ILLINOIS POLLUTION CONTROL BOARD
May 5, 1988

COUNTY OF LAKE (VERNON HILLS WATER SYSTEM), Petitioner, v. ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, Respondent, and TINA SANTOPOALO, LAKE COUNTY DEFENDERS, VILLAGE OF VERNON HILLS, NORTH SUBURBAN GROUP OF THE GREAT LAKES CHAPTER OF THE SIERRA CLUB, MARK D. BOORAS, AND F.T. MIKE GRAHAM, Intervenors.	)	PCB 87-198

DISSENTING OPINION (by J.D. Dumelle):

My reason for dissenting is the public health hazard of the radium content of the drinking water, especially as it pertains to children and infants.

Radium is an acknowledged carcinogen. Most scientists agree that no threshold exists for a carcinogen. Thus any exposure may be sufficient to begin a cancer. One cannot then interpret a "70-year risk" as being completely riskless until May 31, 1991 when compliance is mandated in this variance.

Besides the lack of a threshold there is the high risk in the standard itself. A scientist at USEPA, C. Richard Cothern, in a June 30, 1986 letter (Lake County Defenders Ex. 32) gave the current risk as 0.4×10^{-4} over a lifetime. That number translates to a 1-in-25,000 risk which is 40 times greater than the 1-in-1,000,000 risk which USEPA usually uses for cancer risks when setting maximum contaminant levels.

The Journal of the American Medical Association paper "Association of Leukemia with Radium Groundwater Contamination" (August 2, 1985) raises this additional issue. If leukemia is indeed caused by groundwater high in radium then an additional hazard besides bone cancer and sinus cavity cancer is present. (Ex. 21 in R85-14).

Another paper, "Drinking Water and Cancer Incidence in Iowa" published in the American Journal of Epidemiology in 1982 points to additional types of cancers as possibly being caused by radium in drinking water. These are cancers of the lung and bladder in males and cancers of the lung and breast in females. (Ex. 26E in R85-14).

Finally, there is the largely unquantified higher risk for infants and young children. The Board's proceeding R85-14 contains as Ex. 26I pp. 30-33 from Dr. Edward J. Calabrese's book "Pollutants and High-Risk Groups." Absorption rates for heavy metals for infants and young children are many times higher than for adults (Fig. 7, p. 30). And radiation sensitivity for a fetus is 20 times that for an adult (Fig. 8, p. 33).

If the variance had been written to exclude residential development (where infants and children reside) and include only commercial and industrial projects this greater hazard would have been avoided.

Jacob D. Dumelle
Chairman

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Dissenting Opinion was submitted on the 10th day of May, 1988.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board