Benchmark practical

You have a Cf-252 assessment in a terrestrial environment. There are 750 Bq/kg of Cf-252 in soil (dw). Cf-252 is not in the ERICA default radionuclide list. You should start the assessment at Tier 1.

Use the published surrogate approach and locate the most appropriate EMCL value from the ERICA database to choose radionuclides to assess against. Record your results below:

Would the more simplistic approach of the surrogate approach always be conservative?

Now use Tier 3 to calculate your own Cf-252 EMCL value using the Mammal (rat), shrub and soil invertebrate (worm) geometries only in the terrestrial environment. Use the CR distributions (which are all lognormal) given below. Use a media concentration of 1 Bq/kg in soil. Record your results below and identify the most appropriate EMCL value to use the assessment (justify your choice).

Reference Organism	Mean CR	Standard deviation
Mammal (Rat)	2.5E-2	1.0E-2
Shrub	1.0E-3	1.0E-3
Soil Invertebrate (worm)	4.0E-2	1.0E-2

You may all get slightly different numbers because this is running probabilistically.

Reference Organism	5th percentile dose rate (μGy h^{-1})
Mammal (Rat)	
Shrub	
Soil Invertebrate (worm)	

Calculated EMCL value

Reference Organism	EMCL value (Bq/kg soil) using the ERICA screening dose rate value	Use this one (tick)	Why?
Mammal (Rat)			
Shrub			
Soil Invertebrate (worm)			