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Before the
Pennsylvania Department of Environmental Protection

In Re: Proposed Rulemaking: Public :
Notice on Drinking Water Systems :
(Public Notification Revisions to : DEP ID: _____
Title 25, Pa Code Chapter 109. :
Safe Drinking Water) :

Comments of Philadelphia Water Department

I. Introduction

The Philadelphia Water Department (PWD) is the country's oldest municipal water supplier, founded in 1799, and provides integrated water, wastewater and stormwater services to more than 1.6 million people in Philadelphia and Lower Bucks County. PWD's mission is to plan for, operate, and maintain both the infrastructure and the organization necessary to purvey high quality drinking water, to provide an adequate and reliable water supply for all household, commercial, and community needs, and to sustain and enhance the region's watersheds and quality of life by managing wastewater and stormwater effectively.

PWD applauds the states' initiative to improve the process of public notification related to imminent threats to water supplies. Effective communication can be a first-line defense to protect human health from imminent threats to drinking water supplies. PWD has in place extensive and detailed guidelines related to public notification and communication. PWD is now developing risk communication procedures using state-of-the-industry techniques and industry experts. Effective risk communication means delivering correct information in a simple and clear manner, when necessary, to the population that is at risk.

II. Comments

A. Tier 1 Public Notice Categories

In order to trigger Tier 1 public notice, circumstances must exist such that there is (1) an occurrence of a waterborne disease or probable emergency situation that (2) adversely affects the quality or quantity of the finished water *and* has a significant potential to have serious adverse effects on human health as a result of short-term exposure.

The new term “probable emergency situation” is not sufficiently defined. Section 107.701(3)(iii) is identified as the provision providing a definition for “probable emergency situation.” This section does not provide a definition; this section provides a list of circumstances which may adversely affect the quality or quantity of drinking water. As discussed below, in Section B, these circumstances do not necessarily adversely affect the quality or quantity of drinking water.

PWD supports the concept that acute or short-term exposure to drinking water quality contaminants should be included in any emergency review. PWD has practiced this approach to water quality emergencies for many years. The proposed revisions do not adequately define when the emergency notices are triggered. The given definition of “probable emergency situation” provides examples of situations that *may* adversely affect the water quality or quantity; but, there is no definition of what constitutes an “adverse affect” to determine whether a particular “probable emergency situation” “adversely affects” water quality and quantity. There has been some reference to future work that

the PADEP is conducting to develop policy definitions. If this is correct, these definitions need to be reviewed and addressed before, not after, public comment is closed on the Rule. The public is unable to understand and apply the Rule requirements without the supporting background definitions and specifications.

Further, a utility must determine whether there is a significant potential of a serious adverse effect on human health from short-term exposure. The proposed regulations do not define “adverse effect” and do not provide guidance to determine what constitutes “serious.” Finally, the water utility must determine what would be considered a “significant potential.” On a national basis, there has not been a risk assessment done of the conditions specified herein to provide scientifically valid support for assumed adverse effects (such as during a loss in pressure or a water main break).

The revisions require more definition to avoid excessive public notification that damages public trust. PWD would embrace the opportunity to work with PADEP and other Pennsylvania water utilities to develop guidelines to clarify the circumstances that trigger Tier 1 public notice.

B. One Hour Reporting Requirement - § 109.701(a)(3)

1. Circumstances

In the Pennsylvania Bulletin Proposed Rulemaking, the Department explains, “The Department is including a few more examples of situations that require 1-hour reporting to the Department. These situations include: an overfeed of a drinking water treatment chemical; a situation that causes negative pressure in the distribution system; and a lack of resources that affect operations, such as staff shortages, notification by the power utility of planned lengthy power outages or imminent depletion of treatment

chemical inventories.” As proposed, the effort to incorporate additional situations of imminent threats to water supplies is vague and over-inclusive.

As drafted, Section 109.701 demands 1-hour reporting to the Department of situations “which *may* adversely affect the quality or quantity of drinking water (emphasis added).” The listed situations may or may not adversely affect water quality or quantity. In fact, the proposed additional circumstances occur frequently with no impact on the quality or quantity of Philadelphia’s water supply. There exists no background data or published reports to support the assumptions being made in this notice.

