

ILLINOIS POLLUTION CONTROL BOARD  
March 5, 1987

CITY OF OTTAWA, )  
 )  
 Petitioner, )  
 )  
 v. ) PCB 86-179  
 )  
 ILLINOIS ENVIRONMENTAL )  
 PROTECTION AGENCY, )  
 )  
 Respondent. )

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

This matter comes before the Board on the petition for variance filed by the City of Ottawa (City) on October 14, 1986, as amended November 6, 1986. The City seeks variance from 35 Ill. Adm. Code 602.105(a) "Standards for Issuance", and 35 Ill. Adm. Code 602.106(b) "Restricted Status", as they relate to the exceedance of the City's public water supply of the 5 pCi/l combined radium-226 and radium-228 standard contained in 35 Ill. Adm. Code 604.301. On December 1, 1986, the Illinois Environmental Protection Agency (Agency) filed its Recommendation in support of grant of variance. Hearing was waived and none has been held.

The City of Ottawa, LaSalle County, supplies drinking water to a population of 6,000 residential and 500 industrial and commercial utility customers representing some 18,000 residents. The City's public water supply system includes three deep wells currently in use, storage tanks, pumps and distribution facilities. The wells pump directly to the distribution system without treatment except for the addition of chlorine and fluoride.

By letter of October 4, 1985, the Agency advised the City that an annual analysis of the composition of four quarterly samples from the City's distribution system showed a combined radium-226, radium-228 concentration of 6.2 pCi/l. By letter of December 19, 1985, the Agency advised the City that its public water supply was being placed on restricted status, with the result that the Agency would be unable to issue permits for water main extensions.

In response to this notification, the City contracted with Argonne National Laboratory to resample its water, which results were transmitted to the City in June, 1986. The following table correlates these sampling results with other information provided by the City concerning its wells:

Well No.	Depth in feet	Pumping Capacity in gallons per minute	Combined Radium in pCi/l
7	(not provided, not in use)		9.48 ± 0.78
8	1180	1360	not provided
10	1220	905	10.36 ± 0.70
11	1203	1440	3.96 ± 0.42
Distribution System Sample			6.21 ± 0.56

As an initial response to these results, the City directed its water operators to make maximum use of Well No. 11. The City reports that in 1985 this well supplied 47% of the City's total pumpage, but that since approximately July, 1986, Well No. 11 had accounted for 65% of the total usage. The City has supplied no results of distribution system sampling since it has maximized use of Well No. 11.

The City's inquiries to date concerning compliance alternatives have produced three potential options. The City identifies and describes these options as follows:

- a) "Drilling several shallow wells into other sandstone formations and blending the discharge with flows from existing deep wells. Two to five shallow wells could be drilled to provide sufficient dilution to the present supplies. Water from shallow wells in this area however are high in iron and Hydrogen (sic) sulfide content. Therefore water from the shallow wells would have to be pumped to a central location for removal of these chemicals prior to blending. Estimates \$1,000,000 to \$2,000,000.
- b) Utilizing water from the Fox River to blend with discharge from existing wells. This alternate would also require construction of treatment facilities because of questionable quality of water in the Fox River. Tests indicate turbidity of 40-50 (JTU), Fecal coliform 450 per 100 ML and Fecal Streptococcus 75 ML (sic). Estimated cost \$1,000,000 to \$1,500,000.
- c) Construction of Ion Exchange or Lime Softening treatment facilities to reduce radium levels of existing supplies. Estimated costs \$2,000,000 to \$4,000,000. It may be possible to treat water from

on (sic) of the three deep wells and blend the finished water with raw water from the remaining wells." (Pet. p.8)

The City has not as yet completed its review and evaluation of its radium problem, and intends to retain an outside consultant to assist it in this task. However, the City presently anticipates implementation of the third alternative: construction of a treatment plant to process all or part of the flows from existing wells. The City anticipates that it will need approximately 12 months to make a final compliance option determination; if the treatment plant alternative is chosen it expects that between 36-60 months could be necessary to implement the option.

The City states that one of the reasons additional time is needed to analyze compliance options is that its financial situation is such that funding alternatives are limited and must be explored with the assistance of a bond consultant. The City has determined that its non-referendum bonding authority as of April, 1986 was \$455,000, far short of the sums required to address the radium problem. The City additionally states that its consultants have recommended that additional improvements be made to the water supply system totaling \$1,989,000. (The Board notes that the need for multi-million dollar improvements to the City's sewage treatment plant were a subject of discussion in another recent variance proceeding, City of Ottawa v. IEPA, PCB 86-165, January 22, 1987.)

