

# Regulatory Analysis Form

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(1) Agency

Department of Environmental Protection

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INDEPENDENT REGULATORY  
REVIEW COMMISSION

(2) I.D. Number 7-384

IRRC Number: 23-14

(3) Short Title

Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR)

(4) PA Code Cite

25 Pa. Code, Chapter 109

(5) Agency Contacts & Telephone Numbers

Primary Contact: Michele Tate, 783-8727

Secondary Contact: Lou Guerra, 783-8727

(6) Type of Rulemaking (Check One)

- Proposed Rulemaking  
 Final Order Adopting Regulation  
 Final Order, Proposed Rulemaking Omitted

(7) Is a 120-Day Emergency Certification Attached?

- No  
 Yes: By the Attorney General  
 Yes: By the Governor

(8) Briefly explain the regulation in clear and nontechnical language.

The U.S. Environmental Protection Agency (EPA) promulgated the *Federal Interim Enhanced Surface Water Treatment Rule (IESWTR)* on December 16, 1998, to control *Cryptosporidium* in public drinking water systems using surface water sources and serving 10,000 or more people. The Environmental Quality Board amended Chapter 109 to include EPA's IESWTR at its April 17, 2001 meeting (PA Bulletin, Vol.31, No.29, Saturday, July 21, 2001). EPA promulgated the *Federal Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR)* on January 14, 2002, which extends most of IESWTR's requirements to public drinking water systems using surface water sources and serving less than 10,000 people. Briefly, the main provisions of LT1ESWTR include 2-log (99%) *Cryptosporidium* removal; strengthened combined filter effluent turbidity performance standards; requirements for individual filter turbidity monitoring for plants using conventional or direct filtration; and a provision on applicability monitoring, profiling, and benchmarking to ensure that microbial protection is not compromised as facility operators take the necessary steps to comply with new disinfection byproduct standards. In addition, the rule is expected to increase the level of protection from other disease-causing organisms, such as *Giardia lamblia* and other waterborne protozoa, bacteria, or viruses.

(9) State the statutory authority for the regulation and any relevant state or federal court decisions.

The Pennsylvania Safe Drinking Water Act, 35 P.S. § 721.4(a), and Sections 1917-A and 1920-A of the Administrative Code of 1929, 71 P.S. §§ 510-7 and 510-20(b).

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(10) Is the regulation mandated by any federal or state law or court order, or federal regulation? If yes, cite the specific law, case or regulation, and any deadlines for action.

Yes. Section 1413 of the Federal Safe Drinking Water Act, 42 U.S.C. § 300g-2a, requires that, in order for the state to retain primary enforcement authority (primacy), the state must adopt drinking water regulations that are "no less stringent than" the national primary drinking water regulations. States must adopt regulations no later than two years after the date on which the regulations are promulgated by EPA, or ask EPA for an extension of up to two years. The federal drinking water primacy regulations at 40 CFR § 142.12(a) also require the state to adopt all new and revised national primary drinking water regulations contained in 40 CFR Part 141 in order to retain primary enforcement responsibility. Furthermore, Section 4(a) of the Pennsylvania Safe Drinking Water Act, 35 P.S. § 721.4(a), requires the Environmental Quality Board to adopt maximum contaminant levels and treatment technique requirements no less stringent than those promulgated under the federal act for all contaminants regulated under the national primary and secondary drinking water regulations. Also Section 5(a) of the state act, 35 P.S. § 721.5(a), requires the Department of Environmental Protection (Department) to adopt and implement a public water supply program which includes those program elements necessary to assume state primary enforcement responsibility under the federal act. EPA promulgated the Federal LT1ESWTR on January 14, 2002. Therefore, Pennsylvania must adopt regulations implementing the federal rule by January 14, 2004. Failure to do so, and without an EPA-granted extension, may result in Pennsylvania losing primacy. It is expected that the Department will request an extension.

(11) Explain the compelling public interest that justifies the regulation. What is the problem it addresses?

The LT1ESWTR will improve public health by increasing the level of protection from exposure to *Cryptosporidium* and other pathogens in drinking water supplies through improvements in filtration at small water systems. This will decrease the likelihood of endemic illness from *Cryptosporidium* by several thousand cases annually at the national level, thus reducing health care costs. In addition, the filtration provisions of the rule are expected to increase the level of protection from exposure to other pathogens, such as *Giardia lamblia* and other waterborne protozoa, bacteria, or viruses.

(12) State the public health, safety, environmental or general welfare risks associated with non-regulation.

The proposed amendments will greatly reduce the chances of cryptosporidiosis outbreaks in Pennsylvania. EPA expects a reduced likelihood of cryptosporidiosis outbreaks, increased protection against gastrointestinal illnesses from *Cryptosporidium* and other pathogens, and a reduced likelihood of endemic illness from *Cryptosporidium* by a nationally estimated 12,000 to 41,000 cases annually.

(13) Describe who will benefit from the regulation. (Quantify the benefits as completely as possible and approximate the number of people who will benefit.)

The LT1ESWTR will affect 200 water treatment plants operated by public water systems serving less than 10,000 people and which use surface water or GUDI sources. In the future, an additional 63 systems (serving 57,000 people) might be affected that currently use ground water under the direct influence of surface water but are not filtered. About 537,000 Pennsylvanians who receive their drinking water from the 200 filter plants will benefit from the regulations. The national benefits resulting from this rule range from \$18.9 to \$90.9 million per year. EPA based this estimate on the value of an avoided case of cryptosporidiosis, which ranges from \$796 to \$1,411 per person.

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(14) Describe who will be adversely affected by the regulation. (Quantify the adverse effect as completely as possible and approximate the number of people who will be adversely affected.)

Under the proposed LT1ESWTR amendments, customers of small public water systems may face increased costs in their drinking water bills. The increase will be limited because most surface water systems in Pennsylvania already meet the higher turbidity standards. The actual increase in water rates will depend upon a number of factors, including population served and the filtration technology in use. At the national level, EPA estimates the mean annual cost per household is \$6.24 and the cost per household is less than \$15 for 90 percent of 6.3 million households potentially affected by LT1ESWTR. Of the remaining households, nine percent will experience a range of annual costs from \$15 to \$120 (\$10 per month), while only one percent of households are estimated to experience annual costs exceeding \$120.

(15) List the persons, groups or entities that will be required to comply with the regulation. (Approximate the number of people who will be required to comply.)

The LT1ESWTR will affect all public water systems serving less than 10,000 people and which use surface water or GUDI sources. Currently, 200 water treatment plants serving over a half-million Pennsylvanians meet these criteria. Because the overwhelming majority of these plants are independently operated, very few are owned and operated by the same company or municipality.

(16) Describe the communications with and input from the public in the development and drafting of the regulation. List the persons and/or groups who were involved, if applicable.

