

ILLINOIS POLLUTION CONTROL BOARD  
January 7, 1993

CITY OF HIGHLAND,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 92-144
	)	(Variance)
ILLINOIS ENVIRONMENTAL	)	
PROTECTION AGENCY,	)	
	)	
Respondent.	)	

**OPINION AND ORDER OF THE BOARD (by J. C. Marlin):**

This matter is before the Board on the October 5, 1992, petition ("Pet.") for variance filed by the City of Highland ("City"). The City seeks relief from 35 Ill. Adm. Code 602.105(a), "Standards for Issuance" and 602.106(a), "Restricted Status", to the extent those rules relate to the violation by the City's public water supply of the maximum contaminant level (MCL) of 0.10 mg/L for total trihalomethanes (TTHM) as set forth in 35 Ill. Adm. Code 611.310(c),(d). The City seeks a variance of thirty-three months lasting up to, and including, February 28, 1995.

On December 7, 1992, the Illinois Environmental Protection Agency (Agency) filed a variance recommendation ("R."). The Agency recommends that the Board grant the variance subject to certain conditions. The Agency recommends that a variance of eighteen (18) months be granted to petitioner to give petitioner time to complete construction projects, perform four quarterly tests of the water for post-construction contaminant levels, and submit the test results. Hearing on this matter was waived, and none was held.

For the reasons discussed below, the Board finds that the record contains adequate proof that to require immediate compliance with the Board's regulations for "Standards for Issuance" and "Restricted Status" would result in the imposition of an arbitrary or unreasonable hardship. Accordingly, the variance is granted subject to the conditions specified in the Board's order.

**BACKGROUND**

Petitioner is a municipality which owns and operates the water supply, treatment facility, and distribution system for the City of Highland in Madison County, Illinois. Water is provided to all residential, commercial, and industrial users as needed, and charges are made according to ordinance. Petitioner is not

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part of a regional water supply. (Pet. at 5) Agency records indicate the City has not sought a variance from regulations concerning TTHM prior to this petition. (R. at 4)

### REGULATORY FRAMEWORK

The instant variance request concerns two features of the Board's public water supply regulations: "Standards for Issuance" and "Restricted Status". These features are found at 35 Ill. Adm. Code 602.105 and 602.106, which in pertinent part 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. 1989, ch. 111 1/2, pars. 1001 et seq.) (Act), or of this Chapter.

#### Section 602.106 Restricted Status

- 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.

These regulations authorize the issuance of construction permits only where the applicant submits proof that the public water supply will be constructed, modified or operated in accordance with the Act. In this case, a denial of the construction permit would prevent the City from building and operating new water main extensions. (R. at 9)

In determining whether any variance is to be granted, the Act requires the Board to determine whether a petitioner has presented adequate proof that immediate compliance with the Board regulations at issue would impose an arbitrary or unreasonable hardship. (Ill. Rev. Stat. 1991, ch. 111 1/2, par. 103(a)). Furthermore, the burden is upon the petitioner to show that its claimed hardship outweighs the public interest in attaining compliance with regulations designed to protect the public (Willowbrook Motel v. Pollution Control Board (1977), 133 Ill.App.3d 343, 481 N.E.2d 1032). Only with such showing can the claimed hardship rise to the level of arbitrary or unreasonable hardship. Where the petitioner seeks to extend a variance, the

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petitioner must show satisfactory progress.

A further feature of a variance is that it is, by its nature, a temporary reprieve from compliance with the Board's regulations (Monsanto Co. v. IPCB (1977), 67 Ill.2d 276, 367 N.E.2d 684), and compliance is to be sought regardless of the hardship which the task of eventual compliance presents an individual polluter. (Id.) Accordingly, except in certain special circumstances, a variance petitioner is required, as a condition to grant of variance, to commit to a plan which is reasonably calculated to achieve compliance within the term of the variance.