Section 109.701(a)(3)(iii)(F) identifies “An overfeed of a drinking water treatment chemical,” as a probable emergency situation which may adversely affect the quality or quantity of drinking water. Water treatment chemicals are overfed everyday. Whenever the process flow is reduced, the treatment chemical doses are changed for the lower flow. For a minute or so, during the adjustment, chemicals are technically overfed. Occasionally, chemical feed equipment fails and overfeeds a chemical. PWD facilities are equipped with monitoring and alarm systems that alert operations staff who take corrective actions. Neither of these day to day situations impact water quality. PWD’s facilities have redundant monitoring techniques to check for chemical feed. It is not an overfeed that should trigger PADEP notification, but PWD’s inability to manage an overfeed that should trigger 1-hour notification. In extreme circumstances, a chemical overfeed can have an adverse affect on drinking water. In such situations only, water utilities should be required to comply with strict one-hour report provision.

Section 109.701(a)(3)(iii)(G) identifies, "A situation that causes a negative water pressure in any portion of the distribution system," as a probable emergency situation which may adversely affect the quality or quantity of drinking water. Changes in pressure are expected and system designs account for them. Events that could cause significant pressure reductions include: valve closures, fire hydrant operations, sudden large customer demands, pump shut downs (scheduled and emergency) and main breaks. Water quality is typically not impacted with a change in pressure unless some other hazardous condition exists. In fact, PWD maintains a cross connection control program to prevent backflow hazards in the distribution system. We recognize that certain backflow contamination could present a significant health risk to the public.

There is no conclusive evidence that pressure loss or main breaks in and of themselves have an unacceptable public health risk associated with them (see Appendix A). Notification requirements and guidelines have historically been focused on scientifically defensible water quality issues. There is no study that has of yet shown that pressure loss or main breaks in and of themselves create real public health risk.

Methods to sample, test, analyze, monitor and report water quality parameters have been studied, debated, standardized and regulated with great scrutiny for decades. Unfortunately the same rigorous review has not been performed for the hydraulic performance of the distribution system. To include pressure as an indicator of distribution system performance and trigger for notification requirements opens a new field that requires some of the same review and standardization. Since distribution systems were designed primarily to convey water developing guidelines and standards for

hydraulic performance would be a valuable first step before including it as a reportable parameter.

PWD agrees with the Department that early consultation with the Department will improve human health protection in situations where an imminent threat exists. On the other hand, PWD does not support any regulations that may increase threat to public health by unnecessarily stretching the Department's resources, sensitizing Department responders to overfeed reports, and improperly deploying utility resources to address overfeeds. Requiring one-hour reporting for frequent non-threatening situations will result in excessive notification, which will flood the Department's response resources with immaterial reports that will serve to confound the Department's ability to identify and respond to actual imminent threats. Further, a one-hour reporting requirement improperly diverts the utilities' priority from focusing on system performance to calling the Department in order to avoid a violation for late notification. Finally, advances in risk communication have not been displayed in this change in regulation. Since 9-11 especially, there have been advances made in the application of risk communication techniques. Prior to emergency public notification, for example, there should be public education as to how to receive and respond to such communication. Also, boil water alerts and other messages have not been tested. These are being used but no studies have been done to determine their effectiveness as well as their cost to the communities. This requirement continues to rely on messages and methods that have not been well advanced nor well studied.

2. *Timing*

PWD appreciates the Department's requirement of prompt notification of imminent threats to water safety. PWD recognizes the many benefits associated with consultation with the Department during emergency situations.

As proposed, notification "within one hour of discovery" is vague and unreasonable. "Discovery" is not a precise moment in time; during an investigation of a possible problem, several "discoveries" are made. The Department should adopt regulations that specify a more definable time upon which the one hour notification period begins. The Public Utility Code provides that a utility "shall notify the Commission by telephone within one hour after a preliminary assessment of conditions reasonably indicates that there is an unscheduled service interruption..." 52 Pa. Code § 67.1. The Department could adopt consistent regulations requiring, "A public water supplier shall report the circumstances to the Department within 1 hour of discovery, **AFTER A PRELIMINARY ASSESSMENT OF CONDITIONS**, for the following violations or situations." This would ensure prompt notification of threats without resulting in excessive false reports and excessive violations for late notice.