The Federal LT1ESWTR was developed through the regulatory negotiation process with many participants. These participants included public water systems, environmental groups, and public health groups. In Pennsylvania, both the Water Resources Advisory Committee and the Small Water Systems Technical Assistance Center Advisory Board reviewed drafts of the proposal, provided comments and suggestions, and approval. A thirty-day public comment period will also be scheduled following the EQB's approval of this proposed rulemaking.

(17) Provide a specific estimate of the costs and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required.

The turbidity provisions, which include treatment changes, monitoring, and reporting requirements, account for the largest portion of the total rule costs. In projecting costs, EPA estimates that nationally, the rule's turbidity provisions will cause 2,207 systems to modify their treatment, 2,327 will install turbidimeters, and 5,817 will incur monitoring costs. Some systems might seek less costly alternatives, such as connecting into a larger regional water system.

EPA estimates that the annualized, nationwide cost of the final rule will range from \$39.5 (three percent discount rate) to \$44.8 million (seven percent discount rate). Approximately 84 percent (\$33.1 to \$38.2 million at the three and seven percent discount rates, respectively) of the rule's total annual costs are imposed on drinking water utilities while states incur the remaining 16 percent (\$6.4 to \$6.6 million) of the annual costs. Total capital costs for the LT1ESWTR (non-annualized) is \$173.6 million across the country. Costs are based on 1999 dollars.

The national benefits of this rule range from \$18.9 to \$90.9 million per year (in 1999 dollars). This estimate is based on the value of an avoided case of cryptosporidiosis, which ranges from \$796 to \$1,411 per person. Through improved filtration performance, the rule is estimated to reduce the mean annual number of waterborne cryptosporidiosis by 12,000 to 41,000 cases per year assuming individuals consume 1.2 liters of drinking water per day.

## Regulatory Analysis Form

(18) Provide a specific estimate of the costs and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required.

The LT1ESWTR will affect all public water systems serving less than 10,000 people and which use surface water or ground water under the direct influence of surface water. Currently, 200 water treatment plants in Pennsylvania meet these criteria, of which local governments – in the form of borough/city ownership and municipal authorities – own approximately 130. In total, the local governments that own these utilities will incur estimated annual costs of \$452,000. It should be noted that, for the purposes of the table in question (20) on the following page, the local government costs are for compliance with the LT1ESWTR provisions. That is, local government is considered in this analysis to be a part of the regulated community, not the regulating community.

EPA's national analysis showed that of the approximately 11,000 small entities potentially affected by the LT1ESWTR, over 5,000 are expected to incur average annualized costs of less than \$70 dollars (0.003 percent of average annual revenue) while slightly more than 3,000 are expected to incur average annualized costs of less than \$850 dollars (0.03 percent of average annual revenue). Of the remaining systems, approximately 500 systems are expected to incur average annualized costs of approximately \$2,500 dollars (0.1 percent of average annual revenue), approximately 2,000 systems are expected to incur average annualized costs of approximately \$13,000 dollars (0.6 percent of average annual revenue). Less than 100 systems are expected to incur average annualized costs of approximately \$15,700 dollars (0.7 percent of average annual revenue).

EPA's economic analysis document states that this estimate includes capital costs for turbidity treatment and startup labor costs for monitoring and reporting activities that have been annualized assuming, in this case, a seven percent discount rate over a 20-year period. They also include annual operating and maintenance costs for turbidity treatment and annual labor for turbidity monitoring activities.

To estimate the annualized net benefits of the rule, EPA used the annualized, nationwide costs ranging from \$39.5 (three percent discount rate) to \$44.8 million (seven percent discount rate). The annual net benefits of the rule range from \$20.6 to \$51.4 million using the three percent discount rate. Using the seven percent discount rate, the net benefits range from \$25.9 to \$46.1 million.

(19) Provide a specific estimate of the costs and/or savings to state government associated with the implementation of the regulation, including any legal, accounting or consulting procedures which may be required.

EPA estimates that the annualized, nationwide cost of the final rule will range from \$39.5 to \$44.8 million (in 1999 dollars), depending on the discount rate. Approximately 16 percent (\$6.4 to \$6.6 million at the three and seven percent discount rates, respectively) of the rule's total annual costs are imposed on states. As a result, states nationwide will collectively incur annual costs at a *maximum* \$6.6 million at the seven percent discount rate.

## Regulatory Analysis Form

(20) In the table below, provide an estimate of the fiscal savings and cost associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
<b>SAVINGS:</b>	\$	\$	\$	\$	\$	\$
<b>Regulated Community</b>	0	0	0	0	0	0
<b>Local Government</b>	0	0	0	0	0	0
<b>State Government</b>	0	0	0	0	0	0
<b>Total Savings</b>	0	0	0	0	0	0
<b>COSTS:</b>	\$	\$	\$	\$	\$	\$
<b>Regulated Community</b>	0	695,240	695,240	695,240	695,240	695,240
<b>Local Government*</b>	0	0	0	0	0	0
<b>State Government</b>	0	24,000	24,000	24,000	24,000	24,000
<b>Total Costs</b>	0	719,240	719,240	719,240	719,240	719,240
<b>REVENUE LOSSES:</b>	\$	\$	\$	\$	\$	\$
<b>Regulated Community</b>	0	0	0	0	0	0
<b>Local Government</b>	0	0	0	0	0	0
<b>State Government</b>	0	0	0	0	0	0
<b>Total Revenue Losses</b>	0	0	0	0	0	0

(20a) Explain how the cost estimates listed above were derived.

The cost estimates were derived from EPA's national estimates as published in the preamble of the LT1ESWTR (Federal Register, Vol. 67, No. 9, starting on page 1822). The EPA used estimates based on over 11,000 systems nationwide serving <10,000 people and using surface or GUDI sources. Pennsylvania has about 200 treatment plants in this category.

Estimated Annual Costs to Regulated Community

The ratio of PA to nationwide is  $200/11,000 = 0.0182$

Maximum nationwide cost for regulated community to implement LT1ESWTR = \$38,200,000

Maximum cost to Pennsylvania systems:  $\$38,200,000 \times 0.0182 = \$695,240$

Percentage of Pennsylvania systems that are "local government" municipalities and authorities = 65% (130 out of 200 plants, obtained from the Safe Drinking Water Program's PADWIS data system)

Maximum cost to Pennsylvania systems that are local government / authorities:  $\$695,240 \times 0.65 = \$452,000$

Maximum cost to Pennsylvania systems that are not local government:  $\$695,240 - \$452,000 = \$243,300$

Estimated Annual Costs to Local Government

\*Included in Regulated Community. No additional costs to local governments.

Estimated Annual Costs to State Government

Maximum nationwide cost to States to implement LT1ESWTR = \$6,600,000

Maximum DEP cost to implement the amendments =  $\$6,600,000 \times 0.0182 = \$120,100$

The estimated cost to state government over the next five years will be applied to the Environmental Protection Operations appropriation (160—field) and the Environmental Program Management appropriation (161—central office). The breakdown is 82% in 160 and 18% in 161 for each of the next 5 years, as follows: \$19,700 (160) and \$4,300 (161).

