

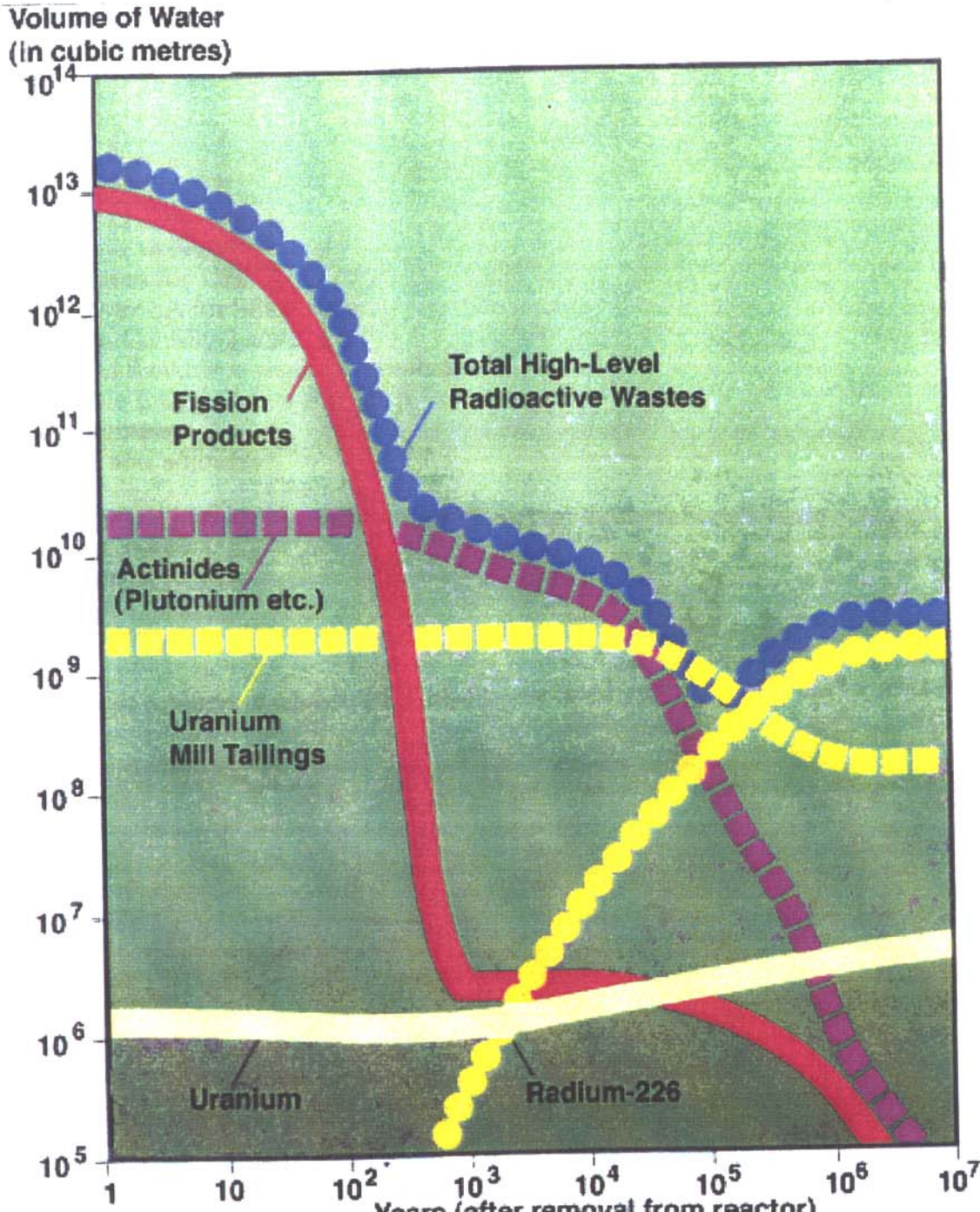
# TOXICITY OF IRRADIATED CANDU FUEL OVER 10 MILLION YEARS

This graph, published in 1978 by the Ontario Royal Commission on Electric Power Planning, shows the toxicity (over a period of 10 million years) of the irradiated fuel left over from just one year's operation of a 1000 megawatt CANDU nuclear reactor.

The vertical axis shows the "ingestion toxicity": it is the volume of water needed to dilute the wastes to the maximum levels of contamination allowed for public drinking water.

The "high-level wastes" in the chart consist mainly of fission products and actinides, two categories of radioactive materials which are also plotted separately.

