64660 Operating Criteria

(a)

All treatment plants utilizing an approved surface water shall be operated by operators certified by the State Board in accordance with Health and Safety Code section 106885.

(b)

Filtration facilities shall be operated in accordance with the following requirements: (1) Conventional and direct filtration treatment plants shall be operated at filtration rates not to exceed 3.0 gallons per minute per square foot (gpm/sq. ft.) for single media filters and 6.0 gpm/sq. ft. for deep bed, dual or mixed media filters under gravity flow conditions. For pressure filters, filtration rates shall not exceed 2.0 gpm/sq. ft. for single media filters and 3.0 gpm/sq. ft. for dual, mixed media, or deep bed filters; (2) Slow sand filters shall be operated at filtration rates not to exceed 0.10 gallon per minute per square foot. The filter bed shall not be dewatered except for cleaning and maintenance purposes; (3) Diatomaceous earth filters shall be operated at filtration rates not to exceed 1.0 gallon per minute per square foot; (4) To obtain approval for filtration rates higher than, but not more than twice, those specified in paragraphs (1), (2), and (3), a water supplier shall demonstrate to the State Board that the filters can comply with the performance requirements of section 64653; (5) To obtain approval for filtration rates greater than twice those specified in paragraphs (1), (2), and (3), a

water supplier shall demonstrate to the State Board that the filters do the following: (A) Provide a minimum of 99 percent Giardia lamblia cyst removal, 90 percent virus removal, and 99 percent Cryptosporidium removal; and (B) Meet the turbidity performance standards established in section 64653(c); (6) Filtration rates shall be increased gradually when placing filters back into service following backwashing or any other interruption in the operation of the filter; (7) When any individual filter in a conventional or direct filtration treatment plant is placed back into service following backwashing or other interruption event, the filtered water turbidity of the effluent from that filter shall not exceed any of the individual filter turbidity performance triggers in table 64660, subparagraphs (A) through (D). The filtered water turbidity of the effluent from any individual filter in a conventional or direct filtration treatment plant shall not exceed any of the individual filter turbidity performance triggers in table 64660, subparagraphs (E) through (G). If an exceedance occurs, a supplier shall comply with the required follow-up action in table 64660: Table 64660 Individual Filter Turbidity Performance Triggers and Required Follow-Up Actions for a Trigger Exceedance(a) Performance Trigger at Any Time During the First Four Hours of OperationRequired Follow-Up Actions (A) 2.0 NTU1. The supplier shall take the filter unit out of service and inspect it to determine the cause of its inadequate performance; and (B) 1.0 NTU following at least 90 percent of the interruption events during any period of 12 consecutive months2. The supplier shall not return the filter unit to service until deficiencies have been corrected and operations tests demonstrate that the filter unit is meeting the performance triggers of subparagraphs (A), (B), and (C). The supplier shall comply with the required follow-up actions of subparagraphs (A)1. and (A)2. Performance Trigger at the Time that the Filter has been in Operation for Four HoursRequired Follow-Up

Action (C) 0.5 NTUThe supplier shall comply with the required follow-up actions of subparagraphs (A)1. and (A)2. Performance Trigger in Two Consecutive Measurements Taken No More than 15 Minutes ApartRequired Follow-Up Action (D) For a supplier serving 10,000 or more persons, 0.3 NTU after the filter has been in continuous operation for 60 minutes or moreWithin seven days of the exceedance, the supplier shall produce a filter profile if the supplier is unable to identify and report a reason for the abnormal filter performance. (E) 1.0 NTUA supplier serving 10,000 or more persons shall comply with the required follow-up action of subparagraph (D). (F) 1.0 NTU for three consecutive months1. Within 14 days of the exceedance, the supplier shall conduct a self-assessment of the filter. The self-assessment shall consist of the following components as a minimum: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report;

2. A supplier serving fewer than 10,000 persons shall conduct a self-assessment unless a comprehensive performance evaluation (CPE) was conducted pursuant to an exceedance of subparagraph (G); and 3. A supplier serving fewer than 10,000 persons and monitoring pursuant to footnote (c) of table 64655 shall conduct a self-assessment of each individual filter. (G) 2.0 NTU for two consecutive months1. The supplier shall arrange with the State Board for the conduct of a CPE pursuant to "Optimizing Water Treatment Plant Performance Using the Composite Correction Program," EPA Handbook, Chapter 4, pg. 21-65, Office of Research and Development, USEPA, EPA/625/6-91/027 (revised August 1998), which is incorporated by reference; Performance Trigger at Any Time During the First Four Hours of OperationRequired Follow-Up Actions 2. If a supplier serves 10,000 or more persons, the CPE shall be conducted no later than