## Regulatory Analysis Form

(20b) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY-3	FY-2	FY-1	Current FY
Env. Prot. Operations (160)	\$71,402,000	\$76,018,000	\$75,074,000	\$76,323,000
Env. Program Mgmt. (161)	40,200,000	41,471,000	43,354,000	44,224,000

The safe drinking water program expenditures from the above appropriations are as follows:

Env. Protection Operations (160)	491,116	792,445	853,816	950,000
Env. Program Management (161)	2,210,022	3,566,000	3,842,170	5,420,000

(21) Using the cost-benefit information provided above, explain how the benefits of the regulation outweigh the adverse effects and costs.

Through improved filtration performance, the rule is estimated to reduce the mean annual number of waterborne cryptosporidiosis cases. An estimate of benefits is based on the value of an avoided case of cryptosporidiosis, which ranges from \$796 to \$1,411 per person. EPA estimated the national, annualized net benefits of the rule. The annual net benefits of the rule range from \$20.6 to \$51.4 million using a three percent discount rate. Using a seven percent discount rate, the net benefits range from \$25.9 to \$46.1 million.

(22) Describe the nonregulatory alternatives considered and the costs associated with those alternatives. Provide the reasons for their dismissal.

Nonregulatory alternatives were not considered. This is a federal rule that must be either complied with, or adopted, by the individual states.

(23) Describe alternative regulatory schemes considered and the costs associated with those schemes. Provide the reasons for their dismissal.

No alternative regulatory schemes were considered. This is a federal rule that must be either complied with, or adopted, by the individual states.

## Regulatory Analysis Form

(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulation.

Section CFR 141.560 contains a requirement for systems using conventional filtration or direct filtration to continuously monitor the turbidity for each individual filter at the water system. In Section 141.562, any of these systems with two or fewer filters may conduct continuous monitoring of the combined filter effluent turbidity in lieu of individual filter effluent turbidity monitoring. The Department wishes to require roughly 75 systems affected by CFR 141.560 and 141.562 to monitor each filter even if their filtration plants have two or fewer filters. This proposed provision will be part of Section 109.301(1)(iv) and will allow water system operators to detect a poorly performing filter and thus prevent a waterborne disease outbreak. The majority of the 75 systems will incur no costs, but a few could incur a maximum cost of \$3,750 for equipment to continuously monitor turbidity.

Section CFR 141.563 requires suppliers using conventional filtration or direct filtration to report to the state when individual filter turbidities exceed 1.0 or 2.0 NTU and then undertake specific follow-up actions. This provision does not apply when individual filter turbidities exceed 0.5 NTU. The Department wishes to require all suppliers affected by CFR 141.563 to similarly notify the Department if an individual filter exceeds 0.5 NTU. This proposed provision will be part of Section 109.701(e)(2)(ii). Research has shown that when filter effluent turbidity ranges between 0.1 NTU and 0.3 NTU, *Cryptosporidium* presence was as much as 90 percent greater than when filter effluent turbidity was 0.1 NTU or less. Similarly, research findings show there is a significant difference between 0.5 NTU and 1.0 NTU with regards to the level of pathogens that may be passing through the filter. No additional cost is incurred by including the 0.5-NTU trigger.

Both the Water Resources Advisory Committee and the Small Water Systems Technical Assistance Center Advisory Board reviewed a special draft document that outlined the costs and benefits of these two more stringent provisions. They expressed no disagreement with these provisions in their November 2002 meetings or in follow-up written comments.

(25) How does the regulation compare with those of other states? Will the regulation put Pennsylvania at a competitive disadvantage with other states?

The federal LT1ESWTR will need to be either complied with, or adopted, by 49 other states. Because of this, the proposed amendments will not put Pennsylvania at a competitive disadvantage with any other state.

(26) Will the regulation affect existing or proposed regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

The proposed amendments will be incorporated into the existing language of 25 Pa Code Chapter 109. Other than this incorporation, the proposed amendments should not affect any existing or proposed regulations of the Department or any other state agency.

(27) Will any public hearings or informational meetings be scheduled? Please provide the dates, times, and locations, if available.

No public hearings or informational meetings are scheduled for these proposed amendments.

## Regulatory Analysis Form

(28) Will the regulation change existing reporting, record keeping, or other paperwork requirements? Describe the changes and attach copies of forms or reports which will be required as a result of implementation, if available.

The proposed amendments will not create any major change in the reporting, record keeping and paperwork requirements. It is anticipated that our current data reporting forms will easily facilitate any additional monitoring and reporting and that no additional data or paperwork will be necessary.

(29) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

The proposed amendments should have no effect on one particular group relative to another. The amendments were originally developed to protect everyone and should have no effect on any one particular group. However, the Safe Drinking Water Program is prepared to develop special provisions, or provide special services, to accommodate any such group as the need arises.

(30) What is the anticipated effective date of the regulation; the date by which compliance with the regulation will be required; and the date by which any required permits, licenses or other approvals must be obtained?

The final Federal LT1ESWTR was published in the Federal Register on January 14, 2002. Public water systems must comply with the new requirements by January 2005. Pennsylvania will have to adopt and implement the requirements of this regulation by January 14, 2004. EPA, however, can extend this deadline to January 14, 2006. The Department's goal is to amend Chapter 109 and receive primacy before January 2005. This will allow water systems sufficient time to comply with LT1ESWTR provisions and avoid overlapping regulatory authority with EPA in the event the Department does not finalize these regulations and receive primacy.

(31) Provide the schedule for continual review of the regulation.

The amendments will be reviewed in accordance with the Sunset Review Schedule published by the Department.

**FACE SHEET  
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WITH THE LEGISLATIVE REFERENCE  
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REVIEW COMMISSION

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Copy below is hereby approved as to form and legality.  
Attorney General

By: (Deputy Attorney General)

JUL 01 2003

DATE OF APPROVAL

Copy below is hereby certified to be true and correct copy of a document issued, prescribed or promulgated by:

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ENVIRONMENTAL QUALITY BOARD

(AGENCY)

DOCUMENT/FISCAL NOTE NO. 7-384

DATE OF ADOPTION 5/21/03

BY

TITLE KATHLEEN A MCGINTY  
ACTING CHAIRPERSON

EXECUTIVE OFFICER CHAIRMAN OR SECRETARY

Copy below is hereby approved as to form and legality  
Executive or Independent Agencies

BY

DATE OF APPROVAL

6/12/03

(Deputy General Counsel)

(Chief Counsel - Independent Agency)

(Strike inapplicable title)

Check if applicable. No Attorney General Approval or objection within 30 days after submission.

Check if applicable  
Copy not approved. Objections attached.

