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Title 22@ Social Security

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Division 4@ Environmental Health

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Chapter 17@ Surface Water Treatment

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Article 2@ Treatment Technique Requirements, Watershed Protection Requirements, and Performance Standards

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Section 64652.5@ Criteria for Avoiding Filtration

64652.5 Criteria for Avoiding Filtration

(a)

A supplier that uses an approved surface water shall meet all of the requirements of this section to avoid the necessity of providing filtration. Within 18 months of the failure of a supplier using an approved surface water to meet any one of the requirements of subsections (b) through (l), the supplier shall have installed filtration and meet the requirements for filtered systems specified in sections 64653, 64658, 64659, 64660, and 64661.

(b)

The approved surface water quality shall be monitored downstream of all surface water and groundwater under the influence of surface water contributions and upstream of the first or only point of disinfectant application, as follows: (1) For fecal or total coliform density at the following minimum frequency each week:

System size (persons served)	Samples/week [LESS THAN EQUAL TO]
501-3,300	2*
3,301-10,000	3*
10,001-25,000	4*
> 25,000	5*

* Shall be taken on separate days. (2) For fecal or total coliform density, once every day the turbidity of the source water exceeds 1 NTU unless the State Board determines that the system, for logistical reasons outside the system's control, is unable to have the sample analyzed within 30 hours of collection. If collected, these samples count toward the weekly coliform sampling requirement; and (3) For turbidity at a minimum frequency of once every four hours. A supplier may

substitute continuous turbidity monitoring for grab sample monitoring if, at regular intervals, it validates the accuracy of the continuous measurement using a protocol approved by the State Board.

(1)

For fecal or total coliform density at the following minimum frequency each week:

System size (persons served) Samples/week [LESS THAN EQUAL TO] 5001 501-3,300

2* 3,301-10,000 3* 10,001-25,000 4* > 25,000 5* * Shall be taken on separate days.

(2)

For fecal or total coliform density, once every day the turbidity of the source water exceeds 1 NTU unless the State Board determines that the system, for logistical reasons outside the system's control, is unable to have the sample analyzed within 30 hours of collection. If collected, these samples count toward the weekly coliform sampling requirement; and

(3)

For turbidity at a minimum frequency of once every four hours. A supplier may substitute continuous turbidity monitoring for grab sample monitoring if, at regular intervals, it validates the accuracy of the continuous measurement using a protocol approved by the State Board.

(c)

The approved surface water quality monitored pursuant to subsection (b) shall meet the following criteria: (1) The fecal coliform concentration shall be equal to or less than 20/100 mL, or the total coliform concentration shall be equal to or less than 100/100 mL, in representative samples of the approved surface water in at least 90 percent of the measurements made for the six previous months that the system served unfiltered approved surface water to the public on an ongoing

basis. If a system measures both fecal and total coliforms, the fecal coliform criterion, not the total coliform criterion, in this paragraph shall be met; and (2) The turbidity level shall not exceed 5 NTU in representative samples of the approved surface water unless: (A) The State Board determines that any such event was caused by circumstances that were unusual and unpredictable; and (B) As a result of any such event, there have not been more than two events in the past 12 months the system served unfiltered approved surface water to the public, or more than five events in the past 120 months the system served unfiltered approved surface water to the public, in which the turbidity level exceeded 5 NTU. An "event" is one day or a series of consecutive days during which at least one turbidity measurement each day exceeds 5 NTU.

(1)

The fecal coliform concentration shall be equal to or less than 20/100 mL, or the total coliform concentration shall be equal to or less than 100/100 mL, in representative samples of the approved surface water in at least 90 percent of the measurements made for the six previous months that the system served unfiltered approved surface water to the public on an ongoing basis. If a system measures both fecal and total coliforms, the fecal coliform criterion, not the total coliform criterion, in this paragraph shall be met; and

(2)

The turbidity level shall not exceed 5 NTU in representative samples of the approved surface water unless: (A) The State Board determines that any such event was caused by circumstances that were unusual and unpredictable; and (B) As a result of any such event, there have not been more than two events in the past 12 months the system served unfiltered approved surface water to the public, or more than five events in the past 120 months the system served unfiltered approved surface water to

the public, in which the turbidity level exceeded 5 NTU. An "event" is one day or a series of consecutive days during which at least one turbidity measurement each day exceeds 5 NTU.

(A)

The State Board determines that any such event was caused by circumstances that were unusual and unpredictable; and

(B)

As a result of any such event, there have not been more than two events in the past 12 months the system served unfiltered approved surface water to the public, or more than five events in the past 120 months the system served unfiltered approved surface water to the public, in which the turbidity level exceeded 5 NTU. An "event" is one day or a series of consecutive days during which at least one turbidity measurement each day exceeds 5 NTU.

(d)

Water quality information collected pursuant to subsection (a) shall be reported to the State Board in conformance with the requirements of 40 CFR section 141.75(a)(1) (54 Fed. Reg. 27486 (June 29, 1989)), which is incorporated by reference.