The City's funding difficulties are exacerbated by other economic considerations. The City estimates that the cost to construct treatment facilities would be in the range of \$55 to \$220 per capita (based on a \$1-4 million capital cost) as a one-time expense, or a \$5-\$18 increase in quarterly water bills for 15 years. The increase in operation, maintenance and sludge removal costs would impose an additional \$3-\$10 increase per water bill for the indefinite future. The unemployment rate in the Ottawa area is in excess of 13%, which raises concerns over the customers' ability to absorb an increase.

In further support of its allegations that denial of variance would impose an arbitrary or unreasonable hardship, the City states that portions of its area have been designated by the State as an Enterprise Zone. The City's ability to seek industrial development for eight undeveloped sites in the Zone area on the south and west sides of the community is impeded, as these sites require extensions of water as well as sewer mains. The City has also identified other areas which would require servicing by water main extensions:

"a) Northwood Addition, a residential subdivision on the city's north side. The construction permit for

the initial extensions serving 3 lots has been denied because of the current listing on the restricted status.

- b) Briarcrest Subdivision, an 83 lot residential development on the city's south side. The initial phases serving 27 lots has been completed. Developer wishes to begin phase three serving 20 additional homes.
- c) Commercial development on north side. Developers plan a seven store strip mall in the southwest quadrant of Rt. 23 and I-80.
- d) Looping to dead end main to Community Hospital of Ottawa. The Community Hospital and several doctor's offices are connected to a dead end main that crosses the Fox River. We have had several breaks in the main in recent years necessitating the extension of 800 feet of fire hose to temporarily supply the hospital. The city plans a 1,000 linear ft. extension to improve pressure and provide an alternative supply.
- e) Enterprise Zone extensions. ...
- f) Gracefield Subdivision, a ten lot subdivision zoned for duplex construction on the city's north side.
- g) MWM Subdivision, a four lot commercial subdivision northwest of the Rt. 23 and I-80 interchange."  
(Pet. p. 5-6)

Finally, as to the environmental and health effects of its request, the City asserts that it believes that grant of variance will impose no significant health risk to persons who will receive water from the new service connections during the term of this variance. In support of this belief, the City has referred to the Board to the testimony and exhibits presented by Dr. Richard E. Toohey, Ph.D and Dr. James Stebbings, Ph.D., both of Argonne National Laboratory, at the hearing held on July 30 and August 2, 1985 in R85-14, Proposed Amendments to Public Water Supply Regulations, 35 Ill. Adm. Code at 602.105 and 602.106.

In its Recommendation, the Agency does not dispute the City's various assertions. The Agency believes that while radiation at any level create some risk, the risk associated with the 6.2 pCi/l level in petitioner's water is low. The Agency further states:

"The Agency believes that the hardship resulting from denial of the recommended variance from the

effect of being on Restricted Status would outweigh the injury of the public from grant of that variance. In light of the cost to the Petitioner of treatment of its current water supply, the likelihood of no significant injury to the public from continuation of the present level of the contaminant in question in the Petitioner's water for the limited time period of the variance, and the likelihood of compliance with the [combined radium] standard, the Agency concludes that denial of a variance from the effects of Restricted Status would impose an arbitrary or unreasonable hardship upon Petitioner.

For these reasons, the Agency recommends grant of a five year variance, subject to conditions.

The Board finds that, in light of all the facts and circumstances of this case, denial of variance would impose an arbitrary or unreasonable hardship. However, the Board believes that, if the City makes maximum use of Well #11, testing might show that the City is able to achieve compliance earlier than the five years that may be necessary to assure long term compliance. Also, since this variance is granted without commitment to a specific compliance plan, the Board would like to review the City's progress towards committing to and achieving compliance before extending the variance for the full five years. The Board will accordingly grant a variance for two years or as otherwise determined pursuant to paragraph (A) of its Order, and subject to the pre-construction conditions similar to those outlined by the Agency.

The Board notes that grant of variance from restricted status will affect only those users who consume water drawn from any newly extended water lines, it will not affect the status of the rest of the City's population drawing water from existing water lines, except insofar as the variance by its conditions may hasten compliance. Grant of variance may also, in the interim, lessen exposure for that portion of the population which will be consuming more effectively blended water.