**NOTICE OF PROPOSED RULEMAKING**

**DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ENVIRONMENTAL QUALITY BOARD**

**Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR)**

25 Pa. Code, Chapter 109



**Notice of Proposed Rulemaking  
Department of Environmental Protection  
Environmental Quality Board  
(25 Pa. Code, Chapter 109)  
(Safe Drinking Water)  
Long Term 1 Enhanced Surface Water Treatment Rule**

**Preamble**

The Environmental Quality Board (EQB) proposes to amend 25 Pa. Code, Chapter 109 (relating to Safe Drinking Water). The proposed amendments pertain to public drinking water systems serving less than 10,000 people and that use either surface water sources or ground water sources under the direct influence of surface water (GUDI). The *Long Term 1 Enhanced Surface Water Treatment Rule* (LT1ESWTR) will improve the control of microbial pathogens, including the protozoan *Cryptosporidium*, in drinking water. Key provisions include *Cryptosporidium* removal requirements for systems that filter; strengthened combined filter effluent turbidity performance standards; requirements for individual filter turbidity monitoring for plants using conventional or direct filtration; and a provision to ensure that microbial protection is not compromised as facility operators take the necessary steps to comply with new disinfection byproduct standards. The implementation of the LT1ESWTR will significantly reduce the level of *Cryptosporidium* in finished drinking water supplies through improvements in filtration. In addition, the rule is expected to increase the level of protection from other disease-causing organisms like *Giardia lamblia* and waterborne protozoa, bacteria, or viruses.

The Federal LT1ESWTR was promulgated on January 14, 2002. Pennsylvania must adopt this regulation by January 14, 2004, in order to obtain state primary enforcement authority (primacy) for this rule. Public water systems must comply with the new requirements starting in January 2005.

The proposal was adopted by the Board at its meeting of May 21, 2003.

**A. Effective Date**

These amendments will go into effect upon publication in the *Pennsylvania Bulletin* as final rulemaking.

**B. Contact Persons**

For further information, contact Jeffrey A. Gordon, Chief, Division of Drinking Water Management, P.O. Box 8467, Rachel Carson State Office Building, Harrisburg, PA 17105-8467, (717) 772-4018 or Marylou Barton, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060.

Persons with a disability may use the AT&T Relay Service by calling 1-800-654-5984 (TDD users) or 1-800-654-5988 (voice users). This proposal is available electronically through the DEP Web site (<http://www.dep.state.pa.us>).

### **C. Statutory Authority**

The proposed rulemaking is being made under the authority of section 4 of the Pennsylvania Safe Drinking Water Act (35 P.S. § 721.4), which grants the EQB the authority to adopt rules and regulations governing the provision of drinking water to the public, and sections 1917-A and 1920-A of the Administrative Code of 1929 (71 P.S. §510-7 and §510-20).

### **D. Background and Purpose**

The U.S. Environmental Protection Agency (EPA) promulgated the *Federal Interim Enhanced Surface Water Treatment Rule* (IESWTR) on December 16, 1998, to control *Cryptosporidium* in public drinking water systems using surface water sources and serving 10,000 or more people. The Environmental Quality Board (EQB) amended Chapter 109 to include EPA's IESWTR at its April 17, 2001 meeting. EPA promulgated the *Federal Long Term 1 Enhanced Surface Water Treatment Rule* (LT1ESWTR) on January 14, 2002, which extends most of IESWTR's requirements to public drinking water systems using surface water sources and serving less than 10,000 people.

Briefly, the main provisions of LT1ESWTR include 2-log (99%) *Cryptosporidium* removal; strengthened combined filter effluent turbidity performance standards; requirements for individual filter turbidity monitoring for plants using conventional or direct filtration; and a provision on applicability monitoring, profiling, and benchmarking to insure that microbial protection is not compromised as facility operators take the necessary steps to comply with new disinfection byproduct standards.

Other federal rules promulgated in tandem with LT1ESWTR – or within the next two years as a follow-up to the LT1ESWTR – are the *Long Term 2 Enhanced Surface Water Treatment Rule, Stage 2 Disinfectants and Disinfection Byproducts Rule*, and the *Filter Backwash Recycling Rule*. Long Term 2 will apply to all public water systems using surface water or GUDI sources. The *Filter Backwash Recycling Rule* applies to this same group, but only if they use conventional or direct filtration technologies. Through a staged approach, the federal rules will continue to improve microbial protection while reducing health risks associated with disinfection byproducts.

*Cryptosporidium* is a common protozoan in the environment. Sources of *Cryptosporidium* oocysts include agricultural runoff and wastewater discharges. If a water system's treatment processes do not operate efficiently, oocysts may enter finished water at levels that pose health risks. Unlike other pathogens (disease-causing organisms) such as viruses

and bacteria, *Cryptosporidium* oocysts are resistant to inactivation using standard disinfection practices. Until effective and practical disinfection methods are available, the successful control of *Cryptosporidium* is dependent on physical removal processes.

In humans, *Cryptosporidium* may cause a severe gastrointestinal infection, termed cryptosporidiosis, which can last several weeks. Cryptosporidiosis is a common protozoal infection that usually causes 7 to 14 days of diarrhea, a low-grade fever, nausea, and abdominal cramps in individuals with healthy immune systems. There is currently no therapeutic cure for cryptosporidiosis, but the disease is self-limiting in healthy individuals. It does, however, pose serious health and mortality risks for sensitive subpopulations including children, the elderly, pregnant women, organ transplant recipients, and persons with weakened immune systems, which represent almost 20 percent of the population in the United States.

In 1993, *Cryptosporidium* caused over 400,000 people in Milwaukee to experience serious intestinal illness. More than 4,000 people were hospitalized and at least 50 deaths were attributed to the *Cryptosporidium* outbreak. Between 1984 and 1994, six of the ten documented waterborne outbreaks of cryptosporidiosis occurred in systems serving fewer than 10,000 people. These outbreaks have widespread health implications and cost families, businesses, and local/state governments millions of dollars.

The state's 340 filter plants, and the regulations that govern them, provide important health protection for over 8 million Pennsylvania residents and thousands of out-of-state visitors who receive some or all of their drinking water from filtered surface water suppliers. It is, therefore, in the best interest of Pennsylvania's public health protection and economic development goals to incorporate the provisions of the Federal LT1ESWTR into Chapter 109, Safe Drinking Water Regulations.

#### **“More Stringent Proposals” Presented to Advisory Committees**

In developing the regulations, DEP identified two situations in which it wanted to establish requirements that were more stringent than the applicable federal requirements. These two provisions are already in effect for the larger water systems, which must meet similar existing regulations. DEP presented two “more stringent proposals” to the WRAC and TAC in a document called, *Long Term 1 Enhanced Surface Water Treatment Rule – More Stringent Proposals*. These issues, and the committees' responses, are as follows:

(1) 40 CFR 141.560 contains a requirement for systems using conventional filtration or direct filtration to continuously monitor the turbidity for each individual filter at the water system. In § 141.562, any of these systems with two or fewer filters may conduct continuous monitoring of the combined filter effluent turbidity in lieu of individual filter effluent turbidity monitoring. The Department proposes to require roughly 75 systems affected by § 141.560 and § 141.562 to monitor each filter even if their filtration plants have two or fewer filters. This proposed provision will be part of § 109.301(1)(iv) and will allow water system operators to detect a poorly performing filter and thus prevent a waterborne disease outbreak. The majority of the 75 systems will incur no additional cost related to this provision, but a few could incur an additional cost of under \$4,000 for equipment to continuously monitor turbidity.