The "uranium mill tailings" in the chart are the sandy radioactive residues left over from mining and milling the uranium ore needed to produce the CANDU fuel.



Buried irradiated nuclear fuel will heat up the surrounding rock for tens of thousands of years. The rock will not return to its original temperature for more than 100,000 years after fuel has been employed. This heat will continue to cause new cracks to appear in the rock formation.

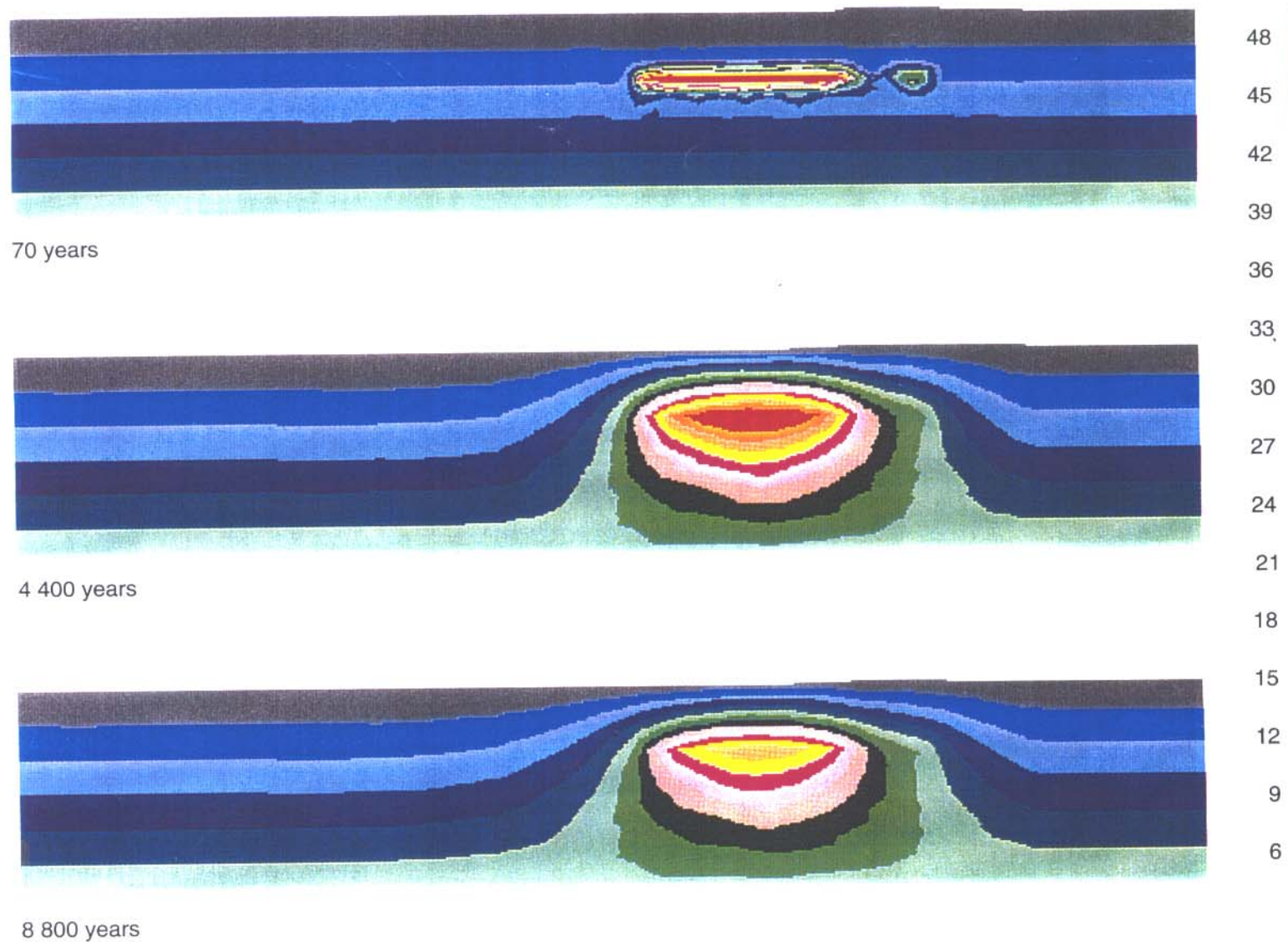


FIGURE 5.5.17a: Temperature distribution ( $^{\circ}\text{C}$ ) in a vertical slice centered on the vault through the entire model, for 70, 4 400, and 8 800 years

from: Atomic Energy of Canada, Ltd: The Disposal of Canada's Nuclear Fuel Waste (1994)

