

ILLINOIS POLLUTION CONTROL BOARD
April 16, 1981

VILLAGE OF ARLINGTON HEIGHTS,)
)
Petitioner,)
)
v.) PCB 80-229
)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,)
)
Respondent.)

OPINION AND ORDER OF THE BOARD (by J. Anderson):

This matter comes before the Board on the petition filed December 18, 1980 as amended February 11, 1981 for an extension of the variance granted from the 15 pCi/l gross alpha particle activity limitation of Rule 304(C) of Chapter 6: Public Water Supply in Village of Arlington Heights v. IEPA, PCB 79-132, 37 PCB 13 (December 13, 1979). The Illinois Environmental Protection Agency (Agency) filed its Recommendation in support of grant of variance January 22, 1981, and amendment thereto on February 23, 1981. Hearing was waived and none has been held.

The Village of Arlington Heights, located in northwestern Cook County, supplies water to the "great majority" of its 71,000 residents from its eleven deep wells. In compliance with the requirements of its earlier variance, the Village commissioned Metcalf and Eddy, Inc. to prepare a "Report to the Village of Arlington Heights on Radioactivity in the Water Supply" (Pet. Ex. 3). Tests of the ten wells then operational during the test period revealed that the levels of alpha activity in the wells ranged from a high of 42.8 ± 6.5 pCi/l to a low of 6.8 ± 2.0 pCi/l, with eight wells exceeding the standard and two within it.

Wells 13 and 15 were also tested for radium 226 and 228. Wells #13 and 15 violated the combined radium 226 and 228 standard of 5 pCi/l, with readings in pCi/l for Well No. 13 of 4.70 ± 0.08 for radium 226 and 4.2 ± 1.4 for radium 228, and for Well No. 15 of 3.59 ± 0.07 and 4.9 ± 1.2 . The report notes that the "relationship of alpha activity to radium 226 levels indicates other wells would also exceed the radium standard." Since 51% of all alpha activity is from radium 226 and about 24% of all beta activity is from radium 228, compliance with the 5 pCi/l combined radium standard would result in compliance with the gross alpha standard (Pet. Ex. C, p. 1-2, 4-6, Tables A-1 to A-3). Although the Village has petitioned only for variance from the alpha activity standard of Rule 304(C)(1)(b), in the interests of administrative economy the Board will construe the petition as also seeking variance from the radium standard of Rule 304(C)(1)(a).

Test results indicated that the standards cannot be met by "mixing or blending," as all wells exceed various parts of the standard (Pet. Ex. C, p. 1-2). Also, use of shallow wells would not provide enough water for adequate blending (Pet. Ex. C, p. 5-9).

Eight possible water treatment processes were considered: sodium zeolite ion exchange, hydrogen cycle zeolite ion exchange, continuous countercurrent ion exchange, greensand zeolite ion exchange, lime softening, reverse osmosis, electrodialysis, and distillation. The cost analysis of the most appropriate of these various methods -ion exchange or lime softening- would result in a range of capital expenditures from \$5,844,000 to \$14,200,000, with costs for water treatment ranging between \$0.78 per thousand gallons and \$1.75 per thousand gallons. The most cost effective treatment, sodium ion exchange, might produce finished water with an unacceptable sodium content, so that a hydrogen cycle ion exchange system at slightly higher capital and operating costs might prove necessary (Pet. Ex. C, pp. 1-3, 4, 6-1 to 14).

The Village has, however, long been seeking an alternative water source. It has received a Lake Michigan water allocation to begin in 1984, which water will be delivered from the City of Evanston via a pipeline to be laid by the Northwest Suburban Water Commission, of which Arlington Heights is a member (Pet. 3). Under these circumstances, the Village believes that to require immediate and costly installation of compliance equipment useful for only 3 years would impose an arbitrary and unreasonable hardship, particularly given the Board's previous finding that the risk to the health of its water users is low, assuming compliance is reached in the near future.

The Agency does not dispute the Village's assertions, and recommends that the requested variance until January 1, 1984 be granted. It does however note that had the Village supplied more information concerning its membership in the Northwest Suburban Water Commission, that it might be entitled to variance until January 1, 1986 consistent with the deadline for exemptions under the Safe Drinking Water Act (SDWA), 42 U.S.C. §1416, as recently extended by P.L. 96-502, for water supplies that have binding commitments to become part of a regional water supply.

The Board finds that the Village had demonstrated that denial of variance would impose an arbitrary and unreasonable hardship. The Board takes official notice that the text of the Northwest Suburban Water System Agreement was recently supplied it and is part of the record in Village of Hanover Park v. IEPA, PCB 80-221, March 5, 1981. Arlington Heights is shown to have authorized execution of the agreement by ordinance #78-77 dated June 16, 1978 (p. 20). The Board therefore finds, as it did in Hanover Park, that the Village's entry into the Agreement satisfies the SDWA requirement. Variance from Rule 304(C)(1)(a) and

(b) is therefore granted until January 1, 1986 subject to the conditions outlined in the attached Order.

This Opinion constitutes the Board's findings of fact and conclusions of law in this matter.

ORDER

1) Petitioner, the Village of Arlington Heights, is hereby granted variance from the gross alpha particle activity and radium standards of Rule 304(C)(1)(a) and (b) of Chapter 6: Public Water Supplies until January 1, 1986, subject to the following conditions:

A) Petitioner shall continue to perform its obligations as outlined in the Northwest Suburban Water System Agreement, as it may be from time to time amended, and shall replace its current water supply with Lake Michigan water as expeditiously as is practicable.

B) Pursuant to Rule 313(D)(1) of Chapter 6, on or before June 30, 1981 and every three months thereafter, Petitioner will send to each user of its public water supply a written notice to the effect that Petitioner has been granted by the Pollution Control Board a variance from the above listed radiological quality standards. The notice shall state the average content of gross alpha particle activity and radium in samples taken since the last notice period during which samples were taken.

2) Within forty-five days of the date of this Order, Petitioner shall execute and forward to David L. Rieser, Technical Advisor, Enforcement Programs, Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, Illinois 62706, a Certificate of Acceptance and Agreement to be bound to all terms and conditions of this variance. This forty-five day period shall be held in abeyance for any period this matter is being appealed. The form of the certificate shall be as follows:

CERTIFICATION

I, (We), _____, having read the Order of the Illinois Pollution Control Board in PCB 80-229 dated _____, understand and accept the said conditions thereto binding and enforceable.

Petitioner

By: Authorized Agent

Title

Date

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order were adopted on the 16th day of April, 1981 by a vote of 5-0.

Christan L. Moffett
Christan L. Moffett, Clerk
Illinois Pollution Control Board