

A circular graphic containing a stylized water drop with wavy lines representing water ripples. The background of the graphic is a light teal color with a repeating pattern of small, darker teal wavy lines.

Fact Sheet

Long Term 1 Enhanced Surface Water Treatment Rule

August 2011

DOH 331-285
(Updated)

Background

The Long Term 1 Enhanced Surface Water Treatment Rule has new monitoring and treatment requirements to reduce the risk of illnesses caused by disease-causing microbes commonly found in surface water, such as *Cryptosporidium*. The new requirements are effective January 1, 2005.

The rule applies to public water systems serving fewer than 10,000 people that use surface water or groundwater under the direct influence of surface water. Surface water systems that serve 10,000 or more people have been required to meet similar requirements since 2002.

Cryptosporidium, a protozoan, can cause gastrointestinal illnesses lasting up to two weeks. It is found in untreated surface water and is a threat to drinking water because it is resistant to chlorine, small and difficult to filter. It has been detected in some of the largest waterborne disease outbreaks in the U.S. during the last 20 years, including an outbreak in Milwaukee, Wisconsin that affected more than 400,000 people.

Requirements

The rule requires water systems that filter to physically remove 99 percent (2-log) of *Cryptosporidium*. Specific turbidity monitoring and reduction performance requirements depend upon the type of filtration used by the system.

Unfiltered systems must update their watershed control program to minimize the potential for contamination by *Cryptosporidium*.

Conventional, direct, and in-line filters

Systems with conventional, direct, and in-line filters are required to:

- Continuously monitor and record turbidity from the system's combined filter effluent (CFE) at equal intervals of no more than four hours.
- Comply with enhanced turbidity performance requirements to ensure 2-log removal of *Cryptosporidium*.

CFE turbidity must be less than or equal to 0.30 NTU (nephelometric turbidity units) in at least 95 percent of measurements taken each month and must not exceed 1.0 NTU at any time during the month.

Individual filter effluent (IFE) turbidity must be measured continuously and measurements recorded every 15 minutes that drinking water is produced. If a system has only two filters, it may record CFE measurements instead of individual filter measurements. These records must be kept for at least three years. If there is a failure in the continuous turbidity monitoring equipment, grab sampling must be conducted every four hours until the turbidimeter is back on-line. The system has 14 days to resume continuous monitoring before a violation is incurred.



HELPING TO ENSURE SAFE AND RELIABLE DRINKING WATER

Every month water systems must submit confirmation of IFE monitoring to the Office of Drinking Water. Water systems must also report IFE measurements and corrective actions when the following conditions occur:

1. Turbidity exceeds 1.0 NTU in two consecutive recordings 15 minutes apart at the same filter or CFE.
2. Turbidity exceeds 1.0 NTU in two consecutive recordings 15 minutes apart at the same filter or CFE for three consecutive months.
3. Turbidity exceeds 2.0 NTU in two consecutive recordings 15 minutes apart at the same filter or CFE for two months in a row.

Slow sand and diatomaceous earth filtration

Water systems that use slow sand and diatomaceous earth filtration must continue meeting existing turbidity limits of 1.0 NTU or less in at least 95 percent of measurements taken each month and 5.0 NTU maximum turbidity.

Bag, cartridge and membrane filtration

We establish turbidity limits on a case-by-case basis for systems that use bag, cartridge or membrane filtration. State-set limits must not exceed 1.0 NTU in at least 95 percent of measurements taken each month or 5.0 NTU maximum. These types of filtration equipment must demonstrate 2-log removal of *Cryptosporidium* through third-party testing.

Other requirements

Systems considering a significant change to their disinfection practice must:

- Determine their lowest monthly average level of microbial inactivation (disinfection benchmark).
- Base the disinfection benchmark on the same data we used in 2002 to develop their disinfection profile.
- Obtain our approval prior to implementing the change.

Newly constructed finished water reservoirs must be covered.

For more information

Call the Office of Drinking Water at (800) 521-0323 or the:

- Southwest Region, Tumwater (360) 236-3030
- Northwest Region, Kent (253) 395-6750
- Eastern Region, Spokane Valley (509) 329-2100

Visit the our website at <http://www.doh.wa.gov/ehp/dw/>

U.S. Environmental Protection Agency

Call the Safe Drinking Water Hotline (800) 426-4791

Visit EPA's website at www.epa.gov/safewater/mdbp/lt1eswtr.html