(2) 40 CFR 141.563 requires suppliers using conventional filtration or direct filtration to report to the state when individual filter turbidities exceed 1.0 or 2.0 NTU and then undertake specific follow-up actions. This provision does not apply when individual filter turbidities exceed 0.5 NTU. The Department proposes to require all suppliers affected by § 141.563 to similarly notify the Department if an individual filter exceeds 0.5 NTU. This proposed provision is part of § 109.301(1)(iv) and § 109.701(a)(2)(i). Research has shown that when filter effluent turbidity ranges between 0.1 NTU and 0.3 NTU, *Cryptosporidium* presence was as much as 90 percent greater than when filter effluent turbidity was 0.1 NTU or less. Similarly, there is a significant difference between 0.5 NTU and 1.0 NTU with regards to the level of pathogens that may be passing through the filter. No additional cost is incurred by including the 0.5-NTU trigger.

The Department provided these proposals during the November committee meetings, both in a presentation format and in the above-referenced document. Neither committee expressed a disagreement with the issues or the rationale for the Department's proposals.

#### **E. Summary of Regulatory Requirements**

The proposed amendments reflect the new Federal LT1ESWTR requirements and the two more stringent provisions described in section D, "Background and Purpose." LT1ESWTR extends most of the requirements of the *Interim Enhanced Surface Water Treatment Rule (PA Bulletin, Vol.31, No.29, Saturday, July 21, 2001)*, which focused on large water systems, to similar systems serving less than 10,000 people.

1. § 109.202 (c)(1) *Treatment technique requirements for pathogenic bacteria, viruses and protozoan cysts.*

This subparagraph includes the requirement for 99% removal of *Cryptosporidium*. It extends the requirement for systems serving less than 10,000 people. This amendment reflects the federal requirement in 40 CFR 141.73.

2. § 109.202 (c)(1)(i)(A)(IV) *Conventional or direct filtration.*

This new subclause was added to incorporate EPA's revised turbidity performance standards for conventional and direct filtration systems serving less than 10,000 people. This amendment reflects the federal requirement in 40 CFR 141.551(a) and (b).

3. § 109.204 *Disinfection profiling and benchmarking.*

This language will incorporate EPA's new disinfection profiling and benchmarking requirements for systems using surface water or GUDI sources and serving less than 10,000 people. The amendment reflects the federal requirement in 40 CFR 141.530 through 141.536, (relating to disinfection profiling), 40 CFR 141.540 through 141.544 (relating to disinfection benchmarking), and 40 CFR 141.570(c) and (d) (relating to reporting and record keeping). New

language will ensure that public water suppliers, which may have experienced a population change since promulgation of the *Interim Enhanced Surface Water Treatment Rule*, now conduct the activities mandated by this subsection and as specified under 40 CFR 141.170(d). The amendment will require public water systems required to conduct disinfection profiling to keep records indefinitely, as reflected in 40 CFR 141.571, and submit the disinfection profiling and benchmark data to the Department by October 1, 2004 or April 1, 2005, depending on population served.

4. § 109.301(1)(iv) *Performance monitoring for filtration and disinfection.*

As per 40 CFR 141.560, this new clause was added to incorporate EPA's individual filter continuous monitoring requirements for systems using surface water or GUDI sources, employing conventional or direct filtration technologies, and serving less than 10,000 people. This subparagraph also includes EPA's requirements for turbidimeter calibration and continuous monitor failure procedures. This amendment reflects the federal requirements in 40 CFR 141.174 (a) and (b). Also, § 109.301(1)(iv) is referenced in § 109.701(e) and § 109.714. As a result, this clause will apply the individual filter reporting requirements and the requirements on filter profiles, filter self-assessments and comprehensive performance evaluations to systems using surface water or GUDI sources, employing conventional or direct filtration technologies, and serving less than 10,000 people. These requirements are contained in 40 CFR 141.570 and 40 CFR 141.571.

5. § 109.301(1)(iv)(C) *Performance monitoring for filtration and disinfection.*

The paragraph was amended to ensure a public water supplier serving fewer than 10,000 persons has a maximum of 14 days following the failure of equipment to repair or replace the equipment, as reflected in 40 CFR 141.561.

7. § 109.701(a)(2)(i)(A)(VI) *Monthly reporting requirements for performance monitoring.*

This clause was added to incorporate EPA's new monthly turbidity reporting requirements for systems using surface water or GUDI sources and serving less than 10,000 people. This amendment reflects the federal requirements in 40 CFR 141.570.

8. § 109.714(1) *Filter profile, filter self-assessment and comprehensive performance evaluations.*

This language will exclude public water systems using surface water or GUDI sources and serving less than 10,000 people from having to produce a filter profile within 7 days of an individual filter exceedance if they cannot identify the reason for the exceedance. Unlike the requirements for large systems, the federal requirements in 40 CFR 141.570(b) do not specify that the system must produce the profile. However, like the large systems, the small systems must adhere to the requirements for filter self-assessments. Likewise, comprehensive performance evaluations must be performed under certain conditions, but completion deadlines are extended an additional 30 days.

9. § 109.714(3)(iv) *Filter profile, filter self-assessment and comprehensive performance evaluations.*

At public water systems using surface water or GUDI sources and serving less than 10,000 people, this new clause will incorporate EPA's new reporting requirements for individual filter evaluations and follow-up requirements for comprehensive performance evaluations. This amendment reflects the federal requirements in 40 CFR 141.570(b) and the follow-up requirements in 40 CFR 141.563.

## **F. Benefits, Costs and Compliance**

Executive Order 1996-1 requires a cost/benefit analysis of the proposed regulation.

### **Benefits**

About 537,000 Pennsylvanians who receive their drinking water from the 200 affected filter plants will benefit from the regulations. The implementation of the proposed amendment will significantly reduce the level of *Cryptosporidium* in finished drinking water supplies through improvements in filtration. EPA has estimated that the national benefits of this rule range from \$18.9 to \$90.9 million per year (in 1999 dollars). This estimate is based on the value of an avoided case of cryptosporidiosis, which ranges from \$796 to \$1,411 per person. Through improved filtration performance, the rule is estimated to reduce the mean annual number of waterborne cryptosporidiosis in the nation by 12,000 to 41,000 cases per year assuming individuals consume 1.2 liters of drinking water per day. In addition, the filtration provisions of the rule are expected to increase the level of protection from other pathogens like *Giardia lamblia* and waterborne bacterial or viral pathogens.

