15	12	13	11	13
1925	9	17	15	10	11
1930	5	7	11	16	16
1935	19	14	10	7	10
1940	11	7	7	11	11
1945	10	7	9	10	5
1950	11				

C = 208
B = 179
N = 29

MCA #1 - Canberra S100 - 18600770.MCA - NOPI-ECP-18.6/7.7

Tag Number:	40	Readout:	Tue 30 Jun 1992 @ 17:30:30
Report Group:	2/4	Acquire Started:	Tue 30 Jun 1992 @ 17:27:42
Group Size:	4096		

Elapsed Live Time:	215.00 min.
Elapsed True Time:	215.03 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 215.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

7/1/92
OCL

MASS = 4.5742 g

TIME = 215.0 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1144	178	46.6
	49.5	0.09	23.83	1.45
2	60.5	1549	319	63.5
	66.0	0.12	15.81	1.21
	Isotope:	TH-234 @	63.3	
3	89.0	2167	561	92.9
	96.5	0.17	13.69	1.49
4	182.9	1442	545	186.0
	188.4	0.11	9.54	1.36
	Isotope:	U-235 @	185.7	
5M	230.9	2408	874	241.9
	248.4	0.19	14.93	1.45
6	291.4	1723	1197	295.1
	298.9	0.13	5.72	1.45
	Isotope:	PB-214 @	295.2	
7	334.3	553	71	337.9
	341.8	0.04	54.65	1.38
	Isotope:	AC-228 @	338.3	
8	347.8	2513	2029	351.7
	355.3	0.19	4.08	1.49
	Isotope:	PB-214 @	351.9	
9	578.7	321	41	582.6
	586.2	0.02	72.10	2.42
	Isotope:	TL-208 @	583.2	
10	605.1	1675	1435	608.9
	612.6	0.13	4.71	1.81
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	213	35	910.4
	914.4	0.02	68.80	0.76
	Isotope:	AC-228 @	911.2	
12M	957.9	379	19	967.9
	975.4	0.03	310.57	1.37

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(86	65	82)	[88
90	124	134	148	94	70]
95	(86	74	93)		

C = 658
B = 486
N = 172

ROI # 2
Channel #

**** Data ****

119					(76
120	114	107)	[103	140	181
125	233	175	122]	(86	104
130	108)				

C = 954
B = 595
N = 359

ROI # 3
Channel #

**** Data ****

176		106	111	121	121
180	(116	120)	[184	272	279
185	179	117]	(97	97	81)
190	90	76			

C = 1031
B = 511
N = 520

ROI # 4
Channel #

**** Data ****

364					(65
365	54	57)	[76	116	197
370	286	245	134]	(83	68
375	61)				

C = 1054
B = 388
N = 666

ROI # 5
Channel #

**** Data ****

460	49	42	51	38	47
465	57	48	42	57	55
470	48	67	48	49	77
475	116	117	74	38	58
480	95	176	234	171	82
485	49	54	37	46	38
490	37	50	41	41	37
495	42				

ROI # 6
Channel #

**** Data ****

581		(24	27	38	44)
585	[43	75	218	370	412
590	205	91	46]	(29	33
595	31	37)			

C = 1460
B = 263
N = 1197

ROI # 7
Channel #

**** Data ****

667			(24	33	32

REGION OF INTEREST DATA

ROI # 7
Channel #

**** Data ****

670	30	28	36	39	49
675	49	37	36	38	29
680	34	21	38		

C = 312
B = 241
N = 71

ROI # 8
Channel #

**** Data ****

694					31
695	35	31	25	31	84
700	253	555	681	456	146
705	65	28	38	25	29

C = 2271
B = 242
N = 2029

ROI # 9
Channel #

**** Data ****

1156		16	25	25	12
1160	10	16	29	30	28
1165	24	28	16	11	10
1170	19	22			

C = 181 81
B = 140 124
N = 41 57

BWL 7/5/92

ROI # 10
Channel #

**** Data ****

1209					18
1210	19	19	14	41	109
1215	260	395	384	246	87
1220	33	12	14	9	15

C = 1555
B = 120
N = 1435

ROI # 11
Channel #

**** Data ****

1813				7	14
1815	11	9	10	18	17
1820	25	16	11	14	13
1825	9	16	11	12	

C = 120 124
B = 93 89
N = 27 35

ROI # 12
Channel #

**** Data ****

1915	6	11	8	16	9
1920	12	14	7	13	12
1925	6	11	12	16	8
1930	12	11	13	8	18
1935	18	17	12	4	10
1940	13	5	10	6	9
1945	7	6	10	11	8
1950	10				

C = 206
B = 173
N = 33

MCA #1 - Canberra S100 - 22801080.MCA - NOPI-ECP-22.8/10.8

Tag Number:	38	Readout:	Tue 30 Jun 1992 @ 13:51:36
Report Group:	2/4	Acquire Started:	Tue 30 Jun 1992 @ 13:50:19
Group Size:	4096		

Elapsed Live Time:	106.00 min.
Elapsed True Time:	106.03 min.
Dead Time:	0.03 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 106.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

7/1/92

OCL

mass = 4.2218 g

time = 106.0 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	2025	222	46.5
	49.5	0.32	24.91	1.25
2	60.5	2833	577	63.3
	66.0	0.45	11.81	1.26
	Isotope:	TH-234 @	63.3	
3	89.0	4079	1021	92.7
	96.5	0.64	10.32	1.39
4	182.9	2820	1287	186.0
	188.4	0.44	5.81	1.48
	Isotope:	U-235 @	185.7	
5M	230.9	3797	1723	241.9
	248.4	0.60	9.08	1.49
6	291.4	3887	3245	295.1
	298.9	0.61	3.17	1.44
	Isotope:	PB-214 @	295.2	
7	334.3	611	43	338.3
	341.8	0.10	94.85	2.42
	Isotope:	AC-228 @	338.3	
8	347.8	5967	5409	351.7
	355.3	0.94	2.36	1.51
	Isotope:	PB-214 @	351.9	
9	578.7	326	8	582.4
	586.2	0.05	372.39	0.78
	Isotope:	TL-208 @	583.2	
10	605.1	3958	3668	608.8
	612.6	0.62	2.83	1.69
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	218	8	909.9
	914.4	0.03	304.52	0.48
12M	957.9	387	23	968.1
	975.4	0.06	264.23	1.30

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86	(152	150	150)	⌈157

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	222	246	201	154	136
95	138	153	166		

C = 1116
B = 909
N = 207

ROI # 2
Channel # **** Data ****

119					175
120	174	198	194	247	373
125	412	297	222	180	183
130	178				

C = 1745
B = 1088
N = 657

ROI # 3
Channel # **** Data ****

176		193	246	302	243
180	155	202	366	569	530
185	332	215	181	170	127
190	130	118			

C = 2012
B = 835
N = 1177

ROI # 4
Channel # **** Data ****

364					95
365	102	91	124	186	473
370	606	533	275	145	97
375	93				

C = 2197
B = 623
N = 1574

ROI # 5
Channel # **** Data ****

460	60	72	56	58	57
465	65	69	57	56	76
470	94	95	60	67	71
475	112	97	61	58	68
480	169	414	570	466	185
485	73	48	46	54	48
490	49	51	48	62	53
495	52				

ROI # 6
Channel # **** Data ****

581		46	38	44	42
585	54	192	522	1057	987
590	520	171	63	37	32
595	42	40			

C = 3566
B = 321
N = 3245

ROI # 7
Channel # **** Data ****

667			41	42	31
670	36	36	39	42	43

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

675	44	45	43	35]	(28
680	35	40	31)		

C = ~~292~~ 327 ocl 6/26/12
B = 284
N = 8

ROI # 8
Channel # **** Data ****

694					(24
695	35	41	55)	[66	172
700	671	1415	1743	1115	407
705	99]	(30	34	27	33)

C = ~~5688~~ 279
B = 6
N = 5409

ROI # 9
Channel # **** Data ****

1156	[	(18	19	24	23)
1160	27	17	19	21	27
1165	18	17	21]	(23	23
1170	17	12)			

Bkg = 2X
7/5/12 BWL
C = 164
B = 159 150
N = 5

ROI # 10
Channel # **** Data **** BWL

1209					(18
1210	19	22	32)	[88	299
1215	630	1031	999	549	172
1220	45]	(15	17	11	11)

C = 3813
B = 145
N = 3668

ROI # 11
Channel # **** Data ****

1813				(13	10
1815	13)	[10)	[11	14	21
1820	11	19	14	11]	(12]
1825	(13	16	16	14)	

BWL 7/5/12

C = 111 113
B = 107 105
N = 4 8

ROI # 12
Channel # **** Data ****

1915	(8	6	15	10	5
1920	12	5	13	12)	[8
1925	15	11	20	13	14
1930	7	6	6	9	14
1935	23	24	14	9	4
1940	10	10]	(8	10	8
1945	6	10	7	13	11
1950	11)				

C = 217
B = 170
N = 47

MCA #1 - Canberra S100 - 16001440.MCA - NOPI-ECP-16.0/14.4

Tag Number:	36	Readout:	Tue 30 Jun 1992 @ 12:03:56
Report Group:	2/4	Acquire Started:	Tue 30 Jun 1992 @ 12:02:50
Group Size:	4096		

Elapsed Live Time:	110.00 min.
Elapsed True Time:	110.04 min.
Dead Time:	0.03 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 110.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/30/92

OCL

mass = 4.1264 g

time = 110 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	2530	331	46.8
	49.5	0.38	18.85	1.38
2	60.5	4033	1081	63.5
	66.0	0.61	7.72	1.35
	Isotope:	TH-234 @	63.3	
3	89.0	5809	1925	92.6
	96.5	0.88	6.53	1.45
4	182.9	4013	2066	186.0
	188.4	0.61	4.40	1.45
	Isotope:	U-235 @	185.7	
5M	230.9	4452	2072	241.9
	248.4	0.67	8.12	1.41
6	291.4	4515	3743	295.1
	298.9	0.68	2.96	1.55
	Isotope:	PB-214 @	295.2	
7	334.3	780	60	338.5
	341.8	0.12	76.80	1.96
	Isotope:	AC-228 @	338.3	
8	347.8	7036	6328	351.8
	355.3	1.07	2.19	1.51
	Isotope:	PB-214 @	351.9	
9	578.7	351	15	582.7
	586.2	0.05	206.08	1.29
	Isotope:	TL-208 @	583.2	
10	605.1	4620	4358	608.8
	612.6	0.70	2.57	1.73
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	239	59	910.6
	914.4	0.04	43.23	2.89
	Isotope:	AC-228 @	911.2	
12M	957.9	437	73	968.2
	975.4	0.07	83.57	1.75

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(184	150	163)	[211
90	242	307	273	242	179]
95	(187	197	195)		

C = 1454
B = 1076
N = 378

ROI # 2
Channel # **** Data ****

119					(278
120	248	235)	[249	366	581
125	656	462	272]	(238	224
130	224)				

C = 2586
B = 1447
N = 1139

ROI # 3
Channel # **** Data ****

176		255	292	345	291
180	(232	242)	[577	908	832
185	527	291]	(258	238	196)
190	154	171			

C = 3135
B = 1166
N = 1969

ROI # 4
Channel # **** Data ****

364					(123
365	136	136)	[136	337	693
370	927	758	353]	(194	109
375	111)				

C = 3204
B = 673
N = 2531

ROI # 5
Channel # **** Data ****

460	75	61	88	89	77
465	77	71	76	71	82
470	116	103	80	80	84
475	117	107	88	78	85
480	198	439	684	492	238
485	83	64	57	62	65
490	79	70	55	41	53
495	67				

ROI # 6
Channel # **** Data ****

581		(50	52	51	62)
585	[78	213	632	1157	1166
590	625	186	72]	(46	44
595	46	35)			

C = 4129
B = 386
N = 3743

ROI # 7
Channel # **** Data ****

667			(43	48	54

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	35	49	49	50	59
675	62	53	57	41	42
680	33	50	55		

C = 420
B = 360
N = 60

ROI # 8
Channel # **** Data ****

694					36
695	49	45	61	82	234
700	749	1578	2051	1390	488
705	110	48	33	44	38

C = 6402
B = 354
N = 6048

ROI # 9
Channel # **** Data ****

1156		20	21	23	29
1160	15	18	15	34	26
1165	30	21	24	12	22
1170	18	23			

C = 183
B = ~~190~~ 168 150
N = 15 33 BW2 7/5/92

ROI # 10
Channel # **** Data ****

1209					16
1210	12	20	27	101	316
1215	798	1206	1136	639	237
1220	56	18	15	12	11

C = 4489
B = 131
N = 4358

ROI # 11
Channel # **** Data ****

1813				13	11
1815	10	6	16	19	18
1820	25	22	20	19	10
1825	18	9	17	6	

C = 143
B = 94
N = 51

ROI # 12
Channel # **** Data ****

1915	15	6	10	8	14
1920	10	11	15	15	15
1925	13	9	15	15	13
1930	10	11	17	10	14
1935	17	18	17	11	12
1940	13	9	13	9	10
1945	8	12	9	10	9
1950	14				

C = 239
B = 198
N = 41

MCA #1 - Canberra S100 - 02550765.MCA - NOPI-ECP-2.55/7.65

Tag Number:	34	Readout:	Tue 30 Jun 1992 @ 10:10:55
Report Group:	2/4	Acquire Started:	Tue 30 Jun 1992 @ 10:10:08
Group Size:	4096		

Elapsed Live Time:	1374.00 min.
Elapsed True Time:	1374.13 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1374.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/30/92

OCL

mass = 4.8387 g

time = 1374 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	4094	371	46.6
	49.5	0.05	21.01	1.45
2	60.5	4909	688	63.5
	66.0	0.06	12.69	1.47
	Isotope:	TH-234 @	63.3	
3	89.0	7548	1634	92.8
	96.5	0.09	8.77	1.47
4	182.9	4438	1018	185.9
	188.4	0.05	8.47	1.54
	Isotope:	U-235 @	185.7	
5M	230.9	10723	2655	238.5
	248.4	0.13	10.93	1.54
	Isotope:	PB-212 @	238.6	
6	291.4	4013	1167	295.3
	298.9	0.05	8.96	1.40
	Isotope:	PB-214 @	295.2	
7	334.3	2796	370	338.1
	341.8	0.03	23.58	1.67
	Isotope:	AC-228 @	338.3	
8	347.8	4299	2055	351.8
	355.3	0.05	5.26	1.45
	Isotope:	PB-214 @	351.9	
9	578.7	2044	632	582.8
	586.2	0.02	11.80	1.76
	Isotope:	TL-208 @	583.2	
10	605.1	2968	1598	608.9
	612.6	0.04	5.63	1.71
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1414	512	910.4
	914.4	0.02	12.12	1.95
	Isotope:	AC-228 @	911.2	
12M	957.9	2214	432	968.1
	975.4	0.03	31.19	1.67

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(334	316	300)	[313
90	399	439	441	333	275]
95	(308	327	309)		

C = 2200
B = 1809
N = 391

ROI # 2
Channel # **** Data ****

119					(348
120	384	341)	[353	419	571
125	594	511	368]	(310	353
130	357)				

C = 2816
B = 2093
N = 723

ROI # 3
Channel # **** Data ****

176		328	388	527	445
180	(382	374)	[619	900	878
185	621	465]	(352	326	332)
190	298	313			

C = 3483
B = 1766
N = 1717

ROI # 4
Channel # **** Data ****

364					(265
365	247	265)	[298	397	593
370	637	531	384]	(294	282
375	245)				

C = 2840
B = 1598
N = 1242

ROI # 5
Channel # **** Data ****

460	234	210	258	238	220
465	232	227	236	213	219
470	231	210	238	314	590
475	903	850	521	282	269
480	310	373	450	320	238
485	236	205	194	211	223
490	208	207	210	195	230
495	218				

ROI # 6
Channel # **** Data ****

581		(175	169	174	155)
585	[173	210	360	552	533
590	383	211	168]	(179	174
595	178	219)			

C = 2590
B = 1423
N = 1167

ROI # 7
Channel # **** Data ****

667			(152	139	158

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	153	151	156	228	249
675	276	220	166	137	133
680	164	160	154		

C = 1583
B = 1213
N = 370

ROI # 8
Channel # **** Data ****

694					147
695	149	149	146	155	216
700	353	610	811	590	274
705	168	131	157	125	118

C = 3177
B = 1122
N = 2055

ROI # 9
Channel # **** Data ****

1156		86	93	88	95
1160	85	98	136	222	233
1165	279	188	97	76	106
1170	85	77			

C = 1338
B = 706
N = 632

ROI # 10
Channel # **** Data ****

1209					87
1210	87	91	93	107	181
1215	338	519	523	331	187
1220	97	72	84	90	81

C = 2376
B = 592
N = 1784

ROI # 11
Channel # **** Data ****

1813				56	56
1815	57	60	88	114	148
1820	176	167	113	89	68
1825	53	55	60	54	

C = 955
B = 459
N = 496

ROI # 12
Channel # **** Data ****

1915	50	50	54	46	52
1920	45	53	45	51	45
1925	71	87	75	64	60
1930	69	45	54	81	85
1935	135	137	94	68	48
1940	60	53	61	36	47
1945	43	54	55	50	47
1950	44				

C = 1312
B = 883
N = 429

MCA #1 - Canberra S100 - 24001050.MCA - NOPI-ECP-24.0/10.5

Tag Number:	31	Readout:	Mon 29 Jun 1992 @ 11:13:08
Report Group:	2/4	Acquire Started:	Mon 29 Jun 1992 @ 11:02:48
Group Size:	4096		

Elapsed Live Time:	10.00 min.
Elapsed True Time:	10.09 min.
Dead Time:	0.86 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 10.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/29/92

OCL

mass = 4.6065 g

time = 10.0 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	6211	718	46.6
	49.5	10.35	13.53	1.43
2	60.5	9939	2328	63.5
	66.0	16.57	5.55	1.29
	Isotope:	TH-234 @	63.3	
3	89.0	15237	4773	92.7
	96.5	25.40	4.27	1.40
4	182.9	10194	5099	186.0
	188.4	16.99	2.83	1.43
	Isotope:	U-235 @	185.7	
5M	230.9	11698	5934	241.9
	248.4	19.50	4.49	1.36
6	291.4	13444	11450	295.1
	298.9	22.41	1.67	1.54
	Isotope:	PB-214 @	295.2	
7	334.3	1651	-17	337.8
	341.8	2.75	394.37	0.48
	Isotope:	AC-228 @	338.3	
8	347.8	21227	19493	351.7
	355.3	35.38	1.23	1.51
	Isotope:	PB-214 @	351.9	
9	578.7	682	-20	579.9
	586.2	1.14	215.45	1.19
10	605.1	13770	12970	608.8
	612.6	22.95	1.49	1.71
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	465	9	913.4
	914.4	0.77	395.34	0.60
12M	957.9	854	35	963.1
	975.4	1.42	253.94	1.75

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(421	438	499)
90	641	724	694	490

[494
448]

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

95	(440	418	484)		

C = 3511
B = 2700
N = 811

ROI # 2
Channel # **** Data ****

119					(626
120	626	664)	[709	823	1409
125	1546	1087	737]	(620	520
130	572)				

C = 6311
B = 3628
N = 2683

ROI # 3
Channel # **** Data ****

176		610	802	908	771
180	(624	700)	[1431	2273	2076
185	1290	824]	(787	751	606)
190	421	363			

C = 7894
B = 3468
N = 4426

ROI # 4
Channel # **** Data ****

364					(308
365	330	314)	[384	833	1671
370	2365	1928	1042]	(460	284
375	275)				

C = 8223
B = 1971
N = 6252

ROI # 5
Channel # **** Data ****

460	184	174	175	182	179
465	164	183	163	218	304
470	359	303	194	174	180
475	164	168	170	170	228
480	523	1311	2071	1418	622
485	251	166	141	145	129
490	165	154	158	141	131
495	136				

ROI # 6
Channel # **** Data ****

581		(124	127	136	133)
585	[195	604	1934	3570	3575
590	1879	527	163]	(138	112
595	113	114)			

C = 12447
B = 997
N = 11450

ROI # 7
Channel # **** Data ****

667			(129	108	71
670	99)	[89	89	106	125
675	105	96	96	111]	(111

7/5/92 BWL
BKg = 2X

REGION OF INTEREST DATA

Ra223 peak BWL 7/15/92 ccd 6/30/92

ROI # 7
Channel # **** Data ****

680	95	115	106

C = 817 1634
B = 834
N = 800

ROI # 8
Channel # **** Data ****

694			
695	115	130	149
700	2339	5097	6223
705	336	117	94

102			
207	703		
4001	1454		
80	80		

C = 20360
B = 867
N = 19493

ROI # 9
Channel # **** Data ****

1156		38	50
1160	50	37	35
1165	50	39	36
1170	37	38	

69	59		
44	40		
29	31		

Bkg = 2x
C = ~~331~~ 662 ccd 6/30/92
B = 351 270
N = 311 61 BWL 7/15/92

ROI # 10
Channel # **** Data ****

1209			
1210	54	44	79
1215	2330	3650	3419
1220	182	68	35

50			
265	897		
1960	667		
32	38		

C = 13374
B = 400
N = 12974

ROI # 11
Channel # **** Data ****

1813			
1815	32	22	26
1820	30	25	31
1825	31	39	34

27	18		
29	33		
36	27		
25			

BWL 7/15/92 ccd 6/30/92
cts ~~28237~~ C = ~~252~~ 464
BK ~~200~~ B = 233
Net ~~54~~ 9 N =

ROI # 12
Channel # **** Data ****

1915	20	26	22
1920	25	24	32
1925	38	40	32
1930	16	27	21
1935	30	21	20
1940	20	17	21
1945	19	22	19
1950	24		

24	29		
26	35		
18	20		
20	20		
20	16		
19	24		
20	27		

C = 431
B = 423
N = 8

MCA #1 - Canberra S100 - 26751125.MCA - NOPI-ECP-26.75/11.25

Tag Number:	28	Readout:	Mon 29 Jun 1992 @ 10:48:55
Report Group:	2/4	Acquire Started:	Mon 29 Jun 1992 @ 10:34:10
Group Size:	4096		

Elapsed Live Time:	15.00 min.
Elapsed True Time:	15.02 min.
Dead Time:	0.12 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 15.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/29/92

O C L

mass = 4.0734 g

time = 15.0 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1413	234	46.6
	49.5	1.57	20.23	1.41
2	60.5	2095	583	63.5
	66.0	2.33	10.36	1.15
	Isotope:	TH-234 @	63.3	
3	89.0	3058	1000	92.6
	96.5	3.40	9.12	1.51
4	182.9	2204	1141	186.0
	188.4	2.45	5.92	1.45
	Isotope:	U-235 @	185.7	
5M	230.9	2391	1217	242.0
	248.4	2.66	9.90	1.58
6	291.4	2654	2260	295.1
	298.9	2.95	3.76	1.51
	Isotope:	PB-214 @	295.2	
7	334.3	365	19	337.4
	341.8	0.41	165.91	0.43
	Isotope:	AC-228 @	338.3	
8	347.8	4221	3853	351.8
	355.3	4.69	2.78	1.49
	Isotope:	PB-214 @	351.9	
9	578.7	165	-15	579.9
	586.2	0.18	141.30	0.92
10	605.1	2660	2490	608.9
	612.6	2.96	3.42	1.73
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	100	16	909.2
	914.4	0.11	103.13	1.00
12M	957.9	178	57	970.1
	975.4	0.20	64.10	0.91
	Isotope:	RU-105 @	969.4	

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86 (83 89 99) 120

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	141	182	179	125	107
95	101	95	92		

C = 859
B = 559
N = 295

ROI # 2
Channel # **** Data ****

119					147
120	129	130	133	201	265
125	374	247	123	112	117
130	117				

C = 1343
B = 752
N = 591

ROI # 3
Channel # **** Data ****

176		118	171	201	162
180	126	154	309	431	471
185	263	138	137	127	83
190	78	89			

C = 1612
B = 627
N = 985

ROI # 4
Channel # **** Data ****

364					63
365	63	75	81	158	376
370	516	445	211	91	66
375	59				

C = 1787
B = 417
N = 1370

ROI # 5
Channel # **** Data ****

460	34	38	44	38	31
465	33	33	40	34	58
470	73	61	40	36	35
475	45	45	27	35	53
480	100	269	366	318	140
485	54	40	29	30	26
490	35	44	26	27	23
495	31				

ROI # 6
Channel # **** Data ****

581		31	35	19	23
585	40	123	379	675	725
590	377	110	28	21	24
595	23	21			

C = 2457
B = 197
N = 2260

ROI # 7
Channel # **** Data ****

667			26	21	22
670	16	28	17	30	21

REGION OF INTEREST DATA

223Ra peak 7/5/92

ROI # 7

Channel #		**** Data ****			
675	25	29	18	24	16
680	21	28	23		

C = 192
B = 173
N = 19

ROI # 8

Channel #		**** Data ****			
694					25
695	29	33	30	45	143
700	419	1019	1243	798	297
705	73	18	15	20	14

C = 4037
B = 184
N = 3853

ROI # 9

Channel #		**** Data ****			
1156		12	11	14	20
1160	7	12	11	11	11
1165	9	9	5	8	3
1170	14	8			

BKy=2X

C = ~~75~~ 75 150 7/5/92
B = 90 66
N = 60 9

ROI # 10

Channel #		**** Data ****			
1209					11
1210	8	17	11	57	166
1215	429	696	672	394	133
1220	28	10	5	8	15

C = 2575
B = 85
N = 2490

ROI # 11

Channel #		**** Data ****			
1813				5	5
1815	7	5	12	11	5
1820	8	5	3	8	6
1825	3	6	5	6	

C = 57
B = 43
N = 14

ROI # 12

Channel #		**** Data ****			
1915	4	3	4	5	7
1920	6	7	5	2	4
1925	5	7	6	3	6
1930	5	9	3	9	3
1935	7	6	3	5	4
1940	12	3	3	5	3
1945	5	8	2	6	2
1950	1				

C = 100
B = 78
N = 22

MCA #1 - Canberra S100 - 26851165.MCA - NOPI-ECP-26.85/11.65

Tag Number:	30	Readout:	Mon 29 Jun 1992 @ 11:01:14
Report Group:	2/4	Acquire Started:	Mon 29 Jun 1992 @ 10:50:39
Group Size:	4096		

Elapsed Live Time:	600.00 sec. = 10 minutes BWL 6/29/92
Elapsed True Time:	630.35 sec.
Dead Time:	4.81 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 600 sec. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/29/92

DCL

mass = 5.4715 g

time = 10.0 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	28740	1605	46.6
	49.5	47.90	12.66	1.54
2	60.5	42233	7429	63.3
	66.0	70.39	3.50	1.41
	Isotope:	TH-234 @	63.3	
3	89.0	87198	21124	92.6
	96.5	145.33	2.31	1.41
4	182.9	51823	24501	185.9
	188.4	86.37	1.32	1.47
	Isotope:	U-235 @	185.7	
5M	230.9	67579	31804	241.9
	248.4	112.63	2.06	1.49
6	291.4	75665	62765	295.0
	298.9	126.11	0.72	1.56
	Isotope:	PB-214 @	295.2	
7	334.3	10181	205	338.3
	341.8	16.97	81.21	1.64
	Isotope:	AC-228 @	338.3	
8	347.8	119578	106496	351.7
	355.3	199.30	0.54	1.59
	Isotope:	PB-214 @	351.9	
9	578.7	4276	-330	580.1
	586.2	7.13	32.70	1.51
10	605.1	80258	73870	608.7
	612.6	133.76	0.63	1.71
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	2619	-7	907.9
	914.4	4.36	1206.30	0.54
12M	957.9	5294	349	963.3
	975.4	8.82	62.91	2.29

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(2230	2200	2323)	2415
90	2696	2844	2657	2453	2210

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

95	(2188	2288	2236)		

C = 15275
B = 13465
N = 1810

ROI # 2
Channel # **** Data ****

119					(2688
120	2816	2840)	[3163	3999	5455
125	5448	4128	3079]	(2857	2875
130	2885)				

C = 25272
B = 16961
N = 8311

ROI # 3
Channel # **** Data ****

176		3519	4490	4676	4015
180	(3386	4445)	[7686	10350	9090
185	6344	5919]	(6941	6502	4310)
190	2906	2619			

C = 39389
B = 25584
N = 13805

ROI # 4
Channel # **** Data ****

364					(1783
365	1736	1861)	[2574	4734	8900
370	11240	8734	4568]	(2310	1717
375	1666)				

C = 40750
B = 11073
N = 29677

ROI # 5
Channel # **** Data ****

460	1065	1081	1103	1023	1052
465	1035	1029	1102	1362	1644
470	1787	1547	1248	1039	1006
475	1031	1104	975	1156	1649
480	3695	8065	10439	7217	3260
485	1419	1045	926	1004	965
490	905	923	956	934	873
495	915				

ROI # 6
Channel # **** Data ****

581		(724	724	758	861)
585	[1582	4591	12448	19735	17803
590	8911	2892	1253]	(923	834
595	805	821)			

C = 69215
B = 6450
N = 62765

ROI # 7
Channel # **** Data ****

667			(710	630	600
670	603)	[617	612	655	690
675	705	706	624	584]	(575

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

680	608	643	619		

223Ra peak
C = 5193
B = 4988
N = 205

ROI # 8
Channel # **** Data ****

694					696
695	749	814	935	1702	5401
700	15465	29250	32202	19756	7171
705	2090	1051	858	715	723

C = 113037
B = 6541
N = 106496

ROI # 9
Channel # **** Data ****

1156		282	357	386	392
1160	300	233	230	231	244
1165	246	239	250	224	231
1170	211	220			

ocl 6/30/92
C = 1973 3946 1973
B = 2303 1772
N = 1643 201
BWL 7/5/92

ROI # 10
Channel # **** Data ****

1209					251
1210	272	320	657	2266	6787
1215	14684	20782	17822	9895	3669
1220	1159	532	396	394	372

C = 77064
B = 3194
N = 73870

ROI # 11
Channel # **** Data ****

1813				153	158
1815	186	166	159	183	173
1820	156	155	153	160	167
1825	151	163	167	169	

BWL 7/5/92
C = 1305 1306
B = 1314 1313
N =

ROI # 12
Channel # **** Data ****

1915	149	155	145	124	125
1920	149	130	183	153	207
1925	223	230	215	194	144
1930	148	131	122	122	149
1935	128	130	134	155	128
1940	122	114	128	128	141
1945	127	135	133	123	139
1950	131				

C = 2796
B = 2498
N = 298

MCA #1 - Canberra S100 - 19601450.MCA - NOPI-ECP-19.6/14.5

Tag Number:	26	Readout:	Mon 29 Jun 1992 @ 10:31:13
Report Group:	2/4	Acquire Started:	Mon 29 Jun 1992 @ 10:20:41
Group Size:	4096		

Elapsed Live Time:	600.00 sec. = 10 minutes BWL 6/29/92
Elapsed True Time:	620.99 sec.
Dead Time:	3.38 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 600 sec. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/29/92

OCL

mass = 4.9996 g

time = 10.0 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	20974	1350	46.6
	49.5	34.96	12.92	1.41
2	60.5	32343	6173	63.3
	66.0	53.90	3.71	1.34
	Isotope:	TH-234 @	63.3	
3	89.0	63460	17050	92.6
	96.5	105.77	2.44	1.40
4	182.9	38589	19196	186.0
	188.4	64.32	1.46	1.45
	Isotope:	U-235 @	185.7	
5M	230.9	46559	22367	241.9
	248.4	77.60	2.41	1.52
6	291.4	53019	44589	295.0
	298.9	88.36	0.85	1.53
	Isotope:	PB-214 @	295.2	
7	334.3	6899	143	338.1
	341.8	11.50	95.84	1.13
	Isotope:	AC-228 @	338.3	
8	347.8	83671	75491	351.7
	355.3	139.45	0.63	1.56
	Isotope:	PB-214 @	351.9	
9	578.7	2836	-314	579.8
	586.2	4.73	27.98	1.24
10	605.1	55191	51259	608.7
	612.6	91.99	0.76	1.71
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1761	-107	907.4
	914.4	2.93	64.71	21458958.00
12M	957.9	3497	221	963.1
	975.4	5.83	80.71	2.02

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86		(1635	1594	1659) [1682
90	1964	2135	2089	1703 1612]

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

95	(1643	1600	1658)	

C = 11185
B = 9789
N = 1396

ROI # 2
Channel # **** Data ****

119					(2096
120	2153	2113)	[2329	3017	4130
125	4468	3281	2331]	(2089	2204
130	2132)				

C = 19556
P = 12787
N = 6769

ROI # 3
Channel # **** Data ****

176		2653	3160	3467	2934
180	(2422	3273)	[5726	8187	7433
185	4772	3835]	(4607	4376	2935)
190	1971	1709			

C = 29503
B = 17613
N = 11890

ROI # 4
Channel # **** Data ****

364					(1207
365	1186	1236)	[1725	(3343	6698
370	8710	6909	3467]	(1746	1222
375	1140)				

C = 30852
B = 7737
N = 23115

ROI # 5
Channel # **** Data ****

460	740	720	750	709	678
465	675	743	739	886	1156
470	1373	1174	861	682	711
475	667	752	633	730	1038
480	2500	5482	7181	5358	2383
485	930	684	615	641	639
490	603	669	636	614	579
495	628				

ROI # 6
Channel # **** Data ****

581		(454	540	509	594)
585	[958	3022	8130	14103	13070
590	6694	2018	809]	(551	551
595	478	538)			

C = 48804
B = 4215
N = 44589

ROI # 7
Channel # **** Data ****

667			(485	426	419
670	394)	[389	410	454	503
675	520	425	423	397]	404

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
680	409	403	438		

C = 3521
B = 3378
N = 143
223 Ra peak

ROI # 8

Channel #		**** Data ****			
694					443
695	500	519	572	1018	3460
700	10406	20616	23180	14330	5206
705	1365	662	492	433	469

C = 79581
B = 4090
N = 75491

ROI # 9

Channel #		**** Data ****			
1156		195	246	282	254
1160	178	164	174	158	152
1165	144	141	150	139	157
1170	163	139			

2nd Pb peak

BKg = 2X

od 6/30/92

C = 1261 ~~2522~~ 1261
B = 1575 1196
N = 947 65

7/5/92 BWL

ROI # 10

Channel #		**** Data ****			
1209					166
1210	183	218	437	1312	4601
1215	9838	14463	12686	7027	2542
1220	756	282	240	217	223

C = 53225
B = 1966
N = 51259

ROI # 11

Channel #		**** Data ****			
1813				112	130
1815	115	123	98	122	111
1820	105	103	91	101	96
1825	112	106	116	120	

C = ~~744~~ 854 BWL
B = 907 7/5/92
N =

ROI # 12

Channel #		**** Data ****			
1915	103	94	87	89	98
1920	99	92	83	99	139
1925	145	139	138	105	90
1930	105	87	72	73	108
1935	94	90	85	96	84
1940	106	91	99	83	93
1945	91	85	87	93	76
1950	99				

C = 1847
B = 1650
N = 197

MCA #1 - Canberra S100 - 23300980.MCA - NOPI-ECP-23.3/9.8

Tag Number:	24	Readout:	Mon 29 Jun 1992 @ 10:18:45
Report Group:	2/4	Acquire Started:	Mon 29 Jun 1992 @ 08:11:29
Group Size:	4096		

Elapsed Live Time:	120.00 min.
Elapsed True Time:	120.02 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 120.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/29/92

OCL

mass = 4.1698 g

time = 120 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	836	134	46.6
	49.5	0.12	27.12	1.36
2	60.5	1067	215	63.4
	66.0	0.15	19.43	1.44
	Isotope: TH-234 @ 63.3			
3	89.0	1463	301	92.7
	96.5	0.20	20.97	1.26
4	182.9	1103	446	186.0
	188.4	0.15	10.30	1.36
	Isotope: U-235 @ 185.7			
5M	230.9	1735	579	241.9
	248.4	0.24	19.40	1.51
6	291.4	1429	1047	295.2
	298.9	0.20	5.96	1.15
	Isotope: PB-214 @ 295.2			
7	334.3	309	11	338.3
	341.8	0.04	263.68	1.20
	Isotope: AC-228 @ 338.3			
8	347.8	2030	1672	351.8
	355.3	0.28	4.45	1.46
	Isotope: PB-214 @ 351.9			
9	578.7	202	20	582.8
	586.2	0.03	117.25	0.75
	Isotope: TL-208 @ 583.2			
10	605.1	1363	1179	608.9
	612.6	0.19	5.17	1.66
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	137	25	910.2
	914.4	0.02	77.25	0.50
	Isotope: AC-228 @ 911.2			
12M	957.9	244	42	968.1
	975.4	0.03	108.90	0.50

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(47	67	65)	[61
90	112	87	93	76	47]
95	(62	51	68)		

C = 476
B = 360
N = 116

ROI # 2
Channel # **** Data ****

119					(84
120	97	71)	[82	96	143
125	150	110	61]	(61	57
130	55)				

C = 642
B = 425
N = 217

ROI # 3
Channel # **** Data ****

176		69	100	101	91
180	(57	79)	[121	197	163
185	115	81]	(69	62	49)
190	54	55			

C = 677
B = 316
N = 361

ROI # 4
Channel # **** Data ****

364					(44
365	45	35)	[60	83	149
370	227	206	104]	(61	52
375	37)				

C = 829
B = 274
N = 555

ROI # 5
Channel # **** Data ****

460	31	37	35	33	30
465	40	32	27	37	43
470	35	40	28	41	57
475	71	68	40	33	46
480	73	132	180	152	66
485	29	27	29	26	31
490	34	31	36	29	34
495	22				

ROI # 6
Channel # **** Data ****

581		(30	28	24	23)
585	[24	48	176	368	332
590	203	60	27]	(3	17
595	24	22)			

C = 1230
B = 191
N = 1047

ROI # 7
Channel # **** Data ****

667			(18	27	15

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
670	18	18	13	20	24
675	27	21	18	19	17
680	17	20	17		

C = 160
B = 149
N = 11

ROI # 8

Channel #		**** Data ****			
694					23
695	23	20	27	29	57
700	203	449	571	366	139
705	37	18	23	21	24

C = 1851
B = 179
N = 1672

ROI # 9

Channel #		**** Data ****			
1156		16	13	15	14
1160	6	9	22	15	23
1165	15	12	9	11	7
1170	10	5			

← 214 pb peak

BKG = 27

C = 111 111
B = 94 66
N = 20 45

7/5/92 BWL

ROI # 10

Channel #		**** Data ****			
1209					10
1210	13	15	18	25	91
1215	215	339	317	175	89
1220	20	5	12	12	7

C = 1271
B = 92
N = 1179

ROI # 11

Channel #		**** Data ****			
1813				8	7
1815	7	7	8	5	21
1820	13	10	9	10	5
1825	9	5	5	8	

C = 83
B = 54
N = 29

ROI # 12

Channel #		**** Data ****			
1915	5	7	5	6	5
1920	6	5	8	11	9
1925	8	9	10	2	6
1930	6	3	4	6	7
1935	15	8	9	8	9
1940	7	3	9	11	6
1945	2	7	4	5	7
1950	6				

C = 129
B = 115
N = 14

MCA #1 - Canberra S100 - 18551620.MCA - NOPI-ECP-18.55/16.2

Tag Number:	22	Readout:	Mon 29 Jun 1992 @ 08:07:47
Report Group:	2/4	Acquire Started:	Mon 29 Jun 1992 @ 07:58:30
Group Size:	4096		

Elapsed Live Time:	10.00 min.
Elapsed True Time:	10.01 min.
Dead Time:	0.14 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 10.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/29/92

OCL

mass = 4.2545 g

time = 10.0 min

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

90	94	137	126	76	65
95	75	79	68		

C = 574
B = 444
N = 130

ROI # 2
Channel #

**** Data ****

119					80
120	106	87	107	141	239
125	223	185	100	74	78
130	103				

C = 1095
B = 528
N = 567

ROI # 3
Channel #

**** Data ****

176		98	131	155	129
180	98	104	249	372	296
185	199	108	103	118	78
190	70	57			

C = 1324
B = 501
N = 823

ROI # 4
Channel #

**** Data ****

364					51
365	59	50	62	118	253
370	412	300	173	68	37
375	36				

C = 918
B = 301
N = 617

ROI # 5
Channel #

**** Data ****

460	26	28	33	30	25
465	26	25	15	33	44
470	47	46	33	29	32
475	22	31	24	26	41
480	98	211	309	234	96
485	25	22	23	21	23
490	19	22	23	24	29
495	26				

ROI # 6
Channel #

**** Data ****

581		24	22	22	19
585	37	83	296	595	571
590	317	94	27	15	32
595	16	15			

C = 2020
B = 165
N = 1855

ROI # 7
Channel #

**** Data ****

667			19	18	19
670	21	15	11	19	12

REGION OF INTEREST DATA

ROI # 7				
Channel #		**** Data ****		
675	19	19	16	8
680	20	26	16	12
ROI # 8				
Channel #		**** Data ****		
694				
695	12	29	26	32
700	345	750	975	623
705	66	21	10	11
ROI # 9				
Channel #		**** Data ****		
1156		10	8	9
1160	7	5	7	2
1165	6	11	5	6
1170	2	10		
ROI # 10				
Channel #		**** Data ****		
1209				
1210	6	9	9	49
1215	373	589	549	277
1220	26	7	6	8
ROI # 11				
Channel #		**** Data ****		
1813				3
1815	5	13	3	6
1820	2	1	4	4
1825	6	2	1	9
ROI # 12				
Channel #		**** Data ****		
1915	1	7	1	4
1920	1	7	3	5
1925	10	10	5	5
1930	3	6	3	4
1935	5	6	3	5
1940	3	1	4	6
1945	5	1	4	2
1950	3			

				12
				92
				249
				14
				8
				5
				8
				8
				147
				96
				9
				2
				6
				8
				6
				5
				6
				4
				7
				1
				3

Ra-223 peak

ROI #7: C = 238, B = 151, N = 87

ROI #9: C = 3132, B = 137, N = 2995

ROI #10: BKg = 2X; C = 96, B = 61, N = 35

ROI #11: C = 2106, B = 62, N = 2044

ROI #12: C = 39, B = 36, N = 3

C = 91, B = 64, N = 27

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1018	141	46.8
	49.5	1.70	28.26	1.06
2	60.5	1523	421	63.5
	66.0	2.54	12.23	1.35
	Isotope:	TH-234 @	63.3	
3	89.0	2365	693	92.6
	96.5	3.94	11.58	1.39
4	182.9	1619	815	186.0
	188.4	2.70	7.06	1.26
	Isotope:	U-235 @	185.7	
5M	230.9	1821	836	241.9
	248.4	3.04	12.93	1.45
6	291.4	2185	1855	295.2
	298.9	3.64	4.16	1.26
	Isotope:	PB-214 @	295.2	
7	334.3	270	-32	341.3
	341.8	0.45	84.73	2.68
	Isotope:	CS-136 @	340.6	
8	347.8	3269	2995	351.8
	355.3	5.45	3.15	1.48
	Isotope:	PB-214 @	351.9	
9	578.7	109	-13	583.6
	586.2	0.18	132.51	0.45
	Isotope:	TL-208 @	583.2	
10	605.1	2168	2044	608.7
	612.6	3.61	3.76	1.63
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	75	-7	908.4
	914.4	0.13	204.13	0.51
12M	957.9	155	43	963.1
	975.4	0.26	81.09	1.50

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86 (83 82 57) [76

6/29/92

O.C.L.

