

ILLINOIS POLLUTION CONTROL BOARD  
March 24, 1988

VILLAGE OF LADD, )  
 )  
 Petitioner, )  
 )  
 v. ) PCB 88-30  
 )  
 ILLINOIS ENVIRONMENTAL )  
 PROTECTION AGENCY, )  
 )  
 Respondent. )

OPINION AND ORDER OF THE BOARD (by R. C. Flemal):

This matter comes before the Board on a Petition for Variance ("Petition") filed on February 3, 1988 by the Village of Ladd ("Ladd"). Ladd seeks variance from 35 Ill. Adm. Code 602.105(a) "Standards For Issuance" and 602.106(b) "Restricted Status" to the extent those rules relate to the exceedence by Ladd's public water supply of the 5 picocuries per liter ("pCi/l") combined radium-226 and radium-228 standard of 35 Ill. Adm. Code 604.301(a). The requested term of the variance is five years, "or until the Illinois Environmental Protection Agency accepts data demonstrating that Petitioner is in compliance with the Safe Drinking Water Act, whichever occurs first" (Petition, para. 1).

On March 3, 1988, the Illinois Environmental Protection Agency ("Agency") filed a Recommendation ("Rec") in support of grant of variance subject to conditions. Hearing was waived and none was held.

Based on the record before it, the Board finds that Ladd would incur an arbitrary or unreasonable hardship, not justified by the environmental and health impact, if variance were to be denied. Accordingly, the variance will be granted, subject to a reduction in the requested term and other conditions as discussed.

BACKGROUND

Ladd provides potable water supply and distribution for a population of 530 residential and 30 industrial and commercial customers representing a resident population of 1,316. Ladd currently has two wells: a deep well which is used in day-to-day operations and a shallow well "which has been used in emergencies" (Petition, para. 12). The particulars of the wells are:

<u>Well No.</u>	<u>Depth</u>	<u>Placed in Operation</u>	<u>Gallons Per Minute</u>	<u>Location</u>
1	1864 feet	1909	600	E. Cleveland St
2	165 feet	1959	400	E. Cleveland St

Ladd was first advised of the high radium content in its water supply by letter from the Agency dated October 4, 1985, and was first notified of placement on restricted status by letter from the Agency dated December 19, 1985. The Agency based its determination on an annual composite of four consecutive quarterly samples or the average of the analyses of four samples obtained at quarterly intervals (Rec., para. 10), which showed a radium-226 content of 6.1 pCi/l and a radium-228 content of 1.4 pCi/l, for a combined value of 7.5 pCi/l; the record does not indicate whether the samples were taken from the distribution system or the well head. Ladd believes that the analyses upon which the Agency's determination was made were derived exclusively from water from the deep well, Well #1 (Petition, para. 17). A subsequent single analysis reported by Ladd on a sample taken in December 1988 from Well #2 showed a radium-226 content of 0.5 pCi/l and radium-228 content of 1.4 pCi/l, for a combined total of 1.9 pCi/l.

#### REGULATORY FRAMEWORK

In recognition of a variety of possible health effects occasioned by exposure to radioactivity, the U.S. Environmental Protection Agency has promulgated maximum concentration limits for drinking water of 5 pCi/l of combined radium-226 and radium-228. Illinois subsequently adopted the same limit as the maximum allowable concentration under Illinois law.

The action that Ladd requests here is not variance from these two maximum allowable concentrations. Irrespective of the action taken by the Board in the instant matter, these standards will remain applicable to Ladd. Rather, the action Ladd requests is the temporary lifting of prohibitions imposed pursuant to 35 Ill. Adm. Code 602.105 and 602.106. In pertinent part these sections read:

#### **Section 602.105 Standards for Issuance**

- a) The Agency shall not grant any construction or operating permit required by this Part unless the applicant submits adequate proof that the public water supply will be constructed, modified or operated so as not to cause a violation of the Environmental Protection Act (Ill. Rev. Stat. 1981, ch. 111<sup>1</sup>/<sub>2</sub>, pars. 1001 et seq.) (Act), or of

this Chapter.