(e)

The supplier shall maintain a watershed control program which minimizes the potential for contamination by *Giardia lamblia* cysts, viruses, and *Cryptosporidium* oocysts in the source water. The adequacy of the program to limit potential contamination by *Giardia lamblia* cysts, viruses, and *Cryptosporidium* oocysts shall be determined by: the comprehensiveness of the watershed review; the effectiveness of the supplier's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water system has maximized land ownership and/or controlled land use within

the watershed. At a minimum, the watershed control program shall: (1) Characterize the watershed hydrology and land ownership; (2) Identify watershed characteristics and activities which may have an adverse effect on source water quality; (3) Monitor the occurrence of activities which may have an adverse effect on source water quality. The supplier shall demonstrate through ownership and/or written agreements with landowners within the that it can control all human activities which may have an adverse impact on the microbiological quality of the water. The supplier shall submit an annual report to the State Board that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in the future and how the public water system expects to address them; and (4) Monitor the presence of Giardia lamblia cysts in the approved surface water whenever agricultural grazing, water oriented recreation, or point source domestic wastewater discharges occur on the watershed. At a minimum the monitoring shall measure the Giardia lamblia cyst concentration monthly at a point immediately prior to the first or only point of disinfectant application. The monitoring results shall be included in an annual report to the State Board. This monitoring requirement may be waived after one year for a supplier serving fewer than 500 persons when the monitoring results indicate a mean Giardia lamblia cyst concentration of 1 cyst per 100 liters or less.

(1)

Characterize the watershed hydrology and land ownership;

(2)

Identify watershed characteristics and activities which may have an adverse effect on source water quality;

(3)

Monitor the occurrence of activities which may have an adverse effect on source water quality. The supplier shall demonstrate through ownership and/or written agreements with landowners within the that it can control all human activities which may have an adverse impact on the microbiological quality of the water. The supplier shall submit an annual report to the State Board that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in the future and how the public water system expects to address them; and

(4)

Monitor the presence of Giardia lamblia cysts in the approved surface water whenever agricultural grazing, water oriented recreation, or point source domestic wastewater discharges occur on the watershed. At a minimum the monitoring shall measure the Giardia lamblia cyst concentration monthly at a point immediately prior to the first or only point of disinfectant application. The monitoring results shall be included in an annual report to the State Board. This monitoring requirement may be waived after one year for a supplier serving fewer than 500 persons when the monitoring results indicate a mean Giardia lamblia cyst concentration of 1 cyst per 100 liters or less.

(f)

The water system shall be subject to an annual on-site inspection to assess the watershed control program and disinfection treatment process. Either the State Board or a party approved by the State Board shall conduct the on-site inspection. The inspection shall be conducted by competent individuals who have a sound understanding of public health principles and waterborne diseases, such as sanitary engineers, civil engineers, environmental health specialists, or technicians who have experience and knowledge about the operation and

maintenance of a public water system. A report of the on-site inspection summarizing all findings shall be prepared every calendar year and submitted to the State Board, if not conducted by the State Board, by December 31 of that year. The on-site inspection shall be comprehensive to enable the State Board to determine whether the watershed control program and disinfection treatment process are adequately designed and maintained. The on-site inspection shall include: (1) A review of the effectiveness of the watershed control program; (2) A review of the physical condition of the source intake and how well it is protected; (3) A review of the supplier's equipment maintenance program to ensure there is low probability for failure of the disinfection process; (4) An inspection of the disinfection equipment for physical deterioration; (5) A review of operating procedures; (6) A review of data records to ensure that all required tests are being conducted and recorded and disinfection is effectively practiced; and (7) Identification of any improvements which are needed in the equipment, system maintenance and operation, or data collection.

(1)

A review of the effectiveness of the watershed control program;

(2)

A review of the physical condition of the source intake and how well it is protected;

(3)

A review of the supplier's equipment maintenance program to ensure there is low probability for failure of the disinfection process;

(4)

An inspection of the disinfection equipment for physical deterioration;

(5)

A review of operating procedures;

(6)

A review of data records to ensure that all required tests are being conducted and recorded and disinfection is effectively practiced; and

(7)

Identification of any improvements which are needed in the equipment, system maintenance and operation, or data collection.

(g)

The water system shall not have been identified as a source of a waterborne microbial disease outbreak, or if it has been so identified, the system shall have been modified sufficiently to prevent another such occurrence, as determined by the State Board.

(h)

The water system shall comply with the E. coli maximum contaminant level (MCL) specified in 22 CCR section 64426.1 at least 11 of the 12 previous months that the system served water to the public on an ongoing basis, unless the State Board determines that failure to meet this requirement was not caused by the unfiltered approved surface water.

(i)

The water system shall comply with the requirements for total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide specified in 22 CCR, division 4, chapter 15.5, commencing with section 64530.

(j)

The supplier shall provide to the State Board an annual report, by December 31st of each year, which summarizes its compliance with all the watershed control program requirements.