MCA #1 - Canberra S100 - 25200950.MCA - NOPI-ECP-25.2/9.5

Tag Number:	20	Readout:	Mon 29 Jun 1992 @ 07:54:08
Report Group:	2/4	Acquire Started:	Mon 29 Jun 1992 @ 07:52:23
Group Size:	4096		

Elapsed Live Time:	16.00 min.
Elapsed True Time:	16.13 min.
Dead Time:	0.81 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 16.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

OCL

6/29/92

mass = 4.2649 g

time = 16.0 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	9362	1099	46.6
	49.5	9.75	10.86	1.22
2	60.5	14686	3514	63.5
	66.0	15.30	4.48	1.36
	Isotope:	TH-234 @	63.3	
3	89.0	22744	6742	92.7
	96.5	23.69	3.69	1.40
4	182.9	15019	7416	186.0
	188.4	15.64	2.36	1.40
	Isotope:	U-235 @	185.7	
5M	230.9	17577	9351	241.9
	248.4	18.31	3.45	1.43
6	291.4	20301	17517	295.1
	298.9	21.15	1.34	1.53
	Isotope:	PB-214 @	295.2	
7	334.3	2456	126	338.1
	341.8	2.56	64.90	1.88
	Isotope:	AC-228 @	338.3	
8	347.8	31987	29269	351.8
	355.3	33.32	1.01	1.55
	Isotope:	PB-214 @	351.9	
9	578.7	1075	-153	579.8
	586.2	1.12	35.36	21458958.00
10	605.1	21009	19845	608.8
	612.6	21.88	1.21	1.68
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	658	20	910.9
	914.4	0.69	211.62	0.69
	Isotope:	AC-228 @	911.2	
12M	957.9	1242	41	963.4
	975.4	1.29	265.46	1.69

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86 (707 659 714) 766

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	924	1157	1013	759	679
95	644	694	646		

C = 5298
B = 4004
N = 1234

ROI # 2
Channel # **** Data ****

119					902
120	911	949	1012	1329	2018
125	2250	1641	1018	912	872
130	872				

C = 9268
B = 5418
N = 3850

ROI # 3
Channel # **** Data ****

176		942	1248	1355	1194
180	904	1125	2119	3287	3147
185	1827	1185	1149	1148	867
190	650	597			

C = 115165
B = 6193
N = 6372

ROI # 4
Channel # **** Data ****

364					442
365	457	473	582	1224	2359
370	3478	2889	1515	683	463
375	454				

C = 120477
B = 2972
N = 9075

ROI # 5
Channel # **** Data ****

460	272	205	239	263	242
465	256	283	278	357	412
470	444	486	294	256	256
475	272	263	241	258	317
480	800	1997	3027	2252	998
485	375	272	208	222	222
490	225	236	216	209	186
495	238				

ROI # 6
Channel # **** Data ****

581		185	171	152	194
585	307	919	2899	5382	5452
590	2856	829	265	171	153
595	183	183			

C = 18909
B = 1392
N = 17517

ROI # 7
Channel # **** Data ****

667			172	150	140
670	140	141	130	181	188

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
675	175	179	150	147	139
680	143	134	147		

ignore 223 Ra peak 7/2/92 BWL

C = 1291
B = 1165
N = 126

ROI # 8

Channel #		**** Data ****			
694					187
695	181	222	197	313	1039
700	3604	7487	9241	6261	2197
705	486	188	160	117	107

C = 30628
B = 1359
N = 29269

ROI # 9

Channel #		**** Data ****			
1156		82	98	99	95
1160	96	60	45	51	52
1165	45	57	55	66	52
1170	51	71			

7/2/92 BWL

ocl 6/30/92

C = ~~461~~ 922 461
B = 614 451
N = 10

BKg = $\frac{8}{3}$ x

ROI # 10

Channel #		**** Data ****			
1209					58
1210	67	65	118	405	1405
1215	3435	5589	5329	2947	1053
1220	264	95	73	54	52

C = 20427
B = 582
N = 19845

ROI # 11

Channel #		**** Data ****			
1813				52	36
1815	41	39	41	39	40
1820	41	55	40	48	35
1825	25	41	42	43	

C = 343 339
B = 315 319
N = 28 20

ROI # 12

Channel #		**** Data ****			
1915	40	37	22	29	35
1920	26	37	33	44	37
1925	62	50	63	33	36
1930	23	33	27	37	33
1935	28	25	44	36	27
1940	37	25	27	26	26
1945	33	32	38	26	39
1950	36				

C = 656
B = 586
N = 70

MCA #1 - Canberra S100 - 22251145.MCA - NOP1-ECP-22.25/11.45

Tag Number:	17	Readout:	Fri 26 Jun 1992 @ 18:00:35
Report Group:	2/4	Acquire Started:	Fri 26 Jun 1992 @ 17:59:56
Group Size:	4096		

Elapsed Live Time:	185.00 min.
Elapsed True Time:	185.03 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 185.00 min. Area = 10000 cts., Ch. 5252 to 5267
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/29/92

OCL

mass = 4.2881 g

time = 185 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1219	159	46.5
	49.5	0.11	27.32	1.39
2	60.5	1490	313	63.3
	66.0	0.13	15.85	1.34
	Isotope:	TH-234 @	63.3	
3	89.0	2249	639	92.9
	96.5	0.20	12.25	1.51
4	182.9	1484	563	186.0
	188.4	0.13	9.38	1.48
	Isotope:	U-235 @	185.7	
5M	230.9	2435	991	242.0
	248.4	0.22	12.95	1.63
6	291.4	1861	1293	295.1
	298.9	0.17	5.51	1.52
	Isotope:	PB-214 @	295.2	
7	334.3	510	-2	337.8
	341.8	0.05	1863.11	0.60
	Isotope:	AC-228 @	338.3	
8	347.8	2554	2132	351.8
	355.3	0.23	3.91	1.49
	Isotope:	PB-214 @	351.9	
9	578.7	341	79	582.9
	586.2	0.03	38.57	1.25
	Isotope:	TL-208 @	583.2	
10	605.1	1716	1470	608.9
	612.6	0.15	4.65	1.75
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	214	40	910.2
	914.4	0.02	60.34	0.99
	Isotope:	AC-228 @	911.2	
12M	957.9	366	33	968.4
	975.4	0.03	173.10	2.41

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		89	84	96	105
90	129	154	139	90	83
95	71	86	93		

C = 617
B = 443
N = 174

ROI # 2
Channel #

**** Data ****

119					92
120	98	100	105	143	199
125	214	149	103	91	107
130	89				

C = 913
B = 577
N = 336

ROI # 3
Channel #

**** Data ****

176		88	128	143	139
180	116	98	190	307	313
185	200	123	97	78	87
190	71	71			

C = 1133
B = 476
N = 657

ROI # 4
Channel #

**** Data ****

364					66
365	64	62	85	131	202
370	281	256	142	88	56
375	51				

C = 1097
B = 387
N = 710

ROI # 5
Channel #

**** Data ****

460	46	37	38	43	38
465	38	35	44	39	53
470	71	61	61	66	80
475	107	100	68	43	60
480	105	174	252	251	109
485	48	35	37	40	25
490	30	44	30	39	47
495	41				

ROI # 6
Channel #

**** Data ****

581		34	43	38	26
585	41	81	232	416	429
590	239	101	38	32	31
595	38	42			

C = 1577
B = 284
N = 1293

ROI # 7
Channel #

**** Data ****

667			38	39	29

REGION OF INTEREST DATA

ROI # 7
Channel #

Channel #		**** Data ****			
670	24	25	26	31	43
675	33	34	26	36	38
680	29	30	29		

Bkg = 2 x

C = ~~254~~ ~~508~~ 254
B = ~~250~~ 252
N = 252 2

ROI # 8
Channel #

Channel #		**** Data ****			
694					25
695	30	32	30	39	85
700	220	556	709	490	187
705	57	27	27	14	26

C = 2343
B = 211
N = 2132

ROI # 9
Channel #

Channel #		**** Data ****			
1156		12	15	21	24
1160	18	20	20	28	39
1165	44	21	20	19	12
1170	12	16			

C = 210
B = 131
N = 79

ROI # 10
Channel #

Channel #		**** Data ****			
1209					7
1210	18	12	17	31	89
1215	283	425	390	246	104
1220	25	17	19	18	15

C = 1593
B = 123
N = 1470

ROI # 11
Channel #

Channel #		**** Data ****			
1813				7	8
1815	10	15	9	13	20
1820	27	17	18	10	13
1825	12	12	17	6	

C = 129
B = 85
N = 44

ROI # 12
Channel #

Channel #		**** Data ****			
1915	11	13	4	9	6
1920	8	10	10	11	12
1925	10	14	7	7	8
1930	5	11	6	16	10
1935	17	17	16	18	11
1940	10	7	7	9	6
1945	9	14	5	8	13
1950	11				

C = 202
B = 164
N = 38

MCA #1 - Canberra S100 - 22501240.MCA - NOP1-ECP-22.5/12.4

Tag Number:	74	Readout:	Thu 25 Jun 1992 @ 15:57:12
Report Group:	2/4	Acquire Started:	Thu 25 Jun 1992 @ 15:53:27
Group Size:	4096		

Elapsed Live Time:	10.00 min.
Elapsed True Time:	10.07 min.
Dead Time:	0.73 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 10.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/25/92

OCL

mass = 4.1924 g

time = 10.0 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	5601	707	46.6
	49.5	9.34	13.12	1.46
2	60.5	8738	2216	63.5
	66.0	14.56	5.51	1.38
	Isotope:	TH-234 @	63.3	
3	89.0	13077	4027	92.7
	96.5	21.80	4.69	1.41
4	182.9	8955	4571	186.0
	188.4	14.93	2.97	1.44
	Isotope:	U-235 @	185.7	
5M	230.9	9934	5128	241.9
	248.4	16.56	4.77	1.42
6	291.4	11467	9907	295.1
	298.9	19.11	1.78	1.46
	Isotope:	PB-214 @	295.2	
7	334.3	1516	54	338.1
	341.8	2.53	118.97	1.20
	Isotope:	AC-228 @	338.3	
8	347.8	18117	16659	351.8
	355.3	30.19	1.33	1.50
	Isotope:	PB-214 @	351.9	
9	578.7	624	-46	579.9
	586.2	1.04	89.60	1.13
10	605.1	11918	11240	608.8
	612.6	19.86	1.60	1.75
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	355	-17	911.2
	914.4	0.59	182.87	0.68
	Isotope:	AC-228 @	911.2	
12M	957.9	745	75	962.9
	975.4	1.24	108.98	1.56

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86 (392 386 442) [454

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

90	569	663	643	463	373
95	395	389	432		

C = 3165
B = 2436
N = 729

ROI # 2
Channel #

**** Data ****

119					510
120	522	572	569	784	1255
125	1359	992	670	493	493
130	519				

C = 5629
B = 3109
N = 2520

ROI # 3
Channel #

**** Data ****

176		582	643	805	654
180	489	612	1222	1916	1868
185	1095	660	690	636	485
190	385	335			

C = 6761
B = 2912
N = 3849

ROI # 4
Channel #

**** Data ****

364					263
365	243	271	336	671	1446
370	2092	1823	933	381	265
375	231				

C = 7301
B = 1654
N = 5641

ROI # 5
Channel #

**** Data ****

460	126	147	165	143	125
465	155	145	131	177	229
470	296	234	181	140	136
475	128	160	144	141	198
480	474	1123	1741	1308	560
485	212	121	139	126	107
490	118	117	125	132	104
495	126				

ROI # 6
Channel #

**** Data ****

581		112	102	90	120
585	176	529	1560	3172	3029
590	1575	474	172	94	85
595	75	102			

C = 10687
B = 780
N = 9907

ROI # 7
Channel #

**** Data ****

Ignore contains 223Ra

667			99	100	79
670	84	91	96	101	117

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

675	116	97	83	84	85
680	91	85	108		

C = 785
B = 731
N = 52

ROI # 8
Channel # **** Data ****

694					
695	85	121	110	178	90
700	1923	4259	5346	3465	573
705	320	100	75	69	1324
					79

C = 17388
B = 729
N = 16659

ROI # 9
Channel # **** Data ****

1156		29	50	55	60
1160	35	34	26	45	34
1165	40	41	34	40	33
1170	35	33			

od 6/30/92

C = ~~289~~ 578 C 289 7/2/92
B = 335 B 282 BWL
N =

ROI # 10
Channel # **** Data ****

1209					
1210	41	43	76	232	30
1215	2070	3103	2931	1687	823
1220	151	42	37	33	582
					37

C = 11579
B = 339
N = 11240

ROI # 11
Channel # **** Data ****

1813					
1815	18	22	19	24	20
1820	16	29	31	20	15
1825	26	28	28	22	17
				20	

* 8/3 = Bkg

od 6/30/92

C = ~~174~~ ~~340~~
B = ~~184~~ 169 BWL 7/2/92
N = 167

ROI # 12
Channel # **** Data ****

1915	20	20	21	26	20
1920	17	16	20	24	27
1925	33	27	27	22	24
1930	16	21	18	17	21
1935	24	19	18	17	16
1940	27	15	20	24	24
1945	17	25	12	13	18
1950	19				

C = 389
B = 356
N = 33

MCA #1 - Canberra S100 - 22801295.MCA - NOP1-ECP-22.8/12.95

Tag Number:	72	Readout:	Thu 25 Jun 1992 @ 15:44:44
Report Group:	2/4	Acquire Started:	Thu 25 Jun 1992 @ 15:44:02
Group Size:	4096		

Elapsed Live Time:	59.00 min.
Elapsed True Time:	59.09 min.
Dead Time:	0.16 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 59.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/25/92

OCL

mass = 4.2498 g

time = 59.0 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	7026	1133	46.6
	49.5	1.98	9.31	1.38
2	60.5	10873	2812	63.5
	66.0	3.07	4.85	1.28
	Isotope:	TH-234 @	63.3	
3	89.0	15771	5149	92.6
	96.5	4.46	4.02	1.44
4	182.9	11219	5903	186.0
	188.4	3.17	2.59	1.42
	Isotope:	U-235 @	185.7	
5M	230.9	12376	6315	242.0
	248.4	3.50	4.34	1.47
6	291.4	13837	11923	295.2
	298.9	3.91	1.63	1.24
	Isotope:	PB-214 @	295.2	
7	334.3	1725	23	338.6
	341.8	0.49	297.95	1.36
	Isotope:	AC-228 @	338.3	
8	347.8	21815	19955	351.8
	355.3	6.16	1.22	1.52
	Isotope:	PB-214 @	351.9	
9	578.7	768	-44	580.3
	586.2	0.22	103.92	0.80
10	605.1	14170	13444	608.8
	612.6	4.00	1.46	1.79
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	465	-11	908.4
	914.4	0.13	323.46	0.43
12M	957.9	962	58	963.1
	975.4	0.27	162.92	1.07

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86		(466	506	515)	[539
90	760	926	807	604	496]

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

95	(479	465	463)

C = 4132
B = 2894
N = 1238

ROI # 2
Channel # **** Data ****

119					(661
120	659	716)	[736	963	1521
125	1786	1229	699]	(647	641
130	615)				

C = 6934
B = 3939
N = 2995

ROI # 3
Channel # **** Data ****

176		626	847	1008	789
180	(596	710)	[1531	2414	2297
185	1387	800]	(725	667	541)
190	408	425			

C = 8429
B = 3239
N = 5190

ROI # 4
Channel # **** Data ****

364					(325
365	299	329)	[360	862	1792
370	2686	2335	1187]	(477	290
375	277)				

C = 9222
B = 1997
N = 7225

ROI # 5
Channel # **** Data ****

460	192	173	187	205	182
465	202	188	199	236	277
470	370	278	215	187	173
475	197	172	185	202	240
480	532	1379	2056	1647	714
485	265	168	145	167	154
490	157	142	155	139	153
495	143				

ROI # 6
Channel # **** Data ****

581		(139	112	131	124)
585	[175	573	1947	3814	3651
590	1982	567	171]	(112	100
595	111	128)			

C = 12080
B = 957
N = 11923

ROI # 7
Channel # **** Data ****

ignore 223Ra peak interference

667			(121	118	97
670	109]	[102	98	118	109
675	119	116	110	102]	(104

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

680	104	112	86

C = 874
B = 851
N = 23

ROI # 8
Channel # **** Data ****

694				[219	(129
695	117	135	(139	4394	625
700	2211	5167	6382	97	1565
705	322]	(137	89		87)

C = 20885
B = 930
N = 19955

ROI # 9
Channel # **** Data ****

1156		(52	63	64	76)
1160	[48	49	45	47	38
1165	38	46	51]	(28	35
1170	38	50)			

BW L 7/2/92

C = ~~302~~ ~~724~~ 362
B = ~~406~~ 302
N = ~~318~~ 60

BKg = 2X

ROI # 10
Channel # **** Data ****

1209				[247	(36
1210	48	43	81)	2072	988
1215	2417	3636	3573	29	718
1220	156]	(52	36		38)

C = 13807
B = 363
N = 13444

ROI # 11
Channel # **** Data ****

1813				(29	24
1815	27)	[37)	[30	23	24
1820	35	35	30	27]	(23
1825	35	26	31	29)	

C = 244
B = 224
N = 17

ROI # 12
Channel # **** Data ****

1915	(35	26	24	32	26
1920	18	29	29	29)	[34
1925	57	43	34	23	21
1930	26	21	27	24	25
1935	18	31	29	21	30
1940	32	28]	(22	19	24
1945	17	24	17	21	25
1950	21)				

C = 504
B = 438
N = 66

MCA #1 - Canberra S100 - 17101520.MCA - NOP1-ECP-17.1/15.2

Tag Number:	70	Readout:	Thu 25 Jun 1992 @ 14:43:23
Report Group:	2/4	Acquire Started:	Thu 25 Jun 1992 @ 14:42:33
Group Size:	4096		

Elapsed Live Time:	92.00 min.
Elapsed True Time:	92.06 min.
Dead Time:	0.07 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 92.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/25/92

OCL

mass = 4.3189 g

time = 92 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	4450	570	46.8
	49.5	0.81	14.51	1.29
2	60.5	6735	1701	63.5
	66.0	1.22	6.30	1.38
	Isotope:	TH-234 @	63.3	
3	89.0	10028	3374	92.8
	96.5	1.82	4.90	1.39
4	182.9	6825	3534	186.0
	188.4	1.24	3.36	1.45
	Isotope:	U-235 @	185.7	
5M	230.9	7844	3862	241.9
	248.4	1.42	5.70	1.45
6	291.4	8423	7165	295.2
	298.9	1.53	2.11	1.48
	Isotope:	PB-214 @	295.2	
7	334.3	1135	43	337.9
	341.8	0.21	129.27	1.35
	Isotope:	AC-228 @	338.3	
8	347.8	13146	11910	351.8
	355.3	2.38	1.59	1.53
	Isotope:	PB-214 @	351.9	
9	578.7	558	30	582.4
	586.2	0.10	129.92	1.17
	Isotope:	TL-208 @	583.2	
10	605.1	8420	7946	608.9
	612.6	1.53	1.91	1.71
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	337	37	911.4
	914.4	0.06	81.86	0.50
	Isotope:	AC-228 @	911.2	
12M	957.9	649	73	963.1
	975.4	0.12	103.31	2.67

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(293	351	344)	[327
90	427	541	513	382	334]
95	(300	339	299)	C = 2524	
				B = 1926	
				N = 598	

ROI # 2
Channel #

**** Data ****

119					(445
120	433	445)	[419	627	959
125	1048	745	484]	(405	362
130	363)			C = 4282	
				B = 2453	
				N = 1829	

ROI # 3
Channel #

**** Data ****

176		405	507	619	535
180	(407	471)	[937	1592	1501
185	896	479]	(418	370	346)
190	306	239		C = 5405	
				B = 2012	
				N = 3393	

ROI # 4
Channel #

**** Data ****

364					(185
365	205	208)	[262	543	1102
370	1589	1397	679]	(294	190
375	171)			C = 5572	
				B = 1253	
				N = 4319	

ROI # 5
Channel #

**** Data ****

460	138	126	120	115	123
465	125	109	127	143	184
470	230	191	129	118	147
475	178	160	148	134	149
480	340	857	1246	924	427
485	180	91	109	92	85
490	103	110	102	96	97
495	91				

ROI # 6
Channel #

**** Data ****

581		(79	95	70	83)
585	[124	353	1093	2244	2295
590	1233	344	108]	(73	79
595	58	92)		C = 7794	
				B = 629	
				N = 7165	

ROI # 7
Channel #

**** Data ****

667			(86	67	74

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****		contribution from ^{223}Ra	
670	62)	[57	48	90	92
675	98	67	76	61]	(62
680	54	68	73)		

ignore

C = 589
B = 546
N = 43

ROI # 8

Channel #		**** Data ****			
694					(73
695	96	85	101)	[129	413
700	1402	3059	3800	2594	895
705	236]	(75	62	63	63)

C = 12528
B = 618
N = 11910

ROI # 9

Channel #		**** Data ****			
1156		(34	33	45	48)
1160	[42	28	36	39	48
1165	31	38	32]	(23	30
1170	25	26)			

C = 294
B = 264
N = 30

ROI # 10

Channel #		**** Data ****			
1209					(32
1210	22	31	46)	[152	547
1215	1358	2205	2125	1222	462
1220	112]	(38	25	24	19)

C = 8183
B = 237
N = 7946

ROI # 11

Channel #		**** Data ****			
1813				(21	18
1815	21)	[14	21	18	29
1820	25	19	41	17]	(17
1825	21	19	19	17)	

C = 184
B = 153
N = 31

ROI # 12

Channel #		**** Data ****			
1915	(22	12	19	17	23
1920	16	15	23	19)	[28
1925	21	26	26	21	16
1930	25	13	23	14	19
1935	19	20	22	9	15
1940	16	10]	(17	14	18
1945	16	17	11	19	17
1950	11)				

C = 343
B = 306
N = 37

MCA #1 - Canberra S100 - 22601190.MCA - NOP1-ECP-22.6/11.9

Tag Number:	68	Readout:	Thu 25 Jun 1992 @ 13:07:09
Report Group:	2/4	Acquire Started:	Thu 25 Jun 1992 @ 13:06:06
Group Size:	4096		

Elapsed Live Time:	51.00 min.
Elapsed True Time:	51.02 min.
Dead Time:	0.03 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 51.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/25/92

OCL

mass = 4.3048 g

time = 51 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1184	190	46.6
	49.5	0.39	22.82	1.66
2	60.5	1719	450	63.5
	66.0	0.56	12.07	1.47
	Isotope:	TH-234 @	63.3	
3	89.0	2522	722	92.9
	96.5	0.82	11.48	1.55
4	182.9	1707	851	186.1
	188.4	0.56	6.94	1.17
	Isotope:	U-235 @	185.7	
5M	230.9	2190	1178	242.0
	248.4	0.72	9.63	1.45
6	291.4	2181	1823	295.2
	298.9	0.71	4.23	1.49
	Isotope:	PB-214 @	295.2	
7	334.3	293	41	337.6
	341.8	0.10	68.89	1.93
	Isotope:	AC-228 @	338.3	
8	347.8	3398	3054	351.8
	355.3	1.11	3.15	1.49
	Isotope:	PB-214 @	351.9	
9	578.7	171	21	581.3
	586.2	0.06	102.75	3.96
10	605.1	2296	2136	608.8
	612.6	0.75	3.70	1.75
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	106	42	910.5
	914.4	0.03	40.45	1.41
	Isotope:	AC-228 @	911.2	
12M	957.9	199	33	968.1
	975.4	0.07	125.93	0.83

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86 (90 70 64) [106

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

90	129	146	147	99
95	(74	74	87)	

C = ~~627~~ 725
B = 459
N = 266

ROI # 2
Channel #

**** Data ****

119					(112
120	103	108)	[107	147	252
125	265	209	127]	(104	101
130	84)				

C = 1107
B = 612
N = 495

ROI # 3
Channel #

**** Data ****

176		104	142	152	148
180	(98	115)	[234	346	353
185	220	146]	(110	119	79)
190	77	79			

C = 1299
B = 521
N = 778

ROI # 4
Channel #

**** Data ****

364					(44
365	50	61)	[67	139	233
370	421	343	172]	(86	52
375	39)				

C = 1375
B = 332
N = 1043

ROI # 5
Channel #

**** Data ****

460	35	34	32	24	30
465	45	38	25	40	50
470	66	52	38	43	38
475	48	48	50	25	47
480	84	223	345	284	116
485	39	39	30	31	35
490	26	30	25	18	28
495	29				

ROI # 6
Channel #

**** Data ****

581		(23	27	20	21)
585	[40	89	269	555	586
590	329	105	29]	(22	22
595	23	21)			

C = 2002
B = 179
N = 1823

ROI # 7
Channel #

**** Data ****

667			(20	10	17
670	13)	[15	22	25	22

REGION OF INTEREST DATA

ROI # 7

Channel #	**** Data ****				
675	24	17	21	21]	(14
680	18	18	16)		

C = ~~200~~ 167
B = 126
N = 41

ROI # 8

Channel #	**** Data ****				
694					(11
695	24	26	30)	[35	86
700	350	787	1006	668	238
705	56]	(31	18	16	16)

C = 3226
B = 172
N = 3054

ROI # 9

Channel #	**** Data ****				
1156		(7	11	16	13)
1160	[15	12	15	9	13
1165	12	9	11]	(5	7
1170	9	7)			

BWL 7/2

~~Background = 2x~~

C = 96 75
B = ~~75~~ ~~56~~
N = 21

~~7/2/92 BWL~~

ROI # 10

Channel #	**** Data ****				
1209					(7
1210	11	9	18)	[52	135
1215	406	571	586	319	115
1220	32]	(10	10	6	9)

C = 2216
B = 80
N = 2136

ROI # 11

Channel #	**** Data ****				
1813				(5	4
1815	2)	[5	8	6	11
1820	14	17	6	4]	(8
1825	5	4	5	2)	

ROI # 12

Channel #	**** Data ****				
1915	(5	5	11	4	6
1920	6	10	4	4)	[3
1925	6	6	9	8	4
1930	8	8	7	4	4
1935	10	6	5	5	1
1940	5	5]	(6	3	8
1945	5	6	1	4	1
1950	6)				

C = ~~35~~ 6/25/92
B = 35
N = 36

Bkg = 2x
BWL
7/2/92

C = 107
B = ~~95~~ 80
N = 9

MCA #1 - Canberra S100 - 06200810.MCA - NOP1-ECP-6.2/8.1

Tag Number:	66	Readout:	Thu 25 Jun 1992 @ 12:12:19
Report Group:	2/4	Acquire Started:	Thu 25 Jun 1992 @ 12:11:57
Group Size:	4096		

Elapsed Live Time:	1234.00 min.
Elapsed True Time:	1234.12 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1234.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/25/92

OCL

6/25/92 ocl

MASS = ~~4.3081~~ 4.3018

TIME = ~~209 min~~ 1234 min.

6/25/92 ocl

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3529	370	46.8
	49.5	0.05	19.69	1.18
2	60.5	4141	606	63.3
	66.0	0.06	13.28	1.19
	Isotope:	TH-234 @	63.3	
3	89.0	6442	1334	92.9
	96.5	0.09	9.93	1.01
4	182.9	3769	873	185.9
	188.4	0.05	9.11	1.49
	Isotope:	U-235 @	185.7	
5M	230.9	9089	2452	238.7
	248.4	0.12	10.79	1.55
	Isotope:	PB-212 @	238.6	
6	291.4	3189	851	295.0
	298.9	0.04	10.95	1.48
	Isotope:	PB-214 @	295.2	
7	334.3	2334	334	338.1
	341.8	0.03	23.87	1.76
	Isotope:	AC-228 @	338.3	
8	347.8	3445	1513	351.8
	355.3	0.05	6.40	1.42
	Isotope:	PB-214 @	351.9	
9	578.7	1685	531	582.7
	586.2	0.02	12.76	1.57
	Isotope:	TL-208 @	583.2	
10	605.1	2348	1190	608.9
	612.6	0.03	6.72	1.81
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1197	415	910.6
	914.4	0.02	13.76	1.78
	Isotope:	AC-228 @	911.2	
12M	957.9	2084	388	968.1
	975.4	0.03	33.86	1.76

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		269	256	287 280
90	331	417	365	310 241
95	254	248	271	

C = 1944
B = 1585
N = 359

ROI # 2
Channel # **** Data ****

119				309
120	313	289	297	355 496
125	546	387	329	270 270
130	280			

C = 2410
B = 1731
N = 679

ROI # 3
Channel # **** Data ****

176		301	333	394 366
180	300	337	498	792 731
185	554	367	309	305 286
190	291	278		

C = 2942
B = 1537
N = 1405

ROI # 4
Channel # **** Data ****

364				214
365	222	230	251	346 507
370	545	440	302	254 245
375	213			

C = 2391
B = 1378
N = 1013

ROI # 5
Channel # **** Data ****

460	200	183	202	189 214
465	199	199	203	212 218
470	192	225	202	232 475
475	742	731	433	259 239
480	244	325	301	299 179
485	177	170	180	181 198
490	200	185	186	170 180
495	165			

ROI # 6
Channel # **** Data ****

581		136	152	141 145
585	130	179	292	391 426
590	271	174	157	143 138
595	165	149		

C = 2020
B = 1169
N = 851

ROI # 7
Channel # **** Data ****

667			138	126 114

REGION OF INTEREST DATA

ROI # 7

Channel #	**** Data ****			
670	149	157	131	173
675	217	196	134	136
680	118	115	118	

				190
				122

C = 1116
B = 1000
N = 116

ROI # 8

Channel #	**** Data ****			
694				
695	109	131	125	116
700	268	471	625	451
705	154	131	114	127

				129
				167
				227
				100

C = 2479
B = 966
N = 1513

ROI # 9

Channel #	**** Data ****			
1156		68	70	74
1160	78	70	131	178
1165	190	137	86	86
1170	73	65		

				65
				238
				76

C = 1108
B = 577
N = 531

ROI # 10

Channel #	**** Data ****			
1209				
1210	75	63	63	108
1215	247	367	379	279
1220	93	85	86	80

				67
				146
				150
				60

C = 1769
B = 579
N = 1190

ROI # 11

Channel #	**** Data ****			
1813				46
1815	57	53	72	91
1820	164	138	109	70
1825	49	47	45	48

				46
				121
				41

C = 818
B = 379
N = 439

ROI # 12

Channel #	**** Data ****			
1915	55	63	47	43
1920	44	56	69	59
1925	50	75	78	65
1930	42	47	35	56
1935	119	108	91	65
1940	42	45	53	41
1945	41	51	41	53
1950	32			

				50
				55
				57
				87
				64
				62
				43

C = 1181
B = 903
N = 278

MCA #1 - Canberra S100 - 18050890.MCA - NOP1-ECP-18.05/7.9

Tag Number:	64	Readout:	Wed 24 Jun 1992 @ 15:34:05
Report Group:	2/4	Acquire Started:	Wed 24 Jun 1992 @ 15:33:23
Group Size:	4096		

Elapsed Live Time:	242.00 min.
Elapsed True Time:	242.04 min.
Dead Time:	0.02 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 242.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/25/92

OCL

mass = 5.0326

time = 242 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1964	232	46.7
	49.5	0.14	23.61	0.76
2	60.5	2875	610	63.5
	66.0	0.20	11.29	1.31
	Isotope:	TH-234 @	63.3	
3	89.0	4017	1053	92.8
	96.5	0.28	9.93	1.41
4	182.9	2673	1136	186.0
	188.4	0.18	6.34	1.48
	Isotope:	U-235 @	185.7	
5M	230.9	4058	1727	241.9
	248.4	0.28	9.50	1.47
6	291.4	3434	2540	295.1
	298.9	0.24	3.81	1.57
	Isotope:	PB-214 @	295.2	
7	334.3	827	101	338.3
	341.8	0.06	46.98	2.50
	Isotope:	AC-228 @	338.3	
8	347.8	5207	4489	351.8
	355.3	0.36	2.65	1.48
	Isotope:	PB-214 @	351.9	
9	578.7	473	123	582.9
	586.2	0.03	29.17	1.70
	Isotope:	TL-208 @	583.2	
10	605.1	3329	2979	608.8
	612.6	0.23	3.20	1.78
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	313	75	910.0
	914.4	0.02	38.92	1.48
12M	957.9	522	95	968.1
	975.4	0.04	69.64	1.60

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86	(162	136	155)	[157

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	200	259	194	156	146
95	136	127	136		

C = 1112
B = 399
N = 719

ROI # 2
Channel # **** Data ****

119					165
120	191	180	201	238	398
125	419	310	212	191	173
130	197				

C = 1778
B = 109?
N = 681

ROI # 3
Channel # **** Data ****

176		199	211	256	243
180	167	188	352	563	523
185	351	227	164	186	150
190	117	120			

C = 2016
B = 855
N = 1161

ROI # 4
Channel # **** Data ****

364					108
365	98	120	109	192	426
370	549	481	254	136	102
375	98				

C = 2011
B = 662
N = 1349

ROI # 5
Channel # **** Data ****

460	71	72	65	69	59
465	68	67	77	82	104
470	103	108	72	84	131
475	173	140	101	92	92
480	153	321	478	407	175
485	64	71	75	58	66
490	74	45	59	49	63
495	70				

ROI # 6
Channel # **** Data ****

581		57	66	56	52
585	73	160	461	800	822
590	460	154	57	48	58
595	60	50			

C = 2987
B = 447
N = 2540

ROI # 7
Channel # **** Data ****

667			40	50	42
670	43	58	50	60	64

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

675	66	58	59	49	46
680	56	46	40		

C = 464
B = 363
N = 101

ROI # 8
Channel # **** Data ****

694					47
695	53	54	42	65	162
700	503	1149	1498	1012	358
705	101	42	34	51	36

C = 4818
B = 359
N = 4489

ROI # 9
Channel # **** Data ****

1156		19	24	23	23
1160	29	21	22	45	53
1165	56	39	33	24	27
1170	21	14			

C = 298
B = 175
N = 123

ROI # 10
Channel # **** Data ****

1209					25
1210	20	21	21	71	227
1215	527	820	811	491	156
1220	51	13	21	26	28

C = 3154
B = 175
N = 2979

ROI # 11
Channel # **** Data ****

1813				11	15
1815	9	21	17	29	32
1820	42	27	15	18	14
1825	7	14	28	14	

C = 201
B = 112
N = 89

ROI # 12
Channel # **** Data ****

1915	14	13	11	11	13
1920	12	10	8	11	22
1925	16	19	23	15	20
1930	12	9	11	14	21
1935	27	19	21	18	18
1940	10	15	11	16	10
1945	10	16	15	12	8
1950	11				

C = 310
B = 212
N = 98

MCA #1 - Canberra S100 - 17400785.MCA - NOP1-ECP-17.4/7.85

Tag Number:	62	Readout:	Wed 24 Jun 1992 @ 11:21:57
Report Group:	2/4	Acquire Started:	Wed 24 Jun 1992 @ 11:21:09
Group Size:	4096		

Elapsed Live Time:	209.00 min.
Elapsed True Time:	209.03 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 209.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/25/92

OCL

MASS = 4.9433

TIME = 209 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1034	125	46.6
	49.5	0.08	31.78	1.58
2	60.5	1340	236	63.3
	66.0	0.11	19.63	1.40
	Isotope: TH-234 @ 63.3			
3	89.0	1873	519	92.6
	96.5	0.15	13.76	1.51
4	182.9	1346	490	186.0
	188.4	0.11	10.21	1.51
	Isotope: U-235 @ 185.7			
5M	230.9	2147	676	241.9
	248.4	0.17	18.64	1.58
6	291.4	1553	1037	295.2
	298.9	0.12	6.27	1.54
	Isotope: PB-214 @ 295.2			
7	334.3	524	26	338.1
	341.8	0.04	145.27	0.80
	Isotope: AC-228 @ 338.3			
8	347.8	2115	1689	351.8
	355.3	0.17	4.49	1.51
	Isotope: PB-214 @ 351.9			
9	578.7	303	13	582.7
	586.2	0.02	220.93	1.00
	Isotope: TL-208 @ 583.2			
10	605.1	1373	1139	608.8
	612.6	0.11	5.37	1.81
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	227	53	910.9
	914.4	0.02	46.91	2.37
	Isotope: AC-228 @ 911.2			
12M	957.9	384	-8	968.2
	975.4	0.03	812.14	0.91

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(74	78	78)	[96
90	98	121	114	95	72]
95	(65	77	66)		

C = 804
B = 438
N = 366

ROI # 2
Channel #

**** Data ****

119					(80
120	91	107)	[107	124	175
125	177	128	90]	(94	90
130	77)				

C = 801
B = 539
N = 262

ROI # 3
Channel #

**** Data ****

176		79	99	108	99
180	(85	92)	[174	259	228
185	168	102]	(88	87	76)
190	67	62			

C = 931
B = 428
N = 503

ROI # 4
Channel #

**** Data ****

364					(55
365	65	67)	[76	118	180
370	247	230	132]	(67	47
375	62)				

C = 983
B = 363
N = 620

ROI # 5
Channel #

**** Data ****

460	36	41	43	53	42
465	44	44	41	50	57
470	39	38	48	59	80
475	101	102	59	46	31
480	83	134	185	168	91
485	40	42	35	39	32
490	45	45	36	47	34
495	37				

ROI # 6
Channel #

**** Data ****

581		(28	32	37	34)
585	[38	85	173	316	344
590	212	82	45]	(31	37
595	29	30)			

C = 1295
B = 258
N = 1037

ROI # 7
Channel #

**** Data ****

667			(32	36	27

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	29	26	32	34	37
675	43	33	29	41	36
680	35	30	24		

C = 275
B = 249
N = 26

ROI # 8
Channel # **** Data ****

694					27
695	22	26	33	33	88
700	210	463	548	364	135
705	61	36	29	23	17

C = 1902
B = 213
N = 1689

ROI # 9
Channel # **** Data ****

1156		13	15	23	14
1160	9	13	15	31	31
1165	25	22	12	17	25
1170	23	15			

C = 158
B = 145
N = 13

166
137
N = 29

7/1/92 BWL changed bkg channels

ROI # 10
Channel # **** Data ****

1209					10
1210	15	15	25	38	99
1215	217	315	290	182	86
1220	29	16	10	14	12

C = 1256
B = 117
N = 1139

ROI # 11
Channel # **** Data ****

1813				12	9
1815	10	11	8	13	19
1820	18	24	25	22	11
1825	11	15	10	9	

C = 140
B = 87
N = 53

ROI # 12
Channel # **** Data ****

1915	9	11	10	11	3
1920	4	8	6	4	9
1925	12	20	12	9	9
1930	5	4	13	8	13
1935	19	29	15	15	16
1940	4	13	13	8	11
1945	7	10	10	15	8
1950	13				

C = 223
B = 161
N = 62

MCA #1 - Canberra S100 - 17000750.MCA - NOP1-ECP-17.0/7.5

Tag Number:	60	Readout:	Wed 24 Jun 1992 @ 07:50:53
Report Group:	2/4	Acquire Started:	Wed 24 Jun 1992 @ 07:49:21
Group Size:	4096		

Elapsed Live Time:	1116.00 min.
Elapsed True Time:	1116.13 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1116.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/24/92

OC L

mass = 4.7879 g

time = 1116 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	5180	532	46.6
	49.5	0.08	16.59	1.42
2	60.5	7090	1725	63.5
	66.0	0.11	6.35	1.36
	Isotope:	TH-234 @	63.3	
3	89.0	10928	3518	92.8
	96.5	0.16	4.90	1.41
4	182.9	6831	2703	186.0
	188.4	0.10	4.21	1.47
	Isotope:	U-235 @	185.7	
5M	230.9	10863	3672	241.9
	248.4	0.16	7.63	1.49
6	291.4	6634	4062	295.1
	298.9	0.10	3.31	1.60
	Isotope:	PB-214 @	295.2	
7	334.3	2523	193	338.3
	341.8	0.04	42.94	1.49
	Isotope:	AC-228 @	338.3	
8	347.8	8848	6658	351.8
	355.3	0.13	2.33	1.49
	Isotope:	PB-214 @	351.9	
9	578.7	1649	381	582.7
	586.2	0.02	17.59	1.58
	Isotope:	TL-208 @	583.2	
10	605.1	5954	4722	608.9
	612.6	0.09	2.70	1.71
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1110	298	910.6
	914.4	0.02	18.45	1.91
	Isotope:	AC-228 @	911.2	
12M	957.9	1971	257	968.1
	975.4	0.03	50.88	1.67

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		391	441	366	386
90	528	583	544	426	378
95	400	353	384		

C = 2845
B = 2335
N = 510

ROI # 2

Channel #		**** Data ****			
119					435
120	455	419	494	628	971
125	1100	814	496	458	415
130	405				

C = 3513
B = 2587
N = 926

ROI # 3

Channel #		**** Data ****			
176		464	552	644	540
180	468	561	984	1649	1581
185	988	561	431	419	388
190	370	328			

C = 5763
B = 2267
N = 3496

ROI # 4

Channel #		**** Data ****			
364					284
365	303	303	371	617	1053
370	1346	1063	644	350	249
375	248				

C = 5094
B = 1787
N = 3357

ROI # 5

Channel #		**** Data ****			
460	213	218	212	176	216
465	246	226	222	209	247
470	262	243	220	292	430
475	580	570	405	276	278
480	345	611	856	720	389
485	243	200	205	184	196
490	194	200	210	198	194
495	177				

ROI # 6

Channel #		**** Data ****			
581		173	178	156	164
585	152	292	810	1328	1402
590	849	344	171	170	127
595	144	174			

C = 5347
B = 1286
N = 4062

ROI # 7

Channel #		**** Data ****			
667			160	137	138

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	153	151	151	175	197
675	217	191	145	131	145
680	126	160	146		

C = 1358
B = 1165
N = 193

ROI # 8
Channel # **** Data ****

694					147
695	139	153	149	156	302
700	831	1740	2278	1592	634
705	220	123	123	131	130

C = 7753
B = 1095
N = 6658

ROI # 9
Channel # **** Data ****

1156		69	84	92	79
1160	92	69	106	157	184
1165	202	126	79	74	66
1170	92	78			

C = 1015
B = 634
N = 381

ROI # 10
Channel # **** Data ****

1209					75
1210	74	89	92	158	350
1215	856	1311	1387	808	351
1220	117	74	77	70	65

C = 5338
B = 616
N = 4277

ROI # 11
Channel # **** Data ****

1813				49	48
1815	52	55	61	70	127
1820	127	116	95	58	50
1825	44	51	54	53	

C = 709
B = 401
N = 308

ROI # 12
Channel # **** Data ****

1915	52	36	52	52	45
1920	42	42	49	48	42
1925	60	76	78	59	53
1930	61	44	52	56	80
1935	105	103	74	61	53
1940	41	48	58	34	42
1945	35	49	49	55	38
1950	47				