**Section 602.106      Restricted Status**

- a) Restricted status shall be defined by the Agency determination pursuant to Section 39(a) of the Act and Section 602.105, that a public water supply facility may no longer be issued a construction permit without causing a violation of the Act or this Chapter.
- b) The Agency shall publish and make available to the public, at intervals of not more than six months, a comprehensive and up-to-date list of supplies subject to restrictive status and the reasons why.
- c) The Agency shall notify the owners or official custodians of supplies when the supply is initially placed on restricted status by the Agency.

Illinois regulations thus provide that communities are prohibited from extending water service, by virtue of not being able to obtain the requisite permits, if their water fails to meet any of the several standards for finished water supplies. This provision is a feature of Illinois regulations not found in federal law. It is this prohibition which Ladd herein requests be lifted.

COMPLIANCE PROGRAM

Ladd proposes to achieve compliance through a program of blending the waters from Wells #1 and #2. This is to be accomplished by the installation of an additional storage tank and blending devices at the common location of Wells #1 and #2. Ladd is currently accepting bids for the necessary equipment and construction (Petition, para. 20). It further commits to achieving compliance no later than six months from the date of filing of the instant variance request (Id. at 26).

During the period of the variance, Ladd proposes to mitigate impact of excessive radium concentrations by "immediately ... pumping solely from its conforming, shallow well, Well #2, and ... [taking] all reasonable measures with its existing equipment to minimize the impact during the period of variance" (Petition, para. 29).

HARDSHIP

Ladd believes that a requirement to come into immediate compliance would impose an arbitrary or unreasonable hardship. Ladd and the Agency both note that by virtue of Ladd's inability to receive permits for water main extensions, any economic growth dependent on those water main extensions would not be allowed. As specific examples of the development contemplated, Petitioner currently foresees the need to extend water mains to serve the following new users, four of the homes in which are anticipated to be built in spring 1988 (Petition, para. 30).

- A. Meadows Unit of Granfield Acres Addition to the Village of Ladd, consisting of 11 possible single-family residences, with an estimated population of 44 persons. Each house would have a separate hookup to the proposed water main.
- B. Spring Creek Addition to the Village of Ladd, consisting of 27 possible single-family residences, with an estimated population of 112 persons. Each house would have a separate hookup to the proposed water main.

#### ENVIRONMENTAL AND HEALTH EFFECTS

Due to the quick implementation of the blending proposal, Ladd believes that "there will be no negative environmental impact on human life in the affected area as a result of issuance of this variance" (Petition, para. 26). Ladd further notes that it is of the opinion that the variance it seeks is merely to allow the extension of its water distribution system during the four quarters required by law to establish that the changes in its water treatment process have resulted in compliance (Id. at 25).

The Agency refers the Board to the testimony presented by Richard E. Toohey, Ph.D., 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.

The Agency believes that while radiation at any level creates some risk, the risk associated with Ladd's water is low. Moreover, the Agency believes that "an incremental increase in the allowable concentration of the contaminants in question even up to a maximum of four times the MAC for the contaminant in question, should cause no significant health risk for the limited population served by new water main extensions for the time period of this recommended variance" (Rec., para. 16; emphasis in original). In conclusion the Agency 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 possibility of compliance with the MAC standard due to blending, the Agency concludes that denial of a variance from the effects of Restricted Status would impose an arbitrary or unreasonable hardship upon Petitioner.

The Agency observes that this grant of variance from restricted status should affect only those users who consume water drawn from any newly extended water lines. This variance should not affect the status of the rest of Petitioner'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. In so saying, the Agency emphasizes that it continues to place a high priority on compliance with the radium standards.

Rec., para. 27 and 28.

#### CONCLUSION

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 upon Petitioner. The Board also agrees with Ladd and the Agency that no significant health risk will be incurred by the persons who are served by any new water main extensions, assuming that compliance is timely forthcoming.

However, the Board does question the necessity and advisability of the requested five-year term of the variance. By Ladd's own admission, it can achieve distribution system concentrations of combined radium less than the 5 pCi/l standard at the end of the six months required for installing the necessary blending equipment, and in the meantime can significantly reduce concentrations by switching principal water pumpage from Well #1 to Well #2. It may require as much as an additional year for Ladd to be removed from restricted status via achieving compliance, since for this action it will be necessary to maintain the lowered radium concentrations for a period

sufficient to demonstrate that the average combined radium concentration in an annual composite of consecutive quarters or the average of the analyses of four samples obtained at quarterly intervals is less than the 5 pCi/l level<sup>1</sup>. Thus, the maximum period that Ladd would seemingly require variance is eighteen months, or perhaps slightly longer to allow for unforeseen developments in implementing the blending option and/or for obtaining results of laboratory analyses. For these reasons, the Board will limit the variance to twenty months, with the additional proviso that variance will terminate if compliance is achieved earlier. Such other conditions as are recommended by the Agency and are appropriate will also be imposed.

