

ILLINOIS POLLUTION CONTROL BOARD  
April 16, 1987

VILLAGE OF MONTGOMERY, )  
 )  
 Petitioner, )  
 )  
 vs. ) PCB 87-5  
 )  
 ILLINOIS ENVIRONMENTAL )  
 PROTECTION AGENCY, )  
 )  
 Respondent. )

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

This matter comes before the Board on the January 12, 1987 petition for variance filed by the Village of Montgomery (Village). The Village seeks a four year variance from 35 Ill. Adm. Code 602.105(a), Standards for Issuance, and from 35 Ill. Adm. Code 602.105(b), Restricted Status, but only to the extent those rules involve 35 Ill. Adm. Code 604.301(b) (combined radium-226 and radium-228 concentration). On February 9, 1987, the Illinois Environmental Protection Agency (Agency) filed its Recommendation in support of grant of variance. Hearing was waived and none has been held.

The Village of Montgomery, located in Kane County, provides drinking water from its wells for a population of 3900 residential and 100 industrial and commercial utility customers representing some 13,000 residents and some 100 industries and businesses employing approximately 10,000 people. The water supply system includes three deep wells, one shallow well, two 750,000 gallon elevated water storage tanks, pumps and distribution facilities. The Village by ordinance imposed a user charge.

By letter dated December 6, 1986, the Village was first advised by the Illinois Environmental Protection Agency (hereinafter "Agency") that the maximum allowable concentration of combined radium-226 and radium-228 was exceeded. The Agency report indicated a combined radium-226 and radium-228 concentration of 11.1 pCi/l. The Agency's report was apparently based upon the analysis of a composite sample which was taken on 6/6/84; 9/26/84; 1/25/85 and 2/10/86. The Village states that all previous radium sample analyses had shown the Village to be in compliance, and the Agency Recommendation states that in August 1985 the Agency had informed the Village that a sample analysis (no date specified) indicated radium-226 levels of 4.0 and radium-228 levels of less than 1.0 pCi/l. The Village

asserts that by telephone on December 23, 1986, the Agency notified the Village that it was going to be placed on restricted status. (Although the Agency states that notification was made on January 8, 1987, the Board opines that the Agency may be referencing a written notification.)

The Village has identified three possible compliance options. The first would involve replacing existing deep sandstone wells with shallow sand and gravel aquifer wells with treatment for iron and hardness removal. The estimated construction cost is \$2,500,000, and annual operation and maintenance (O&M) costs are estimated to be \$426,000/yr. The estimated time for implementation is 4 years. The Village estimates that the average cost per year to each of its 4,000 customers, would be \$69 per year for 20 years to finance the capital costs and \$94 per year indefinitely for increased O&M costs.\* (See, Petition, Attachments 2a & 2b).

The Village is actively pursuing this option. The Village has contracted at a cost of \$5,000 with the Illinois State Geological Survey to perform a "Shallow Groundwater Resource Assessment" between September 1, 1986 and December 31, 1987. In September, 1986 the Village also contracted with Layne Western Co., at a cost of \$44,907 for shallow sand and gravel aquifer test consisting of a test well, three observation wells, and aquifer test and hydrology services. (See Petition, Attachments 5-6).

The second option would involve replacing existing deep sandstone wells with water from the Fox River. The estimated construction cost is \$2,500,000 and estimated O&M costs are \$426,000 per year. The estimated time for implementation 5 years. The Village estimates that the average costs per year to each of its 4,000 customers would be \$69 per year for 20 years to finance the capital costs and \$107 per year indefinitely for increased O&M costs. (See Petition, Attachments 3a & 3b).

The final option would involve construction of treatment facilities to properly treat all water supplied by the wells. Estimated construction costs are \$2,800,000, and estimated O&M costs are \$376,000. The estimated time for implementation is 3 years. The Village estimates that the average cost per year to each of its 4,000 customers would be \$77 per year for 20 years to finance the capital costs and \$94 per year indefinitely for increased O&M costs. (See Petition, Attachments 4a & 4b).

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\* The Board notes that this record does not indicate whether the average cost to its residential customers would be alleviated by its commercial/industrial customers.

The Village also notes that the two primary treatment methods used for radium removal, lime or lime-soda softening and ion exchange softening, each produce large quantities of sludge in which the removed radium is concentrated, which can create disposal and handling problems. Additionally, if an ion exchange softener is regenerated with salt, the sodium content of the finished water is increased, creating health risks for those with hypertension or heart problems.

The Village asserts that denial of variance during the period in which it is exploring compliance options would impose an arbitrary or unreasonable hardship. The Village notes that because it is on restricted status, the Agency cannot lawfully issue permits for the following water main extensions:

- a) Season's Ridge Planned Unit Development to be located North of By-Pass 30, South of the Kendall County line, East of Rte. 25 and West of Douglas Road. The development will consist of 829 dwelling units with an estimated population of 2,000 and a 30 acre commercial development. Each house would have a separate hookup to the proposed watermain.
- b) Orchard Road watermain extension which would connect the West Tank with the 12 inch watermain at the intersection of Orchard Road and Aucutt Road. The proposed extension would serve a new industry with an estimated 20 employees.
- c) Baseline Road Watermain Extension which would extend from Lake Street to Blackberry Heights subdivision. The extension would service 5 industries with 200 employees and up to 20 existing homes.