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

#### ORDER

1. Petitioner, the City of Ottawa, is hereby granted a variance from 35 Ill. Adm. Code 602.105(a) Standards of Issuance, and 602.106(b) (Restricted Status) but only as they relate to the 5 pCi/l combined radium-226, radium-228 standard of 35 Ill. Adm. Code 604.301(a), subject to the following conditions:

- A) This variance expires on March 5, 1989, or at such earlier time as either analysis pursuant to 35 Ill. Adm. Code 605.105(a) shows that compliance with the radium standard has been achieved or for failure by Petitioner to file a variance petition pursuant to paragraph (J) of this Order;
- B) The combined radium-226, radium-228 concentration of water from the City's distribution system shall not exceed 10.0 pCi/l;
- C) In consultation with the Agency, Petitioner shall continue its sampling program to determine as accurately as possible the level of radioactivity in its wells and finished water. Until this variance expires, Petitioner shall collect quarterly samples of its water from its distribution system, shall composite and shall analyze them annually by a laboratory certified by the State of Illinois for radiological analysis so as to determine the concentration of radium-226 and radium-228. The results of the analyses shall be reported to the Water Quality Unit, Division of Public Water Supplies, 2200 Churchill Road, IEPA, Springfield, Illinois 62706, within 30 days of receipt of each analysis. At the option of Petitioner, the quarterly samples may be analyzed when collected. The running average of the most recent four quarterly sample results shall be reported to the above address within 30 days of receipt of the most recent quarterly sample;
- D) Within three months of the grant of the variance, the Petitioner shall secure professional assistance (either from present staff or an outside consultant) in investigating compliance options, including the possibility and feasibility of achieving compliance by blending water;
- E) Within four months of the grant of the variance, evidence that such professional assistance has been secured shall be submitted to the Agency's Division of Public Water Supplies, FOS, at 2200 Churchill Road, Springfield, Illinois 62706;
- F) Within nine months of the grant of the variance, the Petitioner shall complete investigating compliance methods, including those treatment techniques described in the Manual of Treatment Techniques for Meeting the Interim Primary Drinking Water Regulations, USEPA, May 1977. EPA-600/8-77-005, and prepare a detailed Compliance Report showing how compliance shall be achieved with the shortest practicable time, but no later than five years from the date of this variance;

- G) This Compliance Report shall be submitted within ten months of the grant of this variance to IEPA, DPWS;
- H) Within three months thereafter Petitioner shall apply to IEPA, DPWS, Permit Section, for all permits necessary for construction of installations, changes or additions to the Petitioner's public water supply needed for achieving compliance with the maximum allowable concentration for radium;
- I) Within three months after each construction permit is issued by IEPA, DPWS, Petitioner shall advertise for bids from contractors to do the necessary work described in the construction permit and shall accept appropriate bids within a reasonable time;
- J) If compliance has not been earlier achieved, and if Petitioner has not filed a variance petition on or before November 5, 1988, this variance shall terminate;
- K) Pursuant to 35 Ill. Adm. Code 606.201, in its first set of water bills or within three months after the date of this Variance Order, whichever occurs first, 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 35 Ill. Adm. Code 602.105(a) Standards of Issuance and 35 Ill. Adm. Code 602.106(b) Restricted Status, as it relates to the combined radium standard;
- L) Pursuant to 35 Ill. Adm. Code 606.201, in its first set of water bills or within three months after the date of this Order, whichever occurs first, and every three months thereafter, Petitioner will send to each user of its public water supply a written notice to the effect that Petitioner is not in compliance with the combined radium-226, radium-228 standard. The notice shall state the average combined radium in samples taken since that the last notice period during which samples were taken;
- M) That Petitioner shall take all reasonable measures with its existing equipment to minimize the level of radium in its finished water. At a minimum Petitioner shall continue to maintain maximum use of Well No. 11 during the period of this variance;
- N) The Petitioner shall provide written progress reports to IEPA, DPWS, FOS every six months concerning steps taken to comply with paragraph B and G. Progress reports shall quote each of the above paragraphs and immediately

below each paragraph state what steps have been taken to comply with each paragraph.

- 2. Within forty-five days of the date of this Order, Petitioner shall execute and forward to Thomas Davis, 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.

I, (We), \_\_\_\_\_, having read the Order of the Illinois Pollution Control Board in PCB 86-179, dated March 5, 1987, understand and accept the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

\_\_\_\_\_  
Petitioner

\_\_\_\_\_  
By: Authorized Agent

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

IT IS SO ORDERED.

J. Dumelle and B. Forcade dissented.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 5<sup>th</sup> day of March, 1987 by a vote of 4-2.

*Dorothy M. Gunn*  
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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board