### **Compliance Costs**

In Pennsylvania, about 537,000 residents and thousands of out-of-state visitors who receive their drinking water from the 200 affected filter plants will benefit from improved health protection under the proposed regulations. These public drinking water systems serve less than 10,000 people and use surface water or GUDI sources. Traditionally, these smaller systems have required relatively more technical, financial and managerial assistance to implement new regulations. In the future, an additional 63 systems (serving 57,000 people) might be affected that presently use GUDI sources but are not currently filtered.

The turbidity provisions, which include treatment changes, monitoring, and reporting requirements, account for the largest portion of the total rule costs. In projecting costs, EPA estimates that nationally, the rule's turbidity provisions will cause 2,207 systems to modify their treatment, 2,327 will install turbidimeters, and 5,817 will incur monitoring costs. Some systems might seek less costly alternatives, such as connecting into a larger regional water system. EPA estimates that the annualized, nationwide cost of the final rule will range from \$39.5 (at a three percent discount rate) to \$44.8 million (at a seven percent discount rate). Approximately 84

percent (\$33.1 to \$38.2 million at the three and seven percent discount rates, respectively) of the rule's total annual costs are imposed on drinking water utilities while states incur the remaining 16 percent (\$6.4 to \$6.6 million) of the annual costs. Total capital costs for the LT1ESWTR (non-annualized) is \$173.6 million across the country. Costs are based on 1999 dollars.

EPA's estimates showed that of the approximately 11,000 small entities potentially affected by the LT1ESWTR, over 5,000 are expected to incur average annualized costs of less than \$70 dollars (0.003 percent of average annual revenue) while slightly more than 3,000 are expected to incur average annualized costs of less than \$850 dollars (0.03 percent of average annual revenue). Of the remaining systems, approximately 500 systems are expected to incur average annualized costs of approximately \$2,500 dollars (0.1 percent of average annual revenue), and approximately 2,000 systems are expected to incur average annualized costs of approximately \$13,000 dollars (0.6 percent of average annual revenue). Less than 100 systems are expected to incur average annualized costs of approximately \$15,700 dollars (0.7 percent of average annual revenue).

Under the proposed LT1ESWTR amendments, customers of small public water systems may face increased costs in their drinking water bills. The increase will be limited because most surface water systems in Pennsylvania already meet the higher turbidity standards. The actual increase in water rates will depend upon a number of factors, including population served and the filtration technology in use. At the national level, EPA estimates the mean annual cost per household is \$6.24 and the cost per household is less than \$15 for 90 percent of 6.3 million households potentially affected by LT1ESWTR. Of the remaining households, nine percent will experience a range of annual costs from \$15 to \$120 (\$10 per month), while only one percent of households are estimated to experience annual costs exceeding \$120.

### **Compliance Assistance Plan**

The Safe Drinking Water Program works with the Commonwealth's PENNVEST Program in order to offer financial assistance to eligible public water systems. This assistance is in the form of a low-interest loan, with some augmenting grant funds for hardship cases. Eligibility is based upon factors such as public health impact, compliance necessity, and project/operational affordability.

In addition, the Department has instituted a number of assistance programs, including the highly successful and nationally recognized Filter Plant Performance Evaluation program. More recently, the department contracted with the Pennsylvania Section American Water Works Association under the Partnership for Safe Water Program. The Partnership promotes and supports filtered surface water suppliers who are committed to going beyond compliance. The Safe Drinking Water Program has also established a network of regional and central office training staff that is responsive to identifiable training needs. The target audience in need of training may be either program staff or the regulated community. As a result of the Department's advanced technical assistance programs, Pennsylvania's public water suppliers are well positioned to manage the risk and meet the more rigorous public health protection measures included in the LT1ESWTR.

## **Paperwork Requirements**

The proposed amendments will require public water systems to monitor and report individual filter turbidity. Modifying the existing data reporting forms will easily facilitate this additional monitoring and reporting. In effect, little additional paperwork will be necessary.

## **G. Sunset Review**

These regulations will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulations effectively fulfill the goals for which they were intended.

## **H. Regulatory Review**

Under Section 5(a) of the Regulatory Review Act (71 P.S. §745.5(a)), the Department submitted a copy of the proposed rulemaking on July 15, 2003 to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the Senate and House Environmental Resources and Energy Committees. In addition to submitting the proposed amendments, the Department will provide IRRC and the Committees with a copy of a detailed regulatory analysis form prepared by the Department. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, IRRC may convey to the Department any comments, recommendations or objections to the proposed regulations within 30 days of the close of the public comment period. The comments, recommendations or objections shall specify the regulatory review criteria that have not been met. The Act specifies detailed procedures for review of these issues by the Department, the General Assembly, and the Governor prior to final publication of the regulation.

## **I. Public Comments**

**Written Comments** - Interested persons are invited to submit comments, suggestions, or objection regarding the proposed regulation to the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 15<sup>th</sup> Floor, 400 Market Street, Harrisburg, PA 17105-2301). Comments submitted by facsimile will not be accepted. Comments, suggestions, or objections must be received by the EQB by August 25, 2003 (within 30 days of publication in the *Pennsylvania Bulletin*). Interested persons may also submit a summary of their comments to the EQB. The summary may not exceed one page in length and must also be received by August 25, 2003 (within 30 days of publication in the *Pennsylvania Bulletin*). The one-page summary will be provided to each member of the EQB in the agenda packet distributed prior to the meeting at which the final regulations will be considered.

***Electronic Comments*** - Comments may be submitted electronically to the EQB at [RegComments@state.pa.us](mailto:RegComments@state.pa.us) and must also be received by the EQB by August 25, 2003. A subject heading of the proposal and a return name and address must be included in each transmission. If an acknowledgement of electronic comments is not received by the sender within two working days, the comments should be retransmitted to ensure receipt.

**BY:**

**Kathleen A. McGinty  
Chairperson  
Environmental Quality Board**



**Annex A**

**TITLE 25. ENVIRONMENTAL PROTECTION**

**Subpart C. PROTECTION OF NATURAL RESOURCES**

**ARTICLE II. WATER RESOURCES**

**CHAPTER 109. SAFE DRINKING WATER**

**Subchapter A. GENERAL PROVISIONS**

**Subchapter B. MCLS, MRDLs OR TREATMENT TECHNIQUE  
REQUIREMENTS**

**§ 109.202. State MCLS, MRDLs and treatment technique requirements.**

(a) *Primary MCLS.*

\* \* \* \* \*

(c) *Treatment technique requirements for pathogenic bacteria, viruses and protozoan cysts.* A public water system shall provide adequate treatment to reliably protect users from the adverse health effects of microbiological contaminants, including pathogenic bacteria, viruses and protozoan cysts. The number and type of treatment barriers and the efficacy of treatment provided shall be commensurate with the type, degree and likelihood of contamination in the source water.

