

ILLINOIS POLLUTION CONTROL BOARD
May 9, 1986

VILLAGE OF BURLINGTON,)
)
 Petitioner,)
)
 v.) PCB 85-183
)
 ILLINOIS ENVIRONMENTAL)
 PROTECTION AGENCY,)
)
 Respondent.)

OPINION AND ORDER OF THE BOARD (by R. C. Flema1):

This matter comes before the Board upon a Petition from the Village of Burlington (Burlington) filed on December 10, 1985. The December 10 Petition requested extension of an existing variance until April 1, 1991, from the maximum allowable barium concentration of Rule 304 of Chapter 6, Public Water Supply Rules and Regulations of the Illinois Pollution Control Board, codified at 35 Ill. Adm. Code 604.202.

The Board on December 20, 1985, ordered that Petitioner clarify and supplement its petition. While the Board was doing this, Petitioner already was in the process of preparing a First Amended Petition (Amend. Pet.) for variance which was received by the Board on December 30, 1985. This Petition asks for variance from Standards for Issuance and Restricted Status relating to barium, but not from the actual barium standard. The Amended Petition also includes a twelve-point proposed program (Amend. Pet., p. 12-13) to bring Burlington into compliance with the barium standard.

The Board on January 9, 1986 directed Petitioner to clarify and supplement its First Amended Petition. Petitioner on February 7, 1986 filed a Supplement to First Amended Petition.

On March 19, 1986, the Illinois Environmental Protection Agency (Agency) filed its recommendation (Rec) in this matter. The Agency recommends that variance be denied on the belief "that Petitioner has not taken adequate steps to comply with its prior variance and therefore denial of a variance from the effects of Restricted Status would not impose an arbitrary or unreasonable hardship upon Petitioner" (Rec., p. 10). The Agency additionally recommends that, should the Board grant the variance request, the grant be conditioned on an eleven-point program designed to bring Petitioner's water supply into compliance with the barium standard (Rec. p. 10-13). This program is similar in all major provisions to that proposed by Burlington.

Burlington waived hearing in its December 30 filing. Since no objections have been filed with the Board, no hearing has been held.

RELIEF SOUGHT BY PETITIONER

Burlington requests a five-year variance from 35 Ill. Adm. Code 602.105(a), Standards of Issuance, and from 35 Ill. Adm. Code 602.106(b), Restricted Status, but only to the extent those rules involve the barium standard of 35 Ill. Adm. Code 604.202. 35 Ill. Adm. Code 602.105(a) states in full:

- 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 1/2, pars. 1001 et seq.) (Act), or of this Chapter.

35 Ill. Adm. Code 602.106(a) and (b) states in full:

- a) Restricted status shall be defined as 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.

35 Ill. Adm Code 604.202 states in pertinent part that the barium concentration in finished water shall not exceed 1.0 milligrams per liter (mg/l).

The asserted purpose of the requested variance is to allow continued operation of Petitioner's water supply and distribution system, expansion of or extension to the distribution system as necessary, and removal of the facility from the Agency's Restricted Status List (Amend. Pet., par. 1).

The Board notes that Petitioner's ability to continue operation of its water supply and distribution system would not be affected by either a grant or denial of the requested relief. However, the decision on relief could affect Petitioner's ability to provide the additional domestic and fire protection requirements of the local population as well as deter future development.

BACKGROUND

Burlington, located in Kane County, provides public services, including potable water, to a population of approximately 450 residents and a small number of industrial and commercial customers. Burlington owns and operates the distribution system in question.

Raw water is derived from a system of three wells with the following characteristics:

- | | |
|------------|--|
| Well No. 1 | This well was drilled in 1936 to depth of 108 feet. It has a six inch casing, a centrifical pump and can produce, at the maximum, 35 gallons per minute. |
| Well No. 2 | This well was drilled approximately in 1960 to a depth of 1,105 feet. It is 10 inches in diameter, and is equipped with a 40 horse power, 16 stage, 8 inch diameter submersible pump. It is capable of pumping 200 gallons per minute. |
| Well No. 3 | This well, completed in August, 1982, is 1,140 feet deep. It is equipped with a 60 horse power, 16 stage, 9 inch diameter peerless submersible pump, which is currently set at 457 feet down. It has the capacity to pump 300 gallons of water per minute. |

Well #3 was developed on the recommendation of Petitioner's then consulting engineers in an attempt to respond to Burlington's problems with barium. The belief was that blending of water from Well #2 and the new Well #3 would reduce barium to an acceptable level. However, Well #3 also proved to provide water of high barium concentration. Thereupon Petitioner sought a permit for general use of Well #3. This permit was denied by the Agency in October, 1982, and use of the well was restricted to emergencies.