C = 1146
B = 825
N = 321

MCA #1 - Canberra S100 - 16400790.MCA - NOP1-ECP-16.4/7.9

Tag Number:	58	Readout:	Tue 23 Jun 1992 @ 13:12:50
Report Group:	2/4	Acquire Started:	Tue 23 Jun 1992 @ 13:12:12
Group Size:	4096		

Elapsed Live Time:	224.00 min.
Elapsed True Time:	224.03 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 224.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/24/92

OCL

mass = 4.5758 g

time = 224 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1413	174	46.6
	49.5	0.11	26.71	1.36
2	60.5	1703	301	63.5
	66.0	0.13	17.38	1.37
	Isotope:	TH-234 @	63.3	
3	89.0	2434	608	92.8
	96.5	0.18	13.39	1.62
4	182.9	1671	642	186.0
	188.4	0.12	8.74	1.55
	Isotope:	U-235 @	185.7	
5M	230.9	2712	953	241.9
	248.4	0.20	14.61	1.54
6	291.4	2062	1416	295.1
	298.9	0.15	5.29	1.44
	Isotope:	PB-214 @	295.2	
7	334.3	609	47	337.8
	341.8	0.05	86.64	0.80
	Isotope:	AC-228 @	338.3	
8	347.8	2839	2293	351.8
	355.3	0.21	3.83	1.51
	Isotope:	PB-214 @	351.9	
9	578.7	342	46	582.7
	586.2	0.03	66.33	1.42
	Isotope:	TL-208 @	583.2	
10	605.1	1860	1598	608.7
	612.6	0.14	4.45	1.63
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	241	55	910.4
	914.4	0.02	46.57	1.50
	Isotope:	AC-228 @	911.2	
12M	957.9	419	95	968.1
	975.4	0.03	60.89	2.62

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		(116	106	108)	[109
90	136	168	167	116	95]
95	(102	97	93)		

C = 791
B = 622
N = 169

ROI # 2

Channel #		**** Data ****			
119					(102
120	120	109)	[110	145	221
125	217	185	147]	(119	100
130	128)				

C = 1025
B = 678
N = 347

ROI # 3

Channel #		**** Data ****			
176		118	141	158	136
180	(112	124)	[226	279	324
185	213	144]	(99	109	92)
190	77	82			

C = 1186
B = 536
N = 650

ROI # 4

Channel #		**** Data ****			
364					(65
365	74	82)	[79	140	245
370	313	287	163]	(91	69
375	63)				

C = 1227
B = 444
N = 783

ROI # 5

Channel #		**** Data ****			
460	59	60	57	52	54
465	46	64	52	49	69
470	65	73	53	54	68
475	127	120	80	63	62
480	109	194	263	198	123
485	45	40	47	47	67
490	43	46	45	43	37
495	38				

ROI # 6

Channel #		**** Data ****			
581		(37	38	45	43)
585	[54	90	255	452	497
590	255	94	42]	(43	33
595	50	34)			

C = 1739
B = 323
N = 1416

ROI # 7

Channel #		**** Data ****			
667			(33	35	33

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	29	29	40	46	58
675	46	39	36	34	34
680	41	33	43		

C = 328
B = 281
N = 47

ROI # 8
Channel # **** Data ****

694					33
695	39	38	40	48	88
700	274	618	761	507	217
705	53	29	33	32	29

C = 2566
B = 273
N = 2293

ROI # 9
Channel # **** Data ****

1156		12	23	28	19
1160	19	16	17	37	33
1165	30	25	17	20	16
1170	14	16			

C = 194
B = 148
N = 46

ROI # 10
Channel # **** Data ****

1209					26
1210	14	18	14	39	138
1215	305	475	418	226	93
1220	35	24	14	10	11

C = 1729
B = 131
N = 1598

ROI # 11
Channel # **** Data ****

1813				17	9
1815	10	10	17	17	27
1820	21	21	17	7	21
1825	14	13	10	10	

C = 137
B = 124
N = 13

ROI # 12
Channel # **** Data ****

1915	11	6	6	17	7
1920	7	9	8	9	9
1925	13	17	19	11	10
1930	10	8	17	20	19
1935	24	28	15	21	18
1940	11	5	6	6	6
1945	7	7	6	13	8
1950	5				

C = 279
B = 144
N = 135

MCA #1 - Canberra S100 - 22601360.MCA - NOP1-ECP-22.6/13.6

Tag Number:	56	Readout:	Tue 23 Jun 1992 @ 09:26:54
Report Group:	2/4	Acquire Started:	Tue 23 Jun 1992 @ 09:25:56
Group Size:	4096		

Elapsed Live Time:	80.00 min.
Elapsed True Time:	80.02 min.
Dead Time:	0.03 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 80.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 5.3152 g

time = 80 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1558	237	46.7
	49.5	0.32	20.90	1.01
2	60.5	2163	453	63.3
	66.0	0.45	13.17	1.13
	Isotope:	TH-234 @	63.3	
3	89.0	2911	623	92.8
	96.5	0.61	14.29	1.30
4	182.9	2132	1051	186.0
	188.4	0.44	6.27	1.38
	Isotope:	U-235 @	185.7	
5M	230.9	2833	1371	241.9
	248.4	0.59	9.70	1.44
6	291.4	2940	2414	295.1
	298.9	0.61	3.71	1.56
	Isotope:	PB-214 @	295.2	
7	334.3	495	75	337.9
	341.8	0.10	48.95	1.39
	Isotope:	AC-228 @	338.3	
8	347.8	4485	3971	351.8
	355.3	0.93	2.78	1.50
	Isotope:	PB-214 @	351.9	
9	578.7	261	5	582.7
	586.2	0.05	533.13	1.27
	Isotope:	TL-208 @	583.2	
10	605.1	2972	2740	608.8
	612.6	0.62	3.28	1.78
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	161	23	910.0
	914.4	0.03	91.03	2.60
12M	957.9	309	35	963.4
	975.4	0.06	150.88	0.85

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86 103 103 106 119

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	157	218	184	118	114
95	104	116	116		

C = 910
B = 648
N = 262

ROI # 2
Channel # **** Data ****

119					130
120	137	149	124	168	293
125	334	228	170	153	127
130	150				

C = 1317
B = 846
N = 471

ROI # 3
Channel # **** Data ****

176		140	173	223	152
180	111	155	242	396	376
185	224	142	121	145	120
190	95	96			

C = 1380
B = 652
N = 728

ROI # 4
Channel # **** Data ****

364					67
365	64	64	83	155	325
370	500	431	218	83	70
375	72				

C = 1712
B = 420
N = 1292

ROI # 5
Channel # **** Data ****

460	38	46	50	36	54
465	40	39	45	56	56
470	70	57	44	40	73
475	83	61	60	42	60
480	134	286	432	329	141
485	61	46	32	42	43
490	46	36	43	37	36
495	39				

ROI # 6
Channel # **** Data ****

581		36	37	46	32
585	43	127	403	751	742
590	415	149	47	27	29
595	29	27			

C = 2677
B = 263
N = 2414

ROI # 7
Channel # **** Data ****

667			24	29	27
670	32	24	26	42	52

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
675	42	33	26	40	24
680	23	28	23		

C = 245
B = 210
N = 35

ROI # 8

Channel #		**** Data ****			
694					23
695	39	38	44	54	142
700	450	1013	1299	897	301
705	72	37	19	25	32

C = 4228
B = 257
N = 3971

ROI # 9

Channel #		**** Data ****			
1156		13	19	22	17
1160	17	11	11	23	22
1165	26	11	12	12	18
1170	13	14			

C = 133
B = 128
N = 5

ROI # 10

Channel #		**** Data ****			
1209					15
1210	22	14	11	44	203
1215	500	751	740	432	144
1220	42	14	15	14	11

C = 2856
B = 116
N = 2740

ROI # 11

Channel #		**** Data ****			
1813				10	7
1815	6	8	13	10	11
1820	12	14	10	13	9
1825	11	8	11	8	

C 91
B 70
N 21

ROI # 12

Channel #		**** Data ****			
1915	6	6	11	4	7
1920	5	10	13	10	12
1925	10	17	12	7	5
1930	10	9	10	5	10
1935	10	11	9	10	11
1940	4	2	7	6	10
1945	10	6	13	12	7
1950	2				

C = 164
B = 135
N = 29

MCA #1 - Canberra S100 - 22101465.MCA - NOP1-ECP-22.1/14.65

Tag Number:	54	Readout:	Tue 23 Jun 1992 @ 08:04:42
Report Group:	2/4	Acquire Started:	Tue 23 Jun 1992 @ 08:04:09
Group Size:	4096		

Elapsed Live Time:	936.00 min.
Elapsed True Time:	936.19 min.
Dead Time:	0.02 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 936.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 4.3862 g

time = 936 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	10709	1738	46.6
	49.5	0.19	7.49	1.37
2	60.5	13923	2583	63.5
	66.0	0.25	5.80	1.30
	Isotope:	TH-234 @	63.3	
3	89.0	19536	4484	92.8
	96.5	0.35	5.14	1.35
4	182.9	14902	6637	186.0
	188.4	0.27	2.58	1.41
	Isotope:	U-235 @	185.7	
5M	230.9	20659	8775	241.9
	248.4	0.37	4.22	1.50
6	291.4	19717	15715	295.2
	298.9	0.35	1.47	1.52
	Isotope:	PB-214 @	295.2	
7	334.3	3691	227	337.9
	341.8	0.07	44.16	1.49
	Isotope:	AC-228 @	338.3	
8	347.8	29105	25639	351.8
	355.3	0.52	1.10	1.49
	Isotope:	PB-214 @	351.9	
9	578.7	1979	147	582.9
	586.2	0.04	49.93	1.29
	Isotope:	TL-208 @	583.2	
10	605.1	19076	17262	608.9
	612.6	0.34	1.32	1.76
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1422	246	910.4
	914.4	0.03	25.29	1.90
	Isotope:	AC-228 @	911.2	
12M	957.9	2469	372	963.6
	975.4	0.04	38.95	1.97

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		739	753	753	826
90	1122	1406	1273	927	679
95	733	737	761		

C = 6233
B = 4410
N = 1757

ROI # 2

Channel #		**** Data ****			
119					951
120	922	920	1019	1204	1736
125	1953	1470	1027	912	904
130	905				

C = 8409
B = 5514
N = 2895

ROI # 3

Channel #		**** Data ****			
176		968	1204	1383	1151
180	922	964	1647	2625	2420
185	1566	1035	831	873	717
190	640	590			

C = 9293
B = 4357
N = 4936

ROI # 4

Channel #		**** Data ****			
364					516
365	534	529	581	1053	2173
370	3255	2911	1619	740	523
375	468				

C = 11592
B = 3315
N = 8282

ROI # 5

Channel #		**** Data ****			
460	344	384	345	365	377
465	376	305	358	351	437
470	510	483	382	356	503
475	721	657	454	390	429
480	859	1906	2693	2138	1015
485	464	346	290	334	307
490	296	281	345	305	289
495	264				

ROI # 6

Channel #		**** Data ****			
581		263	225	234	304
585	317	826	2574	4867	5096
590	2859	860	317	258	226
595	238	253			

C = 17716
B = 2001
N = 15715

ROI # 7

Channel #		**** Data ****			
667			227	225	195

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
670	209	205	209	267	274
675	299	250	235	220	219
680	231	224	202		

C = 1954
B = 1732
N = 227

ROI # 8

Channel #		**** Data ****			
694					238
695	243	230	231	313	898
700	2822	6539	8470	5692	2111
705	527	262	215	139	175

C = 27372
B = 1733
N = 25639

ROI # 9

Channel #		**** Data ****			
1156		112	126	134	156
1160	120	88	115	149	195
1165	170	133	93	113	108
1170	74	93			

Delete 214 Pb peak

Background = 2X

C = 1063
~~B = 916~~ 776
N = 147

BWL 6/23/92

ROI # 10

Channel #		**** Data ****			
1209					137
1210	110	110	143	367	1225
1215	2966	4712	4752	2835	1024
1220	288	98	112	109	88

C = 18169
B = 907
N = 17262

ROI # 11

Channel #		**** Data ****			
1813				84	72
1815	63	93	82	105	132
1820	132	141	99	73	70
1825	67	78	59	72	

C = 857
B = 565
N = 292

ROI # 12

Channel #		**** Data ****			
1915	47	69	78	61	64
1920	55	67	71	78	72
1925	98	88	108	80	75
1930	47	59	56	62	81
1935	100	92	82	64	64
1940	55	58	64	80	66
1945	61	56	49	56	54
1950	52				

C = 1341
B = 1128
N = 213

MCA #1 - Canberra S100 - 14450795.MCA - NOP1-ECP-14.45/7.95

Tag Number:	52	Readout:	Mon 22 Jun 1992 @ 16:25:20
Report Group:	2/4	Acquire Started:	Mon 22 Jun 1992 @ 16:24:47
Group Size:	4096		

Elapsed Live Time:	124.00 min.
Elapsed True Time:	124.02 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 124.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

O C L

mass = 4.3926 g

time = 124 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	809	116	46.8
	49.5	0.11	30.59	1.05
2	60.5	915	128	63.5
	66.0	0.12	29.55	1.48
	Isotope:	TH-234 @	63.3	
3	89.0	1304	204	92.8
	96.5	0.18	29.21	1.42
4	182.9	953	319	186.0
	188.4	0.13	13.06	1.44
	Isotope:	U-235 @	185.7	
5M	230.9	1608	510	241.9
	248.4	0.22	21.35	1.55
6	291.4	1237	893	295.2
	298.9	0.17	6.50	1.64
	Isotope:	PB-214 @	295.2	
7	334.3	370	32	335.4
	341.8	0.05	99.18	0.46
8	347.8	1850	1562	351.8
	355.3	0.25	4.54	1.51
	Isotope:	PB-214 @	351.9	
9	578.7	178	50	582.6
	586.2	0.02	44.03	2.46
	Isotope:	TL-208 @	583.2	
10	605.1	1229	1063	608.8
	612.6	0.17	5.44	1.76
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	152	48	910.9
	914.4	0.02	42.38	2.41
	Isotope:	AC-228 @	911.2	
12M	957.9	244	6	969.8
	975.4	0.03	869.61	0.73
	Isotope:	RU-105 @	969.4	

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(52	65	56)	[71
90	79	108	87	73	68]
95	(38	71	41)		

C = 486
B = 323
N = 163

ROI # 2
Channel # **** Data ****

119					(69
120	70	61)	[76	79	108
125	110	93	62]	(51	65
130	71)				

C = 529
B = 387
N = 141

ROI # 3
Channel # **** Data ****

176		50	92	94	79
180	(50	63)	[109	154	158
185	100	72]	(48	54	80)
190	56	45			

C = 593
B = 295
N = 298

ROI # 4
Channel # **** Data ****

364					(46
365	39	55)	[54	73	121
370	170	166	90]	(48	38
375	53)				

C = 674
B = 279
N = 395

ROI # 5
Channel # **** Data ****

460	34	30	28	39	20
465	27	34	31	28	33
470	32	36	30	34	52
475	64	84	53	21	29
480	65	123	160	134	68
485	38	34	25	21	30
490	33	25	27	27	33
495	26				

ROI # 6
Channel # **** Data ****

581		(16	29	26	32)
585	[21	60	152	273	285
590	189	56	29]	(17	19
595	13	20)			

C = 1065
B = 172
N = 893

ROI # 7
Channel # **** Data ****

667			(12	17	33

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	20)	[20	19	26	25
675	31	30	30	20]	(17
680	24	22	24)		

C = 201
B = 169
N = 32

ROI # 8
Channel # **** Data ****

694					(16
695	23	20	23)	[35	62
700	170	408	503	342	135
705	51]	(18	13	15	16)

C = 1706
B = 144
N = 1562

ROI # 9
Channel # **** Data ****

1156		(9	5	14	8)
1160	[9	13	18	16	20
1165	13	17	8]	(9	5
1170	7	7)			

C = 114
B = 64
N = 50

ROI # 10
Channel # **** Data ****

1209					(6
1210	10	6	20)	[19	94
1215	199	302	272	168	71
1220	21]	(11	6	9	15)

C = 1146
B = 83
N = 1063

ROI # 11
Channel # **** Data ****

1813				(6	8
1815	8)	[7	15	7	12
1820	17	15	11	13]	(10
1825	5	9	6	3)	

C = 97
B = 55
N = 42

ROI # 12
Channel # **** Data ****

1915	(6	8	6	3	10
1920	4	7	3	8)	[5
1925	8	9	6	8	7
1930	1	9	5	6	11
1935	8	12	5	9	13
1940	7	7]	(0	4	7
1945	8	4	5	11	7
1950	7)				

C = 136
B = 108
N = 28

MCA #1 - Canberra S100 - 15600770.MCA - NOP1-ECP-15.6/7.7

Tag Number:	50	Readout:	Mon 22 Jun 1992 @ 14:19:07
Report Group:	2/4	Acquire Started:	Mon 22 Jun 1992 @ 14:18:07
Group Size:	4096		

Elapsed Live Time:	73.00 min.
Elapsed True Time:	73.02 min.
Dead Time:	0.02 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 73.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92
OCL

MASS = 4.4958 g
TIME = 73 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	985	124	46.6
	49.5	0.22	31.33	1.60
2	60.5	1368	317	63.5
	66.0	0.31	15.13	1.41
	Isotope: TH-234 @ 63.3			
3	89.0	2008	570	92.9
	96.5	0.46	12.97	1.44
4	182.9	1349	620	186.0
	188.4	0.31	8.35	1.41
	Isotope: U-235 @ 185.7			
5M	230.9	1852	727	242.0
	248.4	0.42	15.50	1.40
6	291.4	1731	1363	295.1
	298.9	0.40	5.04	1.58
	Isotope: PB-214 @ 295.2			
7	334.3	339	9	337.6
	341.8	0.08	337.55	1.03
	Isotope: AC-228 @ 338.3			
8	347.8	2633	2295	351.8
	355.3	0.60	3.69	1.51
	Isotope: PB-214 @ 351.9			
9	578.7	197	43	582.9
	586.2	0.04	53.86	2.62
	Isotope: TL-208 @ 583.2			
10	605.1	1734	1576	608.9
	612.6	0.40	4.36	1.61
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	123	37	910.5
	914.4	0.03	49.46	2.14
	Isotope: AC-228 @ 911.2			
12M	957.9	202	49	968.1
	975.4	0.05	81.41	0.81

REGION OF INTEREST DATA

ROI # 1

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(77	74	80)	[74	
90	108	112	105	86	70]	
95	(72	62	65)			

C = 532
B = 430
N = 125

ROI # 2
Channel #

**** Data ****

119					(90	
120	95	95)	[89	124	195	
125	202	146	97]	(81	69	
130	85)					

C = 803
B = 515
N = 338

ROI # 3
Channel #

**** Data ****

176		91	102	129	106	
180	(90	81)	[169	273	283	
185	173	120]	(100	79	82)	
190	67	63				

C = 1018
B = 432
N = 586

ROI # 4
Channel #

**** Data ****

364					(37	
365	56	57)	[51	99	190	
370	295	279	144]	(62	36	
375	43)					

C = 1058
B = 291
N = 767

ROI # 5
Channel #

**** Data ****

460	35	34	29	33	36
465	28	27	27	31	52
470	40	46	28	45	41
475	77	72	48	34	44
480	77	142	242	192	90
485	47	21	20	26	25
490	31	13	30	34	29
495	26				

ROI # 6
Channel #

**** Data ****

581	[	(19	31	26	27)	
585	34	69	242	408	443	
590	250	78	23]	(28	24	
595	14	15)				

C = 1547
B = 184
N = 1363

ROI # 7
Channel #

**** Data ****

(21 25 20

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	18)	[20	23	24 28
675	20	16	22	21] (25
680	18	14	24)	

C = 174
B = 145
N = 29

ROI # 8
Channel # **** Data ****

694				(17
695	24	20	34)	[35 84
700	237	615	742	512 178
705	61]	(23	17	23 11)

C = 1914
B = 169
N = 1745

ROI # 9
Channel # **** Data ****

1156		(11	15	14 14)
1160	[11	7	19	17 15
1165	20	20	11]	(9 6
1170	6	2)		

C = 120
B = 77
N = 43

ROI # 10
Channel # **** Data ****

1209				(11
1210	13	8	16)	[35 108
1215	263	473	388	254 102
1220	32]	(7	5	9 10)

C = 1655
B = 79
N = 1576

ROI # 11
Channel # **** Data ****

1813				(2 7
1815	9)	[5	4	12 11
1820	17	12	12	6] (6
1825	4	5	7	4)

C = 69
B = 44
N = 25

ROI # 12
Channel # **** Data ****

1915	(3	4	3	6 5
1920	2	4	6	6) [6
1925	6	12	12	5 6
1930	8	3	6	5 4
1935	10	14	3	4 4
1940	8	4]	(6	10 1
1945	4	4	8	2 4
1950	4)			

C = 120
B = 82
N = 38

MCA #1 - Canberra S100 - 15000760.MCA - NOP1-ECP-15.0/7.6

Tag Number:	48	Readout:	Mon 22 Jun 1992 @ 13:03:40
Report Group:	2/4	Acquire Started:	Mon 22 Jun 1992 @ 13:02:59
Group Size:	4096		

Elapsed Live Time:	208.00 min.
Elapsed True Time:	208.04 min.
Dead Time:	0.02 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 208.00 min. Area = 10000 cts., Ch. 1156 to 1171
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 4.6885 g

time = 208 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	2040	306	46.6
	49.5	0.16	18.47	1.24
2	60.5	2841	536	63.5
	66.0	0.23	12.66	1.35
	Isotope: TH-234 @ 63.3			
3	89.0	3930	1040	92.7
	96.5	0.31	9.95	1.35
4	182.9	2822	1277	186.0
	188.4	0.23	5.85	1.43
	Isotope: U-235 @ 185.7			
5M	230.9	4053	1641	241.9
	248.4	0.32	10.10	1.49
6	291.4	3510	2784	295.2
	298.9	0.28	3.51	1.57
	Isotope: PB-214 @ 295.2			
7	334.3	776	36	337.8
	341.8	0.06	127.68	0.73
	Isotope: AC-228 @ 338.3			
8	347.8	5346	4596	351.8
	355.3	0.43	2.62	1.53
	Isotope: PB-214 @ 351.9			
9	578.7	440	56	582.6
	586.2	0.04	61.80	1.56
	Isotope: TL-208 @ 583.2			
10	605.1	3493	3115	608.8
	612.6	0.28	3.13	1.82
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	303	77	910.2
	914.4	0.02	37.30	1.76
12M	957.9	504	140	968.6
	975.4	0.04	44.50	1.50
	Isotope: RU-105 @ 969.4			

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		(145	146	158)	[153
90	(228	274	214	168	120]
95	(146	149	139)		

C = 1157
B = 883
N = 274

ROI # 2

Channel #		**** Data ****			
119					(182
120	222	206)	[199	223	379
125	377	325	197]	(183	161
130	187)				

C = 1700
B = 1141
N = 559

ROI # 3

Channel #		**** Data ****			
176		190	228	244	228
180	(144	215)	[353	565	509
185	321	173]	(205	167	156)
190	124	108			

C = 1921
B = 887
N = 1034

ROI # 4

Channel #		**** Data ****			
364					(117
365	114	97)	[102	239	419
370	602	532	260]	(149	102
375	89)				

C = 2154
B = 668
N = 1486

ROI # 5

Channel #		**** Data ****			
460	78	70	64	81	58
465	55	74	77	66	89
470	102	89	83	82	122
475	132	144	102	67	73
480	171	343	509	410	207
485	78	80	60	60	67
490	60	57	61	63	51
495	68				

ROI # 6

Channel #		**** Data ****			
581		(58	41	54	43)
585	[66	137	458	877	876
590	509	165	59]	(49	42
595	31	45)			

C = 3147
B = 363
N = 2784

ROI # 7

Channel #		**** Data ****			
667			(54	40	40

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	41	50	50	55	76
675	46	54	47	28	34
680	47	52	40		

C = 406
B = 370
N = 36

ROI # 8
Channel # **** Data ****

694					53
695	57	54	53	66	185
700	556	1161	1487	1021	382
705	113	37	35	44	42

C = 4971
B = 375
N = 4596

ROI # 9
Channel # **** Data ****

1156		24	28	28	38
1160	22	17	33	40	48
1165	37	28	23	18	20
1170	19	17			

C = 248
B = 192
N = 56

ROI # 10
Channel # **** Data ****

1209					22
1210	21	20	32	81	240
1215	565	841	828	516	177
1220	56	23	13	31	27

C = 3309
B = 189
N = 3115

ROI # 11
Channel # **** Data ****

1813				15	14
1815	15	17	12	34	26
1820	25	27	16	26	24
1825	14	16	13	9	

C = 183
B = 110
N = 73

ROI # 12
Channel # **** Data ****

1915	9	15	12	9	12
1920	21	16	20	8	19
1925	17	17	13	21	10
1930	15	11	9	10	11
1935	26	24	17	22	12
1940	7	11	15	11	12
1945	20	16	11	10	6
1950	9				

C = 272
B = 232
N = 40

MCA #1 - Canberra S100 - 13950800.MCA - NOP1-ECP-13.95/8.0

Tag Number:	46	Readout:	Mon 22 Jun 1992 @ 09:30:56
Report Group:	2/4	Acquire Started:	Mon 22 Jun 1992 @ 09:29:26
Group Size:	4096		

Elapsed Live Time:	125.00 min.
Elapsed True Time:	125.05 min.
Dead Time:	0.04 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 125.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 4.8979 g

time = 125 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	2907	393	46.6
	49.5	0.39	17.05	1.47
2	60.5	4207	843	63.3
	66.0	0.56	9.84	1.11
	Isotope:	TH-234 @	63.3	
3	89.0	6104	1662	92.8
	96.5	0.81	7.76	1.35
4	182.9	4875	2442	186.0
	188.4	0.65	4.09	1.40
	Isotope:	U-235 @	185.7	
5M	230.9	5718	2627	241.9
	248.4	0.76	7.28	1.40
6	291.4	6004	5012	295.1
	298.9	0.80	2.55	1.52
	Isotope:	PB-214 @	295.2	
7	334.3	895	15	338.3
	341.8	0.12	329.08	0.47
	Isotope:	AC-228 @	338.3	
8	347.8	9252	8316	351.8
	355.3	1.23	1.91	1.53
	Isotope:	PB-214 @	351.9	
9	578.7	434	38	579.9
	586.2	0.06	90.46	0.87
10	605.1	6053	5613	608.8
	612.6	0.81	2.29	1.76
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	306	60	910.4
	914.4	0.04	48.11	0.82
	Isotope:	AC-228 @	911.2	
12M	957.9	554	91	967.9
	975.4	0.07	75.45	1.47

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86 (198 213 212) [225

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	296	348	329	258	168
95	220	220	220		

C = 1724
B = 1283
N = 441

ROI # 2
Channel # **** Data ****

119					264
120	264	278	308	340	519
125	650	455	317	273	282
130	257				

C = 2589
B = 1618
N = 971

ROI # 3
Channel # **** Data ****

176		263	373	399	362
180	273	269	505	892	836
185	538	300	270	279	211
190	169	165			

C = 3071
B = 1302
N = 1769

ROI # 4
Channel # **** Data ****

364					146
365	152	144	175	364	769
370	1147	973	507	221	135
375	142				

C = 3935
B = 940
N = 2995

ROI # 5
Channel # **** Data ****

460	112	92	73	96	96
465	69	79	92	96	128
470	126	134	95	89	109
475	134	144	116	105	101
480	257	560	903	679	310
485	122	83	70	96	75
490	82	81	75	70	69
495	100				

ROI # 6
Channel # **** Data ****

581		57	72	56	69
585	94	257	821	1562	1575
590	841	270	88	76	59
595	58	49			

C = 5508
B = 496
N = 5012

ROI # 7
Channel # **** Data ****

667			43	61	44
670	51	51	44	44	43

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

675	87	49	53
680	57	60	72

ROI # 8
Channel # **** Data ****

694			
695	69	49	79
700	901	2143	2672
705	163	54	54

ROI # 9
Channel # **** Data ****

1156		19	29
1160	28	22	29
1165	38	21	32
1170	22	19	

ROI # 10
Channel # **** Data ****

1209			
1210	30	33	41
1215	1024	1565	1463
1220	77	34	26

ROI # 11
Channel # **** Data ****

1813			
1815	13	21	18
1820	42	25	21
1825	8	17	16

ROI # 12
Channel # **** Data ****

1915	20	21	12
1920	12	17	13
1925	20	15	22
1930	15	21	18
1935	22	13	20
1940	15	17	16
1945	11	13	9
1950	9		

42		52
C = 455		
B = 440		
N = 15		
72		66
1892		269
54		672
C = 8784		43
B = 468		
N = 8316		
47		31
33		33
20		11
C = 236		
B = 198		
N = 38		
104		21
887		393
19		320
C = 5833		16
B = 220		
N = 5613		
10		18
27		25
17		8
20		
C = 196		
B = 110		
N = 86		
11		20
12		20
16		20
14		18
10		11
14		16
10		11
C = 307		
B = 247		
N = 60		

MCA #1 - Canberra S100 - 05200750.MCA - NOP1-ECP-5.2/7.5

Tag Number:	44	Readout:	Mon 22 Jun 1992 @ 07:23:18
Report Group:	2/4	Acquire Started:	Mon 22 Jun 1992 @ 07:21:57
Group Size:	4096		

Elapsed Live Time:	2230.00 min.
Elapsed True Time:	2230.21 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 2230.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/24/92

OC L

time = 2230 min.

mass = 4.7356 g

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	6425	635	46.8
	49.5	0.05	15.44	1.16
2	60.5	7647	1136	63.5
	66.0	0.06	9.63	1.50
	Isotope:	TH-234 @	63.3	
3	89.0	11829	2745	92.9
	96.5	0.09	6.54	1.60
4	182.9	6846	1665	185.9
	188.4	0.05	6.46	1.49
	Isotope:	U-235 @	185.7	
5M	230.9	16711	4494	238.5
	248.4	0.12	7.98	1.46
	Isotope:	PB-212 @	238.6	
6	291.4	5967	1653	295.1
	298.9	0.04	7.71	1.59
	Isotope:	PB-214 @	295.2	
7	334.3	4447	581	338.3
	341.8	0.03	18.94	1.44
	Isotope:	AC-228 @	338.3	
8	347.8	6413	2737	351.8
	355.3	0.05	4.83	1.59
	Isotope:	PB-214 @	351.9	
9	578.7	3160	1032	582.7
	586.2	0.02	8.99	1.67
	Isotope:	TL-208 @	583.2	
10	605.1	4165	2117	608.7
	612.6	0.03	5.03	1.57
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	2394	928	910.4
	914.4	0.02	8.70	1.83
	Isotope:	AC-228 @	911.2	
12M	957.9	3689	742	968.1
	975.4	0.03	23.40	1.95

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		514	490	496 534
90	596	761	695	513 479
95	425	493	429	

C = 3578
B = 2847
N = 731

ROI # 2
Channel # **** Data ****

119				573
120	553	527	555	665 894
125	930	817	546	502 533
130	552			

C = 4407
B = 3240
N = 1167

ROI # 3
Channel # **** Data ****

176		546	616	659 671
180	623	653	975	1367 1406
185	1044	644	575	561 526
190	490	473		

C = 5436
B = 2938
N = 2498

ROI # 4
Channel # **** Data ****

364				426
365	415	417	437	613 912
370	1024	843	548	400 389
375	422			

C = 4377
B = 2469
N = 1908

ROI # 5
Channel # **** Data ****

460	371	349	370	336	335
465	365	337	328	323	383
470	376	359	403	444	880
475	1473	1387	780	477	437
480	501	573	619	542	401
485	361	315	324	292	338
490	334	309	347	316	316
495	310				

ROI # 6
Channel # **** Data ****

581		307	270	242	262
585	278	338	535	779	765
590	555	324	236	278	254
595	240	304			

C = 3810
B = 2157
N = 1653

ROI # 7
Channel # **** Data ****

667			274	239	230

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	215	244	219	299	433
675	451	376	254	238	250
680	223	255	247		

C = 2514
B = 1933
N = 581

ROI # 8
Channel # **** Data ****

694					245
695	244	246	240	249	273
700	532	918	1074	844	433
705	252	236	192	217	218

C = 4575
B = 1838
N = 2737

ROI # 9
Channel # **** Data ****

1156		148	147	140	148
1160	128	125	225	328	430
1165	435	262	163	117	121
1170	127	116			

C = 1996
B = 1064
N = 932

ROI # 10
Channel # **** Data ****

1209					136
1210	121	163	128	160	261
1215	461	727	725	418	227
1220	162	115	123	115	123

C = 3911
B = 1024
N = 2117

ROI # 11
Channel # **** Data ****

1813				88	92
1815	120	88	148	189	280
1820	335	306	206	113	84
1825	103	72	90	80	

C = 1660
B = 729
N = 936

ROI # 12
Channel # **** Data ****

1915	86	74	100	74	88
1920	68	98	83	74	112
1925	110	119	135	111	106
1930	77	91	99	104	173
1935	219	209	182	115	112
1940	73	88	67	80	83
1945	80	78	76	89	76
1950	80				

C = 2235
B = 1454
N = 781

MCA #1 - Canberra S100 - 22702525.MCA - NOP1-ECP-22.7/25.25

Tag Number:	41	Readout:	Sat 20 Jun 1992 @ 18:11:16
Report Group:	2/4	Acquire Started:	Sat 20 Jun 1992 @ 18:09:56
Group Size:	4096		

Elapsed Live Time:	591.00 min.
Elapsed True Time:	591.06 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 591.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/24/92

OCL

mass = 4.1850g

time = 591 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	2003	248	46.6
	49.5	0.06	22.32	1.31
2	60.5	2432	434	63.3
	66.0	0.07	14.39	1.15
	Isotope:	TH-234 @	63.3	
3	89.0	3675	881	92.8
	96.5	0.10	11.35	1.37
4	182.9	2271	663	185.9
	188.4	0.06	9.53	1.55
	Isotope:	U-235 @	185.7	
5M	230.9	4922	1435	238.6
	248.4	0.14	13.43	1.58
	Isotope:	PB-212 @	238.6	
6	291.4	2215	997	295.1
	298.9	0.06	7.79	1.71
	Isotope:	PB-214 @	295.2	
7	334.3	1235	147	338.3
	341.8	0.03	39.45	1.49
	Isotope:	AC-228 @	338.3	
8	347.8	2694	1666	351.8
	355.3	0.08	5.14	1.55
	Isotope:	PB-214 @	351.9	
9	578.7	827	221	582.6
	586.2	0.02	21.47	1.81
	Isotope:	TL-208 @	583.2	
10	605.1	1752	1156	608.8
	612.6	0.05	5.97	1.73
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	607	207	910.4
	914.4	0.02	19.64	1.70
	Isotope:	AC-228 @	911.2	
12M	957.9	995	194	968.2
	975.4	0.03	46.57	1.96

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		147	159	142	144
90	192	240	238	163	140
95	142	158	138		

C = 1117
B = 886
N = 231

ROI # 2

Channel #		**** Data ****			
119					154
120	169	179	160	212	300
125	349	239	174	132	194
130	170				

C = 1434
B = 998
N = 436

ROI # 3

Channel #		**** Data ****			
176		172	177	242	215
180	188	176	308	478	435
185	300	202	191	173	148
190	142	130			

C = 1723
B = 1146
N = 577

ROI # 4

Channel #		**** Data ****			
364					130
365	129	121	129	182	319
370	357	341	173	145	129
375	116				

C = 1501
B = 770
N = 731

ROI # 5

Channel #		**** Data ****			
460	104	111	108	79	95
465	109	105	100	105	121
470	114	100	87	135	240
475	366	363	213	140	123
480	148	216	262	196	141
485	111	84	100	98	91
490	98	86	89	92	93
495	99				

ROI # 6

Channel #		**** Data ****			
581		102	67	72	84
585	77	113	262	383	322
590	256	119	74	70	65
595	83	66			

C = 1606
B = 609
N = 997

ROI # 7

Channel #		**** Data ****			
667			73	44	72

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	55	77	73	72	109
675	115	110	73	62	63
680	93	62	62		

C = 691
B = 544
N = 147

ROI # 8
Channel # **** Data ****

694					66
695	66	70	66	57	115
700	238	458	578	444	193
705	97	61	66	54	65

C = 2180
B = 514
N = 1666

ROI # 9
Channel # **** Data ****

1156		35	41	41	48
1160	30	35	65	93	103
1165	97	61	40	44	26
1170	31	37			

C = 524
B = 303
N = 221

ROI # 10
Channel # **** Data ****

1209					43
1210	36	46	42	62	127
1215	224	353	325	211	104
1220	48	36	44	27	24

C = 1454
B = 295
N = 1150

ROI # 11
Channel # **** Data ****

1813				25	28
1815	25	30	35	45	82
1820	79	73	45	22	26
1825	16	23	29	24	

C = 411
B = 196
N = 215

ROI # 12
Channel # **** Data ****

1915	15	17	30	22	28
1920	16	22	23	24	24
1925	30	43	24	27	33
1930	26	24	23	34	41
1935	45	57	49	36	29
1940	25	18	19	22	22
1945	23	30	26	28	16
1950	24				

C = 588
B = 407
N = 181

MCA #1 - Canberra S100 - 22502460.MCA - NOP1-ECP-22.5/24.6

Tag Number:	39	Readout:	Sat 20 Jun 1992 @ 08:17:55
Report Group:	2/4	Acquire Started:	Sat 20 Jun 1992 @ 08:16:48
Group Size:	4096		

Elapsed Live Time:	965.00 min.
Elapsed True Time:	965.10 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 965.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 4.5768g

time = 965 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3147	377	46.8
	49.5	0.05	18.39	1.19
2	60.5	3817	568	63.5
	66.0	0.07	13.60	1.37
	Isotope:	TH-234 @	63.3	
3	89.0	5781	1257	92.9
	96.5	0.10	9.98	1.53
4	182.9	3603	929	185.9
	188.4	0.06	8.46	1.55
	Isotope:	U-235 @	185.7	
5M	230.9	8076	2496	238.5
	248.4	0.14	9.81	1.47
	Isotope:	PB-212 @	238.6	
6	291.4	3523	1427	295.1
	298.9	0.06	6.86	1.65
	Isotope:	PB-214 @	295.2	
7	334.3	2054	290	338.3
	341.8	0.04	25.79	1.66
	Isotope:	AC-228 @	338.3	
8	347.8	4046	2336	351.8
	355.3	0.07	4.49	1.50
	Isotope:	PB-214 @	351.9	
9	578.7	1430	406	582.9
	586.2	0.02	15.37	1.90
	Isotope:	TL-208 @	583.2	
10	605.1	2695	1773	608.9
	612.6	0.05	4.83	1.66
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1007	345	910.4
	914.4	0.02	15.18	1.49
	Isotope:	AC-228 @	911.2	
12M	957.9	1688	176	968.1
	975.4	0.03	69.32	1.25

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86		226	253	214	265
90	281	385	381	253	229
95	209	198	253		

C = 1794
B = 1353
N = 441

ROI # 2

Channel # **** Data ****

119					265
120	266	251	288	344	426
125	486	395	312	249	258
130	277				

C = 2251
B = 1566
N = 685

ROI # 3

Channel # **** Data ****

176		269	362	348	328
180	277	314	473	652	710
185	493	336	264	250	258
190	226	221			

C = 2604
B = 1363
N = 1301

ROI # 4

Channel # **** Data ****

364					175
365	217	228	220	323	465
370	552	480	322	225	202
375	194				

C = 2362
B = 1291
N = 1121

ROI # 5

Channel # **** Data ****

460	174	173	171	159	174
465	163	177	161	169	176
470	184	175	189	242	403
475	685	631	377	191	212
480	236	326	391	335	197
485	166	146	154	120	167
490	144	145	124	141	142
495	156				

ROI # 6

Channel # **** Data ****

581		140	125	133	139
585	128	167	382	514	579
590	386	186	133	127	126
595	131	127			

C = 2475
B = 1018
N = 1427

ROI # 7

Channel # **** Data ****

667			120	115	89

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	109	100	129	144	174
675	193	185	123	124	120
680	120	103	106		

C = 1172
B = 882
N = 290

ROI # 8
Channel # **** Data ****

694					93
695	128	107	91	136	154
700	351	656	849	623	286
705	136	123	102	102	109

C = 3191
B = 855
N = 2336

ROI # 9
Channel # **** Data ****

1156		69	69	67	66
1160	58	75	99	146	183
1165	130	137	90	56	53
1170	69	63			

C = 918
B = 512
N = 406

ROI # 10
Channel # **** Data ****

1209					64
1210	57	49	64	101	174
1215	350	511	559	322	144
1220	73	71	54	55	47

C = 2234
B = 461
N = 1773

ROI # 11
Channel # **** Data ****

1813				37	40
1815	52	46	46	81	120
1820	151	107	70	58	43
1825	33	44	39	40	

C = 679
B = 328
N = 351

ROI # 12
Channel # **** Data ****

1915	48	47	39	39	46
1920	40	48	40	37	46
1925	37	55	59	50	40
1930	42	44	40	47	74
1935	115	89	69	43	51
1940	34	35	48	29	22
1945	39	33	48	24	39
1950	52				

C = 970
B = 718
N = 252

MCA #1 - Canberra S100 - 22802375.MCA - NOP1-ECP-22.8/23.75

Tag Number:	37	Readout:	Fri 19 Jun 1992 @ 16:09:38
Report Group:	2/4	Acquire Started:	Fri 19 Jun 1992 @ 16:08:57
Group Size:	4096		

Elapsed Live Time:	341.00 min.
Elapsed True Time:	341.04 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 341.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 4.7437 g

time = 341 mm

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1485	189	46.8
	49.5	0.07	25.26	1.17
2	60.5	1811	311	63.5
	66.0	0.09	17.28	1.36
	Isotope: TH-234 @ 63.3			
3	89.0	2790	696	92.8
	96.5	0.14	12.52	1.58
4	182.9	1762	576	185.9
	188.4	0.09	9.80	1.42
	Isotope: U-235 @ 185.7			
5M	230.9	3436	1029	241.9
	248.4	0.17	15.60	1.60
6	291.4	1900	1088	295.1
	298.9	0.09	6.61	1.40
	Isotope: PB-214 @ 295.2			
7	334.3	808	84	338.3
	341.8	0.04	55.84	1.67
	Isotope: AC-228 @ 338.3			
8	347.8	2490	1820	351.8
	355.3	0.12	4.52	1.43
	Isotope: PB-214 @ 351.9			
9	578.7	543	131	582.7
	586.2	0.03	29.35	1.63
	Isotope: TL-208 @ 583.2			
10	605.1	1741	1339	608.8
	612.6	0.09	5.14	1.65
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	392	144	910.4
	914.4	0.02	22.69	1.55
	Isotope: AC-228 @ 911.2			
12M	957.9	659	178	968.1
	975.4	0.03	40.12	1.96