(1) A public water supplier shall provide, as a minimum, continuous filtration and disinfection for surface water and GUDI sources. The treatment technique shall provide at least 99.9% removal and inactivation of *Giardia lamblia* cysts, and at least 99.99% removal and inactivation of enteric viruses. Beginning January 1, 2002, public water suppliers serving 10,000 or more people shall provide at least 99% removal of *Cryptosporidium* oocysts. **Beginning January 1, 2005, public water suppliers serving fewer than 10,000 people shall provide at least 99% removal of *Cryptosporidium* oocysts.** The Department, depending on source water quality conditions, may require additional treatment as necessary to meet the requirements of this chapter and to protect the public health.

(i) The filtration process shall meet the following performance requirements:

(A) *Conventional or direct filtration.*

(I) The filtered water turbidity shall be less than or equal to .5 NTU in 95% of the measurements taken each month under § 109.301(1) (relating to general monitoring requirements).

(II) The filtered water turbidity shall be less than or equal to 2.0 NTU at all times, measured under § 109.301(1).

(III) Beginning January 1, 2002, for public water systems serving 10,000 or more persons, the filtered water turbidity shall meet the following criteria:

(-a-) Be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month under § 109.301(1).

(-b-) Be less than or equal to 1 NTU at all times, measured under § 109.301(1).

**(IV) Beginning January 1, 2005, for public water systems serving fewer than 10,000 persons, the filtered water turbidity shall meet the following criteria:**

**(-a-) Be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month under § 109.301(1).**

**(-b-) Be less than or equal to 1 NTU at all times, measured under § 109.301(1).**

\* \* \* \* \*

#### **§ 109.204. Disinfection profiling and benchmarking.**

**(a) The disinfection profiling and benchmarking requirements, established by the EPA under the National Primary Drinking Water Regulations in 40 CFR 141.172 (relating to disinfection profiling and benchmarking), 40 CFR 141.530 through 141.536 (relating to disinfection profiling), 40 CFR 141.540 through 141.544 (relating to disinfection benchmarking), and 40 CFR 141.570(c) and (d) (relating to reporting and record keeping) are incorporated by reference except as otherwise established by this chapter.**

**(b) Public water suppliers that did not conduct TTHM and HAA5 monitoring under this section because they served fewer than 10,000 persons when such monitoring was required, but serve 10,000 or more persons before January 1, 2005, shall comply with this section. These suppliers shall also establish a disinfection benchmark and consult with the Department for approval. A supplier that decides to make a significant change to its disinfection practice, as described in this section, shall consult with the Department before making such a change.**

**(c) The public water supplier shall conduct disinfection profiling in accordance with the procedures and methods in the most current edition of the *Disinfection Profiling and Benchmarking Guidance Manual* published by the EPA. The results of the disinfection profiling and the benchmark, including raw data and analysis, shall be retained indefinitely on the water system premises or at a convenient location near the**

**premises. [The public] Public water suppliers serving 10,000 or more persons and required to conduct disinfection profiling shall submit the disinfection profiling data and the benchmark data to the Department by June 1, 2001, in a format acceptable to the Department. Public water suppliers serving 500 to 9,999 persons shall submit the disinfection profiling data to the Department by October 1, 2004. Public water suppliers serving less than 500 persons shall submit the disinfection profiling data to the Department by April 1, 2005, in a format acceptable to the Department.**

## **Subchapter C. MONITORING REQUIREMENTS**

### **§ 109.301. General monitoring requirements.**

The monitoring requirements established by the EPA under the National Primary Drinking Water Regulations, 40 CFR Part 141 (relating to national primary drinking water regulations), as of December 8, 1984, are incorporated by reference. Public water suppliers shall monitor for compliance with MCLs and MRDLs in accordance with the requirements established in the National Primary Drinking Water Regulations, except as otherwise established by this chapter unless increased monitoring is required by the Department under § 109.302 (relating to special monitoring requirements). Alternative monitoring requirements may be established by the Department and may be implemented in lieu of monitoring requirements for a particular National Primary Drinking Water Regulation if the alternative monitoring requirements are in conformance with the Federal act and regulations. The monitoring requirements shall be applied as follows:

(1) *Performance monitoring for filtration and disinfection.* A public water supplier providing filtration and disinfection of surface water or GUDI sources shall conduct the performance monitoring requirements established by the EPA under the National Primary Drinking Water Regulations, unless increased monitoring is required by the Department under § 109.302.

\* \* \* \* \*

(iv) A public water supplier providing conventional filtration treatment or direct filtration and serving 10,000 or more people and using surface water or GUDI sources shall, beginning January 1, 2002, conduct continuous monitoring of turbidity for each individual filter using an approved method under the EPA regulation in 40 CFR 141.74(a) (relating to analytical and monitoring requirements) and record the results at least every 15 minutes. **Beginning January 1, 2005, public water suppliers providing conventional or direct filtration and serving fewer than 10,000 people and using surface water or GUDI sources shall conduct continuous monitoring of turbidity for each individual filter using an approved method under the EPA regulation in 40 CFR 141.74(a) (relating to analytical and monitoring requirements) and record the results at least every 15 minutes.**

(A) The water supplier shall calibrate turbidimeters using the procedure specified by the manufacturer.

(B) If there is failure in the continuous turbidity monitoring equipment, the system shall conduct grab sampling every 4 hours in lieu of continuous monitoring.

(C) A public water supplier **servicing 10,000 or more persons** has a maximum of 5 **working** days following the failure of the equipment to repair or replace the equipment. **A public water supplier servicing fewer than 10,000 persons has a maximum of 14 days following the failure of the equipment to repair or replace the equipment.**

\* \* \* \* \*

### **Subchapter G. SYSTEM MANAGEMENT RESPONSIBILITIES**

#### **§ 109.701. Reporting and recordkeeping.**

(a) *Reporting requirements for public water systems.* Public water systems shall comply with the following requirements:

\* \* \* \* \*

(2) *Monthly reporting requirements for performance monitoring.*

(i) The test results of performance monitoring required under § 109.301(1) (relating to general monitoring requirements) for public water suppliers providing filtration and disinfection of surface water or GUDI sources shall include the following at a minimum:

(A) For turbidity performance monitoring:

(I) The number of days of filtration operation.

(II) The number of filtered water turbidity measurements taken each month.

(III) The number of filtered water turbidity measurements that are less than or equal to .5 NTU for conventional, direct or other filtration technologies, or 1.0 NTU for slow sand or diatomaceous earth filtration technologies.

(IV) The date, time and values of any filtered water turbidity measurements exceeding 2.0 NTU.

(V) **[In lieu]Instead** of clause (A)(III) and (IV), beginning January 1, 2002, for public water systems that serve 10,000 or more people and use conventional or direct filtration:

(-a-) The number of filtered water turbidity measurements that are less than or equal to 0.3 NTU.

