

§ 141.711

40 CFR Ch. I (7-1-07 Edition)

*Cryptosporidium* bin concentration using the *Cryptosporidium* results reported under §141.701(b) and following the procedures in paragraphs (b)(1) through (4) of this section. Systems must then redetermine their bin classification using this bin concentration and the table in paragraph (c) of this section.

(e)(1) Filtered systems must report their initial bin classification under paragraph (c) of this section to the State for approval no later than 6 months after the system is required to complete initial source water monitoring based on the schedule in §141.701(c).

(2) Systems must report their bin classification under paragraph (d) of this section to the State for approval no later than 6 months after the system is required to complete the second

round of source water monitoring based on the schedule in §141.701(c).

(3) The bin classification report to the State must include a summary of source water monitoring data and the calculation procedure used to determine bin classification.

(f) Failure to comply with the conditions of paragraph (e) of this section is a violation of the treatment technique requirement.

**§ 141.711 Filtered system additional *Cryptosporidium* treatment requirements.**

(a) Filtered systems must provide the level of additional treatment for *Cryptosporidium* specified in this paragraph based on their bin classification as determined under §141.710 and according to the schedule in §141.713.

| If the system bin classification is . . . | And the system uses the following filtration treatment in full compliance with subparts H, P, and T of this part (as applicable), then the additional <i>Cryptosporidium</i> treatment requirements are . . . |                            |  |                                     |
|---|---|----------------------------|--|-------------------------------------|
|   | Conventional filtration treatment (including 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 .....   | 1.5-log treatment .....    | 1-log treatment .....                      | ( <sup>1</sup> )                    |
| Bin 3 .....                               | 2-log treatment .....   | 2.5-log treatment .....    | 2-log treatment .....                      | ( <sup>2</sup> )                    |
| Bin 4 .....                               | 2.5-log treatment .....   | 3-log treatment .....      | 2.5-log treatment .....                    | ( <sup>3</sup> )                    |

<sup>1</sup> As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 4.0-log.

<sup>2</sup> As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 5.0-log.

<sup>3</sup> As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 5.5-log.

(b)(1) Filtered systems must use one or more of the treatment and management options listed in §141.715, termed the microbial toolbox, to comply with the additional *Cryptosporidium* treatment required in paragraph (a) of this section.

(2) Systems classified in Bin 3 and Bin 4 must achieve at least 1-log of the additional *Cryptosporidium* treatment required under paragraph (a) of this section using either one or a combination of the following: bag filters, bank filtration, cartridge filters, chlorine dioxide, membranes, ozone, or UV, as described in §§141.716 through 141.720.

(c) Failure by a system in any month to achieve treatment credit by meeting criteria in §§141.716 through 141.720 for microbial toolbox options that is at least equal to the level of treatment required in paragraph (a) of this section is a violation of the treatment technique requirement.

(d) If the State determines during a sanitary survey or an equivalent source water assessment that after a system completed the monitoring conducted under §141.701(a) or §141.701(b), significant changes occurred in the system's watershed that could lead to increased contamination of the source water by *Cryptosporidium*, the system must take actions specified by the State to address the contamination. These actions may include additional source water monitoring and/or implementing microbial toolbox options listed in §141.715.

**§ 141.712 Unfiltered system *Cryptosporidium* treatment requirements.**

(a) *Determination of mean Cryptosporidium level.* (1) Following completion of the initial source water monitoring required under §141.701(a), unfiltered systems must calculate the

arithmetic mean of all *Cryptosporidium* sample concentrations reported under §141.701(a). Systems must report this value to the State for approval no later than 6 months after the month the system is required to complete initial source water monitoring based on the schedule in §141.701(c).

(2) Following completion of the second round of source water monitoring required under §141.701(b), unfiltered systems must calculate the arithmetic mean of all *Cryptosporidium* sample concentrations reported under §141.701(b). Systems must report this value to the State for approval no later than 6 months after the month the system is required to complete the second round of source water monitoring based on the schedule in §141.701(c).

(3) If the monthly *Cryptosporidium* sampling frequency varies, systems must first calculate a monthly average for each month of monitoring. Systems must then use these monthly average concentrations, rather than individual sample concentrations, in the calculation of the mean *Cryptosporidium* level in paragraphs (a)(1) or (2) of this section.

(4) The report to the State of the mean *Cryptosporidium* levels calculated under paragraphs (a)(1) and (2) of this section must include a summary of the source water monitoring data used for the calculation.

(5) Failure to comply with the conditions of paragraph (a) of this section is a violation of the treatment technique requirement.

(b) *Cryptosporidium* inactivation requirements. Unfiltered systems must provide the level of inactivation for *Cryptosporidium* specified in this paragraph, based on their mean *Cryptosporidium* levels as determined under paragraph (a) of this section and according to the schedule in §141.713.

(1) Unfiltered systems with a mean *Cryptosporidium* level of 0.01 oocysts/L or less must provide at least 2-log *Cryptosporidium* inactivation.

(2) Unfiltered systems with a mean *Cryptosporidium* level of greater than 0.01 oocysts/L must provide at least 3-log *Cryptosporidium* inactivation.

(c) *Inactivation treatment technology requirements.* Unfiltered systems must use chlorine dioxide, ozone, or UV as

described in §141.720 to meet the *Cryptosporidium* inactivation requirements of this section.

(1) Systems that use chlorine dioxide or ozone and fail to achieve the *Cryptosporidium* inactivation required in paragraph (b) of this section on more than one day in the calendar month are in violation of the treatment technique requirement.

(2) Systems that use UV light and fail to achieve the *Cryptosporidium* inactivation required in paragraph (b) of this section by meeting the criteria in §141.720(d)(3)(ii) are in violation of the treatment technique requirement.

(d) *Use of two disinfectants.* Unfiltered systems must meet the combined *Cryptosporidium* inactivation requirements of this section and *Giardia lamblia* and virus inactivation requirements of §141.72(a) using a minimum of two disinfectants, and each of two disinfectants must separately achieve the total inactivation required for either *Cryptosporidium*, *Giardia lamblia*, or viruses.

**§ 141.713 Schedule for compliance with *Cryptosporidium* treatment requirements.**

(a) Following initial bin classification under §141.710(c), filtered systems must provide the level of treatment for *Cryptosporidium* required under §141.711 according to the schedule in paragraph (c) of this section.

(b) Following initial determination of the mean *Cryptosporidium* level under §141.712(a)(1), unfiltered systems must provide the level of treatment for *Cryptosporidium* required under §141.712 according to the schedule in paragraph (c) of this section.

(c) *Cryptosporidium* treatment compliance dates.

CRYPTOSPORIDIUM TREATMENT COMPLIANCE DATES TABLE

|                                   | Must comply with <i>Cryptosporidium</i> treatment requirements no later than . . . . <sup>a</sup> |
|-----------------------------------|---|
| (1) At least 100,000 people . . . | (i) April 1, 2012.  |
| (2) From 50,000 to 99,999 people. | (i) October 1, 2012.  |
| (3) From 10,000 to 49,999 people. | (i) October 1, 2013.  |