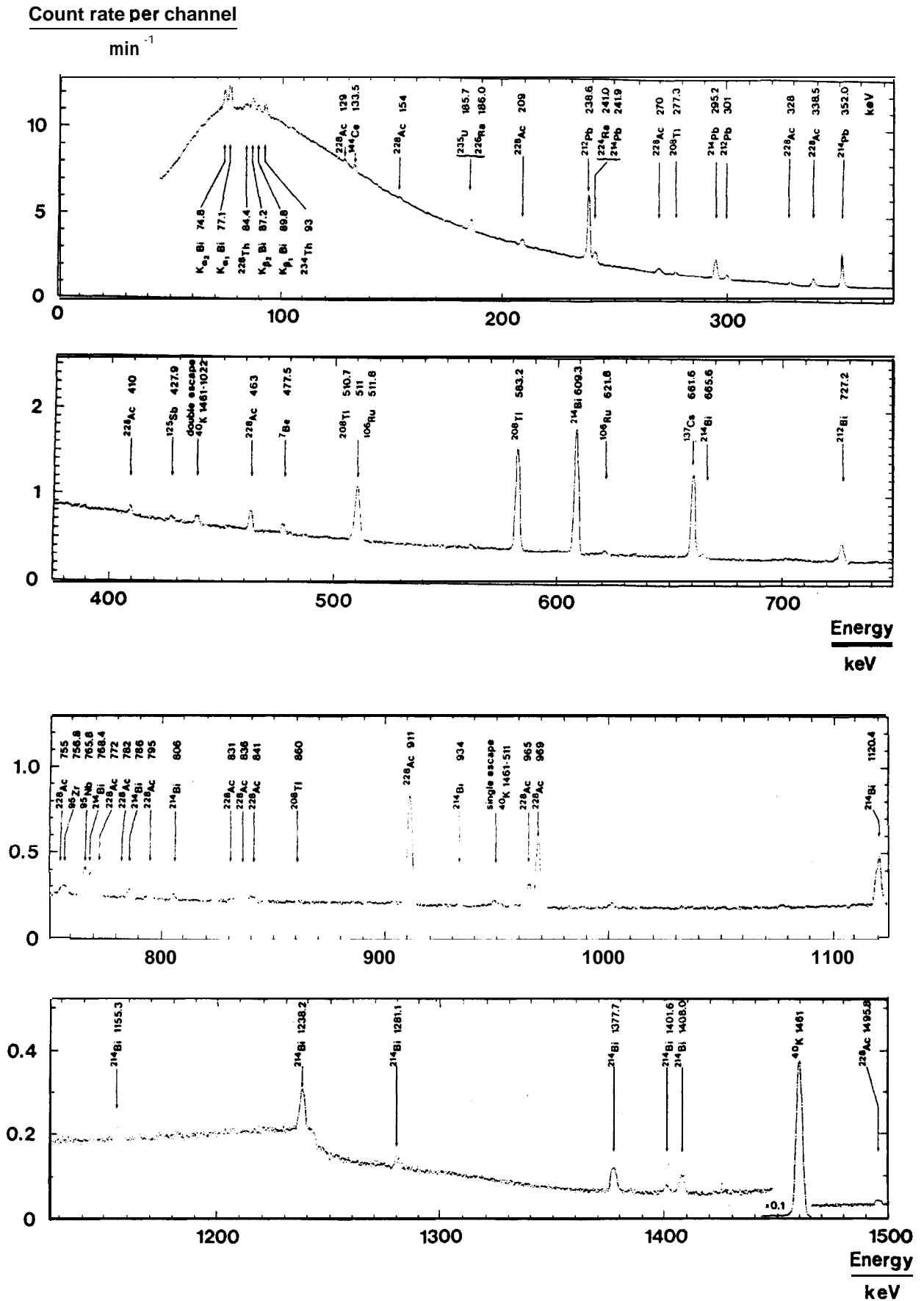


Normal background terrestrial radiation



A terrestrial gamma ray spectrum recorded over 170 hours using a 60 cm³ Ge(Li) detector mounted 1 m above the ground. (From Finck, Liden, and Persson¹.)

