ILLINOIS POLLUTION CONTROL BOARD
March 20, 1980

TURNBERRY UTILITIES, INC., Petitioner,	)	
v.	)	PCB 79-257
ENVIRONMENTAL PROTECTION AGENCY, Respondent.	)	

OPINION AND ORDER OF THE BOARD (by Mr. Dumelle):

On December 4, 1979 Petitioner requested a variance from the limitations for fluoride in Rule 304 B4 of Chapter 6: Public Water Supplies for a period of five years. The Agency has recommended that a variance be granted until January 1, 1981. A hearing was held on February 20, 1980 in Northbrook, Illinois.

Petitioner provides public water utility service to a subdivision located in the village of Lakewood, McHenry, Illinois. The water supply serves approximately 75 single-family homes and certain recreational facilities. The existing facilities consist of a 395 feet deep well with a capacity of 325 gallons per minute and a 150,000 gallon elevated storage tank and distribution system. Raw water from Petitioner's well contains a natural fluoride content of approximately 2.72 mg/l. Finished water contains fluoride at approximately the same level as raw. A standard of 2.0 mg/l is presently required by Rule 304 B4. In order to comply with the regulation, the installation and operation of a central system to remove fluoride is necessary. Petitioner's consulting engineers reviewed possible alternatives, and determined that the adsorption process with the use of bone char media was the most cost effective treatment technique. Adsorption would involve $204,365 in installation costs which would require additional revenues of $75,993/year. It is projected by Petitioner that each existing user would be charged $84.50/month in addition to the present rates for water service.

Petitioner and the Agency agree the fluoride removal equipment is costly. They agree too that present fluoride levels in Petitioner's system are not a health threat. Petitioner points out that fluoride removal equipment is

difficult to operate and control and may be unreliable. There is no alternative surface-water supply available to Petitioner of proven water quality. Petitioner would thus be required to install the fluoride removal system which would impose a hardship on it due to the high costs of installation and difficulties in operation. A burden would also be placed on those users of the system who will be charged additional rates.

There is no dispute as to the granting of some form of variance to Petitioner. At issue before the Board is the characterization of that variance under applicable Federal law. Petitioner contends that it seeks a Federal variance while the Agency states that the Petitioner qualifies for a Federal exemption. Determination of this issue based on the facts and relevant law will provide Petitioner with either a possible 5-year State variance or a January 1, 1981 deadline for compliance with the requirements of the public water supply regulations concerning fluoride concentrations. The Board concludes that Petitioner's request should be characterized as a Federal variance for the reasons discussed below.

In its Recommendation dated January 21, 1980 the Agency stated its belief that the United States Environmental Protection Agency (USEPA) may raise the permissible maximum concentration level for fluoride and that Congress may extend the deadline for exemptions under the Safe Drinking Water Act from the current date of January 1, 1981. USEPA has stated that aside from tooth mottling, no adverse health effects have been observed at fluoride levels up to 8 mg/l. Until further studies are completed, the USEPA recommends an interim standard up to 4 mg/l providing excess tooth mottling is not evident. The Agency believes that the fluoride levels in Petitioner's supply should not produce noticeable tooth mottling. Since the Agency's position on enforceable fluoride limits is to allow interim levels at approximately four times optimal and because Petitioner's excursion over the existing limit is minimal, the Agency supports the granting of a State variance as a Federal exemption. However, because of the Agency's objections under the delegation of primary enforcement responsibility (primacy) and the requirements of Section 35 of the Act, the Agency feels it can recommend that the variance be granted only until January 1, 1981.

The Agency points out that until the maximum concentration levels are raised, it is obligated to observe the existing federal standards under the USEPA's grant of primacy for the public water systems in the state. Under the provisions of primacy and the limitations in Section 35 of the Act, the state must maintain a program at least as stringent as that of the Federal government. Thus, both the Agency and the Board must follow the Federal variance and

exemption regulations set forth at 40 CFR Part 142, Subparts E and F. (44 Fed. Reg. 2923-2326, January 29, 1976).

In granting a Federal variance, a state with primacy must find that:

(1) Because of characteristics of the raw water sources which are reasonably available to the system, the system cannot meet the requirements respecting the maximum contaminant levels of the drinking water regulations despite application of the best technology, treatment techniques, or other means, which the Administrator finds are generally available (taking costs into consideration); and

(2) The granting of a variance will not result in an unreasonable risk to the health of persons served by the system. (§1415 of the Safe Drinking Water Act, 42 U.S.C. §300(g)-4).

The Agency states that the grant of a Federal variance under §1415 applies to public water systems whose source water is of such poor quality that it may not be possible to predict when technology will become available to bring that system into compliance.

The Agency points out that Petitioner, through the work and study of its consulting engineer, can meet the fluoride standard by use of the adsorption process.