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(120	93	106)	[125
90	130	186	169	136	100]
95	(106	109	105)		

C = 846
B = 639
N = 207

ROI # 2
Channel # **** Data ****

119					(120
120	125	123)	[128	154	223
125	241	193	128]	(116	125
130	135)				

C = 1067
B = 749
N = 323

ROI # 3
Channel # **** Data ****

176		112	171	179	152
180	(121	133)	[248	356	344
185	248	157]	(136	127	110)
190	105	91			

C = 1353
B = 627
N = 726

ROI # 4
Channel # **** Data ****

364					(90
365	87	73)	[108	158	244
370	314	255	148]	(104	81
375	100)				

C = 1227
B = 535
N = 692

ROI # 5
Channel # **** Data ****

460	79	55	74	68	64
465	73	67	75	83	81
470	67	95	65	72	132
475	224	215	133	72	82
480	103	204	245	234	110
485	72	53	45	63	70
490	53	49	59	61	76
495	63				

ROI # 6
Channel # **** Data ****

581		(50	52	51	55)
585	[71	92	200	396	384
590	212	92	47]	(55	37
595	41	65)			

C = 1494
B = 406
N = 1088

ROI # 7
Channel # **** Data ****

667			(40	40	44

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
670	49	53	41	56	70
675	72	72	45	37	47
680	42	52	46		

C = 446
B = 362
N = 84

ROI # 8

Channel #		**** Data ****			
694					44
695	37	53	47	53	92
700	200	465	647	455	180
705	63	42	34	38	40

C = 2155
B = 335
N = 1820

ROI # 9

Channel #		**** Data ****			
1156		27	28	31	24
1160	21	16	37	66	63
1165	72	36	26	13	26
1170	26	31			

C = 337
B = 206
N = 131

ROI # 10

Channel #		**** Data ****			
1209					27
1210	23	30	22	48	106
1215	267	401	383	208	100
1220	27	28	23	26	22

C = 1540
B = 201
N = 1339

ROI # 11

Channel #		**** Data ****			
1813				18	12
1815	13	20	23	28	49
1820	57	51	20	21	19
1825	13	25	11	12	

C = 269
B = 123
N = 146

ROI # 12

Channel #		**** Data ****			
1915	17	11	14	16	25
1920	15	14	26	13	28
1925	16	22	27	19	17
1930	19	19	20	23	24
1935	29	34	23	17	14
1940	14	7	23	16	19
1945	17	12	8	11	20
1950	10				

C = 330
B = 287
N = 43

MCA #1 - Canberra S100 - 22702300.MCA - NOP1-ECP-22.7/23.0

Tag Number:	35	Readout:	Fri 19 Jun 1992 @ 10:26:41
Report Group:	2/4	Acquire Started:	Fri 19 Jun 1992 @ 10:25:38
Group Size:	4096		

Elapsed Live Time:	156.00 min.
Elapsed True Time:	156.04 min.
Dead Time:	0.03 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 156.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/24/92

OCL

mass = 5.1163 g

time = 156 min

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	2627	292	46.6
	49.5	0.28	21.62	1.53
2	60.5	4016	1174	63.5
	66.0	0.43	7.16	1.38
	Isotope:	TH-234 @	63.3	
3	89.0	6281	2147	92.7
	96.5	0.67	6.09	1.59
4	182.9	3988	1975	186.0
	188.4	0.43	4.56	1.35
	Isotope:	U-235 @	185.7	
5M	230.9	4854	2240	242.0
	248.4	0.52	7.86	1.50
6	291.4	4677	3837	295.0
	298.9	0.50	2.94	1.48
	Isotope:	PB-214 @	295.2	
7	334.3	794	48	338.1
	341.8	0.08	96.86	0.94
	Isotope:	AC-228 @	338.3	
8	347.8	6987	6223	351.8
	355.3	0.75	2.22	1.48
	Isotope:	PB-214 @	351.9	
9	578.7	438	60	582.9
	586.2	0.05	57.55	1.28
	Isotope:	TL-208 @	583.2	
10	605.1	4491	4145	608.8
	612.6	0.48	2.67	1.78
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	283	71	910.4
	914.4	0.03	39.09	1.70
	Isotope:	AC-228 @	911.2	
12M	957.9	500	131	963.2
	975.4	0.05	47.50	0.95

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(185	184	201) [232
90	253	299	288	230 174]
95	(184	197	200)	

C = 1476
B = 1151
N = 325

ROI # 2
Channel #

**** Data ****

119				(238
120	232	237)	[250	376 573
125	675	497	247]	(236 229
130	226)			

C = 2618
B = 1398
N = 1230

ROI # 3
Channel #

**** Data ****

176		267	321	381 307
180	(228	309]	[651	941 959
185	578	290]	(258	265 192)
190	185	149		

C = 3419
B = 1252
N = 2107

ROI # 4
Channel #

**** Data ****

364				(147
365	156	106)	[174	308 641
370	945	752	361]	(157 132
375	109)			

C = 3181
B = 807
N = 2374

ROI # 5
Channel #

**** Data ****

460	85	74	86	77 79
465	77	99	77	98 120
470	143	119	100	96 119
475	151	160	116	74 89
480	209	422	643	544 241
485	101	78	58	61 76
490	63	60	61	70 67
495	61			

ROI # 6
Channel #

**** Data ****

581		(62	52	64 45)
585	[70	190	659	1193 1240
590	602	229	74]	(52 46
595	57	42)		

C = 4257
B = 420
N = 3837

ROI # 7
Channel #

**** Data ****

667			(52	48 49

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
670	41	42	45	59	59
675	75	57	43	41	45
680	48	41	49		

C = 421
B = 373
N = 48

ROI # 8

Channel #		**** Data ****			
694					41
695	57	58	59	84	236
700	700	1533	2060	1399	491
705	102	55	41	34	37

C = 6605
B = 382
N = 6223

ROI # 9

Channel #		**** Data ****			
1156		25	27	35	25
1160	23	19	23	33	40
1165	48	28	35	23	17
1170	20	17			

C = 249
B = 189
N = 60

ROI # 10

Channel #		**** Data ****			
1209					32
1210	21	24	20	98	296
1215	746	1124	1113	643	245
1220	53	24	18	9	25

C = 4318
B = 173
N = 4145

ROI # 11

Channel #		**** Data ****			
1813				17	8
1815	14	10	16	16	30
1820	29	30	20	17	19
1825	15	10	14	18	

C = 168
B = 115
N = 53

ROI # 12

Channel #		**** Data ****			
1915	11	7	16	9	15
1920	14	12	10	15	14
1925	17	30	16	13	21
1930	9	10	11	10	20
1935	23	15	25	17	15
1940	16	14	9	9	17
1945	8	13	10	10	10
1950	9				

C = 296
B = 204
N = 92

MCA #1 - Canberra S100 - 22602240.MCA - NOP1-ECP-22.6/22.4

Tag Number:	33	Readout:	Fri 19 Jun 1992 @ 07:48:17
Report Group:	2/4	Acquire Started:	Fri 19 Jun 1992 @ 07:47:27
Group Size:	4096		

Elapsed Live Time:	888.00 min.
Elapsed True Time:	888.09 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 888.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 4.2954 g

time = 888 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3166	450	46.6
	49.5	0.06	15.61	1.38
2	60.5	3620	581	63.5
	66.0	0.07	13.02	1.52
	Isotope:	TH-234 @	63.3	
3	89.0	5580	1322	92.9
	96.5	0.10	9.32	1.35
4	182.9	3439	916	185.9
	188.4	0.06	8.41	1.48
	Isotope:	U-235 @	185.7	
5M	230.9	7623	2529	238.5
	248.4	0.14	9.31	1.52
	Isotope:	PB-212 @	238.6	
6	291.4	3512	1566	295.2
	298.9	0.07	6.24	1.55
	Isotope:	PB-214 @	295.2	
7	334.3	1904	242	338.1
	341.8	0.04	29.75	1.74
	Isotope:	AC-228 @	338.3	
8	347.8	4241	2737	351.8
	355.3	0.08	3.93	1.58
	Isotope:	PB-214 @	351.9	
9	578.7	1412	428	582.7
	586.2	0.03	14.49	1.54
	Isotope:	TL-208 @	583.2	
10	605.1	2895	1935	608.9
	612.6	0.05	4.59	1.68
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	928	346	910.6
	914.4	0.02	14.53	1.80
	Isotope:	AC-228 @	911.2	
12M	957.9	1583	337	968.3
	975.4	0.03	33.61	1.56

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(232	227	239)	[227
90	333	397	350	275	225]
95	(224	228	209)		

C = 1807
B = 1359
N = 448

ROI # 2
Channel # **** Data ****

119					(230
120	243	239)	[269	320	417
125	449	408	264]	(263	267
130	251)				

C = 2127
B = 1493
N = 634

ROI # 3
Channel # **** Data ****

176		250)	294	343	335
180	(272	307)	[453	678	667
185	481	343]	(250	252	233)
190	223	199			

C = 2622
B = 1314
N = 1308

ROI # 4
Channel # **** Data ****

364					(212
365	187	192)	[216	311	452
370	551	443	311]	(218	176
375	170)				

C = 2284
B = 1150
N = 1134

ROI # 5
Channel # **** Data ****

460	153	137	167	149	169
465	151	172	172	169	162
470	145	171	139	210	362
475	592	572	342	182	211
480	225	311	398	335	236
485	175	163	131	133	163
490	158	142	145	143	123
495	115				

ROI # 6
Channel # **** Data ****

581		(141	106	146	136)
585	[109	168	367	602	624
590	393	153	123]	(116	119
595	112	97)			

C = 2539
B = 973
N = 1566

ROI # 7
Channel # **** Data ****

667			/104	118	95

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
670	92	111	106	143	177
675	164	159	111	102	114
680	106	106	96		

C = 1073
B = 831
N = 242

ROI # 8

Channel #		**** Data ****			
694					92
695	107	105	94	111	161
700	351	756	914	743	296
705	157	103	91	73	87

C = 3489
B = 752
N = 2737

ROI # 9

Channel #		**** Data ****			
1156		63	75	64	64
1160	65	55	89	137	192
1165	191	111	80	67	47
1170	58	54			

C = 920
B = 492
N = 428

ROI # 10

Channel #		**** Data ****			
1209					64
1210	63	65	66	78	163
1215	381	592	611	366	150
1220	74	71	49	50	62

C = 2415
B = 435
N = 1980

ROI # 11

Channel #		**** Data ****			
1813				39	42
1815	40	30	48	64	96
1820	115	127	86	52	49
1825	36	35	35	34	

C = 618
B = 310
N = 308

ROI # 12

Channel #		**** Data ****			
1915	46	32	40	43	37
1920	43	47	34	40	50
1925	40	44	56	53	39
1930	42	36	31	48	62
1935	86	101	70	41	39
1940	34	37	38	36	38
1945	43	41	23	33	27
1950	33				

C = 909
B = 674
N = 235

BWL 6/23/92

135

MCA #1 - Canberra S100 - 13550775.MCA - NOP1-ECP-13~~.55~~/7.75

Tag Number:	31	Readout:	Thu 18 Jun 1992 @ 16:57:47
Report Group:	2/4	Acquire Started:	Thu 18 Jun 1992 @ 16:57:12
Group Size:	4096		

Elapsed Live Time:	142.00 min.
Elapsed True Time:	142.02 min.
Dead Time:	0.02 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 142.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 4.4529 g

time = 142 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1055	175	46.8
	49.5	0.12	23.44	1.22
2	60.5	1379	223	63.3
	66.0	0.16	20.98	0.98
	Isotope:	TH-234 @	63.3	
3	89.0	1920	434	92.8
	96.5	0.23	16.66	1.29
4	182.9	1400	520	186.0
	188.4	0.16	9.84	1.49
	Isotope:	U-235 @	185.7	
5M	230.9	2147	757	241.9
	248.4	0.25	16.36	1.59
6	291.4	1714	1236	295.2
	298.9	0.20	5.53	1.46
	Isotope:	PB-214 @	295.2	
7	334.3	425	23	338.6
	341.8	0.05	147.89	0.78
	Isotope:	AC-228 @	338.3	
8	347.8	2591	2193	351.8
	355.3	0.30	3.83	1.39
	Isotope:	PB-214 @	351.9	
9	578.7	270	48	582.7
	586.2	0.03	56.48	1.30
	Isotope:	TL-208 @	583.2	
10	605.1	1684	1456	608.9
	612.6	0.20	4.65	1.79
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	173	39	910.8
	914.4	0.02	55.65	2.10
	Isotope:	AC-228 @	911.2	
12M	957.9	299	43	969.2
	975.4	0.04	119.05	0.79
	Isotope:	RU-105 @	969.4	

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(79	86	75)	[88
90	(97	145	134	92	72]
95	(60	55	72)		

C = 628
B = 427
N = 201

ROI # 2
Channel #

**** Data ****

119					(88
120	106	108)	[95	123	152
125	203	130	115]	(92	80
130	87)				

C = 818
B = 561
N = 257

ROI # 3
Channel #

**** Data ****

176		96)	134	131	106
180	(74	79)	[154	251	277
185	147	115]	(80	68	75)
190	66	67			

C = 949
B = 376
N = 568

ROI # 4
Channel #

**** Data ****

364					(58
365	62	62)	[72	104	210
370	269	230	145]	(79	59
375	50)				

C = 1030
B = 370
N = 660

ROI # 5
Channel #

**** Data ****

460	44	43	46	33	36
465	44	34	30	36	53
470	44	40	42	51	51
475	109	92	50	50	39
480	78	181	225	202	96
485	41	38	37	35	28
490	39	37	36	38	34
495	35				

ROI # 6
Channel #

**** Data ****

581		(34	30	25	34)
585	[33	70	217	382	432
590	230	82)	29]	(36	22
595	26	32)			

C = 1475
B = 239
N = 1236

ROI # 7
Channel #

**** Data ****

667			(29	30	33

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	22	23	29	21	25
675	35	43	18	30	19
680	25	25	28		

C = 224
B = 201
N = 23

ROI # 8
Channel # **** Data ****

694					23
695	23	27	28	32	79
700	261	533	769	485	176
705	57	30	19	23	26

C = 2392
B = 199
N = 2193

ROI # 9
Channel # **** Data ****

1156		13	12	16	15
1160	11	14	11	30	35
1165	25	19	14	15	14
1170	14	12			

C = 159
B = 111
N = 148

ROI # 10
Channel # **** Data ****

1209					14
1210	9	25	20	42	93
1215	249	411	400	280	81
1220	14	12	10	11	13

C = 1570
B = 114
N = 1456

ROI # 11
Channel # **** Data ****

1813				9	9
1815	12	15	10	10	15
1820	19	18	13	13	8
1825	3	7	9	3	

C = 113
B = 60
N = 53

ROI # 12
Channel # **** Data ****

1915	11	7	8	6	6
1920	6	9	9	5	11
1925	7	9	12	7	9
1930	13	5	6	12	15
1935	14	4	15	10	10
1940	5	10	6	7	13
1945	3	4	6	5	8
1950	6				

C = 174
B = 125
N = 49

MCA #1 - Canberra S100 - 12950790.MCA - NOP1-ECP-12.95/7.9

Tag Number:	29	Readout:	Thu 18 Jun 1992 @ 14:33:09
Report Group:	2/4	Acquire Started:	Thu 18 Jun 1992 @ 14:32:27
Group Size:	4096		

Elapsed Live Time:	191.00 min.
Elapsed True Time:	191.17 min.
Dead Time:	0.09 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 191.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 4.2500g

time = 191 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	12115	1396	46.8
	49.5	1.06	9.71	1.14
2	60.5	18527	4597	63.5
	66.0	1.62	3.86	1.40
	Isotope:	TH-234 @	63.3	
3	89.0	26966	8356	92.7
	96.5	2.35	3.24	1.39
4	182.9	18191	9010	186.0
	188.4	1.59	2.14	1.42
	Isotope:	U-235 @	185.7	
5M	230.9	21831	10707	241.9
	248.4	1.90	3.43	1.44
6	291.4	24895	21203	295.1
	298.9	2.17	1.23	1.49
	Isotope:	PB-214 @	295.2	
7	334.3	3192	54	338.1
	341.8	0.28	172.63	0.97
	Isotope:	AC-228 @	338.3	
8	347.8	38166	34938	351.8
	355.3	3.33	0.92	1.53
	Isotope:	PB-214 @	351.9	
9	578.7	1521	-53	579.9
	586.2	0.13	121.42	1.24
10	605.1	25406	23966	608.8
	612.6	2.22	1.10	1.70
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	917	89	910.4
	914.4	0.08	56.14	1.35
	Isotope:	AC-228 @	911.2	
12M	957.9	1781	229	963.1
	975.4	0.16	54.34	1.95

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86 (889 847 905) [845

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	1178	1493	1322	976	875
95	854	899	932		

C = 6789
B = 5326
N = 1463

ROI # 2
Channel # **** Data ****

119					1161
120	1203	1149	1232	1672	2666
125	2832	2070	1294	1125	1065
130	1058				

C = 11766
B = 6761
N = 5005

ROI # 3
Channel # **** Data ****

176		1140	1530	1823	1404
180	1066	1251	2573	4179	3858
185	2340	1297	1097	1142	864
190	750	652			

C = 14247
B = 5420
N = 8827

ROI # 4
Channel # **** Data ****

364					577
365	579	587	671	1402	2940
370	4203	3525	1834	757	586
375	530				

C = 14575
B = 3616
N = 10959

ROI # 5
Channel # **** Data ****

460	361	360	338	315	326
465	310	324	370	363	511
470	579	508	418	341	339
475	392	376	370	306	420
480	973	2423	3629	2734	1218
485	469	269	288	251	256
490	294	302	284	278	266
495	270				

ROI # 6
Channel # **** Data ****

581		238	232	253	269
585	352	1030	3474	6568	6762
590	3452	1074	337	212	191
595	221	230			

C = 23049
B = 1846
N = 21203

ROI # 7
Channel # **** Data ****

667			199	198	197
670	202	181	177	219	225

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
675	253	197	199	172	193
680	206	178	196		

C = 1822
B = 1569
N = 253

ROI # 8

Channel #		**** Data ****			
694					211
695	219	212	278	361	1139
700	3952	9071	11110	7524	2782
705	613	212	154	163	165

C = 36552
B = 1614
N = 34938

ROI # 9

Channel #		**** Data ****			
1156		107	122	148	134
1160	98	79	80	96	102
1165	114	82	83	71	65
1170	69	71			

6/25/92 OCL

C = ~~734~~ 1468
B = ~~787~~ 787
N =

ROI # 10

Channel #		**** Data ****			
1209					80
1210	91	87	177	500	1657
1215	4161	6751	6348	3662	1304
1220	303	105	66	52	62

C = 246866
B = 720
N = 23966

ROI # 11

Channel #		**** Data ****			
1813				46	59
1815	48	72	61	59	66
1820	76	71	50	54	66
1825	42	52	47	48	

C = 509
B = 408
N = 101

ROI # 12

Channel #		**** Data ****			
1915	52	47	43	29	48
1920	43	47	40	46	77
1925	65	82	75	52	51
1930	60	39	36	54	53
1935	65	52	51	44	48
1940	42	51	45	33	53
1945	36	48	45	42	43
1950	44				

C = 997
B = 784
N = 213

MCA #1 - Canberra S100 - 09000750.MCA - NOP1-ECP-9.0/7.5

Tag Number:	27	Readout:	Thu 18 Jun 1992 @ 11:18:45
Report Group:	2/4	Acquire Started:	Wed 17 Jun 1992 @ 08:28:39
Group Size:	4096		

Elapsed Live Time:	1440.00 min.
Elapsed True Time:	1440.15 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1440.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/23/92

OCL

mass = 4.3514 g

time = 1440 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	4992	546	46.6
	49.5	0.06	15.90	1.33
2	60.5	6255	1083	63.5
	66.0	0.07	9.23	1.36
	Isotope: TH-234 @ 63.3			
3	89.0	9385	2317	92.9
	96.5	0.11	6.90	1.07
4	182.9	5795	1789	185.9
	188.4	0.07	5.68	1.53
	Isotope: U-235 @ 185.7			
5M	230.9	11917	3331	238.5
	248.4	0.14	9.05	1.49
	Isotope: PB-212 @ 238.6			
6	291.4	5499	2427	295.2
	298.9	0.06	5.04	1.50
	Isotope: PB-214 @ 295.2			
7	334.3	3089	419	338.3
	341.8	0.04	21.89	1.40
	Isotope: AC-228 @ 338.3			
8	347.8	6578	4130	351.8
	355.3	0.08	3.24	1.50
	Isotope: PB-214 @ 351.9			
9	578.7	2126	610	582.8
	586.2	0.02	12.47	1.85
	Isotope: TL-208 @ 583.2			
10	605.1	4564	3074	608.9
	612.6	0.05	3.63	1.73
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	1489	521	910.4
	914.4	0.02	12.22	1.75
	Isotope: AC-228 @ 911.2			
12M	957.9	2462	509	968.1
	975.4	0.03	27.78	2.09

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		360	354	408	371
90	500	583	548	397	367
95	348	356	400		

C = 2766
B = 2226
N = 540

ROI # 2

Channel #		**** Data ****			
119					417
120	437	404	472	547	751
125	841	668	446	421	453
130	398				

C = 3725
B = 2530
N = 1195

ROI # 3

Channel #		**** Data ****			
176		436	499	568	526
180	416	534	759	1191	1180
185	816	515	440	431	377
190	369	328			

C = 4461
B = 2198
N = 2263

ROI # 4

Channel #		**** Data ****			
364					306
365	295	307	329	518	814
370	966	826	506	318	312
375	298				

C = 3959
B = 1836
N = 2123

ROI # 5

Channel #		**** Data ****			
460	224	270	258	263	218
465	240	249	248	249	257
470	271	264	228	312	571
475	924	824	566	300	318
480	366	479	624	512	326
485	245	230	229	237	247
490	267	208	215	245	214
495	219				

ROI # 6

Channel #		**** Data ****			
581		195	203	182	198
585	208	285	540	924	956
590	601	276	173	184	176
595	210	188			

C = 3963
B = 1536
N = 2427

ROI # 7

Channel #		**** Data ****			
667			161	140	185

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	154	182	165	201
675	305	252	183	175
680	173	169	168	

C = 1754
B = 1335
N = 419

ROI # 8
Channel # **** Data ****

694				136
695	156	163	153	148
700	544	1189	1449	1016
705	269	165	156	144

				249
				490
				151

C = 5354
B = 1224
N = 4130

ROI # 9
Channel # **** Data ****

1156		103	95	103
1160	102	93	153	214
1165	250	180	118	100
1170	72	87		

		102
		258
		96

C = 1368
B = 758
N = 610

ROI # 10
Channel # **** Data ****

1209				80
1210	100	107	101	134
1215	620	888	948	566
1220	127	109	81	80

	292
	244
	87

C = 3819
B = 745
N = 3074

ROI # 11
Channel # **** Data ****

1813				55
1815	64	67	82	116
1820	204	191	126	68
1825	62	63	55	61

	57
	156
	62

C = 1010
B = 479
N = 531

ROI # 12
Channel # **** Data ****

1915	61	60	55	52
1920	46	66	56	66
1925	81	80	86	74
1930	52	56	67	67
1935	124	134	105	85
1940	45	57	54	62
1945	57	75	46	53
1950	57			

	59
	64
	59
	127
	60
	64
	50

C = 1423
B = 1039
N = 384

MCA #1 - Canberra S100 - 11550780.MCA - NOP1-ECP-11.55/7.8

Tag Number:	26	Readout:	Wed 17 Jun 1992 @ 08:25:47
Report Group:	2/4	Acquire Started:	Wed 17 Jun 1992 @ 08:25:15
Group Size:	4096		

Elapsed Live Time:	1112.00 min.
Elapsed True Time:	1112.13 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1112.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/17/92

O.C.L.

mass = 6.6537 grams

time = 1112 minutes

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	5124	696	46.8
	49.5	0.08	12.79	1.12
2	60.5	5726	644	63.3
	66.0	0.09	14.46	1.64
	Isotope: TH-234 @ 63.3			
3	89.0	8161	1207	92.8
	96.5	0.12	12.35	1.37
4	182.9	5792	1694	186.0
	188.4	0.09	5.96	1.47
	Isotope: U-235 @ 185.7			
5M	230.9	11792	4304	241.9
	248.4	0.18	6.70	1.54
6	291.4	7105	4595	295.2
	298.9	0.11	3.03	1.52
	Isotope: PB-214 @ 295.2			
7	334.3	2620	344	338.3
	341.8	0.04	24.55	1.16
	Isotope: AC-228 @ 338.3			
8	347.8	9508	7388	351.8
	355.3	0.14	2.18	1.48
	Isotope: PB-214 @ 351.9			
9	578.7	1823	491	582.7
	586.2	0.03	14.35	1.49
	Isotope: TL-208 @ 583.2			
10	605.1	6522	5180	608.9
	612.6	0.10	2.57	1.78
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	1298	446	910.4
	914.4	0.02	13.33	1.55
	Isotope: AC-228 @ 911.2			
12M	957.9	2088	284	968.1
	975.4	0.03	47.28	1.77

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		371	390	387	412
90	489	670	582	431	391
95	334	333	334		

ROI # 2
Channel # **** Data ****

119					400
120	437	412	451	534	590
125	644	570	445	395	450
130	398				

ROI # 3
Channel # **** Data ****

176		423	536	595	497
180	425	436	618	867	828
185	588	494	428	410	347
190	334	335			

ROI # 4
Channel # **** Data ****

364					336
365	280	294	302	454	743
370	972	891	566	351	309
375	292				

ROI # 5
Channel # **** Data ****

460	218	222	244	206	217
465	211	217	253	219	233
470	255	247	230	290	468
475	759	742	478	301	283
480	405	690	923	714	434
485	255	215	223	202	205
490	226	233	190	203	197
495	184				

ROI # 6
Channel # **** Data ****

581		172	147	166	147
585	185	347	799	1455	1536
590	909	404	215	163	146
595	146	168			

ROI # 7
Channel # **** Data ****

667			128	129	142

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	156	152	165	186	250
675	226	199	162	142	136
680	140	138	149		

ROI # 8
Channel # **** Data ****

694					148
695	125	145	138	165	300
700	833	1889	2515	1784	719
705	243	123	138	114	129

ROI # 9
Channel # **** Data ****

1156		91	93	100	86
1160	79	84	114	178	224
1165	247	135	96	77	85
1170	62	72			

ROI # 10
Channel # **** Data ****

1209					75
1210	92	97	108	151	382
1215	940	1480	1450	940	364
1220	144	74	91	73	61

ROI # 11
Channel # **** Data ****

1813				57	55
1815	60	55	70	106	139
1820	192	137	110	67	51
1825	52	61	42	44	

ROI # 12
Channel # **** Data ****

1915	51	48	61	42	56
1920	49	64	47	43	44
1925	62	65	59	63	67
1930	64	38	42	66	96
1935	101	117	82	70	59
1940	37	52	50	50	43
1945	48	53	60	48	46
1950	45				

MCA #1 - Canberra S100 - 09700735.MCA - NOP1-ECP-9.7/7.35

Tag Number:	25	Readout:	Tue 16 Jun 1992 @ 13:50:40
Report Group:	2/4	Acquire Started:	Mon 15 Jun 1992 @ 12:30:28
Group Size:	4096		

Elapsed Live Time:	1440.00 min.
Elapsed True Time:	1440.14 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1440.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

BWL 6/16/92
time = 1440 minutes
mass = 4.9120 grams

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	4059	387	46.8
	49.5	0.05	20.10	0.91
2	60.5	4796	694	63.5
	66.0	0.06	12.46	1.32
	Isotope: TH-234 @ 63.3			
3	89.0	7440	1476	92.9
	96.5	0.09	9.64	1.54
4	182.9	4338	1002	185.9
	188.4	0.05	8.51	1.34
	Isotope: U-235 @ 185.7			
5M	230.9	11064	3095	238.5
	248.4	0.13	9.39	1.55
	Isotope: PB-212 @ 238.6			
6	291.4	3796	990	295.1
	298.9	0.04	10.27	1.36
	Isotope: PB-214 @ 295.2			
7	334.3	2991	385	338.1
	341.8	0.03	23.44	1.79
	Isotope: AC-228 @ 338.3			
8	347.8	4029	1791	351.8
	355.3	0.05	5.85	1.43
	Isotope: PB-214 @ 351.9			
9	578.7	2129	695	582.8
	586.2	0.02	10.95	1.79
	Isotope: TL-208 @ 583.2			
10	605.1	2684	1296	608.9
	612.6	0.03	6.60	1.79
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	1544	526	910.5
	914.4	0.02	12.33	1.92
	Isotope: AC-228 @ 911.2			
12M	957.9	2349	392	968.1
	975.4	0.03	35.87	1.96

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		298	287	326
90	364	496	428	323
95	294	322	273	

ROI # 2
Channel # **** Data ****

119				
120	381	338	347	367
125	619	536	362	343
130	341			

ROI # 3
Channel # **** Data ****

176		377	414	449
180	346	399	589	838
185	627	440	349	344
190	334	318		

ROI # 4
Channel # **** Data ****

364				
365	278	245	289	384
370	656	487	341	284
375	274			

ROI # 5
Channel # **** Data ****

460	218	229	233	251	248
465	232	246	231	250	213
470	239	229	217	297	646
475	943	911	518	299	277
480	323	406	421	350	270
485	217	194	215	224	242
490	205	230	211	209	230
495	190				

ROI # 6
Channel # **** Data ****

581		182	163	196	161
585	176	215	297	504	455
590	337	210	199	168	185
595	177	171			

ROI # 7
Channel # **** Data ****

667			171	180	137

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

667			171	180	137
670	164	159	150	237	263
675	279	248	178	174	166
680	161	173	151		

ROI # 8
Channel # **** Data ****

694					158
695	122	153	136	158	192
700	309	581	727	517	255
705	171	146	148	127	129

ROI # 9
Channel # **** Data ****

1156		75	107	90	95
1160	85	115	148	234	280
1165	274	184	92	92	86
1170	86	86			

ROI # 10
Channel # **** Data ****

1209					84
1210	90	95	105	97	152
1215	311	444	416	316	143
1220	111	98	63	81	78

ROI # 11
Channel # **** Data ****

1813				71	65
1815	58	73	81	116	187
1820	193	194	127	69	68
1825	63	70	49	69	

ROI # 12
Channel # **** Data ****

1915	64	46	52	56	60
1920	54	60	73	54	49
1925	52	78	82	81	65
1930	62	66	72	78	116
1935	120	133	97	74	51
1940	51	54	43	49	47
1945	41	52	69	55	51
1950	42				

MCA #1 - Canberra S100 - 09700735.MCA - NOP1-ECP-9.7/7.35

Tag Number:	25	Readout:	Tue 16 Jun 1992 @ 13:59:41
Report Group:	3/4	Acquire Started:	Mon 15 Jun 1992 @ 12:30:28
Group Size:	4096		

Elapsed Live Time:	86400.00 sec.
Elapsed True Time:	86408.25 sec.
Dead Time:	0.01 %

OCL 6/16/92

time = 1440 min

mass - 4.9120 g

MCA #1 - Canberra S100 - 12500775.MCA - NOP1-ECP-12.5/7.75

Tag Number:	24	Readout:	Mon 15 Jun 1992 @ 12:27:54
Report Group:	2/4	Acquire Started:	Mon 15 Jun 1992 @ 12:26:37
Group Size:	4096		

Elapsed Live Time:	212.00 min.
Elapsed True Time:	212.14 min.
Dead Time:	0.07 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 212.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/18/92

OCL

MASS = 4.2264 grams

TIME = 212 MINUTES

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	10501	1407	46.8
	49.5	0.83	9.05	1.03
2	60.5	15483	3777	63.5
	66.0	1.22	4.29	1.29
	Isotope:	TH-234 @	63.3	
3	89.0	22121	6849	92.7
	96.5	1.74	3.58	1.32
4	182.9	15362	7826	186.0
	188.4	1.21	2.27	1.45
	Isotope:	U-235 @	185.7	
5M	230.9	18486	9293	241.9
	248.4	1.45	3.62	1.40
6	291.4	20529	17539	295.1
	298.9	1.61	1.35	1.54
	Isotope:	PB-214 @	295.2	
7	334.3	2774	158	338.1
	341.8	0.22	55.00	1.42
	Isotope:	AC-228 @	338.3	
8	347.8	31530	28764	351.7
	355.3	2.48	1.02	1.50
	Isotope:	PB-214 @	351.9	
9	578.7	1279	15	582.6
	586.2	0.10	393.39	2.30
	Isotope:	TL-208 @	583.2	
10	605.1	20531	19317	608.8
	612.6	1.61	1.22	1.70
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	873	41	910.4
	914.4	0.07	118.91	1.44
	Isotope:	AC-228 @	911.2	
12M	957.9	1518	249	963.4
	975.4	0.12	45.38	3.13

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(742	750	744)	[844
90	1028	1389	1175	846	756]
95	(706	734	787)		

C = 6038
B = 4463
N = 1575

ROI # 2
Channel # **** Data ****

119					(970
120	952	1023)	[1035	1353	2186
125	2447	1693	1066]	(934	928
130	896)				

C = 9780
B = 5703
N = 4077

ROI # 3
Channel # **** Data ****

176		956	1203	1420	1194
180	(859	1055)	[2021	3485	3191
185	1850	1069]	(955	914	744)
190	589	616			

C = 11616
B = 4527
N = 7089

ROI # 4
Channel # **** Data ****

364					(447
365	475	504)	[582	1234	2533
370	3554	3017	1524]	(639	410
375	443)				

C = 12494
B = 2918
N = 9526

ROI # 5
Channel # **** Data ****

460	307	259	276	282	284
465	302	263	270	315	467
470	514	434	369	293	333
475	349	369	330	308	353
480	814	1969	3062	2240	1001
485	374	258	267	223	224
490	218	240	213	247	223
495	236				

ROI # 6
Channel # **** Data ****

581		(199	175	164	222)
585	[299	930	2960	5437	5448
590	2839	876	245]	(199	184
595	171	181)			

C = 9034
B = 1495
N = 17539

ROI # 7
Channel # **** Data ****

667			(173	154	166

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			
670	177	163	179	190	201
675	219	186	174	154	163
680	152	152	171		

C = 1466
B = 1308
N = 158

ROI # 8
Channel #

		**** Data ****			
694					191
695	209	201	217	308	948
700	3507	7494	9322	6012	2067
705	489	170	116	144	135

C = 30147
B = 1383
N = 28764

ROI # 9
Channel #

		**** Data ****			
1156		88	98	99	99
1160	91	71	90	85	85
1165	85	72	68	59	57
1170	67	65			

^{214}Pb background

Bkg = 2x

C = 647
B = 632 496 151
N = 15

BWL 6/22/94

ROI # 10
Channel #

		**** Data ****			
1209					67
1210	59	83	140	409	1511
1215	3560	5458	5015	2816	919
1220	236	84	55	55	64

C 19924
B 607
N 19317

ROI # 11
Channel #

		**** Data ****			
1813				64	47
1815	55	49	57	60	62
1820	63	71	43	56	45
1825	61	53	46	41	

C 461
B 412
N 49

ROI # 12
Channel #

		**** Data ****			
1915	45	35	40	27	46
1920	38	33	30	55	64
1925	52	54	51	51	57
1930	36	39	36	50	51
1935	59	46	36	45	43
1940	45	39	40	36	43
1945	30	31	40	18	43
1950	34				

C = 854
B = 664
N = 190

$U^{235} = \frac{1}{21.4} U^{238}$

10000

Th

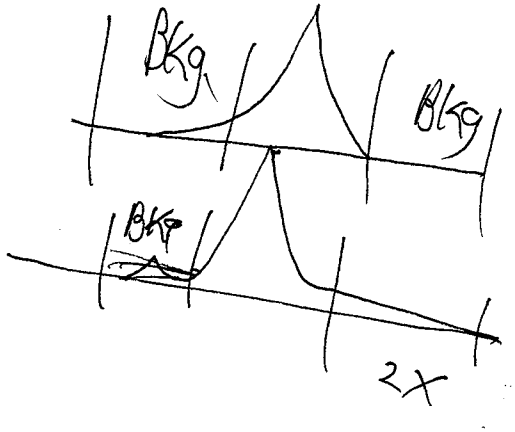
$Act = \frac{}{(eff)(br)}$

214 Bi 904

Tl-208 1000 .01 =

Tl - 20% 583 kev 84%
Pb - 214 580kev .3%

100 Th = 84 cts
10000 .3



MCA #1 - Canberra S100 - 11900790.MCA - NOP1-ECP-11.9/7.9

Tag Number:	22	Readout:	Mon 15 Jun 1992 @ 08:52:13
Report Group:	2/4	Acquire Started:	Mon 15 Jun 1992 @ 08:51:37
Group Size:	4096		

Elapsed Live Time:	150.00 min.
Elapsed True Time:	150.76 min.
Dead Time:	0.50 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 150.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/16/92

O.C.L.

mass = 4.3460 g

time = 150 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
(1)	44.1	55929	6864	46.6
	49.5	6.21	4.26	1.32
2	60.5	89095	23143	63.5
	66.0	9.90	1.69	1.33
	Isotope: TH-234 @ 63.3			
3	89.0	134986	43948	92.6
	96.5	15.00	1.38	1.42
4	182.9	90016	46507	186.0
	188.4	10.00	0.93	1.42
	Isotope: U-235 @ 185.7			
5M	230.9	101973	52721	241.9
	248.4	11.33	1.48	1.47
6	291.4	117894	101622	295.1
	298.9	13.10	0.56	1.52
	Isotope: PB-214 @ 295.2			
7	334.3	14304	368	338.1
	341.8	1.59	53.62	1.17
	Isotope: AC-228 @ 338.3			
8	347.8	183646	168626	351.8
	355.3	20.41	0.42	1.52
	Isotope: PB-214 @ 351.9			
(9)	578.7	6104	-684	579.7
	586.2	0.68	18.85	21458958.00
10	605.1	119702	113312	608.8
	612.6	13.30	0.50	1.72
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
(11)	906.9	3850	100	910.9
	914.4	0.43	102.38	0.69
	Isotope: AC-228 @ 911.2			
12M	957.9	7535	812	963.3
	975.4	0.84	31.70	1.48

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86	(4036	4075	4136)	[4489

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	5584	6800	6228	4607	3979
95	3832	4002	4161		

ROI # 2
Channel # **** Data ****

119					
120	5457	5504	6072	8142	5420
125	14338	10050	6121	5304	12597
130	5058				5032

ROI # 3
Channel # **** Data ****

176		5485	7085	8257	6844
180	4990	6380	13082	20613	19619
185	11573	6818	6392	6230	4700
190	3742	3176			

ROI # 4
Channel # **** Data ****

364					2661
365	2689	2719	3450	6921	15028
370	21383	17678	8818	3816	2534
375	2319				

ROI # 5
Channel # **** Data ****

460	1501	1427	1537	1519	1501
465	1471	1508	1577	1766	2460
470	2953	2673	1873	1518	1448
475	1482	1486	1510	1442	1918
480	4541	11553	17125	13318	5975
485	2097	1375	1296	1333	1286
490	1259	1284	1252	1264	1268
495	1177				

ROI # 6
Channel # **** Data ****

581		1051	1074	1040	1164
585	1683	5170	16425	31438	31708
590	16861	5027	1446	1004	930
595	928	945			

ROI # 7
Channel # **** Data ****

667			963	931	845
670	850	834	863	908	1039

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

675	1093	934	817	848	787
680	864	867	861		

ROI # 8
Channel # **** Data ****

694					926
695	1041	1125	1202	1769	5645
700	19430	43642	53862	35596	13170
705	3022	961	765	730	760

ROI # 9
Channel # **** Data ****

1156		405	558	632	530
1160	422	368	315	322	326
1165	308	298	351	341	301
1170	324	303			

Correction for background from 214 Pb

ROI # 10
Channel # **** Data ****

1209					359
1210	351	413	687	2239	7937
1215	20062	31512	30237	17089	5937
1220	1494	448	349	297	291

ROI # 11
Channel # **** Data ****

1813				243	265
1815	255	219	249	238	263
1820	241	287	232	221	244
1825	224	210	224	235	

ROI # 12
Channel # **** Data ****

1915	181	190	188	195	193
1920	199	191	208	226	258
1925	376	302	313	232	193
1930	208	175	189	215	217
1935	204	195	209	208	196
1940	185	215	218	177	178
1945	186	175	195	172	187
1950	186				

MCA #1 - Canberra S100 - 10800780.MCA - NOP1-ECP-10.8/7.8

Tag Number:	20	Readout:	Mon 15 Jun 1992 @ 06:18:11
Report Group:	2/4	Acquire Started:	Mon 15 Jun 1992 @ 06:17:03
Group Size:	4096		

Elapsed Live Time:	1112.00 min.
Elapsed True Time:	1112.11 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1112.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

6/18/92

OCL

WEIGHT = 4.4324 g.