Petitioner further notes that Well #1 has insufficient capacity to provide water as needed. Accordingly, Petitioner must rely upon the water supplied from Well #2 as its primary source of water.

PREVIOUS VARIANCE

Burlington previously sought variance from the Board's Public Water Supply standard for barium* in PCB 80-203. An Order granting the variance for a period of five years was entered by the Board on April 2, 1981**. The variance is now expired. The grant of variance was subject to the following conditions, among others:

- A. By September 1, 1981, the Petitioner shall submit to the Agency a report on the economic feasibility of blending water from Well #1 with the high barium water from Well #2 so that finished water with a barium content of 1.0 mg/l or less may be delivered.
- B. Beginning on or about June 1, 1981, and at six month intervals thereafter, the Petitioner shall communicate with the Agency in order to ascertain whether barium removal techniques specifically applicable to small systems have been developed and identified.
- C. As expeditiously after identification of a feasible compliance method as is practicable, but no later than January 1, 1984, Petitioner shall submit to the Agency a program (with increments of progress) for bringing its system into compliance with barium standards.
- D. Petitioner shall take all reasonable measures with its existing equipment to minimize the level of barium in its water supply and shall not allow the barium concentration to exceed 2.7 mg/l.
- E. Pursuant to Rule 313 (D)(1) of Chapter 6, on or before April 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 1.0 mg/l maximum barium standard. The notice shall state the average content of barium in samples taken since the last notice period during which samples were taken.

*On June 4, 1981, the Board additionally received a copy of a letter written by the Village to the Agency, requesting variance from the Board's gross alpha particle activity standard. On June 10, 1981, the Board ordered that this deficient "petition" be amended within 45 days, or it would be subject to dismissal. No amended petition was filed, and that action was dismissed on August 20, 1981.

**This date is identified as April 1, 1981, throughout the filings of Petitioner.

Burlington asserts that it has made reasonable attempts to comply with all terms and conditions of the variance. Burlington additionally asserts, and the Agency does not challenge, that it has met condition A of the variance. In support thereof Burlington has submitted as Exhibit A to its Amended Petition a copy of the report required by condition A. This report concludes that it was not then feasible to blend water from Well #1 with water from Well #2 such that finished water with a barium content of 1.0 mg/l or less could be delivered. Burlington also cites its development of Well #3 as an attempt, albeit failed, to meet the conditions of the variance.

The Agency contends, however, that Burlington has not complied with the remaining four conditions, B through E. Specifically it asserts that Agency records do not show that conditions B, C, and E have been met, and that Agency records do show that Burlington violated condition D by allowing barium concentrations to exceed 2.7 mg/l. In support of the latter assertion, the Agency provides the following data, with barium measured in mg/l, for Petitioner's finished water from Agency records as based on reports submitted by Petitioner (Rec., p. 7):

4-6-81	2.0	4-5-83	1.6
6-9-81	2.5	7-5-83	2.0
7-6-81	2.8	10-11-83	2.1
8-4-81	2.1	1-3-84	2.0
10-14-81	2.5	4-2-84	2.2
11-9-81	2.8	7-16-84	2.4
1-12-82	2.5	10-1-84	2.33
4-5-82	2.2	2-19-85	2.1
7-27-82	2.6	4-1-85	3.73
10-5-82	2.5	9-19-85	2.4
1-11-83	2.2	1-13-86	2.19

Petitioner has provided less extensive analyses of the barium concentrations in its finished water which it reports as follows (Amend. Pet., p. 7-8):

<u>Date of Sample</u>	<u>Results</u>
December, 1982	1.0
January, 1983	2.2
April, 1983	1.6
July, 1983	2.0
September, 1983	2.1
February, 1984	2.1
February, 1985	2.1
April, 1985	3.7
September, 1985	2.4

HEALTH RISK

Petitioner has made no analysis of the possible health risk associated with its requested variance (Amend. Pet., par .30). However, Burlington does assert, without further elaboration, that compliance with the maximum allowable barium concentration standard would "not significantly benefit the public or environment, and compliance may in fact harm both" (Amend. Pet., par.35).

