

LT2 ES WTR

Background of LT2ESWTR:

The LT2ESWTR expands upon the requirements of the existing Interim Enhanced Surface Water Treatment Rule and LT1ESWTR, and specifically addresses *Cryptosporidium*. The objective of the LT2ESWTR is to reduce the incidence of disease associated with *Cryptosporidium* and other pathogenic organisms. The LT2ESWTR applies to all community and non-community water systems that use surface water or groundwater under the direct influence of surface water.

IMPORTANT DATES

Proposed: August 11, 2003

Promulgated: January 5, 2006

The LT2ESWTR addresses the adequacy of physical removal to control *Cryptosporidium* and the need for risk-based treatment requirements, control of *Cryptosporidium* in unfiltered systems, and uncovered finished water storage facilities.

Major components of the rule include:

- Source Water Monitoring
- Bin Classification
- Microbial Toolbox
- Disinfection Profiling and Benchmarking

The table on the back page of this flyer provides the schedule for meeting requirements of this rule.

Available Resources:

The following guidance documents are available at www.epa.gov/safewater/disinfection/lt2:

- IDSE Guidance Manuals
- Operational Evaluation Guidance Manual
- Consecutive Systems Guidance Manual
- Small Systems (SBREFA) Guidance Manual
- Simultaneous Compliance Guidance Manual

Email questions to: lt2@epa.gov

LT2ESWTR Schedule Classification

| <i>If you have a Subpart H (surface water) source and are this kind of system:</i> | <i>Follow Schedule Number:</i> |
|---|--------------------------------|
| System serving 100,000 or more people OR a wholesale system in a CDS that contains a system serving less than 100,000 | 1 |
| System serving 50,000 to 99,999 people OR a wholesale system in a CDS that contains a system serving 50,000 to 99,999 | 2 |
| System serving 10,000 to 49,999 people OR a wholesale system in a CDS that contains a system serving 10,000 to 49,999 | 3 |
| System serving fewer than 10,000 AND not a wholesale system | 4 |

Source Water Monitoring: Systems serving greater than 10,000 people will be required to conduct two years of monthly source water monitoring for *Cryptosporidium*, *E. coli*, and turbidity. Filtered systems serving less than 10,000 people will be required to conduct one year of source water monitoring for *E. coli*. If trigger *E. coli* levels of > 10/100 mL for lakes or > 50/100 mL for streams are exceeded, one year of twice per month *Cryptosporidium* sampling will be required. Wholesale systems will be required to monitor according to the schedule based on the population of the largest system in the combined distribution system.

A second round of source water monitoring will be required six years after bin classification for filtered systems and six years after determination of mean *Cryptosporidium* levels for unfiltered systems.

Bin Classification: Following the completion of source water monitoring, systems will be given a bin classification, which will determine the level of additional treatment required. See the table below for information on the treatment requirements associated with each bin classification.

Bin Classification Table for Filtered Systems:

| Average <i>Cryptosporidium</i> concentration | Bin classification |
|--|---------------------------|
| <i>Cryptosporidium</i> < 0.075 oocysts/L | Bin 1 |
| 0.075 oocysts/L ≤ <i>Cryptosporidium</i> < 1.0 oocysts/L | Bin 2 |
| 1.0 oocysts/L ≤ <i>Cryptosporidium</i> < 3.0 oocysts/L | Bin 3 |
| <i>Cryptosporidium</i> > 3.0 oocysts/L | Bin 4 |



If you have any questions on the information provided in this handout or additional questions concerning USEPA drinking water regulations, contact Wayne Gerszewski, PE at 701-746-8087 (Grand Forks), Russ Sorenson, PE at 701-221-0530 (Bismarck), Grant Meyer, PE at 763-463-5036 (Minneapolis), Nate Weisenburger, PE at 406-268-0626 (Great Falls), or Brian Bergantine, PE at 218-299-5610 (Moorhead).

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Bin Classification Table for Unfiltered Systems

| Average <i>Cryptosporidium</i> Concentration | Required Additional Inactivation* |
|--|-----------------------------------|
| <i>Cryptosporidium</i> ≤ 0.01 oocysts/L | 2 log |
| <i>Cryptosporidium</i> > 0.01 oocysts/L | 3 log |

* Must be accomplished using a minimum of two of the following disinfectants: Chlorine dioxide, ozone, or UV.

Microbial Toolbox Treatment Requirements per LT2ESWTR Bin Classification:

| If your bin classification is... | And you use the following filtration treatment in full compliance with the SWTR, IESWTR, and LT1ESWTR (as applicable), then your additional treatment requirements are... | | | |
|----------------------------------|---|--------------------------------|--|---|
| | Conventional filtration treatment (includes softening) | Direct filtration | Slow sand or diatomaceous earth filtration | Alternative filtration technologies |
| Bin 1 | No additional treatment | No additional treatment | No additional treatment | No additional treatment |
| Bin 2 | 1 log treatment ¹ | 1.5 log treatment ¹ | 1 log treatment ¹ | As determined by the State ^{1,3} |
| Bin 3 | 2 log treatment ² | 2.5 log treatment ² | 2 log treatment ² | As determined by the State ^{2,4} |
| Bin 4 | 2.5 log treatment ² | 3 log treatment ² | 2.5 log treatment ² | As determined by the State ^{2,5} |

1 Systems may use any technology or combination of technologies from the microbial toolbox.

2 Systems must achieve at least 1 log of the required treatment using ozone, chlorine dioxide, UV, membranes, bag/cartridge filters, or bank filtration.

3 Total *Cryptosporidium* removal and inactivation must be at least 4.0 log.

4 Total *Cryptosporidium* removal and inactivation must be at least 5.0 log.

5 Total *Cryptosporidium* removal and inactivation must be at least 5.5 log.

Profiling and Benchmarking

Profiling and Benchmarking will be required when altering disinfection to ensure that microbial protection will not be compromised. Systems will be required to develop a profile for *Giardia lamblia* and viruses and to calculate the disinfection benchmark.

LT2ESWTR Compliance Dates:

| Schedule | Systems Serving: | Submit: Sample, Schedule Location, Description, Intent to Grandfather, Intent to Install Full Treatment | Begin Source Water Monitoring | Submit Grandfathered Data (if applicable): | Bin Classification | Compliance Date | Possible Extended Compliance Date |
|----------|-----------------------------|---|-------------------------------|--|------------------------|-----------------|-----------------------------------|
| 1 | More than 100,000 | July 1, 2006 | October 1, 2006 | December 1, 2006 | April 1, 2009 | April 1, 2012 | April 1, 2014 |
| 2 | 50,000 - 99,999 | January 1, 2007 | April 1, 2007 | June 1, 2007 | October 1, 2009 | October 1, 2012 | October 1, 2014 |
| 3 | 10,000 - 49,999 | January 1, 2008 | April 1, 2008 | June 1, 2008 | October 1, 2010 | October 1, 2013 | October 1, 2015 |
| 4 | < 10,000 (<i>E. coli</i>) | July 1, 2008 | October 1, 2008 | December 1, 2008 | N/A (<i>E. coli</i>) | October 1, 2013 | October 1, 2015 |
| 4 | < 10,000 (Crypto) | January 1, 2010 | April 1, 2010 | June 1, 2010 | October 1, 2012 | October 1, 2014 | October 1, 2016 |

Note: A consecutive system that does not sell water to a consecutive system and does not have a Subpart H source is not subject to source water monitoring.