TIME = 1112 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3848	515	46.6
	49.5	0.06	14.96	1.35
2	60.5	4348	664	63.5
	66.0	0.07	12.44	1.40
	Isotope:	TH-234 @	63.3	
3	89.0	6873	1577	92.8
	96.5	0.10	8.67	1.58
4	182.9	4084	1074	185.9
	188.4	0.06	7.81	1.39
	Isotope:	U-235 @	185.7	
5M	230.9	9338	3007	238.5
	248.4	0.14	8.71	1.48
	Isotope:	PB-212 @	238.6	
6	291.4	3968	1570	295.1
	298.9	0.06	6.62	1.36
	Isotope:	PB-214 @	295.2	
7	334.3	2318	318	338.3
	341.8	0.03	24.98	1.47
	Isotope:	AC-228 @	338.3	
8	347.8	4738	2852	351.8
	355.3	0.07	3.98	1.48
	Isotope:	PB-214 @	351.9	
9	578.7	1629	527	582.7
	586.2	0.02	12.64	1.75
	Isotope:	TL-208 @	583.2	
10	605.1	3204	2096	608.9
	612.6	0.05	4.46	1.81
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1116	410	910.4
	914.4	0.02	13.44	2.33
	Isotope:	AC-228 @	911.2	
12M	957.9	1851	366	968.2
	975.4	0.03	33.63	1.74

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		(290	268	299)	[311
90	390	482	426	328	276]
95	(255	243	280)	C = 1913	
				B = 1635	
				N = 278	

ROI # 2

Channel #		**** Data ****			
119					(298
120	322	310)	[323	346	538
125	553	455	324]	(307	288
130	284)			C = 2539	
				B = 1809	
				N = 730	

ROI # 3

Channel #		**** Data ****			
176		348	371	409	393
180	(352	360)	[588	819	833
185	573	367]	(333	317	282)
190	272	256		C = 3180	
				B = 1644	
				N = 1536	

ROI # 4

Channel #		**** Data ****			
364					(227
365	253	214)	[262	345	561
370	662	509	364]	(260	206
375	221)			C 2703	
				B = 1381	
				N 1322	

ROI # 5

Channel #		**** Data ****			
460	184	198	170	185	186
465	183	205	209	199	207
470	202	205	198	260	469
475	762	706	409	233	235
480	265	410	461	380	253
485	210	167	184	183	175
490	190	185	176	168	163
495	163				

ROI # 6

Channel #		**** Data ****			
581		(133	157	171	146)
585	[155	219	328	664	652
590	401	210	140]	(157	168
595	126	141)		C = 2769	
				B = 1199	
				N = 1570	

ROI # 7

Channel #		**** Data ****			
667			(136	127	109

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	125	118	148	170 211
675	227	179	128	137 121
680	146	126	110	

C = 1170
B = 1000
N = 70

ROI # 8
Channel # **** Data ****

694				126
695	131	103	137	121 187
700	390	831	1034	729 328
705	175	108	117	100 121

C = 3795
B = 943
N = 2852

ROI # 9
Channel # **** Data ****

1156		63	65	79 78
1160	70	69	123	178 216
1165	199	130	93	77 65
1170	58	66		

C = 1088
B = 551
N = 537

ROI # 10
Channel # **** Data ****

1209				91
1210	59	64	70	104 210
1215	429	622	607	398 180
1220	100	74	75	58 63

C = 2291
B = 501
N = 1790

ROI # 11
Channel # **** Data ****

1813				54 48
1815	37	56	69	101 106
1820	139	124	107	64 53
1825	39	39	37	43

C = 766
B = 350
N = 416

ROI # 12
Channel # **** Data ****

1915	43	35	42	45 43
1920	47	35	42	38 42
1925	60	60	76	61 57
1930	47	44	52	56 79
1935	117	90	90	71 41
1940	43	45	37	34 40
1945	48	26	41	44 37
1950	43			

C = 1131
B = 720
N = 411

MCA #1 - Canberra S100 - 10300770.MCA - NOP1-ECP-10.3/7.7

Tag Number:	18	Readout:	Sun 14 Jun 1992 @ 11:44:05
Report Group:	2/4	Acquire Started:	Sun 14 Jun 1992 @ 11:42:55
Group Size:	4096		

Elapsed Live Time:	1697.00 min.
Elapsed True Time:	1697.18 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1697.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

OCL

6/22/92

mass = 4.3809 g

time = 1697 minutes

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	6132	708	46.5
	49.5	0.06	13.63	1.61
2	60.5	7662	1409	63.3
	66.0	0.08	7.89	1.23
	Isotope:	TH-234	@ 63.3	
3	89.0	11603	3001	92.6
	96.5	0.11	5.92	1.49
4	182.9	7080	2318	185.9
	188.4	0.07	4.88	1.33
	Isotope:	U-235	@ 185.7	
5M	230.9	14624	4616	238.5
	248.4	0.14	7.12	1.53
	Isotope:	PB-212	@ 238.6	
6	291.4	6908	3270	295.2
	298.9	0.07	4.19	1.50
	Isotope:	PB-214	@ 295.2	
7	334.3	3575	349	338.3
	341.8	0.04	28.27	1.17
	Isotope:	AC-228	@ 338.3	
8	347.8	8450	5440	351.8
	355.3	0.08	2.79	1.58
	Isotope:	PB-214	@ 351.9	
9	578.7	2530	696	582.7
	586.2	0.02	11.92	1.43
	Isotope:	TL-208	@ 583.2	
10	605.1	5720	3906	608.8
	612.6	0.06	3.19	1.64
	Isotope:	XE-135	@ 608.1	
		BI-214	@ 609.3	
11	906.9	1773	555	910.3
	914.4	0.02	12.52	1.97
	Isotope:	AC-228	@ 911.2	
12M	957.9	2912	347	968.1
	975.4	0.03	45.92	1.74

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		430	442	427	546
90	639	708	633	536	459
95	439	427	446		

ROI # 2

Channel #		**** Data ****			
119					491
120	514	496	547	673	948
125	1080	792	568	507	542
130	504				

ROI # 3

Channel #		**** Data ****			
176		538	633	676	590
180	573	584	1014	1499	1469
185	998	632	533	506	495
190	453	410			

ROI # 4

Channel #		**** Data ****			
364					356
365	327	347	438	581	1066
370	1300	958	568	399	375
375	365				

ROI # 5

Channel #		**** Data ****			
460	302	259	282	294	312
465	303	314	301	327	308
470	347	316	331	405	689
475	1047	1092	615	354	356
480	455	678	805	721	438
485	291	270	257	256	255
490	264	293	291	266	269
495	261				

ROI # 6

Channel #		**** Data ****			
581		220	227	213	206
585	225	359	700	1229	1231
590	762	353	230	221	251
595	225	256			

ROI # 7

Channel #		**** Data ****			
667			195	201	203

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
670	199	185	186	240	301
675	361	284	209	196	200
680	213	184	218		

ROI # 8

Channel #		**** Data ****			
694					180
695	213	185	175	221	323
700	823	1545	1856	1386	547
705	244	192	176	208	176

ROI # 9

Channel #		**** Data ****			
1156		106	116	105	122
1160	122	139	171	252	328
1165	277	165	159	136	118
1170	110	104			

ROI # 10

Channel #		**** Data ****			
1209					140
1210	106	132	131	184	373
1215	762	1210	1159	665	287
1220	173	99	121	82	96

ROI # 11

Channel #		**** Data ****			
1813				75	69
1815	79	94	96	151	194
1820	213	221	138	71	80
1825	82	66	73	71	

ROI # 12

Channel #		**** Data ****			
1915	76	71	91	69	62
1920	69	76	65	70	66
1925	88	76	93	91	83
1930	68	75	80	110	108
1935	167	143	136	88	76
1940	79	63	68	55	68
1945	73	46	70	56	81
1950	56				

MCA #1 - Canberra S100 - 08150800.MCA - NOP1-ECP-8.15/8.0

Tag Number:	16	Readout:	Sat 13 Jun 1992 @ 07:24:34
Report Group:	2/4	Acquire Started:	Sat 13 Jun 1992 @ 07:22:37
Group Size:	4096		

Elapsed Live Time:	1320.00 min.
Elapsed True Time:	1320.13 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1320.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

JUNE 18, 1992
OCL
MASS = 5.1922 g
time = 1320 min.

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3874	339	46.8
	49.5	0.05	22.37	0.64
2	60.5	4586	611	63.5
	66.0	0.06	13.77	1.35
	Isotope:	TH-234 @	63.3	
3	89.0	7045	1609	92.8
	96.5	0.09	8.61	1.63
4	182.9	4090	978	185.7
	188.4	0.05	8.50	1.15
	Isotope:	U-235 @	185.7	
5M	230.9	10104	2873	238.6
	248.4	0.13	9.64	1.58
	Isotope:	PB-212 @	238.6	
6	291.4	3591	927	295.0
	298.9	0.05	10.67	1.39
	Isotope:	PB-214 @	295.2	
7	334.3	2813	391	338.1
	341.8	0.04	22.38	1.92
	Isotope:	AC-228 @	338.3	
8	347.8	3878	1672	351.8
	355.3	0.05	6.15	1.58
	Isotope:	PB-214 @	351.9	
9	578.7	2017	727	582.8
	586.2	0.03	10.19	1.77
	Isotope:	TL-208 @	583.2	
10	605.1	2668	1318	608.8
	612.6	0.03	6.47	1.78
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1457	553	910.4
	914.4	0.02	11.39	1.75
	Isotope:	AC-228 @	911.2	
12M	957.9	2231	508	968.1
	975.4	0.03	26.29	1.79

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
670	167	150	168	221	246
675	258	254	156	149	152
680	132	137	158		

C = 1602
B = 1211
N = 391

ROI # 8

Channel #		**** Data ****			
694					147
695	150	122	144	157	178
700	315	565	645	515	248
705	152	145	128	129	138

C = 2775
B = 1103
N = 1172

ROI # 9

Channel #		**** Data ****			
1156		93	79	76	93
1160	79	92	146	220	287
1165	249	186	113	69	76
1170	79	80			

C 1372
B 645
N 727

ROI # 10

Channel #		**** Data ****			
1209					84
1210	86	70	108	100	186
1215	325	441	415	277	157
1220	92	84	74	76	93

C 1993
B 675
N 1318

ROI # 11

Channel #		**** Data ****			
1813				59	55
1815	58	62	87	113	169
1820	198	188	105	84	61
1825	54	58	56	50	

C = 1006
B = 451
N = 555

ROI # 12

Channel #		**** Data ****			
1915	61	36	58	57	56
1920	48	50	52	56	52
1925	71	62	65	70	59
1930	48	63	61	79	102
1935	145	130	101	73	55
1940	56	50	51	45	53
1945	46	49	32	36	58
1950	45				

C = 1342
B = 889
N = 453

REGION OF INTEREST DATA

ROI # 1

Channel #	**** Data ****			
86	(325	303	276)	[281
90	463	384	324	296]
95	(301	296	279)	

C = 2094
B = 1780
N = 314

ROI # 2

Channel #	**** Data ****			
119				(323
120	325)	[316	409	510
125	458	377]	(333	323
130	323)			

C = 2629
B = 1957
N = 672

ROI # 3

Channel #	**** Data ****			
176	296	397	455	408
180	(342 | 424)	[597	827	789
185	609	383]	(356	301	296)
190	268	297		

C = 3205
B = 1719
N = 1486

ROI # 4

Channel #	**** Data ****			
364				(260
365	258	232)	[269	396	511
370	666	442	330]	(254	239
375	233)			

C = 2614
B = 1476
N = 1138

ROI # 5

Channel #	**** Data ****			
460	207	233	199	223	226
465	228	199	194	224	229
470	216	219	228	301	548
475	864	874	486	281	264
480	280	341	410	310	237
485	196	192	197	191	199
490	178	185	193	194	187
495	171				

ROI # 6

Channel #	**** Data ****			
581	(183	144	178	157)
585	[189	203	315	458	466
590	278	188	162]	(164	157
595	167	182)		

C = 2259
B = 1332
N = 927

ROI # 7

Channel #	**** Data ****			
667		(173	146	146

MCA #1 - Canberra S100 - 22251715.MCA - NOP1-ECP-22.25/17.15

Tag Number:	14	Readout:	Fri 12 Jun 1992 @ 09:20:59
Report Group:	2/4	Acquire Started:	Thu 11 Jun 1992 @ 16:32:47
Group Size:	4096		

Elapsed Live Time:	1260.00 min.
Elapsed True Time:	1260.13 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1260.00 min. Area = 10000 cts., Ch. 12982 to 12997
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt = 1260 minutes

mass = 4.3939 grams

BWL
6/12/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	4724	716	46.8
	49.5	0.06	12.02	1.30
2	60.5	5330	773	63.3
	66.0	0.07	11.79	1.04
	Isotope: TH-234 @ 63.3			
3	89.0	8055	1623	92.9
	96.5	0.11	9.12	1.40
4	182.9	5170	1527	186.0
	188.4	0.07	6.25	1.50
	Isotope: U-235 @ 185.7			
5M	230.9	11019	3648	238.5
	248.4	0.15	7.76	1.56
	Isotope: PB-212 @ 238.6			
6	291.4	5179	2377	295.2
	298.9	0.07	5.00	1.55
	Isotope: PB-214 @ 295.2			
7	334.3	2831	269	338.3
	341.8	0.04	32.64	1.43
	Isotope: AC-228 @ 338.3			
8	347.8	6263	4003	351.8
	355.3	0.08	3.26	1.51
	Isotope: PB-214 @ 351.9			
9	578.7	1945	539	582.7
	586.2	0.03	13.50	1.57
	Isotope: TL-208 @ 583.2			
10	605.1	4241	2879	608.8
	612.6	0.06	3.73	1.70
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	1334	444	910.3
	914.4	0.02	13.57	1.91
	Isotope: AC-228 @ 911.2			
12M	957.9	2219	365	968.1
	975.4	0.03	37.43	1.66

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

		**** Data ****			
86		(353	344	343)	[369
90	456	611	557	428	300]
95	(345	280	338)		

ROI # 2
Channel #

		**** Data ****			
119					(364
120	398	361)	[401	453	588
125	733	518	389]	(853	406
130	366)				

ROI # 3
Channel #

		**** Data ****			
176		366	477	547	483
180	(392	416)	[649	944	930
185	689	457]	(362	345	345)
190	331	322			

ROI # 4
Channel #

		**** Data ****			
364					(279
365	289	263)	[306	423	721
370	853	744	452]	(320	252
375	268)				

ROI # 5
Channel #

		**** Data ****			
460	218	218	201	198	234
465	215	224	242	248	256
470	246	228	248	295	553
475	862	823	506	278	239
480	372	489	576	491	332
485	211	223	201	193	209
490	186	201	194	196	221
495	192				

ROI # 6
Channel #

		**** Data ****			
581		(203	176	159	191)
585	[189	283	519	862	882
590	556	292	195]	(145	166
595	163	198)			

ROI # 7
Channel #

		**** Data ****			
667			(174	143	151

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			
670	178	155	165	187	
675	256	218	161	158	
680	161	146	169		

Int = 2831
BWL 1550 1720
6/12/92 cts= 250 Bkg= 1281
159 Net= 625
269

ROI # 8
Channel #

		**** Data ****			
694					
695	135	161	131	156	
700	519	1105	1393	1014	
705	223	154	118	153	

Int = 6263
141 cts= 5133
258 Bkg= 1130
465 Net= 4003
137

ROI # 9
Channel #

		**** Data ****			
1156		85	82	96	
1160	86	95	129	204	
1165	225	148	101	90	
1170	107	76			

Int = 1945
92 cts= 1247
254 Bkg= 703
75 Net= 539

ROI # 10
Channel #

		**** Data ****			
1209					
1210	79	79	101	136	
1215	599	891	817	509	
1220	119	93	82	67	

Int = 4241
88 cts= 3560
262 Bkg= 681
227 Net= 2879
92

ROI # 11
Channel #

		**** Data ****			
1813				52	
1815	59	58	70	117	
1820	171	163	95	69	
1825	55	57	44	66	

Int = 1335
54 cts= 900
157 Bkg= 434
47 Net= 466

ROI # 12
Channel #

		**** Data ****			
1915	49	51	54	48	
1920	48	44	59	55	
1925	67	67	79	69	
1930	59	61	44	76	
1935	120	127	85	68	
1940	49	41	45	49	
1945	55	68	49	48	
1950	61				

Int = 2219
48 cts= 1284
68 Bkg= 935
45 Net= 349
92
67
52
52

MCA #1 - Canberra S100 - 22501655.MCA - NOP1-ECP-22.5/16.55

Tag Number:	25	Readout:	Thu 11 Jun 1992 @ 08:45:30
Report Group:	2/4	Acquire Started:	Thu 11 Jun 1992 @ 08:09:37
Group Size:	4096		

Elapsed Live Time:	1800.00 sec.
Elapsed True Time:	1802.61 sec.
Dead Time:	0.14 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1800 sec. Area = 10000 cts., Ch. 8886 to 8901
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

time = 30 minutes
mass = 4.3441 grams

BWL
6/11/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3297	444	46.6
	49.5	1.83	16.07	1.45
2	60.5	5013	1259	63.5
	66.0	2.79	7.34	1.37
		Isotope: TH-234	@ 63.3	
3	89.0	7334	2326	92.7
	96.5	4.07	6.07	1.38
4	182.9	5117	2530	186.0
	188.4	2.84	4.03	1.46
		Isotope: U-235	@ 185.7	
5M	230.9	5785	2973	241.9
	248.4	3.21	6.28	1.41
6	291.4	6422	5490	295.1
	298.9	3.57	2.41	1.47
		Isotope: PB-214	@ 295.2	
7	334.3	828	4	338.1
	341.8	0.46	1186.97	0.88
		Isotope: AC-228	@ 338.3	
8	347.8	10034	9246	351.8
	355.3	5.57	1.79	1.58
		Isotope: PB-214	@ 351.9	
9	578.7	360	22	580.2
	586.2	0.20	142.30	0.83
10	605.1	6635	6287	608.8
	612.6	3.69	2.14	1.76
		Isotope: XE-135	@ 608.1	
		BI-214	@ 609.3	
11	906.9	228	14	913.4
	914.4	0.13	177.96	0.51
12M	957.9	436	94	963.4
	975.4	0.24	63.07	1.48

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

Int: 3297

86		(260	252	245)	[244
90	354	399	381	261	235]

cts= 1874
BKg= 1423
Net= 451

REGION OF INTEREST DATA

ROI # 1
Channel #

		**** Data ****		
95	(202	248	216)	

ROI # 2
Channel # Int= 5013

		**** Data ****			
119				(311	cts= 3209
120	292	309)	[358	461	733 Bkg= 1805
125	772	544	340)	(310	294 Net= 1403
130	289)				

ROI # 3
Channel # cts=3861

		**** Data ****			Bkg= 1521
176		309	400	441	373 Net = 2340
180	(296	354)	[711	1145	1037
185	621	347]	(319	310	242)
190	221	208			

ROI # 4
Channel # Int= 5117

		**** Data ****			
364				(152	cts=4144
365	179	147)	[214	399	832 Bkg= 973
370	1168	993	538]	(213	141 Net= 3171
375	141)				

ROI # 5
Channel #

		**** Data ****			
460	90	85	82	82	85
465	89	84	101	97	129
470	178	162	119	104	87
475	87	94	78	91	128
480	246	612	965	756	286
485	124	77	79	69	84
490	73	76	74	68	74
495	70				

ROI # 6
Channel # Int = 6422

		**** Data ****			
581		(50	65	76	66) cts= 5956
585	95	265	855	1743	1752 Bkg= 466
590	892	281	73	(47	50 Net= 5490
595	55	57)			

ROI # 7
Channel # Int = 828

		**** Data ****			
667			(48	54	59 cts= 416
670	51)	[58	45	40	66 Bkg= 412
675	67	47	52	41]	(64 Net= 4

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

680	45	41	50)		

ROI # 8
Channel # **** Data ****

Int = 10034

694					(56 cts = 964
695	52	65	61)	[85	339 Bkg = 394
700	1052	2367	2840	2062	728 Net = 9246
705	167]	(45	41	43	31)

ROI # 9
Channel # **** Data ****

214Pb background → 2x → = background 6/22/92 BWL

Int = 360

1156		(13	19	24	32) cts = 191
1160	24	20	26	24	22 Bkg = 169
1165	22	29	24	(24	16 Net = 22
1170	18	23)			

ROI # 10
Channel # **** Data ****

Int = 6635

1209					(27 cts = 646
1210	15	29	39)	[114	436 Bkg = 174
1215	1157	1685	1743	974	292 Net = 628
1220	60]	(22	15	14	13)

ROI # 11
Channel # **** Data ****

Int = 228

1813				(15	11 cts = 121
1815	16	11)	13	17	17 Bkg = 107
1820	15	17	18	11	13 Net = 14
1825	(14	20	9	11)	

ROI # 12
Channel # **** Data ****

Int = 436

1915	(5	13	7	7	13 cts = 253
1920	7	9	13	12)	12 Bkg = 183
1925	19	23	28	15	11 Net = 70
1930	12	13	11	18	9
1935	12	9	16	7	11
1940	11	16	(17	10	8
1945	10	8	15	9	10
1950	10)				

MCA #1 - Canberra S100 - 22601585.MCA - NOP1-ECP-22.6/15.85

Tag Number:	23	Readout:	Thu 11 Jun 1992 @ 08:06:14
Report Group:	2/4	Acquire Started:	Thu 11 Jun 1992 @ 08:04:02
Group Size:	4096		

Elapsed Live Time:	1620.00 sec.
Elapsed True Time:	1624.57 sec.
Dead Time:	0.28 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1620 sec. Area = 10000 cts., Ch. 8886 to 8901
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt = 27 minutes

mass = 4.675 grams

BWL

6/11/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	5564	713	46.8
	49.5	3.43	12.96	1.15
2	60.5	8707	2181	63.3
	66.0	5.37	5.58	1.28
		Isotope: TH-234	@ 63.3	
3	89.0	12960	3906	92.8
	96.5	8.00	4.81	1.41
4	182.9	8788	4444	186.0
	188.4	5.42	3.02	1.41
		Isotope: U-235	@ 185.7	
5M	230.9	10249	5349	241.9
	248.4	6.33	4.63	1.41
6	291.4	11725	10047	295.2
	298.9	7.24	1.78	1.51
		Isotope: PB-214	@ 295.2	
7	334.3	1400	24	338.1
	341.8	0.86	257.24	1.77
		Isotope: AC-228	@ 338.3	
8	347.8	18419	16891	351.8
	355.3	11.37	1.33	1.48
		Isotope: PB-214	@ 351.9	
9	578.7	601	-37	579.9
	586.2	0.37	109.32	0.88
10	605.1	12056	11418	608.8
	612.6	7.44	1.59	1.74
		Isotope: XE-135	@ 608.1	
		BI-214	@ 609.3	
11	906.9	392	30	909.4
	914.4	0.24	108.89	0.58
12M	957.9	767	74	962.9
	975.4	0.47	111.48	1.63

REGION OF INTEREST DATA

ROI # 1

Int= 5564

Channel # **** Data ****

Cts= 3143

Bkg= 2421

86		(401	426	372)	[417
90	542	703	628	457	396]

Net= 722

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

95	(401	393	428)		

ROI # 2
Channel # **** Data ****

Int = 8707
cts = 5558
Bkg = 3149
Net = 2409

119					
120	560	556)	[598	809	1179
125	1407	961	604]	(537	496
130	498)				

ROI # 3
Channel # **** Data ****

Int = 6699
Bkg = 2713
Net = 3986

176		552	787	829	643
180	(507	626)	[1186	1904	1855
185	1105	649]	(601	540	439)
190	388	349			

ROI # 4
Channel # **** Data ****

Int = 8788
cts = 7126
Bkg = 1662
Net = 5464

364					
365	261	265)	[347	690	(267
370	2065	1720	882]	(353	1417
375	259)				257

ROI # 5
Channel # **** Data ****

460	138	142	154	164	152
465	150	149	175	192	244
470	253	255	174	137	149
475	165	141	144	149	179
480	510	1180	1806	1324	551
485	212	154	111	112	141
490	130	121	119	117	122
495	133				

ROI # 6
Channel # **** Data ****

Int = 11725
cts = 10880
Bkg = 839
Net = 10470

581		(105	109	115	112)
585	[164	507	1624	3083	3184
590	1686	488	150]	(100	97
595	87	114)			

ROI # 7
Channel # **** Data ****

Int = 1400
cts = 712
Bkg = 688
Net = 24

667			(95	96	87
670	82)	[84	82	92	93
675	96	97	82	86]	(85

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
680	80	80	83)		

ROI # 8

Channel #		**** Data ****			
694					(98
695	86	108	111)	[167	515
700	1923	4361	5513	3564	1301
705	311]	(104	91	89	77)

Int= 18419
cts= 17651
Bkg= 764
Net= 16891

ROI # 9

Channel #		**** Data ****			
1156		(39	44	61	46)
1160	[40	35	27	34	30
1165	41	39	36]	(36	29
1170	26	38			

214Pb peak

Int= 601
cts= 282
Bkg= ~~319~~ 258
Net= ~~-37~~ 24

\) used to 2x 6/22/92 BWL → for background

ROI # 10

Channel #		**** Data ****			
1209					(40
1210	37	43	62)	[252	802
1215	2089	3209	2877	1762	612
1220	134]	(49	27	27	34)

Int= 12056
cts= 11737
Bkg= 319
Net= 11418

ROI # 11

Channel #		**** Data ****			
1813				(22	23
1815	19)	[22	25	30	21
1820	26	28	28	23]	(30
1825	21	23	22	29)	

Int= 392
cts= 203
Bkg= 189
Net= 14

ROI # 12

Channel #		**** Data ****			
1915	(23	18	15	19	17
1920	29	18	22	23)	[30
1925	34	30	22	26	26
1930	19	21	20	21	27
1935	17	18	20	15	21
1940	20	19]	(20	21	16
1945	23	18	18	22	26
1950	13				

Int= 767
cts= 406
Bkg= 361
Net= 45

MCA #1 - Canberra S100 - 22351530.MCA - NOP1-ECP-22.35/15.3

Tag Number:	27	Readout:	Thu 11 Jun 1992 @ 10:21:27
Report Group:	2/4	Acquire Started:	Thu 11 Jun 1992 @ 08:48:56
Group Size:	4096		

Elapsed Live Time:	4200.00 sec.
Elapsed True Time:	4202.75 sec.
Dead Time:	0.07 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 4200 sec. Area = 10000 cts., Ch. 8886 to 8901
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

BWL 6/11/92
mass = 3.0727 grams
Δt = 70 minutes

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3209	443	46.8
	49.5	0.76	15.92	1.17
2	60.5	4688	1075	63.5
	66.0	1.12	8.24	1.27
	Isotope:	TH-234 @	63.3	
3	89.0	6729	1883	92.7
	96.5	1.60	7.19	1.30
4	182.9	4771	2395	186.0
	188.4	1.14	4.12	1.39
	Isotope:	U-235 @	185.7	
5M	230.9	5863	2835	242.0
	248.4	1.40	6.75	1.48
6	291.4	6633	5689	295.2
	298.9	1.58	2.36	1.52
	Isotope:	PB-214 @	295.2	
7	334.3	866	70	338.3
	341.8	0.21	69.37	0.69
	Isotope:	AC-228 @	338.3	
8	347.8	10096	9260	351.8
	355.3	2.40	1.79	1.50
	Isotope:	PB-214 @	351.9	
9	578.7	419	13	583.6
	586.2	0.10	259.81	1.00
	Isotope:	TL-208 @	583.2	
10	605.1	6687	6285	608.9
	612.6	1.59	2.15	1.71
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	261	21	910.4
	914.4	0.06	126.94	0.70
	Isotope:	AC-228 @	911.2	
12M	957.9	515	34	963.4
	975.4	0.12	204.20	1.31

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

		**** Data ****			Int = 3209
86		(238	216	240)	[268 Cts = 1852
90	322	423	367	253	219] Bkg = 1357
95	(230	215	218)		Net = 495

ROI # 2
Channel #

		**** Data ****			Int = 4688
119					(297 Cts = 2921
120	298	301)	[331	384	665 Bkg = 1767
125	722	508	311]	(286	284 Net = 1154
130	301)				

ROI # 3
Channel #

		**** Data ****			Cts = 3418
176		279	424	465	357 Bkg = 1404
180	(280	327)	[598	1019	908 Net = 2014
185	545	348]	(281	263	253)
190	190	192			

ROI # 4
Channel #

		**** Data ****			Int = 4771
364					(150 Cts = 3843
365	154	145)	[191	342	800 Bkg = 928
370	1133	912	465]	(234	124 Net = 2915
375	121)				

ROI # 5
Channel #

		**** Data ****			
460	88	77	99	103	86
465	85	95	97	108	136
470	149	130	102	93	112
475	104	104	118	86	122
480	268	572	924	789	334
485	142	71	68	67	71
490	82	75	81	85	65
495	75				

ROI # 6
Channel #

		**** Data ****			Int = 6633
581		(69	56	64	Cts = 6161
585	[114	309	907	1765	76) Bkg = 472
590	949	273	67]	(55	1777 Net = 5689
595	48	47)			57

ROI # 7
Channel #

		**** Data ****			
667			(53	41	40

REGION OF INTEREST DATA

ROI # 7

Channel #		**** Data ****			
670	53)	[48	58	60	61
675	82	60	47	52]	(53
680	56	54	48)		

Int = 866
468
cts = ~~521~~
Bkg = 398
Net = 176

ROI # 8

Channel #		**** Data ****			
694					(61
695	59	68	62)	[105	299
700	1028	2414	2997	1966	688
705	181]	(53	35	37	43)

Int = 1009
cts = 9678
Bkg = 418
Net = 926
BWL 6/11/9

ROI # 9

Channel #		**** Data ****			
1156		(22	33	30	26
1160	[31	20	17	25	24
1165	37	31	31]	(25	19
1170	26	22)	used 2 x	for background	

214Pb peak

Int = 419
cts = 216
Bkg = ~~203~~
Net = 13
BWL 6/22/9

ROI # 10

Channel #		**** Data ****			
1209					(25
1210	27	20	42)	[125	425
1215	1087	1753	1702	966	356
1220	72]	(25	14	27	21)

Int = 668
cts = 6480
Bkg = 201
Net = 6285

ROI # 11

Channel #		**** Data ****			
1813				(11	20
1815	11)	[16	10	20	20
1820	28	18	15	13]	(17
1825	20	17	16	9)	

Int = 261
cts = 140
Bkg = 121
Net = 19

ROI # 12

Channel #		**** Data ****			
1915	(13	9	20	13	11
1920	10	14	14	13)	[10
1925	25	30	28	15	11
1930	17	13	15	17	22
1935	14	13	11	8	15
1940	21	9]	(7	8	12
1945	13	12	11	11	12
1950	18)				

Int = 515
cts = 294
Bkg = 221
Net = 73

MCA #1 - Canberra S100 - 07450790.MCA - NOP1-ECP-7.45/7.9

Tag Number:	21	Readout:	Thu 11 Jun 1992 @ 07:35:42
Report Group:	2/4	Acquire Started:	Thu 11 Jun 1992 @ 07:34:58
Group Size:	4096		

Elapsed Live Time:	1089.00 min.
Elapsed True Time:	1089.11 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1089.00 min. Area = 10000 cts., Ch. 8886 to 8901
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

time = 1089 minutes
mass = 4.9265 grams

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3360	326	46.3
	49.5	0.05	21.76	2.02
2	60.5	3977	611	63.5
	66.0	0.06	12.93	1.27
	Isotope:	TH-234 @	63.3	
3	89.0	6319	1453	92.8
	96.5	0.10	9.03	1.43
4	182.9	3766	841	185.9
	188.4	0.06	9.42	1.42
	Isotope:	U-235 @	185.7	
5M	230.9	8568	2345	238.6
	248.4	0.13	10.93	1.57
	Isotope:	PB-212 @	238.6	
6	291.4	3295	1057	295.1
	298.9	0.05	8.96	1.58
	Isotope:	PB-214 @	295.2	
7	334.3	2271	243	338.3
	341.8	0.03	32.36	1.40
	Isotope:	AC-228 @	338.3	
8	347.8	3764	1840	351.8
	355.3	0.06	5.50	1.48
	Isotope:	PB-214 @	351.9	
9	578.7	1600	514	582.7
	586.2	0.02	12.84	1.71
	Isotope:	TL-208 @	583.2	
10	605.1	2432	1284	608.7
	612.6	0.04	6.34	1.62
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1170	444	910.6
	914.4	0.02	12.71	1.95
	Isotope:	AC-228 @	911.2	
12M	957.9	1820	322	968.1
	975.4	0.03	38.29	2.14

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

		**** Data ****			
86		(263	246	263)	[316 cts= 186
90	340	356	357	284	216] Bkg= 149
95	\244	228	247)		Net 378

ROI # 2
Channel #

		**** Data ****			
119					(288 cts= 232
120	266	289)	[287	333	457 Bkg= 164
125	529	414	308]	(263	276 Net= 679
130	267)				

ROI # 3
Channel #

		**** Data ****			
					cts= 294
176		307	355	402	328 Bkg= 149
180	(282	368)	[527	794	721 Net 145
185	530	369]	(295	282	264)
190	253	242			

ROI # 4
Channel #

		**** Data ****			
364					(239 cts= 240
365	229	236)	[246	322	499 Bkg= 136
370	561	434	338]	(252	218 Net= 1034
375	192)				

ROI # 5
Channel #

		**** Data ****			
460	195	161	193	183	169
465	180	187	193	177	189
470	188	199	196	260	459
475	668	704	383	249	221
480	250	285	372	275	235
485	176	154	167	167	170
490	164	148	163	165	169
495	154				

ROI # 6
Channel #

		**** Data ****			
581		(130	138	139	147) cts= 2176
585	[131	154	313	480	479 Bkg= 1119
590	333	162	124]	(142	123 Net= 1057
595	155	145)			

ROI # 7
Channel #

		**** Data ****			
667			(139	123	133

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			Int = 2271
670	135)	[143	128	154	207 cts= 125
675	205	182	122	116]	(125 Bkg= 1014
680	111	114	134)		Net= 24

ROI # 8
Channel #

		**** Data ****			Int = 376
694					(129 cts= 28
695	126	117	122)	[130	173 Bkg= 96
700	303	578	717	518	251 Net= 18
705	132]	(124	119	97	128)

ROI # 9
Channel #

		**** Data ****			Int = 1600
1156		(53	70	65	71) cts= 105
1160	[67	67	122	163	221 Bkg= 543
1165	196	144	77]	(59	69 Net=514
1170	71	85)			

ROI # 10
Channel #

		**** Data ****			Int = 2432
1209					1858
1210	66	77	63)	[75	(68 cts= ~~300~~
1215	333	461	419	252	129 Bkg= 574
1220	80]	(68	66	77	109 Net= ~~243~~
					89/ 1284

BNL 6/11/92

ROI # 11
Channel #

		**** Data ****			Int = 1170
1813				(44	48 cts= 816
1815	44)	[49	62	86	144 Bkg= 354
1820	161	141	111	62]	(40 Net= 462
1825	49	41	40	48)	

ROI # 12
Channel #

		**** Data ****			Int = 1820
1915	(38	38	35	39	46 cts= 108
1920	45	41	45	49)	[37
1925	49	60	56	62	38 Bkg= 737
1930	36	37	45	75	78 Net= 346
1935	108	106	99	55	63
1940	36	43]	(47	32	37
1945	28	34	39	59	40
1950	45)				

MCA #1 - Canberra S100 - 22851785.MCA - NOP1-ECP-22.85/17.85

Tag Number:	19	Readout:	Wed 10 Jun 1992 @ 13:18:03
Report Group:	2/4	Acquire Started:	Wed 10 Jun 1992 @ 13:15:01
Group Size:	4096		

Elapsed Live Time:	340.00 min.
Elapsed True Time:	340.04 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 340.00 min. Area = 10000 cts., Ch. 8886 to 8901
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

time = 340 minutes

mass = 4.3865 grams

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1474	181	46.6
	49.5	0.07	26.22	1.61
2	60.5	1877	344	63.3
	66.0	0.09	15.98	1.21
	Isotope:	TH-234 @	63.3	
3	89.0	2871	603	92.7
	96.5	0.14	14.66	1.29
4	182.9	1836	626	186.0
	188.4	0.09	9.25	1.65
	Isotope:	U-235 @	185.7	
5M	230.9	3405	962	241.9
	248.4	0.17	16.74	1.67
6	291.4	2005	1207	295.1
	298.9	0.10	6.12	1.54
	Isotope:	PB-214 @	295.2	
7	334.3	828	102	338.3
	341.8	0.04	46.55	1.41
	Isotope:	AC-228 @	338.3	
8	347.8	2635	2019	351.8
	355.3	0.13	4.20	1.54
	Isotope:	PB-214 @	351.9	
9	578.7	506	126	582.6
	586.2	0.02	29.46	0.92
	Isotope:	TL-208 @	583.2	
10	605.1	1748	1350	608.8
	612.6	0.09	5.11	1.58
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	395	101	910.6
	914.4	0.02	32.47	1.86
	Isotope:	AC-228 @	911.2	
12M	957.9	657	126	968.0
	975.4	0.03	58.34	1.82

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

		**** Data ****			
86		(126	126	92)	111
90	155	166	163	128	118
95	185	111	93)		

Int= 1474
Cts= 841
Bkg= 633
Net= 208

ROI # 2
Channel #

		**** Data ****			
119					
120	119	122)	[149	166	(135
125	272	195	141]	(102	222
130	139)				115

Int= 1877
Cts= 1145
Bkg= 732
Net= 413

ROI # 3
Channel #

		**** Data ****			
176		148	157	188	152
180	(129	159)	[239	372	335
185	217	149]	(137	134	116)
190	122	117			

Cts= 1312
Bkg= 675
Net= 637

ROI # 4
Channel #

		**** Data ****			
364					(73
365	77	105\	[111	167	266
370	309	287	174]	(107	88
375	72)				

Int: 1896
Cts= 1314
Bkg= 522
Net= 792

ROI # 5
Channel #

		**** Data ****			
460	74	60	60	85	61
465	60	66	76	71	68
470	90	64	63	73	132
475	216	191	125	86	86
480	145	181	235	202	114
485	77	68	60	63	77
490	59	53	75	66	66
495	57				

ROI # 6
Channel #

		**** Data ****			
581		(49	51	44	58)
585	[66	93	244	388	412
590	231	108	64]	(54	46
595	46	51)			

Int= 2005
Cts= 1606
Bkg= 399
Net= 1207

ROI # 7
Channel #

		**** Data ****			
667			(44	45	48

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			
670	48	38	57	56	71
675	80	66	47	50	46
680	35	51	46		

Int = 828
Cts = 465
Bkg = 363
Net = 102

ROI # 8
Channel #

		**** Data ****			
694					
695	51	37	39	53	100
700	253	563	661	469	170
705	58	33	42	34	40

Int = 263
Cts = 232
Bkg = 308
Net = 209

ROI # 9
Channel #

		**** Data ****			
1156		19	22	20	23
1160	27	23	31	48	69
1165	46	51	21	32	23
1170	21	30			

Int = 506
Cts = 316
Bkg = 190
Net = 126

ROI # 10
Channel #

		**** Data ****			
1209					
1210	30	27	27	58	113
1215	251	416	392	208	74
1220	37	27	18	27	17

Int = 1748
Cts = 1541
Bkg = 1991
Net = 1350

ROI # 11
Channel #

		**** Data ****			
1813				17	12
1815	16	19	23	29	41
1820	47	38	33	18	19
1825	24	21	25	13	

Int = 395
Cts = 248
Bkg = 147
Net = 101

ROI # 12
Channel #

		**** Data ****			
1915	19	21	20	8	14
1920	16	16	18	18	17
1925	22	16	16	27	21
1930	12	20	23	22	28
1935	28	35	27	11	20
1940	11	21	22	12	21
1945	13	12	15	14	14
1950	7				

Int = 657
Cts = 377
Bkg = 280
Net = 97

MCA #1 - Canberra S100 - 22702180.MCA - NOP1-ECP-22.7/21.8

Tag Number:	17	Readout:	Wed 10 Jun 1992 @ 07:33:11
Report Group:	2/4	Acquire Started:	Wed 10 Jun 1992 @ 07:32:00
Group Size:	4096		

Elapsed Live Time:	1065.00 min.
Elapsed True Time:	1065.13 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1065.00 min. Area = 10000 cts., Ch. 8886 to 8901
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

time = 1065 minutes
mass = 3.9343 grams

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	5281	613	46.6
	49.5	0.08	14.61	1.43
2	60.5	7557	2043	63.3
	66.0	0.12	5.60	1.29
	Isotope:	TH-234 @	63.3	
3	89.0	11660	4032	92.6
	96.5	0.18	4.42	1.49
4	182.9	6670	2734	185.9
	188.4	0.10	4.14	1.44
	Isotope:	U-235 @	185.7	
5M	230.9	11075	3731	238.5
	248.4	0.17	7.59	1.47
	Isotope:	PB-212 @	238.6	
6	291.4	6224	3562	295.1
	298.9	0.10	3.65	1.48
	Isotope:	PB-214 @	295.2	
7	334.3	2558	324	338.1
	341.8	0.04	25.76	1.96
	Isotope:	AC-228 @	338.3	
8	347.8	8016	6014	351.8
	355.3	0.13	2.46	1.60
	Isotope:	PB-214 @	351.9	
9	578.7	1708	480	582.7
	586.2	0.03	14.21	1.65
	Isotope:	TL-208 @	583.2	
10	605.1	5320	4156	608.8
	612.6	0.08	2.90	1.73
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1134	392	910.4
	914.4	0.02	14.17	1.68
	Isotope:	AC-228 @	911.2	
12M	957.9	1945	240	967.9
	975.4	0.03	54.29	1.72

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

					Int= 5281
86		(376	418	400)	[424 cts= 2986
90	539	617	611	402	393] Bkg= 2295
95	(370	349	382)		Net= 691

ROI # 2
Channel # **** Data ****

					Int=7557
119					(470 cts=4951
120	464	429)	[510	672	1111 Bkg=2606
125	1253	845	560]	457	380 Net=2345
130	406)				

ROI # 3
Channel # **** Data ****

					cts= 6275
176		466	540	621	598 Bkg= 2481
180	(452	606)	[1128	1751	1698 Net= 3794
185	1069	629]	(513	486	424)
190	326	353			

ROI # 4
Channel # **** Data ****

					Int=6670
364					(281 cts=4951
365	269	282)	[316	601	1097 Bkg=1719
370	1337	1011	589]	(320	288 Net=3232
375	279)				

ROI # 5
Channel # **** Data ****

460	220	203	206	226	202
465	204	227	190	236	299
470	304	305	236	295	482
475	756	663	432	256	253
480	381	569	723	673	346
485	214	210	174	206	173
490	225	209	179	200	202
495	196				

ROI # 6
Channel # **** Data ****

					Int=6224
581		(172	163	167	166) cts= 4893
585	[180	315	711	1265	1207 Bkg= 1331
590	703	325	187]	(184	169 Net=3562
595	156	154)			

ROI # 7
Channel # **** Data ****

667			(136	125	148

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	150	[150	151	196	214
675	223	202	166	139]	(150
680	144	128	136)		

Int= 2558
Cts= 1441
Bkg= 1117
Net= 324

ROI # 8
Channel # **** Data ****

694					(111
695	133	126	131)	[165	305
700	822	1672	1915	1392	530
705	214]	(151	114	104	131)

Int= 8016
Cts= 7015
Bkg= 1001
Net= 6014

ROI # 9
Channel # **** Data ****

1156		(70	80	102	88)
1160	[73	97	111	174	220
1165	189	142	88]	(57	77
1170	93	47)			

Int= 1708
Cts= 1094
Bkg= 614
Net= 480

ROI # 10
Channel # **** Data ****

1209					(65
1210	71	79	89)	[129	365
1215	798	1233	1115	705	284
1220	109]	(63	72	65	78)

Int= 5320
Cts= 4738
Bkg= 582
Net= 4156

ROI # 11
Channel # **** Data ****

1813				(47	52
1815	57	46)	[66	88	133
1820	151	109	88	72	56]
1825	(44	44	42	39)	

Int= 1134
Cts= 763
Bkg= 371
Net= 392

ROI # 12
Channel # **** Data ****

1915	[51	58	51	47	42
1920	51	55	54	45)	41
1925	59	54	66	61	57
1930	45	38	54	61	93
1935	102	92	65	61	51
1940	49	46	(46	44	56
1945	37	41	40	33	49
1950	50)				

Int= 1945
Cts= 1095
Bkg= 850
Net= 245

MCA #1 - Canberra S100 - 22402140.MCA - NOP1-ECP-22.4/21.4

Tag Number:	15	Readout:	Tue 09 Jun 1992 @ 13:45:25
Report Group:	2/4	Acquire Started:	Tue 09 Jun 1992 @ 13:43:10
Group Size:	4096		