The record also does not contain any information on how many people might be additionally exposed to elevated barium concentrations should the variance be granted.

The Agency, in its review of environmental impact, concludes that "an incremental increase in the allowable concentration for ... barium, even up to a maximum of 3.4 mg/l, should cause no significant health risk for the limited population served by new water main extensions for the limited time period of the requested variance" (Rec., p. 7, emphasis as in original).

This situation is similar to that previously faced by the Board in Village of Hampshire, PCB 85-114, November 7, 1985. In that case the Board agreed with the Agency's assessment of health risk, but emphasized:

...the particular implication of the underscored qualification. That is, while a rational conclusion would allow that short-term exposure would produce no significant health risk, the same conclusion can not be reached under conditions of long-term exposure. It is in part because situations such as this exist that the Safe Drinking Water Act ("SDWA"), and the Board in its enforcement of the SDWA, entertain the possibility of short-term relief via variances. But implicit in the variance process is that compliance will be achieved in some timely fashion, and that long-term exposures and attendant health risk will thereby not be allowed to occur.

Burlington notes that the United States Environmental Protection Agency (USEPA) currently has its 1.0 mg/l barium standard under review. Burlington makes this observation as a prelude to the conclusion that "substantial expenditure of public funds for treatment facilities which may become obsolescent in the near future is not in the public interest and does not grant a corresponding benefit to the public" (Amend. Pet., par. 41). However, the Board notes that the USEPA action also provides perspective on the health risks associated with barium.

In the similar case of Hampshire the Board commented on the review process:

The Board notes that the first step in this review process has been completed. Namely, the USEPA has proposed that the

Recommended Maximum Contaminant Level (RMCL) for barium in drinking water be 1.5 mg/l (U.S. Environmental Protection Agency, Office of Drinking Water, Barium Health Advisory, Draft, September 30, 1985). Several aspects of this action warrant notice. First, RMCL's are proposed at levels at which no known or anticipated adverse effects on the health of persons occur; they are nonenforceable and considered as health-related goals rather than as standards. Second, the USEPA action to date has been only to propose an RMCL for barium; the proposal may be altered subject to information received during a mandated comment period of 120 days following publication. Third, when and if the USEPA sets a final RMCL, it must then proceed to set a Maximum Contaminant Level (MCL) which, in addition to health effects, also considers matters such as the availability and performance of analytical methods and treatment technologies and assessment of the costs of the applicable technologies. In the ideal an MCL will be set equal to its RMCL; in no case may the MCL be less than the RMCL. Fourth, the MCL is a federally enforceable maximum concentration. However, a state which holds primacy under the SDWA, as does Illinois, may elect to support a standard more stringent than the federal standard.

In view of the conditions laid out in the preceding paragraph, the Board notes that a change in the USEPA posture regarding barium in drinking water, be such change viewed as either favorable or unfavorable to Petitioner, cannot be expected with any immediacy. The Board can not therefore lay great credence on Hampshire's implied position that its requested variance is supported by actions at the federal level, at least as these actions have proceeded to date. In fact, such weight as may be given to the recent federal action would seem to imply that Petitioner's drinking water does impose a long-term health risk: all of the samples taken from the distribution system since 1982 contain concentrations in excess of the USEPA's Recommended Maximum Contaminant Level.

An additional facet of the health risk issue is that the State of Illinois currently supports a 1.0 mg/l standard. Federal action will occasion a change in the State standard only if a more stringent federal standard supersedes the State standard, or if the federal review process produces a less stringent standard and the State finds the federal position sufficiently compelling to warrant a change in the State rule. That any such change might occur is too speculative to be given weight in the instant matter. Accordingly, the Board must consider that the appropriate standard, and attendant health risk level, is 1.0 mg/l.

The Board notes that the situation respecting modification of the barium standard existent at the time of the Hampshire Opinion remains unchanged. Moreover, the Board also notes that,

as was the case in Hampshire, all of Burlington's reported barium analyses are in excess of the 1.5 mg/1 USEPA RMCL. Therefore, the Board must again conclude that such weight as may be given to the recent federal action would seem to imply that Petitioner's drinking water does impose a long-term health risk.

HARDSHIP

With respect to the matter of a showing of arbitrary or unreasonable hardship, the Board notes that §35(a) of the Illinois Environmental Protection Act mandates that a variance may be granted only if Petitioner demonstrates that immediate compliance would impose an arbitrary or unreasonable hardship.