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

ORDER

1. Petitioner, the Village of Ladd, is hereby granted 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 and radium-228 standard of 35 Ill. Adm. Code 604.301(a), subject to the following conditions:
  - (A) This variance expires on November 24, 1990, or when compliance with 35 Ill. Adm. Code 604.301(a) is achieved, whichever is sooner.
  - (B) Compliance shall be achieved with the maximum allowable

+ The Agency notes that if Ladd

...takes a sample when it first begins full implementation of its blending program (i.e., by no later than six months from grant of the variance) and three quarterly samples thereafter, the final sample would be taken no later than 15 months after grant of the variance. If three additional months are added to the schedule to allow the Petitioner's laboratory to perform and report the analysis, compliance with the MAC for the contaminant in question can be determined within 18 months from the grant of the variance.

Rec., para. 29(B)

The Board believes that this outlines an uncomfortably tight schedule, and believes that the twenty months here ordered provides a more reasonable schedule.

concentrations of combined radium-226 and radium-228 no later than November 24, 1990.

- (C) Petitioner shall fully implement its blending program no later than six months from grant of this variance.
- (D) In consultation with the Agency, Petitioner shall continue its sampling program to determine as accurately as possible the level of radioactivity in each of its wells and finished water. Until this variance terminates, Petitioner shall collect quarterly samples of its water from its distribution system, at locations approved by the Agency. Petitioner shall composite the quarterly samples for each location separately and shall have them analyzed annually by a laboratory certified by the State of Illinois for radiological analysis so as to determine the concentration of the two parameters, radium-226 and radium-228. The results of the analyses shall be reported to the Compliance Assurance Section, Division of Public Water Supplies, IEPA, P.O. Box 19276, 2200 Churchill Road, Springfield, Illinois 62794-9276, 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.
- (E) 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 shall 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 they relate to the combined radium-226 and radium-228 standard.
- (F) 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 shall 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 and radium-228 standard. The notice shall state the average content of the contaminant in question in samples taken since the last notice period during which samples were taken.
- (G) Petitioner shall immediately start pumping principally from its shallow Well #2. Raw and finished water originating from Well #2 must meet all applicable

standards, and it is Petitioner's responsibility to assure that all standards are met.

(H) Petitioner shall take all reasonable measures with its existing equipment to minimize the level of contaminants in its finished water.

(I) Petitioner shall provide written progress reports to IEPA, Division of Public Water Supplies, Field Operations, every three months concerning steps taken to comply with paragraphs C and H. Progress reports shall quote each of said paragraphs and immediately below each paragraph state what steps have been taken to comply with each paragraph.

2) Within 45 days of the date of this Order, Petitioner shall execute and forward to Wayne L. Wiemerslage, Enforcement Programs, Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, Illinois 62794-9276, a Certification of Acceptance and Agreement to be bound to all terms and conditions of this variance. The 45-day period shall be held in abeyance during any period that this matter is being appealed. Failure to execute and forward the Certificate within 45 days renders this variance void and of no force and effect as a shield against enforcement of rules from which variance was granted. The form of said Certification shall be as follows:

CERTIFICATION

I (We), \_\_\_\_\_, hereby accept and agree to be bound by all terms and conditions of the Order of the Pollution Control Board in PCB 88-30, March 24, 1988.

\_\_\_\_\_  
Petitioner

\_\_\_\_\_  
Authorized Agent

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

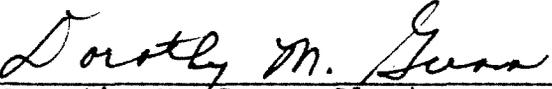
Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1985 ch. 111 1/2 par. 1041, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme

Court of Illinois establish filing requirements.

IT IS SO ORDERED.

Board Members Mr. Dumelle and Mr. 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 24<sup>th</sup> day of March, 1988, by a vote of 4-3.

  
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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board