In granting Federal exemptions, States with primacy must find that:

(1) Due to compelling factors (which may include economic factors) the public water system is unable to comply with a contaminant level or treatment technique requirement,

(2) The public water system was in operation on the effective date of the contaminant level or treatment technique requirement, and

(3) The granting of an exemption will not result in an unreasonable risk to health. (§1416 of the Safe Drinking Water Act, 42 U.S.C. §300(g)-5.)

The Agency notes that in both the Petition and direct testimony at the hearing, Petitioner's rationale in seeking an extended period of time for compliance was based primarily on economic factors including installation and operating expenditures and increases in user rates (R.5). Petitioner states that the cost of installing fluoride removal equipment is beyond its financial ability and if the equipment is installed, the operation costs will be in excess of its present revenues.

The Board concludes that Petitioner's reasons for seeking a variance include more than economics. Petitioner's environmental consulting engineer verified the cost projections for fluoride removal equipment, emphasized that this equipment is difficult to operate and control may be unreliable, and stated that the methods available for fluoride control are at an experimental stage. Therefore the reliability and effectiveness of these methods are, as yet, unproven (Direct testimony of Joseph W. Rezek, attached to transcript of hearing). Petitioner has shown the combination of factors which justify a Federal variance.

Although treatment techniques are suggested by the U.S. EPA in the Manual of Treatment Techniques for Meeting the Interim Primary Drinking Water Regulations (EPA-600/8-77-005) no regulations have been promulgated by the Administrator. Authority is vested in the Adminsitrator to mandate the treatment techniques, but he has failed to do so to date (§1412(a)(2) of the Safe Drinking Water Act). It should also be emphasized that the measures for fluoride removal employing activated alumina and bone char have been used only in a few full-scale-treatment plants in California and Arizona.

There is no question as to the extreme financial hardship imposed on Petitioner should compliance be required by January 1, 1981, nor is there a question concerning the absence of adverse health impacts from water with Petitioner's present concentration of fluoride. The Board recognizes the State's obligations under the primacy provisions, but the Board is not required under the law to impose undue hardship on Petitioner.

The Board finds that Petitioner would suffer an arbitrary and unreasonable hardship if required to install fluoride removal equipment at this time. The Board has granted many variances from the fluoride limitations (See Central Illinois Utility Co. v. EPA, PCB 77-349, 30 PCB 32, April 13, 1978; Little Swan Lake Sanitary District v. EPA, PCB 78-53, 30 PCB 310, May 25, 1978; Village of Rio v. EPA, PCB 78-218, 31 PCB 695, October 19, 1978; and City of Oneida v. EPA, PCB 79-158, 36 PCB 41, November 1, 1979). In those cases the Board recognized that the technology involved had not reached an advanced state and that treatment was unproven and unreasonably expensive. In addition, the Board had

noted that it would be inappropriate to require treatment which may be rendered unnecessary should the standard be changed.

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

ORDER

1. Petitioner is hereby granted a variance from the drinking water standard for fluoride in Rule 304 B4 of Chapter 6: Public Water Supplies for a period of five years from the date of this Order.

2. Within six months of the date of this Order, Petitioner shall submit a compliance program to the Agency which shall include:

   (a) A literature search for published research and development in the area of fluoride removal equipment evaluating the reliability of the treatment techniques as well as suitability for its processes, and

   (b) A report on whether alternative surface water supplies are available which are of proven quality and which would be economically feasible to utilize, and

   (c) Petitioner shall obtain the necessary permits and submit quarterly progress reports to the Agency, following approval of its program, should an appropriate treatment technique become available which requires the installation of new equipment or the development of additional raw water sources.

Petitioner shall submit this program to the Illinois Environmental Protection Agency, Compliance Unit, Division of Public Water Supplies, 2200 Churchill Road, Springfield, Illinois 62706.

3. Petitioner and the Agency shall devise a mutually agreeable schedule for sampling of Petitioner's public water supply to ensure that its fluordie levels do not increase to a concentration which might endanger the health of persons served by the system.

4. Within 45 days of the date of this Order, Petitioner shall execute a certification of acceptance and agreement to be bound to the terms and conditions of this variance. This 45 day period shall be held in abeyance if this matter is appealed. The certification shall be forwarded to the Illinois Environmental Protection Agency, Compliance Unit, Division of Public Water Supply, 2200 Churchill Road, Springfield, Illinois 62706 and shall read as follows:

CERTIFICATION

I (We), _____ having read and fully understanding the Order in PCB 79-257 hereby accept that Order and agree to be bound by all of its terms and conditions.

SIGNED _____

TITLE _____

DATE _____

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 20th day of March, 1980 by a vote of 4-0.

Christan L. Moffett

Christan L. Moffett, Clerk
Illinois Pollution Control Board