Burlington only briefly addresses the issue of the hardship that would exist absent grant of the requested variance. Specifically, this would entail inability to make extensions to the existing distribution system during a time when "there is a great need for the expansion of the water distribution system in order to serve the domestic and fire protection requirements of the local population" (Amend. Pet., par. 43). Elsewhere Petitioner also asserts that retention of Burlington on the Agency's Restrictive Status List "would mislead developers and other persons who check the Restricted Status List" (Amend. Pet., par. 9). In neither case does Petitioner estimate the number of individuals who would be affected as a consequence of retention of either the extension ban or restricted status listing.

Rather, the principal hardship argument made by Petitioner focuses on the costs associated with coming into compliance with the barium standard. Petitioner envisions two alternatives by which compliance might be achieved:

- a. Drilling at least one and possibly more wells and the construction of related facilities for blending purposes. Without having had the benefit of expert advice, it is estimated that construction costs could equal at least \$20,000.00 per well while the estimated time for implementation would be a minimum of 36 to a maximum of 60 months depending on the number of wells needed.
- b. Constructing treatment facilities in order to properly treat all water supplied by the existing wells. Any new treatment facilities needed and their individual specific costs cannot be ascertained without expert advice, but it is estimated that it could perhaps total in excess of \$500,000.00. The estimated time for implementation would be 60 months (Amend. Pet., par. 22).

Burlington estimates that the cost of drilling a new well and constructing related facilities would be approximately \$45. per capita, based on a resident population of 450 (Amend. Pet., par. 23). Absent having had any formal expert financial and engineering advice, Petitioner asserts that it is difficult to provide a hard estimate of the cost for constructing a treatment facility to remove barium (Amend. Pet., par. 24). The Board notes, however, that if the above cited \$500,000 figure is correct, the per capita cost would be approximately \$1,111. At present, each resident water user pays \$240 per year in water bills to fund reduction of bonded indebtedness created in 1980 (Amend. Pet., par. 25).

Burlington also asserts that it has neither the financial ability nor bonding authority to enable it to provide immediate compliance with the barium standard. Petitioner notes that its annual budget since the 1980-81 fiscal year has not exceeded approximately \$225,000 (Amend. Pet., par. 36). Petitioner also notes that in 1980 it committed itself to the creation of bonded indebtedness having a face value of \$416,000 for the purpose of making capital improvements to the then existing public water supply system, which at that time was in serious disrepair (Amend. Pet., par. 37). The bonds are scheduled to be completely retired in 2018 (Supplement to Amended Petition, p. 2). Uncertainty regarding the future of the assessed value of taxable property, which in 1984 amounted to \$2,587,021, makes it difficult to estimate when additional bonded indebtedness could be incurred. Petitioner speculates that this could be in the year 2009.

The Agency does not disagree with Burlington's estimates of the cost of compliance with the barium rule (Rec., p. 19). Rather, the Agency believes that Petitioner has not proven economic hardship because it has not complied in full with its prior variance (Rec., p. 19).

CONCLUSIONS AND FINDINGS

The matter before the Board in this proceeding is whether variance from an extension ban and restricted status is warranted by the evidence presented concerning hardship and health risk. This issue is partly obscured by extensive consideration by both Petitioner and the Agency of matters related to the barium standard itself.

The Board notes that the merit of the barium standard is not a proper issue in the instant matter. However, the Board is compelled to comment on one aspect of the record relating to compliance with the barium standard. Although it believes the perspective to be seriously flawed, the Board can understand Petitioner's hope that at some future time the USEPA will determine that barium levels such as those encountered in Petitioner's water do not constitute a health risk. The Board

can also appreciate Burlington's position as a small community desirous of providing the best possible services to its residents within the framework of a limited financial base. It is also possible to appreciate that of the problems facing a community such as Burlington, correction of a small excess above a water standard may not be viewed by the community as requiring first priority attention. However, none of these perspectives serve to wish away what is a real problem that requires real action. It would be remiss of Burlington, and of this Board, to promote any action injurious to the health of the citizens we serve. Accordingly, the Board, for its part, intends to take such actions as will cause the most expeditious rectification of the barium problem faced by Burlington.

The only matter on record which speaks to the question of health risk on the particular issue before the Board is that there should be no significant health risk if exposure is for a limited time. Burlington's request is basically that it be allowed to expose an additional unidentified number of persons to its excess barium levels by extending water service to them, and that such additional exposure be for a term not to exceed five years. The critical item here is the term of five years or less. In view of the Agency's determination that exposure over this time frame would cause no significant health risk for the limited population served by new water main extensions, the Board finds that granting of the requested variance would produce no significant health risk.