Figure 8

Levels of Activities from Natural Sources in Common Construction Materials

Material	Disintegrations/min per Gram of Material		
	²³² Th(583 keV)	²³⁸ U	⁴⁰ K
Aluminum (6061 from Harshaw)	0.42	0.04	< 0.05
Aluminum (1100 from Harshaw)	0.24	< 0.017	< 0.06
Aluminum (1100 from ALCOA)	0.08	< 0.026	< 0.11
Aluminum (3003 from ALCOA)	0.10	< 0.026	0.56
Stainless steel (304)	< 0.006	< 0.007	< 0.06
Stainless steel (304-L)	< 0.005	< 0.005	< 0.02
Magnesium (rod)	0.06	< 0.04	0.1
Magnesium (ingot)	< 0.01	< 0.002	< 0.02
Magnesium (4"Ø x 4" from Dow)	< 0.005	< 0.002	< 0.02
Magnesium (from PGT)	< 0.05	< 0.03	< 0.05
Beryllium copper alloy	< 0.02	< 0.06	c 0.2
Copper (sheet)	< 0.05	< 0.06	< 0.2
Pyrex window	0.45	0.27	3.8
Quartz window	< 0.018	< 0.018	< 0.07
Molecular sieve	4.4	3.0	9.0
Neoprene	< 0.008	< 0.01	0.36
Rubber	0.12	1.0	2.0
Apiezon Q	4.5	4.5	2.7
Electrical tape - 3M	< 0.04	< 0.06	< 0.1
Cement (Portland)	0.25	1.3	4.5
Epoxy	0.006	0.01	0.19
Lacquer	0.002	0.005	0.04