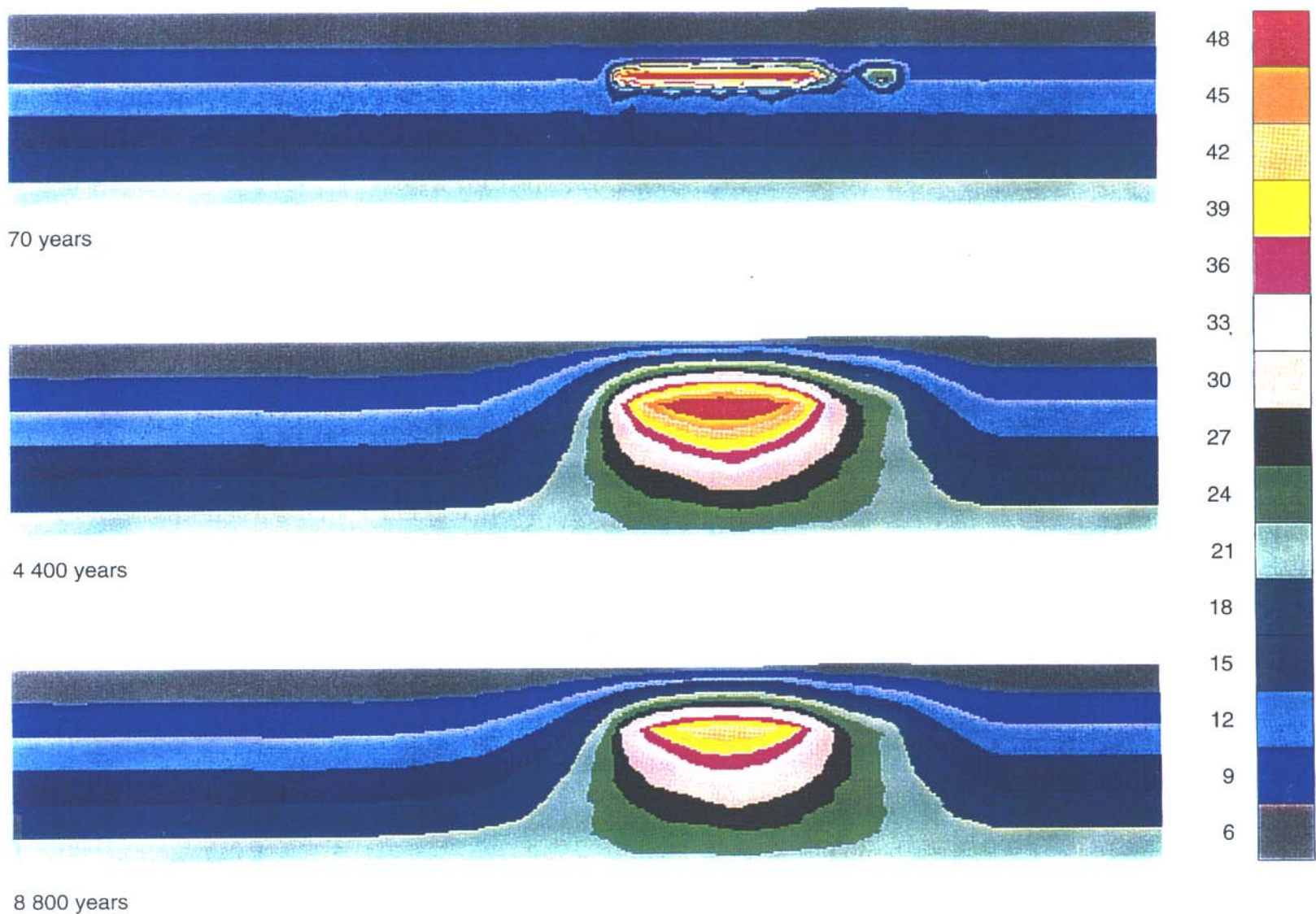


FIGURE 5.5.17a: Temperature distribution ( $^{\circ}\text{C}$ ) in a vertical slice centered on the vault through the entire model, for 70, 4 400, and 8 800 years

Buried irradiated nuclear fuel will heat up the surrounding rock for tens of thousands of years. The rock will not return to its original temperature for more than 100,000 years after fuel has been emplaced. This heat will continue to cause new cracks to appear in the rock formation.