On the matter of hardship, no estimation of the number of homes or other facilities which would be without service absent the variance is given by Petitioner. However, Petitioner clearly expects some requests for water service extensions. Petitioner also asserts that fire protection and the prospect of future development will be hampered by its placement on the Restricted Status List. The Board finds that arbitrary or unreasonable hardship would exist absent the variance.

Although not stated clearly, the Agency's position appears to be that the present hardship is self-imposed because Petitioner failed to come into compliance with the barium standard during the term of the past variance. Indeed, had Petitioner come into compliance during the term of the past variance, it would have no need for the new variance it now requests. The Board believes that a finding of self-imposed hardship would be necessitated if Petitioner had taken no action to come into compliance. However, it is clear that at the minimum Petitioner did attempt to develop an alternate water supply via Well #3, which, had it been successful, would have allowed compliance. The record is not sufficiently clear for the Board to determine whether Burlington itself is at fault for the failure of Well #3. Accordingly, the Board will allow the benefit of the doubt, and finds that Petitioner's hardship is not self-imposed.

The Board notes that both Petitioner and the Agency are in agreement that, should the variance be granted, there be a set of conditions which prescribes a program of action to relieve the need for extension bans and restricted status listing. The Board finds that these conditions are necessary and appropriate and therefore will condition the grant of variance upon them. The Board will also add an additional condition, which is that the maximum barium concentration shall not exceed 2.7 mg/l. The Board points out that these conditions, including the added condition, are similar in content to those imposed by the Board and accepted by Petitioner in PCB 80-203. The Board also notes that Petitioner has been challenged by the Agency as to whether it has in fact complied with these previous conditions. Such conditions are fully binding and enforceable and the Board wishes to impress upon Petitioner the necessity for full compliance with each condition.

Finally, the Board notes that the USEPA has challenged several Board issued variances from the barium standard as being inconsistent with the State's obligations under the Safe Drinking Water Act (SDWA). However, the variance requested here is solely from the State regulations establishing the restricted status mechanism and not from the national primary drinking water regulations. That being the case, such variance will not insulate Burlington from the possibility of enforcement for violations of the underlying barium standard.

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

ORDER

The Village of Burlington 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 barium standard of 35 Ill. Adm. Code 604.202, subject to the following conditions:

1. Variance shall be effective this date and shall extend through May 9, 1991.
2. 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.
3. 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.

4. 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 shall 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.
5. This Compliance Report shall be submitted within ten months of the grant of this variance to IEPA, DPWS, for its approval.
6. Within six months after submission of the Compliance Report, unless there has been a written extension of time by the IEPA, 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 the standard in question.
7. 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.
8. Construction allowed on said construction permits shall begin within a reasonable time of bids being accepted, but in any case, construction of all installations, changes, or additions necessary to achieve compliance with the maximum allowable concentration in question shall begin no later than three years from the grant of this variance and shall be completed no later than four and one half years from the grant of this variance.
9. Compliance shall be achieved with the maximum allowable concentration in question no later than five years from grant of this variance.
10. 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 barium standard.

11. 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 barium standard (35 Ill. Adm. Code 604.202). The notice shall state the average content of barium samples taken since the last notice period during which samples were taken.
12. Petitioner shall take all reasonable measures with its existing equipment to minimize the level of barium in its finished water and shall not allow the barium concentration to exceed 2.7 mg/l.
13. Within forty-five days of the date of this Order, Petitioner shall execute and forward to Wayne Wiemerslage, 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 certification shall be as follows.

CERTIFICATION

The Village of Burlington, having read the Order of the Illinois Pollution Control Board, in PCB 85-183 dated May 9, 1986, understands and accepts the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

Village of Burlington

By: _____
Authorized Agent

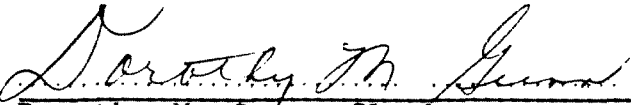
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Date

IT IS SO ORDERED.

Board Members, Jacob D. Dumelle and Bill 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 9th day of May, 1986, by a vote of 5-2.


Dorothy M. Gunn, Clerk
Illinois Pollution Control Board