

## 64653 Filtration

### (a)

All approved surface water utilized by a supplier shall be treated using one of the following filtration technologies unless an alternative process has been approved by the State Board pursuant to subsections (e), (f), (g), and (h): (1) Conventional filtration treatment; (2) Direct filtration treatment; (3) Diatomaceous earth filtration; or (4) Slow sand filtration.

#### (1)

Conventional filtration treatment;

#### (2)

Direct filtration treatment;

#### (3)

Diatomaceous earth filtration; or

#### (4)

Slow sand filtration.

### (b)

Conventional filtration treatment shall be deemed to be capable of achieving at least 99.7 percent removal of *Giardia lamblia* cysts, 99 percent removal of viruses, and 99 percent removal of *Cryptosporidium* when in compliance with operating criteria specified in section 64660 and performance standards specified in table 64653. Direct filtration treatment, diatomaceous earth filtration, and slow sand

filtration shall be deemed to be capable of achieving at least 99 percent removal of *Giardia lamblia* cysts, 90 percent removal of viruses, and 99 percent removal of *Cryptosporidium* when in compliance with operating criteria specified in section 64660 and performance standards specified in table 64653.

**(c)**

A supplier shall comply with the combined filter effluent turbidity performance standards in table 64653 for each treatment plant while the plant is in operation:

Table 64653 Combined Filter Effluent Turbidity Performance Standards(a) If a supplier uses...The turbidity level of the combined filter effluent... (1)

Conventional or direct filtration treatment and serves 10,000 or more persons(A) Shall be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month; (B) Shall not exceed 1 NTU for more than one continuous hour; (C) Shall not exceed 1 NTU at four-hour intervals; and (D) Shall not exceed 1.0 NTU for more than eight consecutive hours. (2) Conventional or direct

filtration treatment and serves fewer than 10,000 persons(A) Shall be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month; (B) For a supplier using a grab sample monitoring program: 1. Shall not exceed 1 NTU; and 2. Shall not exceed 1.0 NTU in more than two consecutive samples; and

(C) For a supplier using a continuous monitoring program: 1. If recording results at least once every 15 minutes, shall comply with paragraph (1)(B); and 2. Shall comply with paragraphs (1)(C) and (1)(D). (3) Diatomaceous earth filtration(A)

Shall be less than or equal to 0.5 NTU in at least 95 percent of the measurements taken each month; (B) Shall not exceed 5.0 NTU; (C) For a supplier using a grab sample monitoring program, shall comply with paragraph (2)(B)2; and (D) For a supplier using a continuous monitoring program, shall comply with paragraph

(1)(D). (4) Slow sand filtration(A) Shall be less than or equal to 1.0 NTU in at

least 95 percent of the measurements taken each month; and (B) Shall not exceed 5.0 NTU. \_\_\_\_\_ (a) If there is only one filter at the treatment plant, the combined filter effluent turbidity performance standards shall apply to the effluent produced by the filter.

**(d)**

To obtain approval for a higher removal efficiency than that specified in subsection (b), a water supplier shall demonstrate to the State Board that the higher removal efficiency can be reliably obtained.

**(e)**

An alternative to the filtration technologies specified in subsection (a) may be used provided that the supplier demonstrates to the State Board that the alternative technology: (1) Provides a minimum of 99 percent Giardia lamblia cyst removal, 90 percent virus removal for the supplier serving more than 500 persons, and 99 percent Cryptosporidium removal; and (2) Meets the turbidity performance standards established by the State Board, as determined from the alternative filtration technology demonstration conducted pursuant to subsection (f). The turbidity performance standards shall not be less stringent than the turbidity performance standards established in subsection (c)(1).

**(1)**

Provides a minimum of 99 percent Giardia lamblia cyst removal, 90 percent virus removal for the supplier serving more than 500 persons, and 99 percent Cryptosporidium removal; and

**(2)**

Meets the turbidity performance standards established by the State Board, as determined from the alternative filtration technology demonstration conducted pursuant to subsection (f). The turbidity performance standards shall not be less

stringent than the turbidity performance standards established in subsection (c)(1).

**(f)**

The alternative filtration technology demonstration shall be based on the results from a prior equivalency demonstration or a testing of a full scale installation that is treating a water with similar characteristics and is exposed to similar hazards as the water proposed for treatment. A pilot plant test of the water to be treated may also be used for this demonstration if conducted with the approval of the State Board. The demonstration shall be presented in an engineering report prepared by a qualified engineer.

**(g)**

A supplier proposing to use an alternative filtration technology may request from the State Board a waiver to comply with the requirements of subsection (e) to demonstrate 90 percent virus removal. The request shall be based on a watershed sanitary survey conducted in accordance with section 64665, within 12 months of the date of the request, that demonstrates a lack of virus hazard in the watershed.

**(h)**

The State Board's approval of alternative filtration technologies, including establishment of performance standards and monitoring requirements, shall be done in accordance with the permit process specified in sections 116525 through 116550 of the Health and Safety Code.

**(i)**

Within 60 days following the first full year of operation of a new alternative filtration treatment process approved by the State Board, the supplier shall submit an engineering report prepared by a qualified engineer describing the effectiveness of the plant operation. The report shall include results of all water

quality tests performed and shall evaluate compliance with established performance standards under actual operating conditions. It shall also include an assessment of problems experienced, corrective actions needed, and a schedule for providing needed improvements.