Elapsed Live Time:	358.00 min.
Elapsed True Time:	358.04 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 358.00 min. Area = 10000 cts., Ch. 8886 to 8901
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

time= 358 minutes

mass = 4.0291 grams

BW L
6/9/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	1868	208	46.3
	49.5	0.09	25.62	1.10
2	60.5	2670	663	63.3
	66.0	0.12	10.16	1.33
	Isotope:	TH-234 @	63.3	
3	89.0	4178	1384	92.8
	96.5	0.19	7.71	1.57
4	182.9	2511	1065	185.9
	188.4	0.12	6.55	1.49
	Isotope:	U-235 @	185.7	
5M	230.9	3939	1406	241.9
	248.4	0.18	11.90	1.45
6	291.4	2228	1262	295.0
	298.9	0.10	6.17	1.53
	Isotope:	PB-214 @	295.2	
7	334.3	852	114	338.1
	341.8	0.04	42.25	0.66
	Isotope:	AC-228 @	338.3	
8	347.8	3044	2326	351.8
	355.3	0.14	3.91	1.56
	Isotope:	PB-214 @	351.9	
9	578.7	586	140	583.1
	586.2	0.03	28.53	1.60
	Isotope:	TL-208 @	583.2	
10	605.1	1933	1539	608.9
	612.6	0.09	4.71	1.63
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	423	137	910.0
	914.4	0.02	24.77	2.36
12M	957.9	693	140	968.3
	975.4	0.03	53.90	1.46

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

86	(145	127	136)	162

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

90	195	238	178	150	136
95	134	123	144		

Int = 1868
Cts = 1059
BKg = 809
Net = 250

ROI # 2
Channel # **** Data ****

119					174
120	165	150	179	232	403
125	410	287	175	152	175
130	168				

Int = 2670
Cts = 1686
BKg = 984
Net = 702

ROI # 3
Channel # **** Data ****

176		160	180	236	210
180	166	205	407	583	627
185	407	215	171	173	151
190	151	136			

Cts = 2239
BKg = 866
Net = 1373

ROI # 4
Channel # **** Data ****

364					116
365	96	107	124	231	422
370	499	395	195	112	108
375	106				

Int = 2511
Cts = 1866
BKg = 645
Net = 1221

ROI # 5
Channel # **** Data ****

460	83	75	76	65	57
465	86	62	78	85	99
470	92	103	101	98	174
475	267	221	147	102	88
480	130	216	298	226	128
485	78	86	72	71	71
490	73	67	76	54	67
495	67				

ROI # 6
Channel # **** Data ****

581		49	70	62	58
585	82	110	270	424	448
590	248	97	66	64	57
595	67	56			

Int = 2228
Cts = 1745
BKg = 483
Net = 1262

ROI # 7
Channel # **** Data ****

667			55	45	46
670	60	43	65	54	98

Int = 852
Cts = 482
BKg = 369
Net = 113

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

675	69	59	53	42]	(38
680	46	31	48)		

ROI # 8
Channel # **** Data **** Int= 3044

694					(38 cts= 2685
695	45	51	42)	[63	104 Bkg= 359
700	301	611	759	551	222 Net= 2326
705	74]	(50	38	40	55)

ROI # 9
Channel # **** Data **** Int= 586

1156		(34	31	28	27) cts= 363
1160	[28	29	36	48	67 Bkg= 223
1165	70	51	34]	(32	25 Net= 140
1170	24	22)			

ROI # 10
Channel # **** Data **** Int= 1933

1209					(22 cts= 1730
1210	30	23	33)	[53	117 Bkg= 197
1215	277	467	434	258	96 Net= 1539
1220	34]	(20	23	26	20)

ROI # 11
Channel # **** Data **** Int= 423

1813				(16	19 cts= 287
1815	15)	[27	37	37	42 Bkg= 136
1820	53	45	25	21]	(20 Net= 151
1825	17	17	22	10)	

ROI # 12
Channel # **** Data **** Int= 693

1915	(17	19	12	10	13
1920	20	22	11	15)	20 cts= 412
1925	14	20	25	27	21 Bkg= 281
1930	18	19	20	23	24 Net= 131
1935	44	42	29	24	15
1940	13	14	(18	13	17
1945	9	20	15	17	17
1950	16)				

MCA #1 - Canberra S100 - 22501955.MCA - NOPI-ECP-22.5/19.55

Tag Number:	39	Readout:	Tue 09 Jun 1992 @ 07:35:30
Report Group:	2/4	Acquire Started:	Tue 09 Jun 1992 @ 07:34:14
Group Size:	4096		

Elapsed Live Time:	997.00 min.
Elapsed True Time:	997.11 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 997.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

time = 997 minutes
mass = 4.0248 grams

BWL
6/9/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	4367	571	46.6
	49.5	0.07	14.37	1.34
2	60.5	5569	1023	63.3
	66.0	0.09	9.26	1.14
	Isotope: TH-234 @ 63.3			
3	89.0	8194	1978	92.6
	96.5	0.14	7.55	1.51
4	182.9	5270	1853	186.0
	188.4	0.09	5.31	1.47
	Isotope: U-235 @ 185.7			
5M	230.9	10201	3235	241.9
	248.4	0.17	8.48	1.52
6	291.4	5765	3407	295.2
	298.9	0.10	3.68	1.52
	Isotope: PB-214 @ 295.2			
7	334.3	2277	193	338.1
	341.8	0.04	40.80	1.19
	Isotope: AC-228 @ 338.3			
8	347.8	7683	5787	351.8
	355.3	0.13	2.50	1.53
	Isotope: PB-214 @ 351.9			
9	578.7	1538	392	582.7
	586.2	0.03	16.51	1.48
	Isotope: TL-208 @ 583.2			
10	605.1	5039	3823	608.9
	612.6	0.08	3.06	1.68
	Isotope: XE-135 @ 608.1			
	BI-214 @ 609.3			
11	906.9	1117	347	910.5
	914.4	0.02	15.89	1.50
	Isotope: AC-228 @ 911.2			
12M	957.9	1785	368	968.1
	975.4	0.03	32.77	1.78

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(308	340	332)	[355
90	433	518	537	348	298]
95	(285	301	312)		

Int = 4367
Cts = 2489
BKg = 1878
Net = 611

ROI # 2
Channel # **** Data ****

119					
120	392	381)	[388	478	(355
125	816	570	415]	(344	674
130	389)				367

Int = 5569
Cts = 3341
BKg = 2228
Net = 1113

ROI # 3
Channel # **** Data ****

176		390	484	507	445
180	(400	401)	[723	1033	1011
185	691	441]	(386	329	350)
190	297	306			

Cts = 3899
BKg = 1866
Net = 2033

ROI # 4
Channel # **** Data ****

364					
365	253	264)	[288	429	(237
370	969	833	484]	(272	761
375	247)				233

Int = 5270
Cts = 3764
BKg = 1506
Net = 2258

ROI # 5
Channel # **** Data ****

460	181	188	204	210	211
465	219	174	190	185	192
470	233	229	224	256	433
475	634	606	352	257	257
480	338	580	747	596	348
485	256	201	197	187	187
490	168	196	218	187	168
495	192				

ROI # 6
Channel # **** Data ****

581		(151	147	165	162
585	[180	306	628	1133	1185
590	707	294	153]	(135	120
595	142	157)			

Int = 5765
BNL 6/9/92
Cts = ~~6499~~
BKg = 1179
Net = 5765

4586 cts
1179 BKg
3407 Net

ROI # 7
Channel # **** Data ****

667			(113	136	130

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	143)	[125	137	151	199
675	212	161	126	124]	(123
680	130	137	130)		

Int = 2277
Cts = 1235
Bkg = 1042
Net = 193

ROI # 8
Channel # **** Data ****

694					(135
695	116	126	113)	[143	295
700	760	1545	1924	1320	548
705	200]	(130	104	111	113)

Int = 7683
Cts = 6735
Bkg = 948
Net = 578

ROI # 9
Channel # **** Data ****

1156		(67	61	90	70)
1160	[66	75	98	158	200
1165	160	120	88]	(92	62
1170	69	62)			

Int = 1538
Cts = 965
Bkg = 573
Net = 392

ROI # 10
Channel # **** Data ****

1209					(86
1210	78	73	81)	[145	296
1215	695	1156	1081	694	250
1220	114]	(81	62	69	78)

Int = 5039
Cts = 443
Bkg = 608
Net = 3823

ROI # 11
Channel # **** Data ****

1813				(55	49
1815	43)	[46	71	89	139
1820	122	113	93	58]	(47
1825	51	41	43	57)	

Int = 1117
Cts = 731
Bkg = 386
Net = 345

ROI # 12
Channel # **** Data ****

1915	(47	34	35	62	46
1920	50	40	44	60)	55
1925	57	53	55	59	57
1930	43	41	39	58	81
1935	107	92	77	54	44
1940	39	44	(38	24	36
1945	37	40	30	33	40
1950	34)				

Int = 1785
Cts = 1055
Bkg = 730
Net = 325

MCA #1 - Canberra S100 - 22852085.MCA - NOPI-ECP-22.85/20.85

Tag Number:	37	Readout:	Mon 08 Jun 1992 @ 14:56:10
Report Group:	2/4	Acquire Started:	Mon 08 Jun 1992 @ 14:54:56
Group Size:	4096		

Elapsed Live Time:	1112.00 min.
Elapsed True Time:	1112.11 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1112.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt = 1112 minutes

mass = 4.065 grams

BWL

6/8/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3496	453	46.6
	49.5	0.05	16.20	1.42
2	60.5	4050	606	63.3
	66.0	0.06	13.14	1.29
	Isotope:	TH-234 @	63.3	
3	89.0	6227	1149	92.9
	96.5	0.09	11.33	1.53
4	182.9	3904	1009	185.9
	188.4	0.06	8.10	1.30
	Isotope:	U-235 @	185.7	
5M	230.9	8709	2310	238.5
	248.4	0.13	11.23	1.58
	Isotope:	PB-212 @	238.6	
6	291.4	3696	1296	295.1
	298.9	0.06	7.74	1.44
	Isotope:	PB-214 @	295.2	
7	334.3	2226	170	338.1
	341.8	0.03	45.79	1.27
	Isotope:	AC-228 @	338.3	
8	347.8	4121	2193	351.8
	355.3	0.06	4.83	1.52
	Isotope:	PB-214 @	351.9	
9	578.7	1605	505	582.7
	586.2	0.02	13.09	1.65
	Isotope:	TL-208 @	583.2	
10	605.1	2760	1622	608.8
	612.6	0.04	5.34	1.83
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1122	420	910.4
	914.4	0.02	13.16	1.73
	Isotope:	AC-228 @	911.2	
12M	957.9	1816	435	968.2
	975.4	0.03	27.57	1.98

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(261	254	259)	[293
90	347	422	412	286	248]
95	(240	228	246)		

Int= 3496
Cts= 2008
Bkg= 1488
Net= 520

ROI # 2
Channel # **** Data ****

119					(283
120	290	295)	[294	356	510
125	507	381	303]	(283	283
130	265)				

Int= 4050
Cts= 2351
Bkg= 1699
Net= 652

ROI # 3
Channel # **** Data ****

176		320	374	386	366
180	(327	326)	[495	695	712
185	499	361]	(273	285	239)
190	306	263			

Cts= 2762
Bkg= 1450
Net= 1312

ROI # 4
Channel # **** Data ****

364					(250
365	206	222)	[262	334	527
370	642	471	306]	(215	229
375	240)				

Int= 3904
Cts= 2542
Bkg= 1362
Net= 1180

ROI # 5
Channel # **** Data ****

460	180	188	191	172	190
465	179	179	196	193	184
470	186	205	198	255	452
475	619	657	385	207	197
480	283	350	424	339	233
485	188	184	146	161	175
490	159	163	157	178	184
495	172				

ROI # 6
Channel # **** Data ****

581		(145	178	147	152)
585	[169	181	343	540	573
590	350	193	147]	(151	153
595	130	144)			

Int= 3696
Cts= 2496
Bkg= 1200
Net= 1296

ROI # 7
Channel # **** Data ****

667			(126	128	146

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			Int= 2226
670	119)	[109	125	154	Cts= 1198
675	194	153	127	136]	200 Bkg= 1028
680	115	133	132)		(129 Net= 170

ROI # 8
Channel #

		**** Data ****			Int= 4121
694					(126 Cts= 3157
695	138	122	112)	[115	177 Bkg= 964
700	378	654	823	582	278 Net= 2193
705	150]	(117	115	126	108)

ROI # 9
Channel #

		**** Data ****			Int= 1605
1156		(73	75	68	62 Cts= 1055
1160	[72	80	108	181	214 Bkg= 550
1165	191	124	85]	(70	57 Net= 505
1170	66	79)			

ROI # 10
Channel #

		**** Data ****			Int= 2760
1209					(67 Cts= 2191
1210	77	81	69)	[113	167 Bkg= 569
1215	383	499	492	321	147 Net= 1622
1220	69]	(67	72	68	68)

ROI # 11
Channel #

		**** Data ****			Int= 122
1813				(40	52 Cts= 755
1815	58)	[39	69	86	126 Bkg= 367
1820	153	148	82	52]	(55 Net= 388
1825	40	37	46	39)	

ROI # 12
Channel #

		**** Data ****			Int= 1816
1915	(50	35	44	31	35
1920	41	44	45	53)	[39 Cts= 1097
1925	59	54	73	58	40 Bkg= 719
1930	48	44	47	49	85 Net= 378
1935	87	111	109	66	40
1940	48	40]	(39	41	37
1945	37	40	23	33	44
1950	47)				

MCA #1 - Canberra S100 - 22852010.MCA - NOPI-ECP-22.85/20.10

Tag Number:	35	Readout:	Sun 07 Jun 1992 @ 20:21:44
Report Group:	2/4	Acquire Started:	Sun 07 Jun 1992 @ 20:21:15
Group Size:	4096		

Elapsed Live Time:	337.00 min.
Elapsed True Time:	337.08 min.
Dead Time:	0.02 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 337.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

$\Delta t = 337$ minutes
mass = 4.2080 grams

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	4605	665	46.8
	49.5	0.23	12.75	1.09
2	60.5	6962	1801	63.5
	66.0	0.34	6.07	1.26
	Isotope:	TH-234 @	63.3	
3	89.0	10441	3555	92.6
	96.5	0.52	4.74	1.43
4	182.9	7060	3528	186.0
	188.4	0.35	3.40	1.45
	Isotope:	U-235 @	185.7	
5M	230.9	8723	4012	241.9
	248.4	0.43	5.89	1.51
6	291.4	8079	6365	295.1
	298.9	0.40	2.33	1.47
	Isotope:	PB-214 @	295.2	
7	334.3	1555	117	337.8
	341.8	0.08	55.61	0.78
	Isotope:	AC-228 @	338.3	
8	347.8	12375	10925	351.8
	355.3	0.61	1.68	1.50
	Isotope:	PB-214 @	351.9	
9	578.7	885	91	582.7
	586.2	0.04	53.94	1.61
	Isotope:	TL-208 @	583.2	
10	605.1	7923	7197	608.8
	612.6	0.39	2.04	1.68
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	576	86	910.2
	914.4	0.03	46.05	0.97
	Isotope:	AC-228 @	911.2	
12M	957.9	1013	158	968.1
	975.4	0.05	58.62	1.87

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(307	318	342)
90	461	612	514	391
95	(315	333	330)	

ROI # 2
Channel # **** Data ****

119				
120	434	456)	[427	605
125	1144	780	461]	(423
130	393)			

ROI # 3
Channel # **** Data ****

176		431	546	637
180	(392	483)	[1043	1666
185	946	552]	(432	416
190	284	279		

ROI # 4
Channel # **** Data ****

364				
365	227	224)	[291	576
370	1603	1360	681]	(307
375	208)			

ROI # 5
Channel # **** Data ****

460	169	123	139	141	128
465	145	151	140	173	258
470	262	229	180	165	232
475	283	265	224	178	185
480	363	785	1096	880	401
485	178	109	121	118	131
490	132	164	124	108	116
495	127				

ROI # 6
Channel # **** Data ****

581		(101	98	110	109)
585	130	374	1084	2086	1991
590	1053	353	151]	(117	100
595	106	116)			

ROI # 7
Channel # **** Data ****

667			(93	77	80

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	96	94	103	106	128
675	107	109	90	99	95
680	81	103	94		

Int = 1555
Cts = 836
Bkg = 719
Net = 117

ROI # 8
Channel # **** Data ****

694					91
695	91	122	94	155	350
700	1313	2809	3587	2359	876
705	201	90	87	81	69

Int = 12375
Cts = 11650
Bkg = 725
Net = 10925

ROI # 9
Channel # **** Data ****

1156		44	55	58	67
1160	45	45	48	77	76
1165	88	61	48	44	42
1170	49	38			

Int = 885
Cts = 488
Bkg = 397
Net = 91

ROI # 10
Channel # **** Data ****

1209					137
1210	50	47	59	157	488
1215	1333	2102	1876	1124	381
1220	99	42	45	49	34

Int = 7923
Cts = 7560
Bkg = 363
Net = 7197

ROI # 11
Channel # **** Data ****

1813				42	31
1815	21	31	44	42	46
1820	64	45	32	34	24
1825	23	42	25	30	

Int = 576
Cts = 338
Bkg = 238
Net = 100

ROI # 12
Channel # **** Data ****

1915	19	19	21	23	23
1920	29	25	30	27	38
1925	35	37	36	29	28
1930	36	29	23	26	43
1935	31	41	44	26	20
1940	23	26	24	26	24
1945	22	22	21	34	26
1950	27				

Int = 1013
Cts = 571
Bkg = 442
Net = 129

MCA #1 - Canberra S100 - 22651885.MCA - NOPI-ECP-22.65/18.85

Tag Number:	33	Readout:	Sun 07 Jun 1992 @ 14:40:29
Report Group:	2/4	Acquire Started:	Sun 07 Jun 1992 @ 14:39:51
Group Size:	4096		

Elapsed Live Time:	1426.00 min.
Elapsed True Time:	1426.16 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1426.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt = 1426 minutes

mass = 3.15694 grams

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	6186	710	46.6
	49.5	0.07	13.66	1.18
2	60.5	7786	1534	63.5
	66.0	0.09	7.34	1.31
	Isotope:	TH-234 @	63.3	
3	89.0	11591	3045	92.9
	96.5	0.14	5.83	1.52
4	182.9	7432	2572	186.0
	188.4	0.09	4.54	1.40
	Isotope:	U-235 @	185.7	
5M	230.9	13670	3860	241.9
	248.4	0.16	8.35	1.45
6	291.4	7793	4497	295.1
	298.9	0.09	3.24	1.44
	Isotope:	PB-214 @	295.2	
7	334.3	3207	341	338.3
	341.8	0.04	27.40	1.40
	Isotope:	AC-228 @	338.3	
8	347.8	10189	7389	351.8
	355.3	0.12	2.25	1.51
	Isotope:	PB-214 @	351.9	
9	578.7	2081	515	582.7
	586.2	0.02	14.62	1.73
	Isotope:	TL-208 @	583.2	
10	605.1	6721	5051	608.8
	612.6	0.08	2.68	1.71
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1466	456	910.6
	914.4	0.02	13.85	1.95
	Isotope:	AC-228 @	911.2	
12M	957.9	2510	350	967.9
	975.4	0.03	41.93	1.49

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(449	459	457)	[495
90	609	762	652	512	439]
95	(403	432	517)		

Int = 6186
cts = 3460
Bkg = 2717
Net = 752

ROI # 2
Channel #

**** Data ****

119					(563
120	518	501)	[562	673	992
125	1120	833	542]	(474	496
130	512)				

Int = 7786
cts = 4722
Bkg = 3064
Net = 1658

ROI # 3
Channel #

**** Data ****

176		545	608	722	627
180	(533	595)	[1033	1475	1549
185	994	598]	(541	492	481)
190	424	374			

cts = 5649
Bkg = 2642
Net = 3007

ROI # 4
Channel #

**** Data ****

364					(337
365	335	348)	[416	647	1028
370	1386	1131	694]	(423	341
375	346)				

Int = 7432
cts = 5302
Bkg = 2130
Net = 3172

ROI # 5
Channel #

**** Data ****

460	293	291	297	283	275
465	267	276	273	284	312
470	333	312	289	339	485
475	826	774	519	294	329
480	439	705	989	840	436
485	287	249	250	287	295
490	255	271	255	246	253
495	262				

ROI # 6
Channel #

**** Data ****

581		(201	208	190	229)
585	[227	334	844	1580	1630
590	909	394	227]	(205	189
595	210	216)			

Int = 7793
cts = 6145
Bkg = 1648
Net = 4497

ROI # 7
Channel #

**** Data ****

667			(186	188	195

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			Int= 3207
					Cts= 1774
670	179)	[186	187	230	255 Bkg= 1433
675	297	239	181	199]	(172 Net= 341
680	180	162	171)		

ROI # 8
Channel #

		**** Data ****			Int= 10189
694					(185 Cts= 878
695	188	191	181)	[190	393 Bkg= 1400
700	943	2052	2519	1720	731 Net= 738
705	241]	(176	157	157	165)

ROI # 9
Channel #

		**** Data ****			Int= 2091
1156		(106	99	119	98) Cts= 1298
1160	[118	97	126	214	233 Bkg= 783
1165	241	159	110]	(94	83 Net= 515
1170	94	90)			

ROI # 10
Channel #

		**** Data ****			Int= 6721
1209					(117 Cts= 5881
1210	102	106	133)	[183	465 Bkg= 835
1215	968	1509	1395	863	340
1220	163]	(92	87	108	90) Net= 5051

ROI # 11
Channel #

		**** Data ****			Int= 1466
1813				(50	55 Cts= 978
1815	84)	[75	100	105	144 Bkg= 488
1820	166	174	126	88]	(58 Net= 490
1825	71	63	62	45)	

ROI # 12
Channel #

		**** Data ****			Int= 2510
1915	(51	66	66	49	59
1920	66	61	53	72)	[74 Cts= 1455
1925	75	66	83	101	70
1930	72	62	77	88	93 Bkg= 1055
1935	121	134	88	70	53 Net= 400
1940	64	64]	48	46	56
1945	63	51	60	77	49
1950	62)				

MCA #1 - Canberra S100 - 22301830.MCA - NOPI-ECP-22.3/18.3-WR-GA

Tag Number:	31	Readout:	Sat 06 Jun 1992 @ 14:51:11
Report Group:	2/4	Acquire Started:	Sat 06 Jun 1992 @ 14:49:58
Group Size:	4096		

Elapsed Live Time:	1266.00 min.
Elapsed True Time:	1266.12 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 1266.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

time Δmin = 1266 minutes BWL 6/6/92
mass = 3.8736 grams BWL 6/7/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	3903	509	46.6
	49.5	0.05	15.24	1.50
2	60.5	4638	750	63.5
	66.0	0.06	11.42	1.31
	Isotope:	TH-234 @	63.3	
3	89.0	7211	1699	92.8
	96.5	0.09	8.25	1.62
4	182.9	4142	1040	185.9
	188.4	0.05	8.08	1.46
	Isotope:	U-235 @	185.7	
5M	230.9	9705	2487	238.5
	248.4	0.13	11.05	1.60
	Isotope:	PB-212 @	238.6	
6	291.4	3734	1128	295.1
	298.9	0.05	8.94	1.43
	Isotope:	PB-214 @	295.2	
7	334.3	2519	287	338.3
	341.8	0.03	28.85	1.54
	Isotope:	AC-228 @	338.3	
8	347.8	4216	2006	351.8
	355.3	0.06	5.34	1.46
	Isotope:	PB-214 @	351.9	
9	578.7	1782	576	582.7
	586.2	0.02	12.09	1.51
	Isotope:	TL-208 @	583.2	
10	605.1	2713	1537	608.8
	612.6	0.04	5.59	1.67
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1229	423	910.6
	914.4	0.02	13.67	2.06
	Isotope:	AC-228 @	911.2	
12M	957.9	2135	434	968.1
	975.4	0.03	30.39	2.03

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

		**** Data ****			
86		(269	305	292)	[292
90	403	457	447	333	283
95	(275	270	277)		

ROI # 2
Channel #

		**** Data ****			
119					
120	324	328)	[337	397	(333
125	619	507	318]	(314	523
130	330)				308

ROI # 3
Channel #

		**** Data ****			
176		345	383	416	421
180	(349	[427	600	861	843
185	654]	(376	345	327	297
190	296	271			

ROI # 4
Channel #

		**** Data ****			
364					(248
365	251	262)	[246	363	552
370	641	518	347]	(240	230
375	244)				

ROI # 5
Channel #

		**** Data ****			
460	203	186	195	228	193
465	209	203	213	194	236
470	230	221	216	287	502
475	729	687	448	271	241
480	294	352	385	347	236
485	230	201	198	187	198
490	206	187	200	206	200
495	186				

ROI # 6
Channel #

		**** Data ****			
581		(160	168	164	170
585	[148	214	336	504	536
590	332	209	152]	(156	164
595	147	174)			

ROI # 7
Channel #

		**** Data ****			
667			[160	140	122

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			
670	142	144	150	186	234
675	234	190	150	115	159
680	121	130	142		

Int=2519
Gis=1403
Bkg=1116
Net=287

ROI # 8
Channel #

		**** Data ****			
694					150
695	130	141	158	129	191
700	359	669	801	552	247
705	163	140	130	126	130

Int=4216
Gis=3111
Bkg=1105
Net=2006

ROI # 9
Channel #

		**** Data ****			
1156		74	66	79	78
1160	80	99	117	193	247
1165	210	129	104	80	69
1170	74	83			

Int=1782
Gis=1179
Bkg=603
Net=576

ROI # 10
Channel #

		**** Data ****			
1209					89
1210	71	79	82	118	174
1215	329	493	491	287	132
1220	101	58	83	64	62

Int=2713
Gis=2125
Bkg=588
Net=1537

ROI # 11
Channel #

		**** Data ****			
1813				59	38
1815	59	63	69	95	147
1820	149	136	108	67	55
1825	56	50	42	36	

Int=1229
Gis=826
Bkg=403
Net=423

ROI # 12
Channel #

		**** Data ****			
1915	49	51	42	45	60
1920	56	50	53	53	46
1925	69	64	76	70	64
1930	58	43	51	70	93
1935	114	115	101	60	46
1940	56	52	43	44	40
1945	60	50	46	58	39
1950	48				

Int=2135
Gis=1248
Bkg=887
Net=361

MCA #1 - Canberra S100 - PBECP1.MCA - PB-Ecp-1

Tag Number:	29	Readout:	Fri 05 Jun 1992 @ 17:39:41
Report Group:	2/4	Acquire Started:	Fri 05 Jun 1992 @ 17:38:51
Group Size:	4096		

Elapsed Live Time:	2972.00 min.
Elapsed True Time:	2972.27 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 2972.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt_{min} : 2972

Mass = 3.4998 grams

DWL

6/5/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	7371	746	46.6
	49.5	0.04	14.10	1.29
2	60.5	8356	1200	63.3
	66.0	0.05	9.51	1.20
	Isotope:	TH-234 @	63.3	
3	89.0	13693	3229	92.6
	96.5	0.08	5.98	1.51
4	182.9	7947	1601	185.9
	188.4	0.04	7.12	1.42
	Isotope:	U-235 @	185.7	
5M	230.9	18565	3414	238.5
	248.4	0.10	11.48	1.50
	Isotope:	PB-212 @	238.6	
6	291.4	6209	635	295.3
	298.9	0.03	20.47	1.02
	Isotope:	PB-214 @	295.2	
7	334.3	5322	552	338.3
	341.8	0.03	21.81	1.37
	Isotope:	AC-228 @	338.3	
8	347.8	5650	1118	351.8
	355.3	0.03	11.09	1.53
	Isotope:	PB-214 @	351.9	
9	578.7	3645	967	582.7
	586.2	0.02	10.30	1.48
	Isotope:	TL-208 @	583.2	
10	605.1	3995	1081	608.9
	612.6	0.02	9.65	1.67
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	2695	733	910.6
	914.4	0.02	11.69	2.10
	Isotope:	AC-228 @	911.2	
12M	957.9	4557	809	968.1
	975.4	0.03	24.09	1.87

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(551	556	599)	[572
90	704	853	775	622	507]
95	(589	515	528)		

Int: 7371
Gts: 4033
Bkg: 3338
Net: 695

ROI # 2
Channel #

**** Data ****

119					[580
120	575	626]	(601	705	970
125	1088	822	633)	(576	548
130	632)				

Int: 8350
Gts: 4819
Bkg: 3537
Net: 1282

ROI # 3
Channel #

**** Data ****

176		619	721	729	(706
180	674	786)	(1170	1666	1570
185	1148	785)	(662	661)	574
190	626	596			

Gts: 6339
Bkg: 3489
Net: 2850

ROI # 4
Channel #

**** Data ****

364					(529
365	490	519)	[526	717	995
370	1110	894	585]	(534	521
375	527)				

Int: 7947
Gts: 4827
Bkg: 3120
Net: 1707

ROI # 5
Channel #

**** Data ****

460	426	432	452	459	445
465	453	456	457	448	474
470	475	446	432	570	770
475	1246	1186	819	508	518
480	515	526	546	489	439
485	417	445	438	426	428
490	409	417	412	380	397
495	409				

ROI # 6
Channel #

**** Data ****

581		(343	357	333	358)
585	[362	383	386	568	565
590	460	359	339]	(351	363
595	328	360)			

Int: 6209
Gts: 3422
Bkg: 2787
Net: 635

ROI # 7
Channel #

**** Data ****

667			(287	315	282

REGION OF INTEREST DATA

ROI # 7
Channel #

**** Data ****

670	304)	[343	326	358	415
675	465	392	324	314]	(298
680	330	292	277)		

Int = 5322
Gks = 2937
Bkg = 2385
Net = 552

ROI # 8
Channel #

**** Data ****

694					(280
695	293	321	295)	[329	330
700	394	555	615	502	354
705	305]	(281	260	286	250)

Int = 5650
Gks = 3384
Bkg = 2266
Net = 1118

ROI # 9
Channel #

**** Data ****

1156		(164	180	164	166)
1160	184	190	260	323	448
1165	404	269	228	(170	186
1170	160	149)			

Int = 3645
Gks = 2306
Bkg = 1339
Net = 967

ROI # 10
Channel #

**** Data ****

1209					(181
1210	199	182)	[196	169	252
1215	379	500	482	344	237]
1220	(175	178	169	182	170

Int = 3995
Gks = 2559
Bkg = 1436
Net = 1123

ROI # 11
Channel #

**** Data ****

1813				(98	139
1815	131	142)	[156	202	286
1820	291	275	220	165	119]
1825	(126	115	117	113)	

Int = 2695
Gks = 1714
Bkg = 981
Net = 733

ROI # 12
Channel #

**** Data ****

1915	(119	91	99	96	125
1920	131	113	126	110)	[121
1925	132	137	168	167	135
1930	138	89	135	156	186
1935	217	233	158	149	118
1940	83	94]	(99	86	97
1945	118	103	103	114	110
1950	101)				

Int = 4557
Gks = 2616
Bkg = 1941
Net = 675

MCA #1 - Canberra S100 - ESCECP1.MCA - ESC-ECP-1

Tag Number:	27	Readout:	Wed 03 Jun 1992 @ 16:03:51
Report Group:	2/4	Acquire Started:	Wed 03 Jun 1992 @ 16:02:18
Group Size:	4096		

Elapsed Live Time:	3366.00 min.
Elapsed True Time:	3366.31 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3366.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

BWL 6/3/92
time = 3366 min
mass = 3.4998 g

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	8817	927	46.6
	49.5	0.04	12.42	1.40
2	60.5	9942	1383	63.5
	66.0	0.05	8.98	1.50
	Isotope:	TH-234 @	63.3	
3	89.0	15829	3339	92.9
	96.5	0.08	6.22	1.57
4	182.9	9039	1644	185.7
	188.4	0.04	7.34	1.25
	Isotope:	U-235 @	185.7	
5M	230.9	23618	5488	238.5
	248.4	0.12	7.90	1.58
	Isotope:	PB-212 @	238.6	
6	291.4	6984	706	294.9
	298.9	0.03	19.53	1.66
	Isotope:	PB-214 @	295.2	
7	334.3	6632	736	338.3
	341.8	0.03	18.26	1.42
	Isotope:	AC-228 @	338.3	
8	347.8	6481	1089	351.8
	355.3	0.03	12.20	1.51
	Isotope:	PB-214 @	351.9	
9	578.7	4734	1514	582.7
	586.2	0.02	7.50	1.56
	Isotope:	TL-208 @	583.2	
10	605.1	4530	1192	608.7
	612.6	0.02	9.32	1.59
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	3203	1115	910.3
	914.4	0.02	8.38	1.88
	Isotope:	AC-228 @	911.2	
12M	957.9	5348	1042	968.1
	975.4	0.03	20.11	2.18

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(661	667	678)
90	883	1014	902	758
95	(608	663	618)	

ROI # 2
Channel # **** Data ****

119				
120	682	693)	[730	897
125	1182	1010	771]	(727
130	762			

ROI # 3
Channel # **** Data ****

176		752	849	911
180	(846	884)	[1293	1802
185	1302	899]	(745	745
190	707	681		

ROI # 4
Channel # **** Data ****

364				
365	551	593)	[659	810
370	1248	869	729]	(614
375	604)			

ROI # 5
Channel # **** Data ****

460	500	512	532	524
465	525	564	524	528
470	505	538	558	735
475	1983	1922	1154	695
480	682	700	610	573
485	476	450	488	462
490	483	477	473	499
495	492			

ROI # 6
Channel # **** Data ****

581		(363	360	404
585	[416	477	528	586
590	485	372	364]	(415
595	383	409)		

ROI # 7
Channel # **** Data ****

667			(370	361

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			
670	384)	[392	408	461	599
675	601	484	374	365]	(380
680	338	356	392)		

Int=6632
Gds= 3684
Bkg= 2948
Net= 736

ROI # 8
Channel #

		**** Data ****			
694					(360
695	338	339	353)	[335	360
700	455	646	697	561	411
705	320]	(332	329	326	319)

Int=6481
Gds= 3785
Bkg= 2696
Net= 1089

ROI # 9
Channel #

		**** Data ****			
1156		(214	218	185	200)
1160	[213	249	331	486	642
1165	577	357	269]	(211	201
1170	205	176)			

Int=4734
Gds= 3124
Bkg= 1610
Net= 1514

ROI # 10
Channel #

		**** Data ****			
1209					(217
1210	224	198	229)	[214	305
1215	401	515	543	355	293
1220	235]	(188	205	195	213)

Int=4530
Gds= 2861
Bkg= 1669
Net= 1192

ROI # 11
Channel #

		**** Data ****			
1813				(129	156
1815	131	134)	[163	293	361
1820	434	370	239	174	125]
1825	(125	128	132	109)	

Int= 3203
Gds= 2159
Bkg= 1044
Net= 1115

ROI # 12
Channel #

		**** Data ****			
1915	(129	130	110	124	129
1920	141	143	132	143)	[150
1925	166	183	180	185	138
1930	138	139	146	176	250
1935	277	264	251	159	135
1940	114	122]	(94	94	119
1945	102	121	137	99	114
1950	114)				

Int=5348
Gds=3173
Bkg=2175
Net= 998

MCA #1 - Canberra S100 - PUE1EP1.MCA - PUE1-ECP-1

Tag Number:	25	Readout:	Mon 01 Jun 1992 @ 07:55:05
Report Group:	2/4	Acquire Started:	Mon 01 Jun 1992 @ 07:53:29
Group Size:	4096		

Elapsed Live Time:	4170.00 min.
Elapsed True Time:	4170.38 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 4170.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

BwL 6/1192

Mass = 3.1755

time = 4170m

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	10743	1224	46.6
	49.5	0.04	10.43	1.37
2	60.5	11839	1501	63.3
	66.0	0.05	8.98	1.30
	Isotope:	TH-234 @	63.3	
3	89.0	18938	4340	92.6
	96.5	0.08	5.23	1.49
4	182.9	11184	2268	185.7
	188.4	0.04	5.97	1.35
	Isotope:	U-235 @	185.7	
5M	230.9	26405	4715	238.5
	248.4	0.11	9.94	1.54
	Isotope:	PB-212 @	238.6	
6	291.4	8963	887	295.1
	298.9	0.04	17.61	1.73
	Isotope:	PB-214 @	295.2	
7	334.3	7762	668	338.1
	341.8	0.03	21.76	1.35
	Isotope:	AC-228 @	338.3	
8	347.8	7899	1313	351.8
	355.3	0.03	11.17	1.56
	Isotope:	PB-214 @	351.9	
9	578.7	5285	1255	582.7
	586.2	0.02	9.56	1.75
	Isotope:	TL-208 @	583.2	
10	605.1	5315	1523	608.7
	612.6	0.02	7.90	1.65
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	3669	1207	910.4
	914.4	0.01	8.28	1.87
	Isotope:	AC-228 @	911.2	
12M	957.9	6267	1187	968.1
	975.4	0.03	19.15	1.77

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(799	807	796)	[859
90	1068	1263	1179	887	740]
95	(776	793	776)		

Int= 10743
cts= 5996
Bkg= 4747
Net = 1249

ROI # 2
Channel #

**** Data ****

119					(824
120	824	840)	[888	1027	1362
125	1416	1142	903]	(825	885
130	903)				

Int= 11839
cts= 6738
Bkg= 5101
Net= 1637

ROI # 3
Channel #

**** Data ****

176		908	979	1051	990
180	(945	1180)	[1605	2254	2165
185	1513	1059]	(918	895	851)
190	795	830			

cts= 8596
Bkg= 4789
Net 3807

ROI # 4
Channel #

**** Data ****

364					(693
365	703	755)	[718	1031	1494
370	1555	1160	827]	(806	735
375	707)				

Int= 1118
cts= 6785
Bkg= 4399
Net= 2386

ROI # 5
Channel #

**** Data ****

460	619	669	608	603	589
465	631	594	598	597	620
470	648	653	610	763	1289
475	1836	1786	1092	729	703
480	753	769	742	702	633
485	584	553	613	629	622
490	608	639	539	624	568
495	590				

ROI # 6
Channel #

**** Data ****

581		(480	521	555	567)
585	[579	599	640	741	741
590	612	516	497]	(481	484
595	465	485)			

Int = 8%
cts= 4925
Bkg= 4038
Net: 887

ROI # 7
Channel #

**** Data ****

667			(430	424	440

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			Int= 2762
670	494	537	487	524	635 Gs= 4215
675	631	518	458	425	457 Bkg= 3547
680	439	460	403		Net= 668

ROI # 8
Channel #

		**** Data ****			Int= 7890
694					377
695	408	442	416	432	458 Gs= 4606
700	533	793	804	680	501 Bkg= 3293
705	405	432	433	392	393 Net= 1313

ROI # 9
Channel #

		**** Data ****			Int= 5285
1156		251	262	265	272 Gs= 3270
1160	257	276	360	565	611 Bkg= 2015
1165	512	415	274	215	263 Net= 1255
1170	254	233			

ROI # 10
Channel #

		**** Data ****			Int= 5315
1209					244 Gs= 3419
1210	267	225	253	250	351 Bkg= 1896
1215	521	674	627	438	296 Net= 1523
1220	262	255	230	196	226

ROI # 11
Channel #

		**** Data ****			Int= 3569
1813				145	152 Gs= 2396
1815	142	152	222	281	410 Bkg= 1273
1820	443	397	284	207	194 Net= 1123
1825	155	148	165	172	

ROI # 12
Channel #

		**** Data ****			Int= 6267
1915	141	133	144	163	157
1920	152	164	172	154	172 Gs= 3619
1925	178	194	186	184	190 Bkg= 2658
1930	142	157	157	191	260 Net= 961
1935	329	342	239	183	183
1940	153	174	162	150	139
1945	145	129	135	134	137
1950	142				

MCA #1 - Canberra S100 - N1EP8914.MCA - NOP1-ECP-8/5914

Tag Number:	18	Readout:	Mon 25 May 1992 @ 15:58:37
Report Group:	2/4	Acquire Started:	Mon 25 May 1992 @ 15:57:25
Group Size:	4096		

Elapsed Live Time:	3356.00 min.
Elapsed True Time:	3356.31 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3356.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

time (minutes) = 3356
mass (g) = 3.2311

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	8732	728	46.5
	49.5	0.04	15.59	1.41
2	60.5	9913	1377	63.3
	66.0	0.05	9.01	1.25
	Isotope:	TH-234 @	63.3	
3	89.0	15694	3602	92.8
	96.5	0.08	5.74	1.51
4	182.9	9228	1875	185.9
	188.4	0.05	6.56	1.45
	Isotope:	U-235 @	185.7	
5M	230.9	22374	4622	238.5
	248.4	0.11	9.22	1.52
	Isotope:	PB-212 @	238.6	
6	291.4	7292	854	295.1
	298.9	0.04	16.50	1.76
	Isotope:	PB-214 @	295.2	
7	334.3	6267	677	338.1
	341.8	0.03	19.29	1.48
	Isotope:	AC-228 @	338.3	
8	347.8	6753	1639	351.8
	355.3	0.03	8.27	1.41
	Isotope:	PB-214 @	351.9	
9	578.7	4529	1393	582.7
	586.2	0.02	7.97	1.59
	Isotope:	TL-208 @	583.2	
10	605.1	4628	1408	608.9
	612.6	0.02	7.97	1.67
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	3190	1008	910.4
	914.4	0.02	9.25	1.83
	Isotope:	AC-228 @	911.2	
12M	957.9	5253	767	968.1
	975.4	0.03	27.63	2.01

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		683	702	716	736
90	855	966	885	690	668
95	595	620	616		

Int= 8732
Cts= 4860
Bkg= 3872
Net= 988

ROI # 2

Channel #		**** Data ****			
119					682
120	695	703	701	840	1169
125	1241	972	764	719	717
130	710				

Int= 9913
Cts= 5687
Bkg= 4226
Net= 1461

ROI # 3

Channel #		**** Data ****			
176		737	853	918	844
180	814	902	1299	1872	1824
185	1308	891	738	699	674
190	697	624			

Int=
Cts= 8096
Bkg= 4466
Net= 3630

ROI # 4

Channel #		**** Data ****			
364					584
365	602	586	628	813	1248
370	1263	1002	718	631	550
375	603				

Int= 9228
Cts= 5672
Bkg= 3556
Net= 2116

ROI # 5

Channel #		**** Data ****			
460	532	512	506	494	514
465	522	516	503	507	523
470	499	497	534	683	1203
475	1769	1641	1012	610	554
480	646	629	626	593	515
485	504	478	470	450	474
490	469	488	474	476	474
495	477				

ROI # 6

Channel #		**** Data ****			
581		398	413	409	415
585	393	446	557	655	665
590	586	408	363	380	404
595	391	409			

Int= 7292
Cts= 4073
Bkg= 3219
Net= 854

ROI # 7

Channel #		**** Data ****			
667			335	368	377

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	331)	337	381	456	529
675	568	454	400	347	(346
680	360	335	343)		

Int=6267
cts= 3472
Bkg= 2795
Net= 677

ROI # 8
Channel # **** Data ****

694					(339
695	328	342	333)	315	367
700	489	792	884	646	372
705	331	(286	316	297	316)

