

minimum of two disinfectants (details in section IV.B).

2. Disinfection Profiling and Benchmarking

The purpose of disinfection profiling and benchmarking is to ensure that when a system makes a significant change to its disinfection practice, it does not compromise the adequacy of existing microbial protection. EPA established the disinfection benchmark under the IESWTR and LT1ESWTR for the Stage 1 M-DBP rules, and the LT2ESWTR proposal extends disinfection benchmark requirements to apply to the Stage 2 M-DBP rules.

The proposed profiling and benchmarking requirements are similar to those promulgated under IESWTR and LT1ESWTR. Systems that meet specified criteria must prepare disinfection profiles that characterize current levels of virus and *Giardia lamblia* inactivation over the course of one year. Systems with valid operational data from profiling conducted under the IESWTR or LT1ESWTR are not required to collect additional data. If a system that is required to prepare a profile proposes to make a significant change to its disinfection practice, the system must calculate a disinfection benchmark and must consult with the State regarding how the proposed change will affect the current benchmark (details in section IV.D).

3. Uncovered Finished Water Storage Facilities

The proposed LT2ESWTR also includes requirements for systems with uncovered finished water storage facilities. The IESWTR and LT1ESWTR require systems to cover all new storage facilities for finished water, but these rules do not address existing uncovered finished water storage facilities. Under the LT2ESWTR proposal, systems with uncovered finished water storage facilities must cover the storage facility or treat the storage facility discharge to achieve 4 log virus inactivation unless the State determines that existing risk mitigation is adequate. Where the State makes such a determination, systems must develop and implement a risk mitigation plan that addresses physical access, surface water run-off, animal and bird wastes, and on-going water quality assessment (details in section IV.E).

C. Will This Proposed Regulation Apply to My Water System?

All community and non-community water systems that use surface water or ground water under the direct influence

of surface water are affected by the proposed LT2ESWTR.

II. Background

A. What Is the Statutory Authority for the LT2ESWTR?

This section discusses the Safe Drinking Water Act (SDWA or the Act) sections that direct the development of the LT2ESWTR.

The Act, as amended in 1996, requires EPA to publish a maximum contaminant level goal (MCLG) and promulgate a national primary drinking water regulation (NPDWR) with enforceable requirements for any contaminant that the Administrator determines may have an adverse effect on the health of persons, is known to occur or there is a substantial likelihood that the contaminant will occur in public water systems (PWSs) with a frequency and at levels of public health concern, and for which in the sole judgement of the Administrator, regulation of such contaminant presents a meaningful opportunity for health risk reduction for persons served by PWSs (section 1412 (b)(1)(A)).

MCLGs are non-enforceable health goals, and are to be set at a level at which no known or anticipated adverse effect on the health of persons occur and which allows an adequate margin of safety (sections 1412(b)(4) and 1412(a)(3)). EPA established an MCLG of zero for *Cryptosporidium* under the IESWTR (63 FR 69478, December 16, 1998) (USEPA 1998a). The Agency is not proposing any changes to the current MCLG for *Cryptosporidium*.

The Act also requires that at the same time EPA publishes an NPDWR and MCLG, it must specify in the NPDWR a maximum contaminant level (MCL) which is as close to the MCLG as is feasible (sections 1412(b)(4) and 1401(1)(c)). The Agency is authorized to promulgate an NPDWR that requires the use of a treatment technique in lieu of establishing an MCL if the Agency finds that it is not economically or technologically feasible to ascertain the level of the contaminant (sections 1412(b)(7)(A) and 1401(1)(C)). The Act specifies that in such cases, the Agency shall identify those treatment techniques that would prevent known or anticipated adverse effects on the health of persons to the extent feasible (section 1412(b)(7)(A)).

The Agency has concluded that it is not currently economically or technologically feasible for PWSs to determine the level of *Cryptosporidium* in finished drinking water for the purpose of compliance with a finished water standard (the performance of

available analytical methods for *Cryptosporidium* is described in section III.C; the treated water *Cryptosporidium* levels that the LT2ESWTR will achieve are described in section IV.A). Consequently, today's proposal for the LT2ESWTR relies on treatment technique requirements to reduce health risks from *Cryptosporidium* in PWSs.

When proposing a NPDWR that includes an MCL or treatment technique, the Act requires EPA to publish and seek public comment on an analysis of health risk reduction and cost impacts. This includes an analysis of quantifiable and nonquantifiable costs and health risk reduction benefits, incremental costs and benefits of each alternative considered, the effects of the contaminant upon sensitive subpopulations (e.g., infants, children, pregnant women, the elderly, and individuals with a history of serious illness), any increased risk that may occur as the result of compliance, and other relevant factors (section 1412 (b)(3)(C)). EPA's analysis of health benefits and costs associated with the proposed LT2ESWTR is presented in "Economic Analysis of the LT2ESWTR" (USEPA 2003a) and is summarized in section VI of this preamble. However, the Act does not authorize the Administrator to use additional health risk reduction and cost considerations to establish MCL or treatment technique requirements for the control of *Cryptosporidium* (section 1412 (b)(6)(C)).

Finally, section 1412 (b)(2)(C) of SDWA requires EPA to promulgate a Stage 2 Disinfectants and Disinfection Byproducts Rule within 18 months after promulgation of the LT1ESWTR, which occurred on January 14, 2002. Consistent with statutory requirements for risk balancing (section 1412(b)(5)(B)), EPA will finalize the LT2ESWTR with the Stage 2 DBPR to ensure parallel protection from microbial and DBP risks.

B. What Current Regulations Address Microbial Pathogens in Drinking Water?

This section summarizes the existing regulations that apply to control of pathogenic microorganisms in surface water systems. These rules form the baseline of regulatory protection that will be supplemented by the LT2ESWTR.

1. Surface Water Treatment Rule

The SWTR (54 FR 27486, June 29, 1989) (USEPA 1989a) applies to all PWSs using surface water or ground water under the direct influence (GWUDI) of surface water as sources (Subpart H systems). It established