(k)

The water system shall meet the following special disinfection requirements:(1)

The water system shall not fail to provide disinfection treatment sufficient to ensure at least a 99.9 percent inactivation of *Giardia lamblia* cysts and a 99.99 percent inactivation of viruses for more than one day in any month the water system served unfiltered approved surface water. The means used to demonstrate the required percent inactivation with disinfection shall be in conformance with the requirements of 40 CFR sections 141.72(a)(1), and 141.74(b)(3) and (b)(4) (54 Fed. Reg. 27486 (June 29, 1989)), which are incorporated by reference. Disinfection information collected pursuant to this subsection shall be reported to the State Board in conformance with the requirements of 40 CFR section 141.75(a)(2) (54 Fed. Reg. 27486 (June 29, 1989)), which is incorporated by reference. The necessity to install filtration as a result of a failure to meet the requirements in subsection (c) will not apply if: (A) Either the supplier meets the requirements of subsection (c) at least 11 of the 12 previous months that the system served unfiltered approved surface water to the public on an ongoing basis; or (B) The system fails to meet the requirements of subsection (c) during 2 of the 12 previous months that the system served unfiltered approved surface water to the public; and (C) The State Board determines that failure to meet the requirements in subsection (c) for at least one of these months was caused by circumstances that were unusual and unpredictable. (2) The disinfection system shall have either: (A) Redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system; or (B) Automatic shut-off of delivery of water to the distribution system whenever there is less than 0.2 mg/L

of residual disinfectant concentration in the water. (3) The water system shall meet the requirements of section 64654(b)(1) at all times the system serves unfiltered approved surface water to the public unless the State Board determines that any such failure was caused by circumstances that were unusual and unpredictable; and (4) The water system shall meet the requirements of section 64654(b)(2) on an ongoing basis unless the State Board determines that failure to meet these requirements was not caused by a deficiency in treatment of the unfiltered approved surface water.

(1)

The water system shall not fail to provide disinfection treatment sufficient to ensure at least a 99.9 percent inactivation of *Giardia lamblia* cysts and a 99.99 percent inactivation of viruses for more than one day in any month the water system served unfiltered approved surface water. The means used to demonstrate the required percent inactivation with disinfection shall be in conformance with the requirements of 40 CFR sections 141.72(a)(1), and 141.74(b)(3) and (b)(4) (54 Fed. Reg. 27486 (June 29, 1989)), which are incorporated by reference. Disinfection information collected pursuant to this subsection shall be reported to the State Board in conformance with the requirements of 40 CFR section 141.75(a)(2) (54 Fed. Reg. 27486 (June 29, 1989)), which is incorporated by reference. The necessity to install filtration as a result of a failure to meet the requirements in subsection (c) will not apply if: (A) Either the supplier meets the requirements of subsection (c) at least 11 of the 12 previous months that the system served unfiltered approved surface water to the public on an ongoing basis; or (B) The system fails to meet the requirements of subsection (c) during 2 of the 12 previous months that the system served unfiltered approved surface water to the public; and (C) The State Board determines that failure to meet the requirements in subsection (c) for at least one of these months was caused by

circumstances that were unusual and unpredictable.

(A)

Either the supplier meets the requirements of subsection (c) at least 11 of the 12 previous months that the system served unfiltered approved surface water to the public on an ongoing basis; or

(B)

The system fails to meet the requirements of subsection (c) during 2 of the 12 previous months that the system served unfiltered approved surface water to the public; and

(C)

The State Board determines that failure to meet the requirements in subsection (c) for at least one of these months was caused by circumstances that were unusual and unpredictable.

(2)

The disinfection system shall have either: (A) Redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system; or (B) Automatic shut-off of delivery of water to the distribution system whenever there is less than 0.2 mg/L of residual disinfectant concentration in the water.

(A)

Redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system; or

(B)

Automatic shut-off of delivery of water to the distribution system whenever there is less than 0.2 mg/L of residual disinfectant concentration in the water.

(3)

The water system shall meet the requirements of section 64654(b)(1) at all times the system serves unfiltered approved surface water to the public unless the State Board determines that any such failure was caused by circumstances that were unusual and unpredictable; and

(4)

The water system shall meet the requirements of section 64654(b)(2) on an ongoing basis unless the State Board determines that failure to meet these requirements was not caused by a deficiency in treatment of the unfiltered approved surface water.

(I)

Whenever the monitoring of the quality of the approved surface water indicates the turbidity exceeds 5.0 NTU, or the fecal coliform level exceeds 20/100 mL or the total coliform concentration exceeds 100/100 mL in 10 percent or more of the samples collected in the previous six months during which the system served unfiltered approved surface water to the public on an ongoing basis, the source shall be removed from service. The source may be returned to service when monitoring subsequent to removing the source from service demonstrates that the turbidity is less than or equal to 5.0 NTU and the fecal coliform level is less than or equal to 20/100 mL or the total coliform level is less than or equal to 100/100 mL for two consecutive days, and Giardia lamblia monitoring results indicate 1 cyst per 100 liters or less. If a system measures both fecal and total coliforms, the fecal coliform criterion, not the total coliform criterion, in this subsection shall be met.