The Village has made no formal assessment of the effect of this variance on the environment, although it refers the Board and Agency to the testimony and exhibits presented by Richard E. Toohey, Ph.D. and James Stebbings, Ph.D. both of the Argonne National Laboratory, on July 30 and August 2, 1985 in R85-14. Proposed Amendments to Public Water Supply Regulations, 35 Ill. Adm. Code 602.105 and 602.106. However, it is the opinion of the Village that the granting of this variance for the limited time period of the requested variance will not cause any significant harm to the environment or to the people served by potential water main extensions that would be allowed if this variance is granted.

In its Recommendation, the Agency does not dispute any of the Village's contentions. The Agency believes that while

radiation at any level creates some risk, the risk associated with the level in the Village's water is very low. The Agency further believes an incremental increases in the maximum allowable concentration (MAC) for radium even up to a maximum of four times the current 5 pCi/l should cause no significant health risk for the limited population served by new water main extensions for the time period of this recommended variance. The Agency notes that the MAC for combined radium is currently under review at the federal level, but also that the Agency does not expect any proposal to change the standard before 1987 or early 1988.

The Agency's conclusion is 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 ... 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 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."

The Agency recommends a grant of variance with conditions for the full four year term requested by the Village. The Agency acknowledges that the Board could grant a short-term variance, e.g. for 18 months, to allow the Village to accomplish its studies and to prepare the Compliance Report, but the Agency believes it is better that the Village be under an enforceable compliance plan that requires compliance by a date certain. It is the Agency's position that this should greatly reduce the risk of federal enforcement against Petitioner.

Based on all of the facts and circumstances here presented, the Board finds that denial of variance would impose an arbitrary or unreasonable hardship.

The Board does not, however, believe that the grant of a four year variance is appropriate in this case, and will instead grant a twenty-two month variance. One reason is that based on the information available to date, it is unclear whether compliance could be achieved in four years. The Board notes that the Village estimates that it would take 4 years to achieve compliance by replacing its deep wells with shallow wells, 5 years by replacing its deep wells with Fox River water, and 3 years by softening its deep well water. Given the fact that the results of the shallow aquifer testing relative to the first option will not be available before December, 1987, it would appear likely that compliance could not be achieved within a four year period if the Village is forced to begin investigation and implementation of another compliance option in the event that no suitable and sufficient shallow source can be developed. In this event, the Village would be required to seek extension of variance.

Another reason is that, while the Board appreciates the Village's timely and good faith efforts towards compliance, the Board believes that the Village's situation merits review before the end of four years. The doubling of the combined radium reading between August, 1985 and December, 1986 leads the Board to question whether both results are accurate. Moreover, in the absence of data concerning production capability and the combined radium levels in the Village's one shallow and three deep wells, as well as the nature of its distribution system, it is unclear whether the Village has as yet considered implementation of a program of blending shallow water from its existing and/or proposed wells to minimize the radium content of its finished water. A twenty-two month variance will provide the Village 18 months in which to perform additional sampling and testing, to complete its studies, to choose and commence a compliance option; the four months added to this period provides for Board deliberation of any timely filed petition for extension of variance.

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

#### ORDER

1. Petitioner, the Village of Montgomery 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 February 15, 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 1 (I) of this Order;
- B) The combined radium-226, radium-228 concentration of water from the City's distribution system shall not exceed 12.0 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. i) As to sampling the 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, ii) As to sampling the raw water in the wells, Petitioner shall follow the procedures outlined in subparagraph i) above, except that only four quarterly samples shall be collected and analyzed for each well;
- D) Within 12 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 13 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 17 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 within the shortest practicable time; but no later than five years from the date of this variance;

- G) This Compliance Report shall be submitted within 18 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) If compliance has not been earlier achieved, and if Petitioner has not filed a variance petition on or before October 15, 1988, this variance shall terminate;
- J) 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;
- 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 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;
- L) The Petitioner shall take all reasonable measures with its existing equipment to minimize the level of radium in its finished water. Petitioner shall make maximum use of wells with water of low radium content, and to the extent feasible shall blend this water with that from wells with higher radium content;
- M) The Petitioner shall provide written progress reports to IEPA, DPWS, FOS every six months concerning steps taken to comply with paragraph C and F. 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 the variance. This forty-five day period shall be held in abeyance during any period that this matter is being appealed. The form of said Certification shall be as follows:

I, (We), \_\_\_\_\_, having read the Order of the Illinois Pollution Control Board in PCB 87-5, dated April 16, 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. D. 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 16<sup>th</sup> day of April, 1987 by a vote of 4-2.

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