The grant of variance from "Standards for Issuance" and "Restricted Status" does not absolve a petitioner from compliance with the MCL at issue, nor does it insulate a petitioner from possible enforcement action brought for violation of that MCL. The underlying MCL remains applicable to the petitioner regardless of whether variance is granted or denied.

#### THE CITY'S RESPONSE TO DATE AND PROPOSED COMPLIANCE PLAN

On July 22, 1992, the City received an Agency letter notifying the City that the level of TTHM in its water distribution system exceeded the regulatory MCL for TTHM. The letter stated that the TTHM average for the past four consecutive quarters was 0.115 mg/L, which exceeded the 0.10 mg/L MCL standard. On July 31, 1992, the Agency notified petitioner that petitioner would be placed on restricted status. (Pet. at 6) By a letter dated August 14, 1992, the City submitted additional laboratory test results from Agency certified laboratories on samples taken from the previous three quarters. The average of these results taken together with previous Agency test results produced an average level of 0.11 mg/L for TTHM. This level was very close to, but still in excess of, the 0.10 mg/L standard. (Pet. at 7)

Prior to notification of noncompliance, the existing treatment plant operated as follows. Raw water was pumped from Silver Lake to the rapid mix chamber where powdered activated carbon could be added to the rapid mix chamber. The flow was then split in the rapid mix chamber with the flow going to one rectangular sedimentation basin (without sludge removal equipment) and to one circular sedimentation basin (with sludge removal equipment). Polymer and lime were added in the basins. The water then flowed through five rapid chamber sand filters which have a six inch layer of anthracite on top of the sand. Chlorine could be added before and after the filters. After filtration, the water flowed into the clearwell where it was pumped into the distribution system. Polyphosphate was added prior to filtration and fluoride was added after filtration. (Pet. at 7-8)

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There are two primary methods for achieving compliance. The first method is to optimize the treatment process to remove trihalomethane precursors, thereby reducing TTHM formation. (Pet. at 9) The second primary method of achieving compliance is to use an alternative disinfection. The most common alternative disinfection method is an ammonia feed process. Ozone is another commonly used disinfectant. (Pet. at 10)

Petitioner began to modify its water treatment process by using the first method of compliance as soon as it became aware of the violation. Petitioner reports that it resumed feeding potassium permanganate at the low service pumps in lieu of chlorine and removed the sludge from the rectangular basin at more frequent, but unspecified, intervals. (Pet. at 10) In addition, when the water treatment expansion is complete, petitioner will resume feeding chlorine into the process after filtration rather than before filtration. Petitioner believes these improvements will reduce the level of TTHM in its water system and bring the system into compliance with the MCL requirements. (Pet. at 8)

Petitioner's water treatment plant is under construction to expand its capacity and to improve the quality of its treated water. The construction is approximately 75% complete and is scheduled to be entirely complete by March 3, 1993. Petitioner expects the new construction improvements will bring it into compliance with the TTHM standard. (Pet. at 5) In addition, the Agency reports that it has issued petitioner a construction permit (Permit #1057FY92) for an ammonia feed system to be used if the construction improvements prove unsuccessful in reducing the TTHM concentrations. (R. at 5) The Agency recommends a variance of eighteen months to allow petitioner to complete the construction, adjust and monitor the new treatment processes, and install the ammonia feed system if the initial modifications do not reduce the TTHM concentrations to an acceptable level. (R. at 6)

#### HARDSHIP

Denial of the variance would prevent the Agency from issuing construction and operating permits until compliance is achieved. Without the construction and operating permits, all construction requiring water extensions within the petitioner's service area would be halted. Petitioner plans to extend its water main service to Cambridge Meadows (Subdivision Two), Town & Country Estates (Subdivisions Eight and Nine), Northwest Highland Development (Subdivision Three), and construction of a water main (approximately 700 linear feet) to provide a loop between Paradise Drive and vicinity. (Pet. at 6) Petitioner does not provide an estimate of the cost of compliance or an estimate of the number of people to be served by the new water extensions.