(-b-) The date, time and values of any filtered water turbidity measurements that exceed 1 NTU for systems using conventional or direct filtration or that exceed the maximum level set under § 109.202(c)(1)(i)(A)(III) (relating to State MCLs, MRDLs and treatment technique requirements).

**(VI) Instead of clause (A)(III) and (IV), beginning January 1, 2005, for public water systems that serve fewer than 10,000 persons and use conventional or direct filtration:**

**(-a-) The number of filtered water turbidity measurements that are less than or equal to 0.3 NTU.**

**(-b-) The date, time and values of any filtered water turbidity measurements exceeding 1 NTU.**

\* \* \* \* \*

**§ 109.714. Filter profile, filter self-assessment and comprehensive performance evaluations.**

Public water systems are required to perform or conduct a filter profile, filter self-assessment or CPE if any individual filter monitoring conducted under § 109.301(1)(iv) (relating to general monitoring requirements) demonstrates one or more of the conditions in paragraphs (1)—(3).

(1) If an individual filter demonstrates a condition under § 109.701(e)(2)(i) or (ii) (relating to reporting and recordkeeping), the public water system shall notify the Department within 24 hours of the individual filter turbidity level exceedance and shall report the obvious reason for the abnormal filter performance. If **[the]a system serving 10,000 or more persons** is not able to identify the reason for the exceedance, the system shall produce a filter profile within 7 days of the exceedance and report to the Department that a filter profile was produced.

\* \* \* \* \*

(3) If an individual filter demonstrates a condition under § 109.701(e)(2)(iv), the public water system shall:

(i) Notify the Department within 24 hours of the turbidity level exceedance.

(ii) Arrange for the conduction of a CPE by the Department no later than 30 days following the turbidity level exceedance.

(iii) Ensure that the CPE is completed and submitted to the Department no later than 90 days following the turbidity level exceedance.

**(iv) Instead of paragraph (3)(ii) and (iii), for public water systems serving fewer than 10,000 persons:**

**(A) Arrange for the conduction of a CPE by the Department no later than 60 days following the turbidity level exceedance.**

**(B) Ensure that the CPE is completed and submitted to the Department no later than 120 days following the turbidity level exceedance.**

**(C) A new CPE is not required if a CPE was completed by the Department within the previous 12 months, or the system and the Department are jointly participating in a program involving a combination of CPE results as the bases for implementing process control priority-setting techniques and maintaining long-term involvement to systematically train staff and administrators at the system.**



Pennsylvania Department of Environmental Protection  
Rachel Carson State Office Building  
P.O. Box 2063  
Harrisburg, PA 17105-2063  
July 15, 2003

Policy Office

717-783-8727

Mr. Robert E. Nyce, Executive Director  
Independent Regulatory Review Commission  
14<sup>th</sup> Floor, Harrisstown #2  
333 Market Street  
Harrisburg, PA 17120

RE: Proposed Rulemaking: Long Term 1 Enhanced Surface Water Treatment Rule (#7-384)

Dear Mr. Nyce:

Enclosed is a copy of a proposed regulation for review and comment by the Commission pursuant to Section 5(a) of the Regulatory Review Act. This proposal is scheduled for publication as a proposed rulemaking in the *Pennsylvania Bulletin* on July 26, 2003, with a 30-day public comment period. The Environmental Quality Board (EQB) approved this proposal on May 21, 2003.

This proposal will amend 25 *Pa. Code* Chapter 109, the Department's Safe Drinking Water Act regulations, to incorporate the requirements contained in the federal *Long Term 1 Enhanced Surface Water Treatment Rule* (LT1ESWTR). The United States Environmental Protection Agency promulgated the federal LT1ESWTR on January 14, 2002, under authority of the federal Safe Drinking Water Act, to control *Cryptosporidium* in public drinking water systems using surface water sources and serving 10,000 or more people. Pennsylvania must adopt this regulation by January 14, 2004, in order to obtain state primary enforcement authority for this rule. Public water systems must comply with the new requirements starting in January 2005.

Key provisions of this proposed rulemaking include *Cryptosporidium* removal requirements for systems that filter; strengthened combined filter effluent turbidity performance standards; requirements for individual filter turbidity monitoring for plants using conventional or direct filtration; and a provision to ensure that microbial protection is not compromised as facility operators take the necessary steps to comply with new disinfection byproduct standards. The implementation of the LT1ESWTR will significantly reduce the level of *Cryptosporidium* in finished drinking water supplies through improvements in filtration. In addition, the rule is expected to increase the level of protection from other disease-causing organisms like *Giardia lamblia* and waterborne protozoa, bacteria, or viruses.

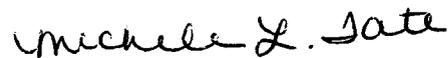


The proposed amendments have two provisions that are more stringent than the Federal LT1ESWTR. The first more stringent provision requires suppliers with two or fewer filters to conduct continuous monitoring of individual filter effluent turbidity monitoring in lieu of the combined filter effluent turbidity. This proposed provision would allow water system operators to detect a poorly performing filter and thus prevent a waterborne disease outbreak. The second more stringent provision requires affected suppliers to notify the Department if an individual filter exceeds 0.5 NTU. Research has shown there is a significant difference between 0.5 NTU and 1.0 NTU in terms of the level of pathogens that may be passing through a filter. If this situation occurs, the notification will allow the Department to respond with assistance that may prevent repeated occurrences of poor filter performance.

The Department will provide the Commission with any assistance required to facilitate a thorough review of this proposal. Section 5(g) of the Regulatory Review Act provides that the Commission may, within 30 days after the close of the public comment period, convey to the agency any comments, recommendations and objections to the proposed regulation. The Department will consider any comments or suggestions made by the Commission, as well as the Committees and public commentators, prior to final adoption of the regulation.

Please contact me at the number above if you have any questions or need additional information.

Sincerely,



Michele L. Tate  
Acting Regulatory Coordinator

Enclosures



TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE  
REGULATORY REVIEW ACT

I.D. NUMBER: 7-384  
SUBJECT: Long Term 1 Enhanced Surface Water Treatment Rule (LTIESWTR)  
AGENCY: DEPARTMENT OF ENVIRONMENTAL PROTECTION

TYPE OF REGULATION

- X Proposed Regulation  
Final Regulation  
Final Regulation with Notice of Proposed Rulemaking Omitted  
120-day Emergency Certification of the Attorney General  
120-day Emergency Certification of the Governor  
Delivery of Tolled Regulation  
a. With Revisions b. Without Revisions

RECEIVED  
2003 JUL 15 PM 3:21  
INDEPENDENT REGULATORY REVIEW COMMISSION

FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
7-15-03	Vicki Hoffmann	HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
7-15-03	Derek A. Costello	SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
7-15-03	Elena Pagan	INDEPENDENT REGULATORY REVIEW COMMISSION ATTORNEY GENERAL (for Final Omitted only)
7/15/03	C Lee Bonn	LEGISLATIVE REFERENCE BUREAU (for Proposed only)

July 2, 2003

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