Int=6753
cts= 4196
Bkg= 2557
Net= 1639

ROI # 9
Channel # **** Data ****

1156		(181	220	187	231)
1160	222	234	310	479	593
1165	527	330	266	(198	196
1170	175	180)			

Int= 4529
cts= 2961
Bkg= 1568
Net= 1393

ROI # 10
Channel # **** Data ****

1209					(211
1210	193	183	209)	222	275
1215	472	611	573	406	260
1220	199	(213	207	207	187)

Int= 4628
cts= 3018
Bkg= 1610
Net= 1408

ROI # 11
Channel # **** Data ****

1813				(127	132
1815	129	137)	175	263	327
1820	414	364	258	167	131
1825	(140	146	156	124)	

Int= 3190
cts= 2099
Bkg= 1091
Net= 1008

ROI # 12
Channel # **** Data ****

1915	(141	117	125	137	135
1920	123	143	114	118)	152
1925	146	151	163	161	143
1930	122	133	149	182	230
1935	292	273	234	189	128
1940	125	101	(125	104	115
1945	97	108	129	125	108
1950	115)				

Int= 5253
cts= 3074
Bkg= 2179
Net= 895

MCA #1 - Canberra S100 - NOP1EP36.MCA - NOP1-ECP-36

Tag Number:	16	Readout:	Sat 23 May 1992 @ 07:59:26
Report Group:	2/4	Acquire Started:	Wed 20 May 1992 @ 13:17:40
Group Size:	4096		

Elapsed Live Time:	5640.00 min.
Elapsed True Time:	5640.51 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 5640.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

$\Delta t =$ 5640.0 minutes

BWL

mass = 3.9259 grams 5/23/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	14370	1322	46.6
	49.5	0.04	11.06	1.33
2	60.5	16171	2137	63.5
	66.0	0.05	7.39	1.46
	Isotope:	TH-234 @	63.3	
3	89.0	25645	5631	92.9
	96.5	0.08	4.69	1.59
4	182.9	14859	2982	185.7
	188.4	0.04	5.23	1.32
	Isotope:	U-235 @	185.7	
5M	230.9	38087	9197	238.5
	248.4	0.11	5.96	1.53
	Isotope:	PB-212 @	238.6	
6	291.4	11337	827	295.1
	298.9	0.03	21.24	1.38
	Isotope:	PB-214 @	295.2	
7	334.3	10617	1249	338.3
	341.8	0.03	13.61	1.54
	Isotope:	AC-228 @	338.3	
8	347.8	10313	1839	351.8
	355.3	0.03	9.11	1.58
	Isotope:	PB-214 @	351.9	
9	578.7	7592	2190	582.7
	586.2	0.02	6.56	1.75
	Isotope:	TL-208 @	583.2	
10	605.1	7069	1675	608.7
	612.6	0.02	8.28	1.59
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	5367	1929	910.4
	914.4	0.02	6.27	1.79
	Isotope:	AC-228 @	911.2	
12M	957.9	8882	1682	968.1
	975.4	0.03	16.08	2.12

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		1158	1072	1104	1175
90	1375	1617	1478	1201	1079
95	1020	1013	1078		

ROI # 2

Channel #		**** Data ****			
119					
120	1173	1153	1204	1383	1815
125	1929	1688	1217	1111	1119
130	1199				

ROI # 3

Channel #		**** Data ****			
176		1261	1378	1486	1383
180	1246	1376	2132	2927	3030
185	2173	1513	1241	1167	1129
190	1098	1105			

ROI # 4

Channel #		**** Data ****			
364					
365	976	945	1057	1395	1937
370	2106	1503	1110	950	922
375	977				

ROI # 5

Channel #		**** Data ****			
460	842	887	825	833	881
465	858	847	808	829	839
470	922	878	888	1180	2102
475	3259	3000	1863	1061	969
480	1113	1023	1002	987	853
485	786	761	783	836	745
490	789	805	786	794	699
495	754				

ROI # 6

Channel #		**** Data ****			
581		615	663	663	657
585	645	718	785	912	933
590	775	679	635	640	644
595	683	690			

ROI # 7

Channel #		**** Data ****			
667			611	601	585

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	618	581	578	759	990
675	999	826	611	589	575
680	548	567	579		

ROI # 8
Channel # **** Data ****

694					561
695	567	510	546	531	584
700	737	1071	1081	871	668
705	533	499	510	539	505

ROI # 9
Channel # **** Data ****

1156		323	328	313	355
1160	329	346	536	804	965
1165	905	632	374	331	333
1170	356	362			

ROI # 10
Channel # **** Data ****

1209					369
1210	337	344	359	350	441
1215	618	817	803	564	429
1220	350	321	318	334	315

ROI # 11
Channel # **** Data ****

1813				227	196
1815	197	260	320	467	591
1820	741	636	401	268	224
1825	215	199	200	225	

ROI # 12
Channel # **** Data ****

1915	205	206	207	217	192
1920	198	234	209	230	236
1925	243	300	344	252	229
1930	232	221	213	303	421
1935	479	479	388	281	237
1940	203	199	193	183	212
1945	179	192	199	204	190
1950	172				

MCA #1 - Canberra S100 - NOP1EP35.MCA - NOP1-ECP-35

Tag Number:	16	Readout:	Fri 15 May 1992 @ 07:48:51
Report Group:	2/4	Acquire Started:	Fri 15 May 1992 @ 07:46:42
Group Size:	4096		

Elapsed Live Time:	2824.00 min.
Elapsed True Time:	2824.26 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 2824.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt: 2824 minutes

ΔMass = 3.6829

BWL
5/15/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	7374	830	46.6
	49.5	0.04	12.74	1.43
2	60.5	8328	1101	63.5
	66.0	0.05	10.29	1.25
	Isotope:	TH-234 @	63.3	
3	89.0	13292	3056	92.8
	96.5	0.08	6.22	1.63
4	182.9	7696	1657	185.9
	188.4	0.05	6.81	1.52
	Isotope:	U-235 @	185.7	
5M	230.9	19101	4076	238.6
	248.4	0.11	9.64	1.56
	Isotope:	PB-212 @	238.6	
6	291.4	6007	651	294.9
	298.9	0.04	19.64	1.37
	Isotope:	PB-214 @	295.2	
7	334.3	5118	546	338.3
	341.8	0.03	21.62	1.36
	Isotope:	AC-228 @	338.3	
8	347.8	5721	1249	351.8
	355.3	0.03	9.99	1.55
	Isotope:	PB-214 @	351.9	
9	578.7	3837	1079	582.7
	586.2	0.02	9.47	1.57
	Isotope:	TL-208 @	583.2	
10	605.1	3870	1054	608.7
	612.6	0.02	9.74	1.56
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	2598	812	910.4
	914.4	0.02	10.36	1.77
	Isotope:	AC-228 @	911.2	
12M	957.9	4482	671	968.1
	975.4	0.03	29.13	2.10

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(545	560)	543	619
90	749	865	795	602	(502
95	517	536	541)		

Int: 7374
Gs: 4173
BKg: 3201
Net: 972

ROI # 2
Channel # **** Data ****

119					(582
120	616	580)	626	691	900
125	1051	868	596	(587	627
130	604)				

Int: 8328
Gs: 4732
BKg: 3596
Net: 1136

ROI # 3
Channel # **** Data ****

176		618	676	753	729
180	(619)	725	1137	1567	1588
185	1163	726	(649	619	615
190	573	535)			

Int: 13291
Gs: 6906
BKg: 3610
Net: 3296

ROI # 4
Channel # **** Data ****

364					(476
365	494	476)	530	729	1016
370	1068	857	584	(522	463
375	481)				

Int: 7696
Gs: 4784
BKg: 2912
Net: 1872

ROI # 5
Channel # **** Data ****

460	460	455	417	400	420
465	441	439	427	412	444
470	429	467	454	576	984
475	1459	1509	893	533	479
480	547	575	540	524	421
485	394	384	437	377	419
490	413	365	411	410	401
495	385				

ROI # 6
Channel # **** Data ****

581		(351	322	333	314
585	329	352	453	522	564
590	409	369	331	(363	320
595	331	344)			

Int: 6007
Gs: 3329
BKg: 2678
Net: 651

ROI # 7
Channel # **** Data ****

667			(281	275	296

REGION OF INTEREST DATA

ROI # 7
Channel #

**** Data ****

670	290	284)	320	341	423
675	478	396	327	263	326
680	(290	280	248)		

Int = 5118
dc = 2874
BKG = 2244
Net = 630

ROI # 8
Channel #

**** Data ****

694					(276
695	302	267)	303	269	322
700	431	598	680	545	366
705	(274	272	289	269	258)

Int = 5721
dc = 3514
BKG = 2207
Net = 1307

ROI # 9
Channel #

**** Data ****

1156		(186	179	164	167)
1160	182	181	245	419	499
1165	451	277	204	(181	154
1170	167	181)			

Int = 3837
dc = 2458
BKG = 1379
Net = 1079

ROI # 10
Channel #

**** Data ****

1209					(147
1210	184	196	178)	207	250
1215	363	487	465	305	206
1220	179	(164	176	177	186)

Int = 3870
dc = 2462
BKG = 1408
Net = 1054

ROI # 11
Channel #

**** Data ****

1813				(123	116
1815	116	134)	145	202	283
1820	325	288	191	151	120
1825	(87	106	101	110)	

Int = 2598
dc = 1705
BKG = 893
Net = 812

ROI # 12
Channel #

**** Data ****

1915	(116	122	114	107	118
1920	116	118	123	89)	116
1925	111	143	147	119	124
1930	121	109	122	150	206
1935	236	220	196	150	98
1940	105	102	(102	102	102
1945	105	85	96	86	105
1950	101)				

Int = 4482
dc = 2575
BKG = 1907
Net = 668

MCA #1 - Canberra S100 - N1EP8915.MCA - NOP1-ECP-8/5915

Tag Number:	15	Readout:	Wed 13 May 1992 @ 08:04:20
Report Group:	2/4	Acquire Started:	Wed 13 May 1992 @ 08:02:27
Group Size:	4096		

Elapsed Live Time:	2876.00 min.
Elapsed True Time:	2876.26 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 2876.00 min. Area = 10000 cts., Ch. 8886 to 8901
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

BWL
5/13/92

Δt = 2876 minutes
mass(g) = 3.6934 grams

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	7453	777	46.6
	49.5	0.04	13.63	1.46
2	60.5	8176	1114	63.3
	66.0	0.05	10.09	1.26
	Isotope:	TH-234 @	63.3	
3	89.0	12819	2855	92.9
	96.5	0.07	6.54	1.52
4	182.9	7744	1605	185.9
	188.4	0.04	7.03	1.34
	Isotope:	U-235 @	185.7	
5M	230.9	18139	2695	238.5
	248.4	0.11	14.58	1.59
	Isotope:	PB-212 @	238.6	
6	291.4	6408	1100	295.1
	298.9	0.04	12.01	1.84
	Isotope:	PB-214 @	295.2	
7	334.3	5044	454	338.1
	341.8	0.03	25.81	1.29
	Isotope:	AC-228 @	338.3	
8	347.8	5966	1470	351.8
	355.3	0.03	8.67	1.36
	Isotope:	PB-214 @	351.9	
9	578.7	3420	820	582.7
	586.2	0.02	11.77	1.64
	Isotope:	TL-208 @	583.2	
10	605.1	4076	1278	608.9
	612.6	0.02	8.24	1.74
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	2482	750	910.4
	914.4	0.01	10.96	2.23
	Isotope:	AC-228 @	911.2	
12M	957.9	4229	652	968.1
	975.4	0.02	29.07	1.97

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(591	572	525)	595
90	729	837	797	639	551
95	(509	561	547)		

Int= 7457
cts= 4148
Bkg= 3305
Net= 843

ROI # 2
Channel # **** Data ****

119					(598
120	542	572)	604	726	923
125	1021	798	642	(569	593
130	588)				

Int= 8176
cts= 4714
Bkg= 3462
Net= 1252

ROI # 3
Channel # **** Data ****

176		608	668	747	(675
180	645)	705	1042	1509	1526
185	1068	747	(595	569	613
190	560)	542			

Int= 12819
cts= 6597
Bkg= 3657
Net= 2940

ROI # 4
Channel # **** Data ****

364					(501
365	486	502)	566	690	965
370	1132	864	597	(526	422
375	493)				

Int= 7744
cts= 4814
Bkg= 2930
Net= 1884

ROI # 5
Channel # **** Data ****

460	445	424	469	450	439
465	420	439	414	430	464
470	458	446	419	514	830
475	1126	1069	761	513	478
480	517	534	599	533	455
485	430	375	395	399	416
490	431	403	425	387	417
495	415				

ROI # 6
Channel # **** Data ****

581		(349	334	327	354
585	368	364	531	611	620
590	528	361	371	(310	312
595	335	333)			

Int= 6408
cts= 3754
Bkg= 2654
Net= 1100

ROI # 7
Channel # **** Data ****

667			(306	299	268

REGION OF INTEREST DATA

ROI # 7 Int= 5044

Channel # **** Data ****

670	294	304	326	323	417	cts= 2749
675	411	345	328	295	283	Bkg= 2295
680	293	283	269			Net= 454

ROI # 8 Int= 5966

Channel # **** Data ****

694					281	
695	315	270	323	276	308	cts= 3718
700	409	637	803	586	397	Bkg= 2248
705	302	250	278	251	280	Net= 1470

ROI # 9 Int= 3420

Channel # **** Data ****

1156		152	166	155	163	cts= 2120
1160	158	172	239	314	395	Bkg= 1300
1165	379	257	206	152	162	Net= 820
1170	162	188				

ROI # 10 Int= 4076

Channel # **** Data ****

1209					180	
1210	183	183	189	207	231	cts= 2677
1215	381	531	525	402	221	Bkg= 1399
1220	179	165	165	163	171	Net= 1278

ROI # 11 Int= 2482

Channel # **** Data ****

1813				102	103	cts= 1616
1815	118	107	135	195	272	Bkg= 866
1820	276	249	214	160	115	Net= 750
1825	105	107	121	103		

ROI # 12 Int= 4229

Channel # **** Data ****

1915	101	108	100	94	104	
1920	106	112	112	99	104	cts= 2432
1925	117	150	141	137	117	Bkg= 1797
1930	101	111	114	139	179	Net= 635
1935	193	218	177	132	110	
1940	95	97	96	102	104	
1945	86	81	105	83	110	
1950	94					

NOP1-ECP-16

MCA #1 - Canberra S100 - NOP1EP16.MCA - NOP1-ECP-16

Tag Number:	20	Readout:	Mon 11 May 1992 @ 07:42:47
Report Group:	2/4	Acquire Started:	Mon 11 May 1992 @ 07:41:21
Group Size:	4096		

Elapsed Live Time:	4266.00 min.
Elapsed True Time:	4266.38 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 4266.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

$\Delta t_{min} = 4266$

BWL
5/11/92

mass = 4,1992 grams

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	10456	1030	46.6
	49.5	0.04	12.14	1.42
2	60.5	11569	1522	63.3
	66.0	0.05	8.77	1.14
	Isotope:	TH-234 @	63.3	
3	89.0	18507	4379	92.9
	96.5	0.07	5.13	1.26
4	182.9	11262	2382	185.7
	188.4	0.04	5.72	1.32
	Isotope:	U-235 @	185.7	
5M	230.9	25971	4574	238.5
	248.4	0.10	10.17	1.45
	Isotope:	PB-212 @	238.6	
6	291.4	8738	922	295.1
	298.9	0.03	16.73	1.33
	Isotope:	PB-214 @	295.2	
7	334.3	7465	513	338.3
	341.8	0.03	27.79	1.44
	Isotope:	AC-228 @	338.3	
8	347.8	7991	1747	351.8
	355.3	0.03	8.44	1.61
	Isotope:	PB-214 @	351.9	
9	578.7	5268	1314	582.7
	586.2	0.02	9.11	1.72
	Isotope:	TL-208 @	583.2	
10	605.1	5415	1431	608.7
	612.6	0.02	8.48	1.67
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	3807	1077	910.4
	914.4	0.01	9.45	1.65
	Isotope:	AC-228 @	911.2	
12M	957.9	6401	880	968.1
	975.4	0.03	26.67	1.82

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		(809	797	795)	824
90	1025	1168	1107	872	832
95	(781	747	699)		

ROI # 2
Channel # **** Data ****

119					(829
120	810	800	808)	990	1265
125	1465	1151	936	862	(847
130	806)				

ROI # 3
Channel # **** Data ****

176		833	940	1087	951
180	(930)	992	1499	2263	2229
185	1610	1024	(896	833	859
190	798	763)			

ROI # 4
Channel # **** Data ****

364					(669
365	714	758)	788	1080	1438
370	1643	1181	843	(743	692
375	713)				

ROI # 5
Channel # **** Data ****

460	595	656	612	598	607
465	616	618	614	680	630
470	651	624	609	732	1206
475	1817	1644	1075	723	663
480	690	815	791	708	610
485	618	576	566	558	615
490	571	589	607	576	547
495	564				

ROI # 6
Channel # **** Data ****

581		(504	522	497	490
585	503	509	599	812	811
590	615	521	460	(464	478
595	460	493)			

ROI # 7
Channel # **** Data ****

667			(476	428	437

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			
670	430	447	420	514	573
675	627	542	430	436	422
680	462	390	431		

ROI # 8
Channel #

		**** Data ****			
694					389
695	400	403	421	387	460
700	597	793	926	766	556
705	384	393	370	377	369

ROI # 9
Channel #

		**** Data ****			
1156		267	235	231	278
1160	269	306	345	539	613
1165	570	408	241	232	230
1170	253	251			

ROI # 10
Channel #

		**** Data ****			
1209					263
1210	236	274	253	256	370
1215	520	668	605	447	303
1220	254	237	235	245	249

ROI # 11
Channel #

		**** Data ****			
1813				171	162
1815	167	188	224	303	393
1820	480	394	269	214	165
1825	185	195	141	156	

ROI # 12
Channel #

		**** Data ****			
1915	169	158	147	163	152
1920	162	149	185	165	181
1925	188	194	197	187	209
1930	160	152	151	210	237
1935	295	321	243	218	157
1940	129	159	167	150	157
1945	155	144	144	144	167
1950	135				

MCA #1 - Canberra S100 - NOP1EP34.MCA - NOP1-ECP-34

Tag Number:	18	Readout:	Fri 08 May 1992 @ 08:31:29
Report Group:	2/4	Acquire Started:	Wed 06 May 1992 @ 16:08:31
Group Size:	4096		

Elapsed Live Time:	2880.00 min.
Elapsed True Time:	2880.26 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 2880.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Bret Leslie
5/8/92

mass = 3.9812 g

$\Delta t_{min} = 2880$

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	7232	800	46.5
	49.5	0.04	13.07	1.32
2	60.5	8418	1197	63.5
	66.0	0.05	9.56	1.40
	Isotope:	TH-234 @	63.3	
3	89.0	13279	3045	92.9
	96.5	0.08	6.24	1.40
4	182.9	7689	1625	185.9
	188.4	0.04	6.93	1.40
	Isotope:	U-235 @	185.7	
5M	230.9	19540	4623	238.6
	248.4	0.11	8.51	1.61
	Isotope:	PB-212 @	238.6	
6	291.4	6026	590	294.9
	298.9	0.03	21.71	1.57
	Isotope:	PB-214 @	295.2	
7	334.3	5385	695	338.3
	341.8	0.03	17.42	1.44
	Isotope:	AC-228 @	338.3	
8	347.8	5563	1137	351.8
	355.3	0.03	10.82	1.62
	Isotope:	PB-214 @	351.9	
9	578.7	3960	1164	582.7
	586.2	0.02	8.92	1.41
	Isotope:	TL-208 @	583.2	
10	605.1	3778	984	608.9
	612.6	0.02	10.31	1.82
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	2879	931	910.4
	914.4	0.02	9.51	1.83
	Isotope:	AC-228 @	911.2	
12M	957.9	4598	922	968.1
	975.4	0.03	21.03	1.88

REGION OF INTEREST DATA

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		(627)	570	567	615
90	747	884	747	(566	522
95	495	507	485)		

ROI # 2

Channel #		**** Data ****			
119					(588
120	602	598)	626	765	979
125	1034	826	646	(585	548
130	621)				

ROI # 3

Channel #		**** Data ****			
176		644	682	778	(704
180	686)	709	1070	1583	1554
185	1155	790	(615	596	598
190	570)	545			

ROI # 4

Channel #		**** Data ****			
364					(525
365	510	481)	528	684	1042
370	1094	826	562	(505	492
375	440)				

ROI # 5

Channel #		**** Data ****			
460	413	388	474	462	405
465	431	441	457	430	431
470	433	429	468	582	1086
475	1632	1599	1006	554	512
480	517	577	500	465	421
485	406	391	416	415	377
490	467	377	408	385	405
495	380				

ROI # 6

Channel #		**** Data ****			
581		(335	340	346)	373
585	328	379	467	514	520
590	388	388	(324	331	305
595	327	361)			

ROI # 7

Channel #		**** Data ****			

667 (319 318 310

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	271	285	309	367	517
675	523	409	333	297	290
680	282	260	295		

Int= 5385
Gds= 3041
Bkg= 2345
Net= 695

ROI # 8
Channel # **** Data ****

694					282
695	287	299	279	282	300
700	414	555	622	538	349
705	290	299	248	266	253

Int= 5563
Gds= 3350
Bkg= 2213
Net= 1137

ROI # 9
Channel # **** Data ****

1156		170	163	184	172
1160	198	203	281	379	545
1165	428	320	208	190	174
1170	174	171			

Int= 3960
Gds= 2562
Bkg= 1398
Net= 1164

ROI # 10
Channel # **** Data ****

1209					171
1210	167	182	199	179	223
1215	360	433	436	326	222
1220	202	151	178	172	177

Int= 3778
Gds= 2381
Bkg= 1397
Net= 984

ROI # 11
Channel # **** Data ****

1813				118	116
1815	131	121	161	239	360
1820	362	297	216	143	127
1825	109	145	129	105	

Int= 2879
Gds= 1905
Bkg= 974
Net= 931

ROI # 12
Channel # **** Data ****

1915	105	82	85	112	83
1920	111	132	99	111	121
1925	127	129	155	152	142
1930	102	113	121	167	190
1935	267	251	195	152	134
1940	98	116	99	121	97
1945	97	99	117	112	104
1950	100				

Int= 4598
Gds= 2732
Bkg= 1866
Net= 866

MCA #1 - Canberra S100 - NOP1EP8.MCA - NOP1-ECP-8/5915

Tag Number:	16	Readout:	Wed 06 May 1992 @ 08:07:02
Report Group:	2/4	Acquire Started:	Wed 06 May 1992 @ 08:05:39
Group Size:	4096		

Elapsed Live Time:	3945.00 min.
Elapsed True Time:	3945.37 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3945.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt = 3945 minutes

mass = 3.6934 grams

BWL
5/6/92

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	10364	1070	46.6
	49.5	0.04	11.66	1.52
2	60.5	11882	1705	63.5
	66.0	0.05	7.98	1.37
	Isotope:	TH-234 @	63.3	
3	89.0	18466	3856	93.0
	96.5	0.08	5.81	1.57
4	182.9	10662	2021	185.9
	188.4	0.05	6.50	1.34
	Isotope:	U-235 @	185.7	
5M	230.9	27127	6409	238.7
	248.4	0.11	7.23	1.61
	Isotope:	PB-212 @	238.6	
6	291.4	8499	825	295.3
	298.9	0.04	18.44	1.46
	Isotope:	PB-214 @	295.2	
7	334.3	7561	995	338.3
	341.8	0.03	14.42	1.31
	Isotope:	AC-228 @	338.3	
8	347.8	7582	1528	351.8
	355.3	0.03	9.40	1.67
	Isotope:	PB-214 @	351.9	
9	578.7	5497	1719	582.9
	586.2	0.02	7.12	1.82
	Isotope:	TL-208 @	583.2	
10	605.1	5268	1430	608.9
	612.6	0.02	8.37	2.04
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	3862	1424	910.6
	914.4	0.02	7.20	2.21
	Isotope:	AC-228 @	911.2	
12M	957.9	6399	1058	968.3
	975.4	0.03	21.93	1.90

REGION OF INTEREST DATA

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
86		751	767	727	809
90	1018	1131	1125	894	807
95	832	781	722		

ROI # 2

Channel #		**** Data ****			
119					814
120	829	825	859	993	1354
125	1495	1255	948	804	832
130	874				

ROI # 3

Channel #		**** Data ****			
176		883	971	1120	1036
180	967	940	1406	2035	2141
185	1648	1121	903	856	822
190	839	778			

ROI # 4

Channel #		**** Data ****			
364					692
365	716	690	767	891	1325
370	1500	1185	790	768	694
375	644				

ROI # 5

Channel #		**** Data ****			
460	645	606	606	603	592
465	602	591	595	568	566
470	610	615	615	816	1389
475	2173	2275	1455	828	681
480	755	749	778	734	621
485	572	558	607	546	551
490	542	539	544	521	515
495	564				

ROI # 6

Channel #		**** Data ****			
581		489	478	460	490
585	487	509	568	707	765
590	686	485	455	443	529
595	466	482			

ROI # 7

Channel #		**** Data ****			

667 (408 407 443 Int= 756

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	382)	424	438	503	722
675	719	600	474	398	(389
680	415	403	436)		

Cts= 4278 BKg= 3283 Net= 995

ROI # 8
Channel # **** Data ****

694					(399
695	403	406	411)	423	411
700	531	707	807	771	499
705	406	(351	350	356	351)

Int= 7582 Cts= 4555 BKg= 3027 Net= 1528

ROI # 9
Channel # **** Data ****

1156		(219	238	263	234
1160	244	265	325	517	682
1165	696	537	342	(242	245
1170	226	222)			

Int= 5497 Cts= 3608 BKg= 1889 Net= 1719

ROI # 10
Channel # **** Data ****

1209					(245
1210	240	243	248)	274	320
1215	461	573	567	549	339
1220	266	(223	233	238	249)

Int= 5268 Cts= 3349 BKg= 1919 Net= 1430

ROI # 11
Channel # **** Data ****

1813				(133	138
1815	158	165)	240	285	382
1820	447	458	397	252	182
1825	(160	141	163	161)	

Int= 3862 Cts= 2643 BKg= 1219 Net= 1424

ROI # 12
Channel # **** Data ****

1915	(142	157	154	150	133
1920	144	164	154	180)	152
1925	154	212	228	227	178
1930	171	170	132	171	261
1935	302	351	311	220	201
1940	152	122	(154	159	117
1945	138	154	139	166	145
1950	134)				

Int= 6399 Cts= 3715 BKg= 2684 Net= 1031

MCA #1 - Canberra S100 - NOPEP2.MCA - NOP-ECP-2/5920

Tag Number:	6	Readout:	Wed 29 Apr 1992 @ 16:21:42
Report Group:	2/4	Acquire Started:	Wed 29 Apr 1992 @ 16:20:19
Group Size:	4096		

Elapsed Live Time:	3210.00 min.
Elapsed True Time:	3210.29 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3210.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	7613	811	46.6
	49.5	0.04	13.21	1.29
2	60.5	8770	1261	63.3
	66.0	0.05	9.27	1.17
	Isotope:	TH-234	@ 63.3	
3	89.0	14005	3123	92.8
	96.5	0.07	6.25	1.44
4	182.9	8286	1757	185.9
	188.4	0.04	6.66	1.54
	Isotope:	U-235	@ 185.7	
5M	230.9	19438	2842	238.5
	248.4	0.10	14.33	1.57
	Isotope:	PB-212	@ 238.6	
6	291.4	6497	631	295.3
	298.9	0.03	21.08	1.40
	Isotope:	PB-214	@ 295.2	
7	334.3	5700	454	338.1
	341.8	0.03	27.44	1.76
	Isotope:	AC-228	@ 338.3	
8	347.8	6055	1295	351.8
	355.3	0.03	9.91	1.59
	Isotope:	PB-214	@ 351.9	
9	578.7	3887	779	582.7
	586.2	0.02	13.21	1.72
	Isotope:	TL-208	@ 583.2	
10	605.1	4163	1199	608.7
	612.6	0.02	8.88	1.67
	Isotope:	XE-135	@ 608.1	
		BI-214	@ 609.3	
11	906.9	2732	808	910.4
	914.4	0.01	10.67	1.91
	Isotope:	AC-228	@ 911.2	
12M	957.9	4912	561	968.1
	975.4	0.03	36.99	2.04

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

86		(568	561)	605	577
90	763	896	791	628	(577
95	513	564	570)		

ROI # 2
Channel #

**** Data ****

119					
120	627	580)	667	710	1022
125	1158	874	658	(630	594
130	630)				

ROI # 3
Channel #

**** Data ****

176		644	716	813	(706
180	674	784)	1146	1681	1680
185	1118	786	695	(708	620
190	612)	622			

ROI # 4
Channel #

**** Data ****

364					
365	548	566)	601	753	1074
370	1144	962	618	(544	497
375	487)				

ROI # 5
Channel #

**** Data ****

460	(469	493	508	457	462
465	491	426	439	465)	471
470	414	487	486	581	876
475	1231	1166	815	554	556
480	560	553	594	508	468
485	440	452	(457	476	449
490	424	449	445	427	443
495	446)				

ROI # 6
Channel #

**** Data ****

581		(365	383	368	381
585	356	391	422	580	549
590	511	399	356	(366	331
595	361	378)			

ROI # 7
Channel #

**** Data ****

667			(357	311	316)

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

670	355	372	353	397	448
675	450	409	339	309	315
680	340	324	305		

ROI # 8
Channel # **** Data ****

694					316
695	330	287	298	325	343
700	436	637	664	534	385
705	351	278	292	283	298

ROI # 9
Channel # **** Data ****

1156		164	198	219	196
1160	184	195	283	348	425
1165	390	295	213	197	194
1170	186	200			

ROI # 10
Channel # **** Data ****

1209					201
1210	195	185	181	189	269
1215	394	505	489	336	263
1220	236	183	177	187	173

ROI # 11
Channel # **** Data ****

1813				125	129
1815	115	131	166	218	275
1820	333	285	225	147	121
1825	122	118	122	100	

ROI # 12
Channel # **** Data ****

1915	113	139	125	128	130
1920	122	121	111	137	113
1925	146	162	151	145	113
1930	119	131	129	142	221
1935	229	239	210	155	107
1940	126	116	109	110	127
1945	127	97	115	108	128
1950	111				

MCA #1 - Canberra S100 - NOP1EP15.MCA - nopi-ecp-15

Tag Number:	13	Readout:	Sun 03 May 1992 @ 12:58:13
Report Group:	2/4	Acquire Started:	Sun 03 May 1992 @ 12:56:51
Group Size:	4096		

Elapsed Live Time:	4135.00 min.
Elapsed True Time:	4135.40 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 4135.00 min. Area = 10000 cts., Ch. 4790 to 4805
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	44.1	10508	992	46.8
	49.5	0.04	12.61	1.24
2	60.5	11777	1717	63.5
	66.0	0.05	7.90	1.16
	Isotope:	TH-234 @	63.3	
3	89.0	18910	4646	93.0
	96.5	0.08	4.88	1.51
4	182.9	11332	2319	185.9
	188.4	0.05	5.88	1.29
	Isotope:	U-235 @	185.7	
5M	230.9	25463	4201	238.8
	248.4	0.10	11.01	1.54
	Isotope:	PB-212 @	238.6	
6	291.4	8797	1157	295.3
	298.9	0.04	13.38	1.48
	Isotope:	PB-214 @	295.2	
7	334.3	7200	430	338.3
	341.8	0.03	32.56	1.48
	Isotope:	AC-228 @	338.3	
8	347.8	8376	2168	351.8
	355.3	0.03	6.97	1.54
	Isotope:	PB-214 @	351.9	
9	578.7	5019	1027	582.7
	586.2	0.02	11.38	1.56
	Isotope:	TL-208 @	583.2	
10	605.1	5764	1856	608.9
	612.6	0.02	6.75	1.55
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	3569	1027	910.6
	914.4	0.01	9.60	1.71
	Isotope:	AC-228 @	911.2	
12M	957.9	6271	988	968.3
	975.4	0.03	23.31	2.14

REGION OF INTEREST DATA

ROI # 1

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

86		834	752	810	
90	939	1176	1176	873	
95	829	685	750		

ROI # 2
Channel # **** Data ****

119					
120	794	877	864	987	
125	1574	1223	910	833	
130	834				

ROI # 3
Channel # **** Data ****

176		851	928	1032	
180	913	994	1443	2246	
185	1744	1155	912	859	
190	842	790			

ROI # 4
Channel # **** Data ****

364					
365	667	738	726	980	
370	1666	1310	941	766	
375	743				

ROI # 5
Channel # **** Data ****

460	589	645	620	624	584
465	637	596	601	611	601
470	627	666	631	680	1002
475	1572	1685	1236	739	647
480	743	766	798	705	634
485	622	561	581	554	534
490	574	551	547	570	549
495	581				

ROI # 6
Channel # **** Data ****

581		465	476	480	499
585	465	512	558	829	834
590	728	508	543	497	476
595	463	464			

ROI # 7
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 7
Channel #

		**** Data ****			
670	429	391	402	444	594
675	599	551	417	417	435
680	398	396	389		

ROI # 8
Channel #

		**** Data ****			
694					416
695	407	413	385	388	421
700	589	863	1075	883	614
705	439	389	370	401	323

ROI # 9
Channel #

		**** Data ****			
1156		240	249	256	239
1160	250	259	308	428	517
1165	561	397	303	293	250
1170	237	232			

ROI # 10
Channel #

		**** Data ****			
1209					240
1210	213	238	270	277	340
1215	519	715	797	544	369
1220	249	249	252	247	245

ROI # 11
Channel #

		**** Data ****			
1813				161	131
1815	153	181	182	219	346
1820	445	404	308	224	170
1825	152	170	162	161	

ROI # 12
Channel #

		**** Data ****			
1915	166	144	142	168	150
1920	152	165	160	159	147
1925	180	178	206	194	197
1930	158	141	161	193	259
1935	272	319	280	246	157
1940	136	174	142	145	139
1945	130	157	142	145	128
1950	139				

MCA #1 - Canberra S100 - NOP1EP7.MCA - nop1-ECP-7

Tag Number:	12	Readout:	Tue 21 Apr 1992 @ 12:51:27
Report Group:	2/4	Acquire Started:	Tue 21 Apr 1992 @ 12:50:19
Group Size:	4096		

Elapsed Live Time:	2899.00 min.
Elapsed True Time:	2899.27 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 2899.00 min. Area = 1200 cts., Ch. 1157 to 1172
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt = 2899 minutes

mass (g) = 3.3984

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	43.6	7462	652	46.8
	49.0	0.04	16.12	1.25
2	60.5	8503	1155	63.5
	66.0	0.05	9.93	1.31
	Isotope: TH-234 @ 63.3			
3	90.5	10784	2401	93.0
	96.0	0.06	5.58	1.49
4	183.4	7869	1497	185.9
	188.9	0.05	7.54	1.47
	Isotope: U-235 @ 185.7			
5M	230.4	19854	4379	238.9
	247.9	0.11	9.12	1.58
	Isotope: PB-212 @ 238.6			
6	291.4	6212	500	295.3
	298.9	0.04	26.01	1.26
	Isotope: PB-214 @ 295.2			
7	334.3	5369	645	338.4
	341.8	0.03	18.74	1.57
	Isotope: AC-228 @ 338.3			
8	347.8	5646	1186	351.9
	355.3	0.03	10.45	1.39
	Isotope: PB-214 @ 351.9			
9	579.2	3888	1140	583.1
	586.7	0.02	9.02	1.73
	Isotope: TL-208 @ 583.2			
10	605.1	3909	1191	609.1
	612.6	0.02	8.66	1.57
	Isotope: BI-214 @ 609.3			
11	906.9	2713	909	910.7
	914.4	0.02	9.45	1.88
	Isotope: AC-228 @ 911.2			
12M	956.9	4485	836	968.4
	974.4	0.03	23.04	1.55

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

85	(592	580	597)	549	584
90	668	834	836	630	(509
95	548	535)			

Int= 7462
4101
cts= 3361
Bkg= 746
Net=

ROI # 2
Channel #

**** Data ****

119					
120	588	623)	614	730	(598
125	1067	888	669	(618	919
130	594)				595

Int= 8505
cts= 4883
Bkg= 3616
Net= 1271

ROI # 3
Channel #

**** Data ****

179					
180	672	699)	940	1468	(765
185	1258	865	723	(642	1604
190	568)				580

Int= 1078
cts= 6859
Bkg= 3926
Net= 2933

ROI # 4
Channel #

**** Data ****

365	(549	521)	527	689	974
370	1113	957	577	(465	(510
375	503	484)			

Int= 7869
cts 4893
Bkg 3032
Net 1805

ROI # 5
Channel #

**** Data ****

459					(449
460	414	476	430	461	456
465	443	473)	463)	428	430
470	439	439	439	557	864
475	1448	1609	1186	668	497
480	512	547	543	527	478
485	418	(434	411	416	411
490	418	400	446	419	405)

Int =19854
cts= 12020
Bkg= 7825
Net= 4204

ROI # 6
Channel #

**** Data ****

581		(336	334	413	352)
585	325	342	418	493	577
590	488	367	346	(372	374
595	341	334)			

Int =6212
cts= 3356
Bkg= 2056
Net= 500

ROI # 7
Channel #

**** Data ****

667			(325	315	298
670	283)	301	310	317	458

Int = 5369
cts= 3007
Bkg= 2362
Net= 645

REGION OF INTEREST DATA

ROI # 7
Channel #

**** Data ****

675	499	433	376	313	(299
680	298	294	250)		

ROI # 8
Channel #

**** Data ****

Int = 5646

694					(270
695	284	274	275)	266	298 cts = 3416
700	364	506	678	568	417 Bkg = 2230
705	319	(283	265	273	304 Net = 1186

ROI # 9
Channel #

**** Data ****

Int = 3885

1157			(173	187	155 cts = 2514
1160	198)	185	206	329	434 Bkg = 1374
1165	495	407	248	210	(174 Net = 1140
1170	156	171	160)		

ROI # 10
Channel #

**** Data ****

Int = 3909

1209					(176
1210	161	168	174)	183	190 cts = 2550
1215	301	435	526	419	271 Bkg = 1359
1220	225	(188	143	177	172 Net = 1191

ROI # 11
Channel #

**** Data ****

Int = 2713

1813				(121	117
1815	91	113)	134	161	277 cts = 1811
1820	338	343	265	158	135 Bkg = 902
1825	(115	129	103	113)	Net = 909

ROI # 12
Channel #

**** Data ****

Int = 4485

1913				(113	105 cts = 2622
1915	118	93	102	108	122
1920	98	105)	114	116	98 Bkg = 1863
1925	128	155	122	135	149 Net = 759
1930	119	117	109	125	164
1935	184	269	241	144	133
1940	(107	104	109	112	85
1945	104	84	93	101)	

NOP1-ECP-19 BWL 4/5/92

MCA #1 - Canberra S100 - NOP1EP19.MCA -

Tag Number:	20	Readout:	Sun 05 Apr 1992 @ 11:41:15
Report Group:	1/4	Acquire Started:	Sun 05 Apr 1992 @ 11:36:24
Group Size:	4096		

Elapsed Live Time:	158220.00 sec.
Elapsed True Time:	158234.08 sec.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3600 sec.
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt = 2637 minutes

mass (g) = 3.9352

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	43.6	6643	814	46.5
	49.0	0.04	12.38	1.21
2	60.5	7314	1035	63.3
	66.0	0.05	10.30	1.20
	Isotope:	TH-234 @	63.3	
3	91.0	9144	690	92.9
	96.5	0.06	16.77	1.46
4	183.4	7215	1602	185.9
	188.9	0.05	6.84	1.51
	Isotope:	U-235 @	185.7	
5M	230.4	14764	1435	238.7
	247.9	0.09	25.21	1.61
	Isotope:	PB-212 @	238.6	
6	291.4	5817	933	295.1
	298.9	0.04	13.49	1.59
	Isotope:	PB-214 @	295.2	
7	334.3	4479	119	338.3
	341.8	0.03	92.80	1.46
	Isotope:	AC-228 @	338.3	
8	347.8	5634	1638	351.8
	355.3	0.04	7.56	1.56
	Isotope:	PB-214 @	351.9	
9	579.2	2909	545	582.4
	586.7	0.02	16.33	2.00
	Isotope:	TL-208 @	583.2	
10	605.1	3794	1434	608.8
	612.6	0.02	7.09	1.76
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	2040	502	910.2
	914.4	0.01	14.85	1.97
	Isotope:	AC-228 @	911.2	
12M	956.9	3756	444	968.1
	974.4	0.02	40.77	1.97

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

85	(487	480	491	463)	556
90	665	819	717	517	509
95	(447	492)			

Int=6643
Cts=3983
Bkg=2860
Net=923

ROI # 2
Channel # **** Data ****

119					(470
120	548	523)	514	598	896
125	933	701	573	(515	464
130	579)				

Int=7314
Cts=4215
Bkg=3099
Net=1116

ROI # 3
Channel # **** Data ****

180	(530)	637	959	1431	1399
185	957	598	(554	535	515
190	549	480)			

Int=9144
Cts=5901
Bkg=3162
Net=2818

ROI # 4
Channel # **** Data ****

365	(434	466	456)	649	966
370	1063	823	621	448	(429
375	438	422)			

Int=7215
Cts=4570
Bkg=2645
Net=1925

ROI # 5
Channel # **** Data ****

459					(400
460	357	385	384	362	377
465	385	341	384)	386	383
470	362	381	378	424	557
475	673	709	515	427	340
480	423	461	504	505	411
485	319	(348	354	364	356
490	373	341	368	370	357)

Int=14764
Cts=2858
Bkg=6602
Net=1552

ROI # 6
Channel # **** Data ****

581		(295	298	314	273)
585	291	340	465	594	598
590	468	331	288	(323	324
595	310	305)			

Int=5817
Cts=3375
Bkg=2442
Net=933

ROI # 7
Channel # **** Data ****

667			(263	287	267
670	291)	260	264	268	321
675	313	329	273	271	(288

Int=4479
Cts=2299
Bkg=2100
Net=119

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

680	249	290	245	

ROI # 8
Channel # **** Data ****

694					
695	254	243	263	258	281
700	483	669	776	564	346
705	259	241	211	238	257

ROI # 9
Channel # **** Data ****

1157			135	165	138
1160	157	193	220	248	260
1165	283	202	168	153	129
1170	150	156	152		

ROI # 10
Channel # **** Data ****

1209					158
1210	131	144	148	161	290
1215	382	543	489	363	218
1220	168	167	151	143	138

ROI # 11
Channel # **** Data ****

1813				178	129
1815	90	105	120	161	212
1820	216	199	147	118	98
1825	90	84	91	102	

ROI # 12
Channel # **** Data ****

1913				92	93
1915	99	83	77	108	103
1920	96	128	87	113	107
1925	103	102	126	119	97
1930	84	103	96	118	154
1935	148	167	132	117	91
1940	90	93	96	86	81
1945	80	88	102	99	

BWL
4/19/92

MCA #1 - Canberra S100 - NOP1EP13.MCA - nop1-ECP-13

Tag Number:	8	Readout:	Sun 19 Apr 1992 @ 11:41:03
Report Group:	2/4	Acquire Started:	Sun 19 Apr 1992 @ 11:40:26
Group Size:	4096		

Elapsed Live Time:	3035.00 min.
Elapsed True Time:	3035.27 min.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3035.00 min. Area = 1200 cts., Ch. 1157 to 1172
Calibration:	0.0000*Ch^2 + 0.4996*Ch + 1.083 keV
Area Statistics:	Background Channels = 4 % Error Sigma = 1.65
Peak Statistics:	Sensitivity Factor = 5.0 Expected FWHM (ch) = 2.7 - 6.0
Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

$\Delta t(\text{min}) = 3035$

mass (g) = 4.1487

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	43.6	7406	713	46.8
	49.0	0.04	14.74	1.28
2	60.5	8073	1208	63.5
	66.0	0.04	9.31	1.27
	Isotope:	TH-234 @	63.3	
3	90.5	10338	2315	93.0
	96.0	0.06	5.67	1.49
4	183.4	7801	1386	185.9
	188.9	0.04	8.07	1.33
	Isotope:	U-235 @	185.7	
5M	230.4	17624	2275	238.9
	247.9	0.10	17.17	1.52
	Isotope:	PB-212 @	238.6	
6	291.4	6152	556	295.4
	298.9	0.03	23.28	1.49
	Isotope:	PB-214 @	295.2	
7	334.3	5301	89	338.3
	341.8	0.03	134.98	0.84
	Isotope:	AC-228 @	338.3	
8	347.8	5598	982	351.8
	355.3	0.03	12.57	1.49
	Isotope:	PB-214 @	351.9	
9	579.2	3509	667	582.9
	586.7	0.02	14.65	1.71
	Isotope:	TL-208 @	583.2	
10	605.1	3925	1131	609.1
	612.6	0.02	9.14	1.71
	Isotope:	BI-214 @	609.3	
11	906.9	2503	573	910.7
	914.4	0.01	14.41	1.80
	Isotope:	AC-228 @	911.2	
12M	956.9	4535	422	968.2
	974.4	0.02	47.59	2.03

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1

Channel #		**** Data ****			
85	(575	530	507)	554	602
90	695	841	806	654	(560
95	526	556)			

Int= 7406
Cts= 4152
Bkg= 3254
Net= 898

ROI # 2

Channel #		**** Data ****			
119					(537
120	592	559)	570	623	865
125	1069	939	620	(563	540
130	596)				

Int= 8073
Cts= 4686
Bkg= 3387
Net= 1299

ROI # 3

Channel #		**** Data ****			
179					(672
180	621)	666	972	1479	1549
185	1155	806	(604	610	615
190	589)				

Int= 10338
Cts= 6627
Bkg= 3711
Net= 2916

ROI # 4

Channel #		**** Data ****			
365	(538	530	518)	681	892
370	1113	883	636	549	(480
375	468	513)			

Int= 7801
Cts= 4754
Bkg= 3047
Net= 1707

ROI # 5

Channel #		**** Data ****			
459					(470
460	446	417	417	460	481
465	452	451	446)	400	457
470	453	439	456	460	615
475	914	972	732	524	465
480	496	459	525	519	434
485	460	(460	413	440	404
490	426	422	413	427	399)

Int= 17624
Cts= 9780
Bkg= 7844
Net= 1936

ROI # 6

Channel #		**** Data ****			
581		(352	354	343	351
585	349	381	406	486	526
590	469	386	351	(338	341
595	369	350)			

Int= 6152
Cts= 3354
Bkg= 2798
Net= 556

ROI # 7

Channel #		**** Data ****			
667			(322	327	343
670	326)	297	291	309	360

Int= 5301
Cts= 2695
Bkg= 2606
Net= 89

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

675	428	367	332	311	(296
680	308	353	331)		

ROI # 8
Channel # **** Data ****

Int = 5598

694					(320
695	298	280	290)	257	321 cts = 3290
700	361	508	608	551	365 Bkg = 2308
705	319	(283	267	276	294 Net = 982

ROI # 9
Channel # **** Data ****

Int = 3509

1157			(164	163	170 cts = 2688
1160	192)	205	207	298	357 Bkg = 1421
1165	363	287	182	189	(206 Net = 667
1170	158	185	183)		

ROI # 10
Channel # **** Data ****

Int = 3925

1209					(183
1210	165	182	186)	165	227 cts = 2528
1215	323	435	494	400	268 Bkg = 1397
1220	216	(151	182	175	173) Net = 1131

ROI # 11
Channel # **** Data ****

Int = 2503

1813				(118	117
1815	124	113)	132	147	229 cts = 1538
1820	259	274	210	160	127 Bkg = 965
1825	(121	135	113	124)	Net = 573

ROI # 12
Channel # **** Data ****

Int = 4535

1913				(121	113
1915	112	122	101	120	96 cts = 2517
1920	122	108)	118	123	126 Bkg = 2018
1925	129	124	132	139	130 Net = 499
1930	119	107	109	123	183
1935	183	206	199	149	118
1940	(120	105	116	110	106
1945	94	119	110	123)	

MCA #1 - Canberra S100 - (Untitled) - nop1-ECP-33

Tag Number:	33	Readout:	Thu 16 Apr 1992 @ 16:51:07
Report Group:	1/4	Acquire Started:	Wed 15 Apr 1992 @ 17:02:27
Group Size:	4096		

Elapsed Live Time:	144000.00 sec.
Elapsed True Time:	144015.43 sec.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3600 sec.