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Petitioner argues that denial of the variance will negatively impact prospective home purchasers and developers, as well as negatively affecting petitioner's tax base. (Pet. at 10) Petitioner further states that there is no significant risk of environmental harm or risk to the public health for the limited time of this variance. Petitioner concludes that the hardship resulting from a denial of the variance outweighs the harm to the public resulting from a grant of the variance and therefore, denial of the variance would constitute an arbitrary or unreasonable hardship. (Pet. at 11)

The Agency agrees that under the circumstances in this case, a denial of the requested variance would result in arbitrary or unreasonable hardship. (R. at 9) The Agency believes an increase in the allowable concentration of TTHM will cause no significant health risk for the limited population served by the new water main extensions for the time period recommended. (R. at 9) The Agency further agrees with petitioner that denial of the variance would stymie any economic growth dependent on the new water main extensions. Therefore, the Agency believes that a denial of the variance would result in arbitrary or unreasonable hardship to petitioner. (R. at 9)

#### ENVIRONMENTAL IMPACT

Petitioner asserts 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. The petitioner does not consider the TTHM concentration of this community water supply to be a significant health risk for the limited time period of the requested variance." (Pet. at 9) (emphasis in original). Although petitioner does not state the basis for this belief, the City's petition together with the Agency's recommendation sufficiently addresses this matter.

The Agency believes an incremental increase in the allowable concentration for TTHM will cause no significant health risk for the limited population served by new water main extensions for the time period of the recommended variance. (R. at 9) TTHM are organic chemicals consisting of one carbon atom and three halogen atoms. TTHM are formed when free chlorine reacts with naturally occurring compounds which are generally produced by decaying vegetation. Research by the National Cancer Institute and the National Academy of Sciences indicates that TTHM may be carcinogenic and can lead to liver and kidney disorders, birth defects, and central nervous system damage. (R. at 7) The United States Environmental Protection Agency (USEPA) promulgated federal regulation 44 Fed. Reg. 68624, R81-11, Ex. 4, R81-11, 23-24 in response to the potential adverse health effects of TTHM. These regulations establish an MCL for TTHM of 0.10 mg/L.

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The TTHM standard in Illinois is also 0.10mg/L and is applicable to public water supplies serving over 10,000 people and after January 1, 1992, is applicable to public water supplies serving less than 10,000 people. (35 Ill. Adm. Code 611.310(c) and (d)). This standard is estimated to allow for one excess cancer death for every 10,000 to 100,000 people with a lifetime exposure to TTHM at the MCL in their drinking water. (R. at 8)

#### CONSISTENCY WITH FEDERAL LAW

The Agency states that the requested variance may be granted consistent with the Safe Drinking Water Act (42 U.S.C. 300(f)) and corresponding regulations (40 CFR Part 141) because the variance does not grant relief from national primary drinking water regulations. (R. at 10)

#### CONCLUSION

Under the circumstances in this case, the Board finds that immediate compliance with the "Standards for Issuance" and "Restricted Status" regulations with respect to TTHM would impose an arbitrary or unreasonable hardship on the petitioner. Although the City's petition does not fully address some issues, the petition read together with the Agency's recommendation provides sufficient information on which the Board may base a decision.

Although petitioner has not listed compliance costs, the record indicates that petitioner moved very quickly to achieve compliance as soon as it was informed that the TTHM level exceeded the MCL. The TTHM levels in petitioner's finished water (0.11 mg/L) is only slightly above the MCL (0.10 mg/L) and should cause no significant health risk for the limited population served by the new water main extensions for the time of this variance.

The petitioner has submitted a construction schedule for a new treatment process that should result in compliance. The construction should be complete in March of 1993. A variance of eighteen months will allow petitioner time to complete construction, perform four quarterly tests to monitor the level of contaminants, and employ the back-up ammonia feed system if necessary.