C. Section 109.407 Delivery of a Teir I Public Notice

No method of public notification can ensure that every user will be notified in time to avoid exposure in every real water supply contamination event. PWD commends the Departments identification and discussion of feasibility of the many public notification delivery methods. Due to the variety of methods, variety of communities, and variety of water utilities within Pennsylvania, PWD suggests a more utility specific assignment of notification procedures. Individual utilities should be able to best assess

their situation and identify the best method of communicating with their community.

Water utilities should be permitted to submit a Public Notice Delivery Plan to be approved by the Department instead of trying to draft a regulation with sufficient flexibility.

III. Conclusion

PWD appreciates the opportunity to present comments on this Proposed Rulemaking: Public Notice on Drinking Water Systems and requests the Department's consideration of PWD's concerns. This rulemaking is an opportunity for Pennsylvania to develop clear and definite rules that result in complete protection of public health without unnecessarily misallocating resources or undermining the public's sense of safety. PWD continually strives for excellence in treatment processes as well as mechanisms for communicating with the public. PWD cooperates on a national level on issues such as these, and participates as experts in many water quality and distribution system or treatment forums. It is with these goals in mind that PWD looks forward to working with the Department on the public notification rule revision.

Appendix 1

The following are the statements made on the public health risk of distribution system issues:

NRC, 2006, Drinking Water Distribution Systems: Assessing and Reducing Risks

Page 3: Investigations conducted in the last five years suggest that a substantial proportion of waterborne disease outbreaks, both microbial and chemical, is attributed to problems within distribution systems. The reason for these observations is not clear; outbreaks associated with distribution system deficiencies have been reported since the surveillance system was started. However, there may be more attention focused on the distribution system now that there are fewer reported outbreaks associated with inadequate treatment of surface water. Also, better outbreak investigations and reporting systems in some states may result in increased recognition and reporting of all the risk factors contributing to the outbreak, including problems with the distribution system that may have been overlooked in the past. Contamination from cross-connections and backsiphonage were found to cause the majority of the outbreaks associated with distribution systems, followed by contamination of water mains following breaks and contamination of storage facilities.

Page 6: The following select conclusions and recommendations regarding the public health risks of distribution systems are made:

- The distribution system is the remaining component of public water supplies yet to be adequately addressed in national efforts to eradicate waterborne disease. This is evident from data indicating that although the number of waterborne disease outbreaks including those attributable to distribution systems is decreasing, the *proportion* of outbreaks attributable to distribution systems is increasing.
- Distribution system ecology is poorly understood, making risk assessment via pathogen occurrence measurements difficult. There is very little information available about the types, activities, and distribution of microorganisms in distribution systems, particularly premise plumbing.
- Epidemiology studies that specifically target the distribution system component of waterborne disease are needed.

Page 6: Furthermore, *Legionella* appears to be a continuing risk and is the single most common etiological agent associated with outbreaks involving drinking water.

Page 131: There is inadequate investigation of waterborne disease outbreaks associated with distribution systems, especially in premise plumbing.

Page 130: Accurate estimates are not yet available for the prevalence of adverse health effects attributable to deficiencies in distribution systems from pathogen occurrence measurements, waterborne disease outbreak surveillance, or epidemiological studies.

Page 131: Until better data are available from these three approaches, it will not be possible to accurately assess the magnitude of the health impacts resulting from distribution system deficiencies.

US EPA White Paper, The Potential for Health Risks from Intrusion of Contaminants into the Distribution System from Pressure Transients

In summary, it is concluded that transient pressure events occur in distribution systems; that during these negative pressure events pipeline leaks provide a potential portal for entry of groundwater into treated drinking water; and that fecal indicators and culturable human viruses are present in the soil and water exterior to the distribution system..... There is insufficient data to indicate whether pressure transients are a substantial source of risk to water quality in the distribution system.

US EPA White Paper, 2002, New or Repaired Water Mains

Of the 12 largest waterborne disease outbreaks reported between 1971 and 1998, two were associated with main construction and repair activities.

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Subject: Safe Drinking Water; Public Notification 25 Pa. Code 109 (Sept. 22, 2007) - Comments to Proposed Rulemaking

Please find attached comments from the Philadelphia Water Department on Proposed Rulemaking - Safe Drinking Water; Public Notification Revisions, 25 Pa. Code ch.109 (Sept. 22, 2007).

Thank you for your time and consideration.

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