Table 2

Self-shielding of alpha particle radiation by liquid hazardous waste

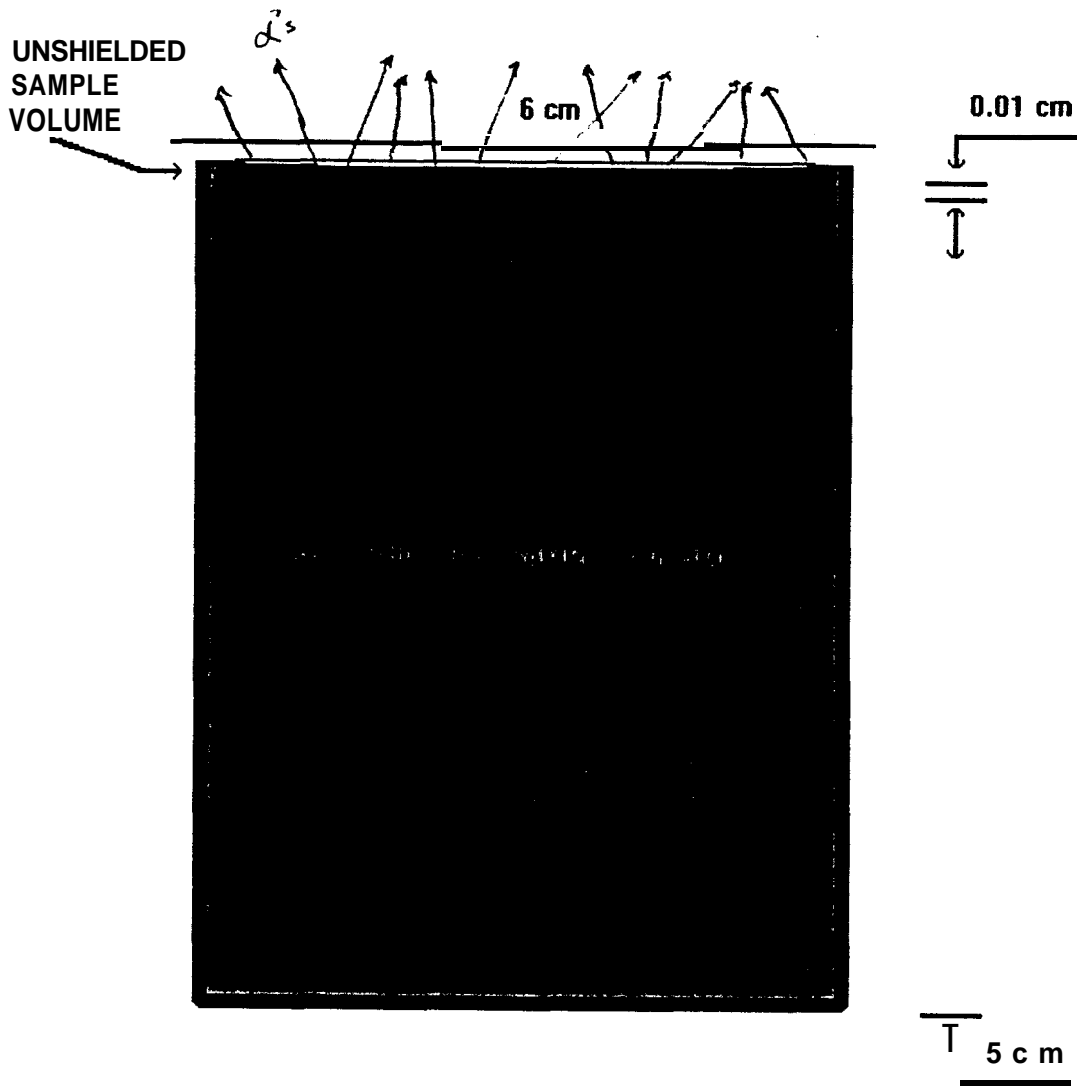


Figure 9

Sample geometry dependent radiation counter efficiency

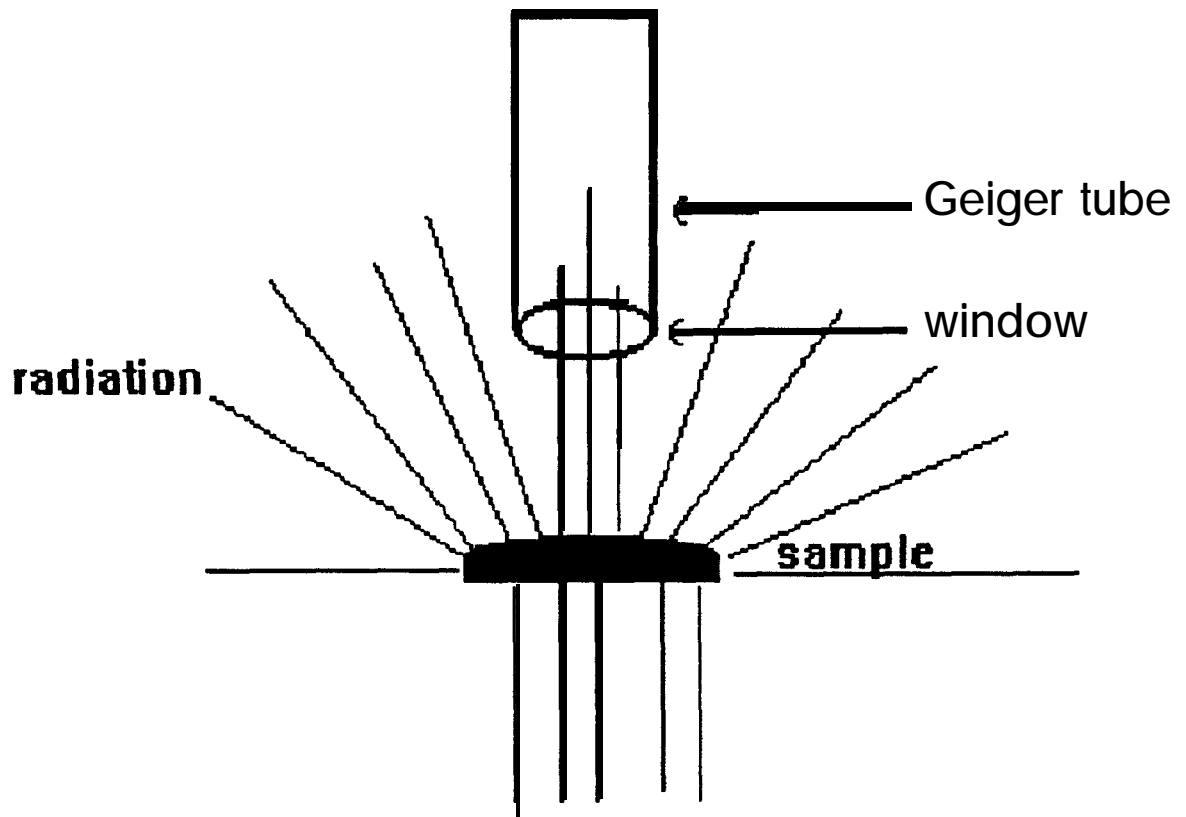


Figure 10

Summary of fallout products

Atomic Number	Isotope	halflife	%Yield
38	Strontium90	28.1 y	5.8
55	Cesium137	30.17 y	6.2
40	Zirconium95	65.5 d	6.3
41	Niobium95	35d	
44	Ruthenium106	368 d	0.4
51	Antimony? 125	2.78 y	.02
58	Cerium144	284 d	6.0
62	Samerium151	93 Y	.44

Table 3