Area Statistics:	Background Channels = 4
	% Error Sigma = 1.65

Peak Statistics:	Sensitivity Factor = 5.0
	Expected FWHM (ch) = 2.7 - 6.0

Δt = 2400 minutes

Mass (g) = 3.609

REGION OF INTEREST REPORT

ROI #	From(Ch) To (Ch)	Integral CPS	Area %Error	Peak(Ch) FWHM(Ch)
1	85	9499	1308	91.43
	96	0.07	9.28	2.46
2	119	10574	1427	124.93
	130	0.07	8.96	2.65
3	180	12155	1205	183.83
	191	0.08	11.19	2.87
4	365	10268	3092	370.07
	376	0.07	4.36	3.14
5M	459	21792	6866	475.23
	494	0.15	5.84	3.02
6	581	11031	5803	588.70
	596	0.08	2.99	3.04
7	667	5209	595	674.94
	682	0.04	20.01	2.30
8	694	14030	9462	701.92
	709	0.10	2.07	2.99
9	1157	3641	1043	1164.03
	1172	0.03	9.55	2.97
10	1209	9371	6851	1216.47
	1224	0.07	2.33	3.48
11	1813	2507	863	1820.00
	1828	0.02	9.57	3.92
12M	1913	4191	825	1935.58
	1948	0.03	22.46	4.40

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

85	(700	673	683)	662
90	930	1205	1137	769
95	647	630)		

Int = 9499

766 cts = 5469

(697 Bkg = 4030

Net = 1439

ROI # 2

119					(749 Int=1057
120	743	782)	823	923	1220

cts: 6120
Bkg: 4454
Net: 1666

REGION OF INTEREST DATA

ROI # 2
Channel # **** Data ****

125	1306	1027	821	(704	742
130	734)				

ROI # 3
Channel # **** Data **** Int = 12155

180	(771)	847	1192	1894	1923 cts: 8040
185	1294	890	(748	722	669 Bkg: 4115
190	623	582)			Net: 3925

ROI # 4
Channel # **** Data **** Int = 10268

365	(549	594	630)	845	1337 cts: 6952
370	1679	1488	980	623	(552 Bkg: 3316
375	514	477)			Net: 3636

ROI # 5
Channel # **** Data **** Int = 21792

459					(426
460	437	428	421	438	429 14314
465	428	414	475)	441	492 cts: 7478
470	523	476	452	565	941 Bkg: Net: 6836
475	1547	1488	912	564	499
480	706	1066	1345	1146	666
485	485	(398	396	401	406
490	376	379	394	391	441)

ROI # 6
Channel # **** Data **** Int = 11031

581		(317	333	341	336 cts: 8417
585	335	520	1222	2065	2123 Bkg: 2614
590	1249	559	344	(332	325 Net: 5803
595	295	335)			

ROI # 7
Channel # **** Data **** Int = 5209

667			(312	294	286 cts: 2902
670	283)	333	317	359	411 Bkg: 2307
675	506	394	306	276	(274 Net: 595
680	306	280	272)		

ROI # 8
Channel # **** Data ****

695	263	298	295)	296	470 Int=14030
700	1241	2647	3342	2352	971 Cts=11746
705	427	(298	272	281	272) Bkg=2284
					Net=9462

ROI # 9
Channel #

**** Data ****

Int=3641

1157			(167	202	152 Cts=2342
1160	156)	175	246	385	497 Bkg=1299
1165	421	255	179	184	(140 Net=1043
1170	145	161	176)		

ROI # 10
Channel #

**** Data ****

Int=9371

1209					(144 Cts=8111
1210	154	163	181)	259	612 Bkg=1260
1215	1274	2010	1937	1211	563 Net=6851
1220	245	(164	149	147	158)

ROI # 11
Channel #

**** Data ****

Int=2507

1813				(90	93 Cts=1685
1815	110	118)	139	213	280 Bkg=822
1820	327	292	209	137	88 Net=863
1825	(119	103	91	98)	

ROI # 12
Channel #

**** Data ****

Int=4191

1913				(97	92
1915	90	101	102	82	83
1920	100	90)	101	119	107 Cts=2493
1925	130	108	138	145	124 Bkg=1698
1930	110	103	110	128	189 Net=795
1935	214	221	205	152	89
1940	(112	93	101	97	90
1945	73	102	83	110)	

MESA-ECP-1

4/13/92
BWL

MCA #1 - Canberra S100 - MESAEP1.MCA -

Tag Number:	28	Readout:	Mon 13 Apr 1992 @ 09:03:47
Report Group:	1/4	Acquire Started:	Mon 13 Apr 1992 @ 08:57:39
Group Size:	4096		

Elapsed Live Time:	403200.00 sec.
Elapsed True Time:	403236.94 sec.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3600 sec.

Calibration: 0.0000*Ch^2 + 0.4996*Ch + 1.083 keV

Area Statistics: Background Channels = 4
% Error Sigma = 1.65

Peak Statistics: Sensitivity Factor = 5.0
Expected FWHM (ch) = 2.7 - 6.0

Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

$\Delta t_{min} = 6720$

Mass (g) = 3.7811

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	43.6	17645	1820	46.6
	49.0	0.04	8.94	1.46
2	60.5	19394	2741	63.3
	66.0	0.05	6.33	1.24
	Isotope:	TH-234 @	63.3	
3	91.0	24443	2345	92.9
	96.5	0.06	8.14	1.49
4	183.4	18301	3591	185.9
	188.9	0.05	4.81	1.48
	Isotope:	U-235 @	185.7	
5M	230.4	44891	8986	238.5
	247.9	0.11	6.74	1.53
	Isotope:	PB-212 @	238.6	
6	291.4	14807	2167	295.1
	298.9	0.04	9.27	1.55
	Isotope:	PB-214 @	295.2	
7	334.3	12391	1181	338.3
	341.8	0.03	15.55	1.61
	Isotope:	AC-228 @	338.3	
8	347.8	14271	3957	351.8
	355.3	0.04	4.98	1.49
	Isotope:	PB-214 @	351.9	
9	579.2	8769	2293	582.7
	586.7	0.02	6.74	1.55
	Isotope:	TL-208 @	583.2	
10	605.1	9654	3334	608.8
	612.6	0.02	4.86	1.76
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	6261	2061	910.4
	914.4	0.02	6.33	1.78
	Isotope:	AC-228 @	911.2	
12M	956.9	10517	1252	968.1
	974.4	0.03	24.20	2.08

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

85	1306	1302	1385	1313	1424
90	1733	1982	1956	1481	1256
95	1267	1240			

ROI # 2
Channel # **** Data ****

119					1345
120	1361	1357	1396	1611	2262
125	2470	1949	1489	1369	1370
130	1415				

ROI # 3
Channel # **** Data ****

180	1484	1685	2550	3678	3754
185	2620	1820	1517	1392	1306
190	1317	1320			

ROI # 4
Channel # **** Data ****

365	1145	1117	1329	1616	2433
370	2578	2024	1459	1168	1133
375	1076	1223			

ROI # 5
Channel # **** Data ****

459					1074
460	1080	1022	1046	987	1015
465	1027	1036	1003	997	1043
470	1069	1012	1074	1369	2206
475	3400	3244	2038	1292	1118
480	1298	1382	1407	1147	1087
485	969	977	936	960	915
490	904	880	919	980	978

ROI # 6
Channel # **** Data ****

581		795	771	782	817
585	781	844	1156	1473	1461
590	1136	907	729	770	777
595	779	829			

ROI # 7
Channel # **** Data ****

667			710	696	706
670	689	682	725	873	1065
675	1075	952	736	678	715

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

680 685 693 711

ROI # 8
Channel # **** Data ****

694
695 672 668 633 655 788
700 1052 1629 1916 1487 908
705 679 634 595 615 631

ROI # 9
Channel # **** Data ****

1157 380 427 433
1160 423 423 612 811 1101
1165 1014 689 502 379 395
1170 399 379 402

ROI # 10
Channel # **** Data ****

1209 388
1210 378 408 415 463 670
1215 965 1254 1297 884 551
1220 410 401 408 379 383

ROI # 11
Channel # **** Data ****

1813 267
1815 255 246 345 505 682
1820 819 681 497 348 284
1825 290 254 272 252

ROI # 12
Channel # **** Data ****

1913 228 276
1915 282 277 243 240 232
1920 264 257 260 240 261
1925 294 323 337 335 258
1930 240 232 315 347 474

1935 517 544 442 356 252
1940 247 233 231 230 254
1945 251 267 256 222

PUE1-ECP-2A -

BWH 4/10/92

MCA #1 - Canberra S100 - PUE1EP2A.MCA -

Tag Number:	26	Readout:	Wed 08 Apr 1992 @ 14:45:20
Report Group:	1/4	Acquire Started:	Wed 08 Apr 1992 @ 14:27:27
Group Size:	4096		

Elapsed Live Time:	168240.00 sec.
Elapsed True Time:	168254.71 sec.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3600 sec.

Calibration: 0.0000*Ch^2 + 0.4996*Ch + 1.083 keV

Area Statistics: Background Channels = 4
% Error Sigma = 1.65

Peak Statistics: Sensitivity Factor = 5.0
Expected FWHM (ch) = 2.7 - 6.0

Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

Δt_{min} = 2804 minutes
mass = 4.1436g

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	43.6	6560	551	46.6
	49.0	0.04	17.86	0.90
2	60.5	7039	912	63.3
	66.0	0.04	11.41	1.13
	Isotope: TH-234 @ 63.3			
3	91.0	9062	530	92.7
	96.5	0.05	21.56	1.20
4	183.4	7020	1113	185.9
	188.9	0.04	9.45	1.47
	Isotope: U-235 @ 185.7			
5M	230.4	15618	1380	238.5
	247.9	0.09	27.06	1.52
	Isotope: PB-212 @ 238.6			
6	291.4	5391	373	295.4
	298.9	0.03	32.48	1.52
	Isotope: PB-214 @ 295.2			
7	334.3	4658	230	338.3
	341.8	0.03	48.96	2.23
	Isotope: AC-228 @ 338.3			
8	347.8	4724	524	351.8
	355.3	0.03	21.64	1.69
	Isotope: PB-214 @ 351.9			
9	579.2	2990	494	582.6
	586.7	0.02	18.26	1.69
	Isotope: TL-208 @ 583.2			
10	605.1	3264	676	609.1
	612.6	0.02	13.94	1.15
	Isotope: BI-214 @ 609.3			
11	906.9	2236	538	910.4
	914.4	0.01	14.50	1.66
	Isotope: AC-228 @ 911.2			
12M	956.9	4046	469	968.1
	974.4	0.02	40.14	1.87

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

		**** Data ****			
85	500	545	(468	484)	534
90	608	774	638	568	(470
95	495	476)			

ROI # 2
Channel #

		**** Data ****			
119					(515
120	479	494)	544	588	804
125	898	664	538	(479	496
130	540)				

ROI # 3
Channel #

		**** Data ****			
180	(562)	643	949	1490	1293
185	897	627	(557	550	483
190	489	522)			

ROI # 4
Channel #

		**** Data ****			
365	(437	507)	516	682	904
370	952	718	508	(436	441
375	464	455)			

ROI # 5
Channel #

		**** Data ****			
459					(444
460	415	384	378	398	421
465	412	404	407)	369	394
470	424	393	399	413	616
475	791	786	566	423	401
480	421	432	455	380	392
485	367	(402	399	408	384
490	397	394	396	379	374)

ROI # 6
Channel #

		**** Data ****			
581		(340	282	295	294)
585	306	333	338	427	413
590	401	348	316	(340	307
595	309	342)			

ROI # 7
Channel #

		**** Data ****			
667			(266	255	268
670	306)	267	281	317	327
675	327	333	309	283	(266

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

680	272	294	287		

ROI # 8
Channel # **** Data ****

694					
695	258	284	267	237	279
700	317	403	426	373	326
705	263	255	253	228	268

ROI # 9
Channel # **** Data ****

1157			166	149	157
1160	148	166	207	273	294
1165	269	200	173	160	162
1170	153	161	154		

ROI # 10
Channel # **** Data ****

1209					189
1210	152	171	147	166	222
1215	242	358	325	264	204
1220	189	179	159	151	146

ROI # 11
Channel # **** Data ****

1813				117	100
1815	112	103	113	164	256
1820	250	213	164	121	106
1825	104	121	107	85	

ROI # 12
Channel # **** Data ****

1913				99	106
1915	112	106	92	114	98
1920	119	111	99	99	112
1925	109	110	119	122	114
1930	111	89	117	118	149
1935	184	188	171	109	90
1940	106	124	110	92	75
1945	90	92	104	86	

4/7/92
BWC

NOP1- ECP-9 /5911

MCA #1 - Canberra S100 - 5911.MCA -

Tag Number:	23	Readout:	Mon 06 Apr 1992 @ 15:45:31
Report Group:	1/4	Acquire Started:	Mon 06 Apr 1992 @ 08:11:25
Group Size:	4096		

Elapsed Live Time:	100800.00 sec.
Elapsed True Time:	100809.51 sec.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3600 sec.

Calibration: 0.0000*Ch^2 + 0.4996*Ch + 1.083 keV

Area Statistics: Background Channels = 4
% Error Sigma = 1.65

Peak Statistics: Sensitivity Factor = 5.0
Expected FWHM (ch) = 2.7 - 6.0

Iso. Id. Criteria: Energy Window = +-1.000 keV
Iso. Library: C:\WINDOWS\S100\SPECTRAN.ISO

Δt = 1680 minutes

mass (g) = 3.5869

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	43.6	4758	476	46.8
	49.0	0.05	17.75	1.13
2	60.5	5449	868	63.3
	66.0	0.05	10.68	1.28
	Isotope:	TH-234 @	63.3	
3	91.0	6586	657	92.9
	96.5	0.07	15.12	1.43
4	183.4	4914	1130	185.9
	188.9	0.05	8.03	1.46
	Isotope:	U-235 @	185.7	
5M	230.4	12063	2618	238.5
	247.9	0.12	11.91	1.52
	Isotope:	PB-212 @	238.6	
6	291.4	4108	812	295.1
	298.9	0.04	13.02	1.39
	Isotope:	PB-214 @	295.2	
7	334.3	3305	527	337.9
	341.8	0.03	18.00	1.66
	Isotope:	AC-228 @	338.3	
8	347.8	4239	1441	351.8
	355.3	0.04	7.46	1.44
	Isotope:	PB-214 @	351.9	
9	579.2	2310	682	582.8
	586.7	0.02	11.63	1.84
	Isotope:	TL-208 @	583.2	
10	605.1	2808	1250	608.8
	612.6	0.03	6.99	1.78
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1584	574	910.4
	914.4	0.02	11.44	2.13
	Isotope:	AC-228 @	911.2	
12M	956.9	2661	510	968.1
	974.4	0.03	29.01	1.83

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

85	374	321	380	384	393
90	431	558	521	393	358
95	300	345			

ROI # 2
Channel #

**** Data ****

119					371
120	390	359	392	511	634
125	719	531	416	348	348
130	430				

ROI # 3
Channel #

**** Data ****

180	413	462	660	982	1036
185	712	475	410	402	364
190	327	343			

ROI # 4
Channel #

**** Data ****

365	308	281	322	431	688
370	745	579	379	290	284
375	316	291			

ROI # 5
Channel #

**** Data ****

459					286
460	278	301	261	271	266
465	283	251	259	256	280
470	290	261	257	382	606
475	946	914	515	377	308
480	351	379	445	358	270
485	249	239	245	222	245
490	239	244	248	242	239

ROI # 6
Channel #

**** Data ****

581		218	204	188	209
585	200	230	328	473	477
590	324	234	194	209	201
595	211	208			

ROI # 7
Channel #

**** Data ****

667			150	181	198
670	196	174	228	258	294
675	318	234	214	196	171

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

680	168	167	158		

ROI # 8
Channel # **** Data ****

Int= 4239

694					182
695	179	177	170	184	224 Obs= 2046
700	315	548	642	453	284 Bkg= 1399
705	190	173	178	162	178 Net= 1441

ROI # 9
Channel # **** Data ****

Int= 2316

1157			108	93	97 Obs= 1496
1160	113	135	168	239	270 Bkg= 814
1165	279	190	116	99	105 Net= 682
1170	101	101	96		

ROI # 10
Channel # **** Data ****

Int= 2808

1209					106
1210	92	97	93	122	191 Obs= 2029
1215	317	431	411	282	147 Bkg= 779
1220	128	105	85	102	99 Net= 1250

ROI # 11
Channel # **** Data ****

Int= 1584

1813				68	53 Obs= 1079
1815	66	76	96	132	194 Bkg= 505
1820	189	178	133	96	61 Net= 574
1825	70	59	66	47	

ROI # 12
Channel # **** Data ****

Int= 2661

1913				44	76
1915	54	67	65	84	58 Obs= 1565
1920	63	62	65	66	69 Bkg= 1096
1925	75	82	97	98	59 Net= 469
1930	58	56	84	77	114
1935	150	140	119	80	76
1940	62	57	51	67	49
1945	47	48	73	69	

COL-ECP-1-WR1/1-GAM-P/1

BWL 4/3/92

MCA #1 - Canberra S100 - 5913.MCA -

Tag Number:	17	Readout:	Fri 03 Apr 1992 @ 15:40:26
Report Group:	1/4	Acquire Started:	Fri 03 Apr 1992 @ 15:32:47
Group Size:	4096		

Elapsed Live Time:	85800.00 sec.
Elapsed True Time:	85807.70 sec.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3600 sec.

Calibration: 0.0000*Ch^2 + 0.4996*Ch + 1.083 keV

Area Statistics: Background Channels = 4
% Error Sigma = 1.65

Peak Statistics: Sensitivity Factor = 5.0
Expected FWHM (ch) = 2.7 - 6.0

Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

mass (g) = 4.0652

Δt_{min} = 1430

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	43.6	3637	325	46.6
	49.0	0.04	22.60	1.58
2	60.5	3843	596	63.5
	66.0	0.04	13.05	1.34
	Isotope:	TH-234 @	63.3	
3	91.0	4990	348	92.9
	96.5	0.06	24.53	1.50
4	183.4	3810	686	185.9
	188.9	0.04	11.41	1.35
	Isotope:	U-235 @	185.7	
5M	230.4	8761	1611	238.5
	247.9	0.10	16.72	1.54
	Isotope:	PB-212 @	238.6	
6	291.4	2838	194	294.9
	298.9	0.03	45.31	1.52
	Isotope:	PB-214 @	295.2	
7	334.3	2585	243	338.3
	341.8	0.03	34.52	1.36
	Isotope:	AC-228 @	338.3	
8	347.8	2676	478	351.6
	355.3	0.03	17.86	1.09
	Isotope:	PB-214 @	351.9	
9	579.2	1736	336	582.6
	586.7	0.02	20.46	1.48
	Isotope:	TL-208 @	583.2	
10	605.1	1818	504	608.7
	612.6	0.02	13.96	1.50
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1237	331	910.4
	914.4	0.01	17.53	1.42
	Isotope:	AC-228 @	911.2	
12M	956.9	2206	330	967.9
	974.4	0.03	41.59	1.69

REGION OF INTEREST DATA

ROI # 1

Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

85	(291	283	270)	263	292
90	370	383	384	301	(286
95	247	267)			

Int= 3637
Cts= 1993
Bkg= 1664
Net= 329

ROI # 2
Channel # **** Data ****

119					264
120	(259	276	279)	339	467
125	491	381	295	(245	265
130	282)				

Int= 2843
Cts= 2237
Bkg= 1606
Net= 631

ROI # 3
Channel # **** Data ****

180	(308	345)	554	763	745
185	495	338	317	/282	285
190	256	302)			

Int= 4990
Cts= 3212
Bkg= 1778
Net= 1434

ROI # 4
Channel # **** Data ****

365	(243	259	241)	359	522
370	555	392	258	269	(241
375	240	231)			

Int= 3301
Cts= 2355
Bkg= 1445
Net= 910

ROI # 5
Channel # **** Data ****

459					(203
460	211	240	203	183	207
465	224	212	220)	222	199
470	194	245	193	275	417
475	589	623	359	233	218
480	253	242	254	224	205
485	231	(172	193	176	212
490	197	170	197	182	183)

Int= 8761
Cts= 5176
Bkg= 3585
Net= 1591

ROI # 6
Channel # **** Data ****

581		(181	148	166	182
585	173	162	205	230	227
590	191	184	144	(147	187
595	161	150)			

Int= 3880
Cts= 1516
Bkg= 1322
Net= 194

ROI # 7
Channel # **** Data ****

667			(151	145	143
670	145)	150	165	178	193
675	220	185	154	169	(153

Int= 2585
Cts= 1414
Bkg= 1171
Net= 243

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

680	164	139	131	

ROI # 8
Channel # **** Data ****

694					
695	115	136	130	134	157
700	211	237	310	232	152
705	144	137	149	162	147

Int: 2676
cts: 1577
123 Bkg: 1099
Net: 478

ROI # 9
Channel # **** Data ****

1157			99	79	99
1160	100	92	131	149	196
1165	172	112	83	101	93
1170	93	76	61		

Int: 1736
cts: 1036
Bkg: 700
Net: 336

ROI # 10
Channel # **** Data ****

1209					
1210	85	83	80	126	102
1215	169	231	196	146	111
1220	80	85	87	86	69

Int: 1818
82 cts: 1161
Bkg: 657
Net: 504

ROI # 11
Channel # **** Data ****

1813				57	55
1815	63	54	67	98	143
1820	169	120	75	66	46
1825	61	48	57	58	

Int: 1237
Cts: 784
Bkg: 453
Net: 331

ROI # 12
Channel # **** Data ****

1913				55	57
1915	59	42	53	48	56
1920	58	49	56	56	44
1925	63	73	68	74	63
1930	56	68	59	72	91
1935	117	106	83	61	59
1940	54	50	49	60	43
1945	47	47	48	62	

Int: 2206
cts: 1260
Bkg: 937
Net: 323

MASSES + time

BWL

5% error ≈500cts

SAMPLE #	Vial wt. (g)	Sample + Vial (g)	Sample Mass (g)	U exp ppm	Th exp ppm	U dpm total	Th dpm total	CT time/U day	CT time Th day
COL-ECP-1/ 5916	2.0643	5.399	3.3347	6.2	14.4	15	12	3.19	4.12
NOP-ECP-1/ 5909	2.0442	5.4332	3.389	9.7	34.4	24	29	2.01	1.70
NOP-ECP-2/ 5920	2.0444	5.5231	3.4787	11.25	34.4	29	30	1.69	1.65
COL-ECP-1/ 5913	2.0375	6.1027	4.0652	6.2	14.4	19	14	2.62	3.38
NOPI-ECP-7/ 5917	2.0434	5.4418	3.3984	14.7	41.4	37	35	1.32	1.41
NOPI-ECP-8/ 5914	2.0478	5.2789	3.2311	14.7	41.4	35	33	1.39	1.48
NOPI-ECP-8/ 5915	2.045	5.7384	3.6934	14.7	41.4	40	38	1.22	1.29
NOPI-ECP-4/ 5918	2.0568	5.8611	3.8043	50	41.4	141	39	0.35	1.26
NOPI-ECP-9/ 5911	2.0434	5.6303	3.5869	14.7	41.4	39	37	1.25	1.33
NOPI-ECP-16	2.042	6.2412	4.1992	6.2	17	19	18	2.54	2.77
NOPI-ECP-15	2.0463	6.0429	3.9966	6.2	17	18	17	2.67	2.91
NOPI-ECP-34	2.0409	6.0221	3.9812	9.7	34.4	29	34	1.71	1.44
NOPI-ECP-35	2.0354	5.7183	3.6829	15	40	41	36	1.20	1.34
NOPI-ECP-36	2.0455	5.9714	3.9259	15	40	44	39	1.12	1.26
NOPI-ECP-13	2.033	6.1817	4.1487	15	1	46	1	1.06	47.70
NOPI-ECP-19	2.0359	5.9711	3.9352	15	1	44	1	1.12	50.29
NOPI-ECP-33	2.0309	5.6349	3.604	30	40	80	36	0.61	1.37
PUE1-ECP-1	2.0334	5.2089	3.1755	10	40	23	31	2.08	1.56
PUE1-ECP-2A	2.0453	6.1889	4.1436	10	40	31	41	1.59	1.19
MESA-ECP-1	2.033	5.8141	3.7811	3	12	8	11	5.82	4.36
MESA-ECP-2	2.0445	5.5745	3.53	3	12	8	10	6.24	4.67
MESA-ECP-3	2.0319	5.6011	3.5692	3	12	8	11	6.17	4.62
PB-ECP-1	2.042	5.7938	3.7518	4.55	30	13	28	3.87	1.76
ESC-ECP-1	2.0346	5.5344	3.4998	8.5	35	22	30	2.22	1.62

NOP-ECP-1/5909

BWL 4/2/92

MCA #1 - Canberra S100 - 5909.MCA -

Tag Number:	14	Readout:	Thu 02 Apr 1992 @ 15:46:48
Report Group:	1/4	Acquire Started:	Thu 02 Apr 1992 @ 15:37:37
Group Size:	4096		

Elapsed Live Time:	106920.00 sec.
Elapsed True Time:	106929.77 sec.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3600 sec.

Area Statistics:	Background Channels = 4
	% Error Sigma = 1.65

Peak Statistics:	Sensitivity Factor = 5.0
	Expected FWHM (ch) = 2.7 - 6.0

wt of sample= 4.0652g

DWL 4/4/92
3.389

Δt_{min} = 1782

REGION OF INTEREST REPORT

ROI #	From(Ch) To (Ch)	Integral CPS	Area %Error	Peak(Ch) FWHM(Ch)
1	85	4576	477	91.46
	96	0.04	17.40	1.91
2	119	5146	592	124.98
	130	0.05	14.93	2.75
3	180	6289	589	183.52
	191	0.06	16.43	2.72
4	365	4674	870	369.92
	376	0.04	9.99	2.85
5M	459	11734	2410	475.47
	494	0.11	12.82	3.30
6	581	3671	349	588.51
	596	0.03	28.65	3.65
7	667	3333	347	674.51
	682	0.03	27.45	2.21
8	694	3411	581	701.99
	709	0.03	16.59	2.98
9	1157	2425	745	1164.06
	1172	0.02	10.91	3.15
10	1209	2316	710	1216.07
	1224	0.02	11.18	3.40
11	1813	1628	490	1819.64
	1828	0.02	13.59	4.23
12M	1913	2773	339	1935.48
	1948	0.03	45.88	4.61

REGION OF INTEREST DATA

ROI # 1
Channel #

**** Data ****

85	(345	356	331)	338	340
90	407	580	516	374	(363
95	326	300)			

ROI # 2
Channel #

**** Data ****

119					371
120	(373	378	413)	394	577

REGION OF INTEREST DATA

ROI # 2
Channel # **** Data ****

125	607	532	391	383	341
130	386				

ROI # 3
Channel # **** Data ****

180	390	427	633	969	921
185	699	460	409	341	364
190	345	331			

ROI # 4
Channel # **** Data ****

365	288	312	301	412	636
370	636	479	387	300	314
375	319	290			

ROI # 5
Channel # **** Data ****

459					283
460	270	246	278	244	279
465	291	270	230	283	247
470	278	263	301	350	634
475	897	874	572	349	283
480	342	324	299	298	251
485	255	237	261	246	249
490	255	255	263	248	229

ROI # 6
Channel # **** Data ****

581		207	217	222	217
585	162	229	275	306	320
590	278	229	211	198	222
595	184	194			

ROI # 7
Channel # **** Data ****

667			171	190	177
670	189	190	190	224	302
675	328	225	185	196	205
680	179	187	195		

ROI # 8
Channel # **** Data ****

694					166
695	188	183	200	174	184
700	239	306	371	304	232
705	186	165	177	161	175

ROI # 9
Channel # **** Data ****

1157			(106	96	122
1160	88)	120	168	251	327
1165	276	194	145	104	(120
1170	86	112	110)		

Int= 2105
Gs= 1585
Bkg= 840
Net= 745

ROI # 10
Channel # **** Data ****

1209					(110
1210	102	100	106)	123	168
1215	221	291	265	188	150
1220	107	(100	95	84	106)

Int= 2316
Gs= 1513
Bkg= 803
Net= 710

ROI # 11
Channel # **** Data ****

1813				(59	72
1815	70)	80	98	143	176
1820	189	175	126	80	(72
1825	79	68	77	64)	

Int= 1628
Gs= 1067
Bkg= 561
Net= 506

ROI # 12
Channel # **** Data ****

1913				(82	62
1915	72	60	74	72	61
1920	50	64)	64	60	73
1925	77	82	97	99	77
1930	63	72	89	90	121
1935	124	131	125	80	81
1940	(54	61	60	61	70
1945	70	80	60	55)	

Int= 2773
Gs= 1609
Bkg= 1168
Net= 437

NOPI-ECP-4/5918

MCA #1 - Canberra S100 - 5918.MCA -

Tag Number:	12	Readout:	Wed 01 Apr 1992 @ 08:21:16
Report Group:	2/4	Acquire Started:	Wed 01 Apr 1992 @ 08:16:04
Group Size:	4096		

Elapsed Live Time:	21.00 hr.
Elapsed True Time:	21.00 hr.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 21.00 hr.

Area Statistics:	Background Channels = 4
	% Error Sigma = 1.65

Peak Statistics:	Sensitivity Factor = 5.0
	Expected FWHM (ch) = 2.7 - 6.0

Δt = 1260 minutes

Sample weight from 031/15

3.8043 grams

REGION OF INTEREST REPORT

	ROI #	From(Ch) To (Ch)	Kev	Integral CPS	Area %Error	Peak(Ch) FWHM(Ch)
Pb-210	1	87 95	46.52	2475 0.03	120 27.91	91.43 1.78
Th-234	2	120 130	63.3	3710 0.05	567 12.16	124.89 2.70
	3	163 170		2513 0.03	0 0.00	166.45 2.10
Th-234	4	181 190	93.3	4455 0.06	-29 189.67	183.77 2.87
U-235/Ra-226	5	364 374	185.7	3429 0.05	601 11.20	369.61 2.09
Pb-212/ Ra-224/ Pb6-214		471 487	238.6 241 242	4577 0.06	846 13.86	475.45 2.81
Pb-214	7	584 593	295	2018 0.03	296 15.05	588.79 2.98
Ac-228	8	669 680	338	1738 0.02	168 30.41	674.54 2.42
Pb-214	9	697 706	351.9	2188 0.03	447 10.97	701.89 2.52
	10	1014 1026		3932 0.05	1516 5.99	1019.57 4.63
Tl-208	11	1160 1168	583.2	1061 0.01	113 22.27	1164.00 1.48
Bi-214	12	1212 1221	609.3	1564 0.02	337 12.44	1216.09 3.08
Ac-228	13	1814 1826	911.2	948 0.01	246 17.55	1819.17 2.97
Ac-228	14	1924 1941	966	1104 0.01	170 35.44	1935.05 3.17
Bi-214	15	2233 2244	1120.3	791 0.01	190 19.28	2237.90 3.29

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

87			238	242	280
90	297	382	344	253	216
95	223				

ROI # 2
Channel # **** Data ****

120	257	292	316	368	479
125	541	404	292	254	243
130	264				

ROI # 3
Channel # **** Data ****

163				250	297
165	354	402	354	320	294
170	242				

ROI # 4
Channel # **** Data ****

181		326	568	777	788
185	522	346	296	293	299
190	240				

ROI # 5
Channel # **** Data ****

364					205
365	211	241	243	311	482
370	579	415	280	240	222

ROI # 6
Channel # **** Data ****

471		172	230	224	370
475	528	528	317	220	230
480	221	257	276	244	205
485	176	189	190		

ROI # 7
Channel # **** Data ****

584					162
585	136	177	245	319	321
590	238	150	146	124	

ROI # 8
Channel # **** Data ****

669					123
670	122	136	128	152	179
675	187	142	128	116	117

REGION OF INTEREST DATA

ROI # 8
Channel # **** Data ****

680 123

ROI # 9
Channel # **** Data ****

697			133	143	149
700	228	369	426	313	176
705	127	124			

ROI # 10
Channel # **** Data ****

1014					117
1015	147	235	361	427	551
1020	566	532	369	213	169
1025	134	111			

ROI # 11
Channel # **** Data ****

1160	86	72	103	145	218
1165	144	129	87	77	

ROI # 12
Channel # **** Data ****

1212			74	101	151
1215	234	294	288	175	97
1220	74	76			

ROI # 13
Channel # **** Data ****

1814					51
1815	49	40	69	94	126
1820	133	92	71	60	56
1825	49	58			

ROI # 14
Channel # **** Data ****

1924					42
1925	58	67	74	70	70
1930	48	41	57	61	82
1935	100	95	65	45	43
1940	48	38			

ROI # 15
Channel # **** Data ****

2233				50	53
2235	57	81	119	107	95
2240					

4/2/92
BWL

NOP1-ECP-4/5918

MCA #1 - Canberra S100 - 5918.MCA -

Tag Number:	12	Readout:	Wed 01 Apr 1992 @ 15:06:32
Report Group:	1/4	Acquire Started:	Wed 01 Apr 1992 @ 08:16:04
Group Size:	4096		

Elapsed Live Time:	75600.00 sec.
Elapsed True Time:	75606.97 sec.
Dead Time:	0.01 %

MCA Mode:	PHA+
Preset Conditions:	Live Time = 3600 sec.

Calibration: 0.0000*Ch^2 + 0.4996*Ch + 1.083 keV

Area Statistics: Background Channels = 4
% Error Sigma = 1.65

Peak Statistics: Sensitivity Factor = 5.0
Expected FWHM (ch) = 2.7 - 6.0

Iso. Id. Criteria:	Energy Window = +-1.000 keV
Iso. Library:	C:\WINDOWS\S100\SPECTRAN.ISO

REGION OF INTEREST REPORT

ROI #	From(keV) To (keV)	Integral CPS	Area %Error	Peak(keV) FWHM(keV)
1	43.6	3192	359	46.8
	49.0	0.04	19.39	1.12
2	60.5	3972	702	63.5
	66.0	0.05	11.36	1.35
	Isotope:	TH-234 @	63.3	
3	91.0	4950	453	92.9
	96.5	0.07	18.93	1.51
4	183.4	3671	799	185.9
	188.9	0.05	9.77	1.28
	Isotope:	U-235 @	185.7	
5M	230.4	8053	1596	238.5
	247.9	0.11	16.09	1.57
	Isotope:	PB-212 @	238.6	
6	291.4	2932	532	295.1
	298.9	0.04	16.79	1.63
	Isotope:	PB-214 @	295.2	
7	334.3	2276	180	338.1
	341.8	0.03	43.73	1.16
	Isotope:	AC-228 @	338.3	
8	347.8	2916	946	351.8
	355.3	0.04	9.42	1.47
	Isotope:	PB-214 @	351.9	
9	579.2	1624	326	582.7
	586.7	0.02	20.40	0.95
	Isotope:	TL-208 @	583.2	
10	605.1	2026	802	608.7
	612.6	0.03	9.26	1.76
	Isotope:	XE-135 @	608.1	
		BI-214 @	609.3	
11	906.9	1103	299	910.0
	914.4	0.01	18.33	1.54
12M	956.9	1977	240	967.9
	974.4	0.03	54.65	1.54

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

Δt = 1260 minutes

REGION OF INTEREST DATA

ROI # 1
Channel # **** Data ****

85	(244	242	238)	242	280
90	297	382	344	253	(216
95	223	231)			

ROI # 2
Channel # **** Data ****

119					(262
120	257	292)	316	368	479
125	541	404	292	(254	243
130	264)				

ROI # 3
Channel # **** Data ****

180	(255	326)	568	777	788
185	522	346	296	(293	299
190	240	240)			

ROI # 4
Channel # **** Data ****

365	(211	241	243)	311	482
370	579	415	280	240	(222
375	218	229)			

ROI # 5
Channel # **** Data ****

459					(195
460	168	181	172	174	191
465	197	184	187)	182	185
470	197	172	230	224	370
475	528	528	317	220	230
480	221	257	276	244	205
485	176	(189	190	178	175
490	191	190	171	184	174)

ROI # 6
Channel # **** Data ****

581		(158	147	173	162)
585	136	177	245	319	321
590	238	150	146	(124	142
595	148	146)			

ROI # 7
Channel # **** Data ****

667			(141	117	123
670	122)	136	128	152	179

REGION OF INTEREST DATA

ROI # 7
Channel # **** Data ****

680 123 139 141

ROI # 8
Channel # **** Data ****

694
695 126 143 133 143 149
700 228 369 426 313 176
705 127 124 132 123 117

Int = 2916
cts = 1931
Bkg = 985
Net = 946

ROI # 9
Channel # **** Data ****

1157 80 78 83
1160 86 72 103 145 218
1165 144 129 87 77 86
1170 81 70 85

Int = 1624
cts = 975
Bkg = 649
Net = 326

ROI # 10
Channel # **** Data ****

1209 71
1210 75 90 74 101 151
1215 234 294 288 175 97
1220 74 76 73 75 78

Int = 2026
cts = 1414
Bkg = 612
Net = 802

ROI # 11
Channel # **** Data ****

1813 58 51
1815 49 40 69 94 126
1820 133 92 71 60 56
1825 49 58 49 48

Int = 1103
cts = 701
Bkg = 402
Net = 299

ROI # 12
Channel # **** Data ****

1913 57 53
1915 41 38 49 31 52
1920 52 59 49 46 42
1925 58 67 74 70 70
1930 48 41 57 61 82

1935 100 95 65 45 43
1940 48 38 55 55 39
1945 40 55 43 59

Int = 1977
cts = 1113
Bkg = 864
Net = 249