

ILLINOIS POLLUTION CONTROL BOARD
June 20, 1991

CITY OF DEKALB,)
)
Petitioner,)
)
v.) PCB 91-34
) (Variance)
ILLINOIS ENVIRONMENTAL)
PROTECTION AGENCY,)
)
Respondent.)

DISSENTING OPINION (by J.D. Dumelle):

The water supply of the City of DeKalb has a combined radium content of 9.8 pCi/l. That is almost exactly twice the 5 pCi/l USEPA standard currently in force.

The risk to all of the people (including the students at Northern Illinois University) of contracting head or bone cancer is thus twice the risk if the water were at the standard. The risk at the standard is 1-in-14,300 over a 70-year lifetime. DeKalb's water, with twice the risk, is then about 1-in-7,000. (The risk levels are contained in Dr. William H. Hallenbeck's paper "Risk Analysis of Exposure to Radium-226/228 in Groundwater" published in The Environmental Professional, Vol. 11, pp. 171-177).

When the USEPA sets limits for pesticide residues and for other chemicals it commonly uses a lifetime risk of 1-in-1,000,000. The DeKalb risk of 1-in-7,000 is thus 143 times greater than the usual risk used for many other chemicals.

But that 1-in-7,000 risk may be even greater for two groups of DeKalb's population. Three separate research papers point to "young children", "young people", and children in "periods of rapid growth" ("0-1 yr. and 10-16 yr.") as being at even greater risk. (See Background Document on Radium in Drinking Water, Illinois Department of Nuclear Safety, August 25, 1986, p. 5). How much greater that risk is to these children we are not told but it is greater than 1-in-7,000.

An additional concern besides head cancer and bone cancer is leukemia. A 1985 paper, "Association of Leukemia with Radium Groundwater Contamination" by Lyman, et al (Journal of the American Medical Association) shows a correlation between high radium content in water and leukemia. Unfortunately, no one seems to have replicated the study in Illinois.

On June 10, 1991 an article in the Aurora Beacon-News gave actual or projected costs for 8 communities to bring their radium levels down to the 5 pCi/l standard.

The table below lists them alphabetically and the per capita cost is computed. Census figures for 1980 are used except in Aurora's case where the 1990 estimate is given.

CITY	COST	POPULATION	COST PER CAPITA
Aurora	\$23,300,000	99,500	\$ 245
Batavia	4,200,000	13,758	306
Channahon	500,000	3,788	132
Elburn	1,400,000	1,224	1,143
Geneva	5,000,000	9,881	507
Morris	600,000	8,833	68
Ottawa	983,000	18,166	54
Wilmington	2,500,000	4,424	565

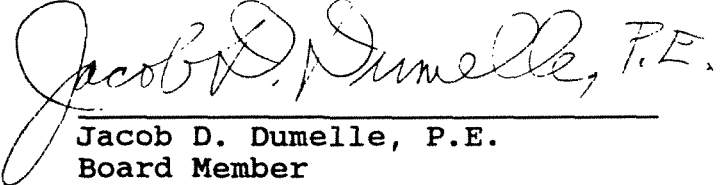
Note that with the exception of Elburn all of the communities have per capita costs of \$565 or less. In addition to these 8 communities which authorized their projects to reduce radium levels there are two major regional water supply projects that will be on-line about April, 1992 that also reduce existing radium levels.

These two projects are the DuPage Water Commission's \$350,000,000 system to supply Lake Michigan water to 27 communities with 750,000 people (per capita cost of \$467) and the Central Lake County Joint Action Water Agency's \$103,200,000 system serving 8 communities with 250,000 people (per capita cost of \$413) also supplying Lake Michigan water.

DeKalb should intensively study the various options to reduce the radium levels in its water. A risk of 1-in-7,000 is simply too great for the public to bear. And that risk is even higher for infants and children.

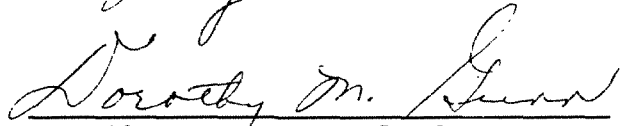
On July 18, 1991 the Federal Register finally published the USEPA's proposed relaxation of the radium standards for drinking water. The new risk estimate for 5 pCi/l of either radium isotope seems to be 1-in-50,000 as compared to the 1-in-14,300 mentioned earlier. The basis for loosening the risk estimate by a factor of 3 is not given but is contained in the "Criteria Document" which is not readily available. 56FR33073. Even using the new risk estimates, DeKalb's water would have a lifetime risk for cancer of 1-in-25,000 or 40 times greater than the usual 1-in-1,000,000.

A duty of a city or a state government is to protect its people. I urge DeKalb to deeply consider the excessive health risks to its citizens from the radium content of its water.



Jacob D. Dumelle, P.E.
Board Member

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board hereby certify that the above Dissenting Opinion was submitted on the 30th day of July, 1991.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board