The Board will accordingly grant this variance for a maximum period of eighteen months to allow petitioner to adjust and monitor the treatment processes and install the ammonia feed system if the initial modifications do not reduce the TTHM concentrations to an acceptable level. Today's action is solely a grant of variance from Standards of Issuance and Restricted Status as they relate to TTHM.

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

**ORDER**

1) The City of Highland (petitioner) is hereby granted a variance from 35 Ill. Adm. Code 602.105(a), "Standards for Issuance", and 602.106(b), "Restricted Status", as they relate to the maximum contaminant level (MCL) for total trihalomethanes (TTHM), as set forth in 35 Ill. Adm. Code 611.310(c) and (d). This variance will remain in effect until July 7, 1994, subject to the following conditions:

- (A) Variance shall terminate on the earliest of the following dates:
- (i) July 7, 1994; or
  - (ii) when analysis of petitioner's water supply shows compliance with the standard for TTHM in drinking water.
- (B) In consultation with the Illinois Environmental Protection Agency (Agency), petitioner shall continue its sampling to determine the level of TTHM in its public water supply through the water treatment facility. Until this variance terminates, petitioner shall collect quarterly samples of its water from its distribution system at locations approved by the Agency in accordance with 35 Ill. Adm. Code 611.680. Analysis shall be performed by a laboratory certified by the State of Illinois for TTHM analysis. The results of the analyses shall be reported within 30 days of receipt of the most recent result to:
- Illinois Environmental Protection Agency  
Compliance Assurance Section  
Division of Public Water Supplies  
2200 Churchill Road  
Springfield, Illinois 62794-9276
- The running average of the most recent four quarterly sample results shall be reported to the above address within 30 days after receipt of the most recent quarterly sample.
- (C) Pursuant to 35 Ill. Adm. Code 611.851(b), 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 person served by the PWS a written notice to the effect

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that the Illinois Pollution Control Board has granted petitioner a variance from 35 Ill. Adm. Code 602.105(a) Standards of Issuance and 35 Ill. Adm. Code 602.106(a) Restricted Status, as they relate to the MCL standard for TTHM.

- (D) If results of analyses performed on samples pursuant to 35 Ill. Adm. Code 611.685 show a violation of the MCL for TTHM, then public notice shall be made pursuant to 35 Ill. Adm. Code 611.851(b).
- (E) Until full compliance is achieved, petitioner shall take all reasonable measures with its existing equipment to minimize the level of TTHM in its finished drinking water.
- (F) Petitioner shall provide written progress reports to the Agency beginning July 1, 1993, and continuing every six months thereafter until compliance, concerning steps taken to comply with the paragraphs of this order. Progress reports shall quote each of said paragraphs and immediately below each paragraph state what steps have been taken to comply with each paragraph. Progress reports shall be addressed to:

Illinois Environmental Protection Agency  
 Division of Public Water Supply  
 Field Operations Section  
 2200 Churchill Road  
 Springfield, Illinois 62794-9276

- 2) Within forty-five days of the date of this order, petitioner shall execute and forward to:

Stephen C. Ewart  
 Division of Legal Counsel  
 Illinois Environmental Protection Agency  
 P.O. Box 19276  
 2200 Churchill Road  
 Springfield, Illinois 62794-9276

a Certificate of Acceptance and Agreement to be bound by all terms and conditions of the granted variance. The 45 day period will be held in abeyance during any period that this matter is being appealed. Failure to execute or forward this certificate within 4 days will render the variance null and void. The form of the certificate is as follows:

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I (We), \_\_\_\_\_  
hereby accept and agree to be bound by all terms and  
conditions of the Order of the Pollution Control Board  
in PCB 92-144, January 7, 1993.

\_\_\_\_\_  
Petitioner

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1991, 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 (but see also 35 Ill. Adm. Code 101.246, Motions for Reconsideration, and Castenada v. Illinois Human Rights Commission (1989), 132 Ill.2d 304. 547 N.E.2d 437.)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 7<sup>th</sup> day of January, 1993 by a vote of 5-0.

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