30 days following the exceedance; and 3. If a supplier serves fewer than 10,000 persons, the CPE shall be conducted no later than 60 days following the exceedance. If a CPE was completed within the prior 12 months or the supplier and State Board are jointly participating in an ongoing comprehensive technical assistance project at the water system, a new CPE is not required. _____ (a) For a supplier monitoring pursuant to footnote (c) of table 64655, the individual filter turbidity performance triggers of table 64660 shall apply to the combined filter effluent. (8) Pressure filters shall be physically inspected and evaluated annually for such factors as media condition, mudball formation, and short circuiting. A written record of the inspection shall be maintained at the treatment plant; and (9) Coagulation and flocculation unit processes shall be in use at all times during which conventional and direct filtration treatment plants are in operation. The effectiveness of these processes shall be demonstrated by either at least an 80 percent reduction through the filters of the monthly average raw water turbidity or jar testing, pilot testing, or other means to demonstrate that optimum coagulation is being achieved.

(1)

Conventional and direct filtration treatment plants shall be operated at filtration rates not to exceed 3.0 gallons per minute per square foot (gpm/sq. ft.) for single media filters and 6.0 gpm/sq. ft. for deep bed, dual or mixed media filters under gravity flow conditions. For pressure filters, filtration rates shall not exceed 2.0 gpm/sq. ft. for single media filters and 3.0 gpm/sq. ft. for dual, mixed media, or deep bed filters;

(2)

Slow sand filters shall be operated at filtration rates not to exceed 0.10 gallon per minute per square foot. The filter bed shall not be dewatered except for cleaning and maintenance purposes;

(3)

Diatomaceous earth filters shall be operated at filtration rates not to exceed 1.0 gallon per minute per square foot;

(4)

To obtain approval for filtration rates higher than, but not more than twice, those specified in paragraphs (1), (2), and (3), a water supplier shall demonstrate to the State Board that the filters can comply with the performance requirements of section 64653;

(5)

To obtain approval for filtration rates greater than twice those specified in paragraphs (1), (2), and (3), a water supplier shall demonstrate to the State Board that the filters do the following: (A) Provide a minimum of 99 percent Giardia lamblia cyst removal, 90 percent virus removal, and 99 percent Cryptosporidium removal; and (B) Meet the turbidity performance standards established in section 64653(c);

(A)

Provide a minimum of 99 percent Giardia lamblia cyst removal, 90 percent virus removal, and 99 percent Cryptosporidium removal; and

(B)

Meet the turbidity performance standards established in section 64653(c);

(6)

Filtration rates shall be increased gradually when placing filters back into service following backwashing or any other interruption in the operation of the filter;

(7)

When any individual filter in a conventional or direct filtration treatment plant is placed back into service following backwashing or other interruption event, the filtered water turbidity of the effluent from that filter shall not exceed any of the individual filter

turbidity performance triggers in table 64660, subparagraphs (A) through (D). The filtered water turbidity of the effluent from any individual filter in a conventional or direct filtration treatment plant shall not exceed any of the individual filter turbidity performance triggers in table 64660, subparagraphs (E) through (G). If an exceedance occurs, a supplier shall comply with the required follow-up action in table 64660:

Table 64660 Individual Filter Turbidity Performance Triggers and Required Follow-Up Actions for a Trigger Exceedance(a) Performance Trigger at Any Time During the First Four Hours of OperationRequired Follow-Up Actions (A) 2.0 NTU1. The supplier shall take the filter unit out of service and inspect it to determine the cause of its inadequate performance; and (B) 1.0 NTU following at least 90 percent of the interruption events during any period of 12 consecutive months2. The supplier shall not return the filter unit to service until deficiencies have been corrected and operations tests demonstrate that the filter unit is meeting the performance triggers of subparagraphs (A), (B), and (C). The supplier shall comply with the required follow-up actions of subparagraphs (A)1. and (A)2. Performance Trigger at the Time that the Filter has been in Operation for Four HoursRequired Follow-Up Action (C) 0.5 NTUThe supplier shall comply with the required follow-up actions of subparagraphs (A)1. and (A)2. Performance Trigger in Two Consecutive Measurements Taken No More than 15 Minutes ApartRequired Follow-Up Action (D) For a supplier serving 10,000 or more persons, 0.3 NTU after the filter has been in continuous operation for 60 minutes or moreWithin seven days of the exceedance, the supplier shall produce a filter profile if the supplier is unable to identify and report a reason for the abnormal filter performance. (E) 1.0 NTUA supplier serving 10,000 or more persons shall comply with the required follow-up action of subparagraph (D). (F) 1.0 NTU for three consecutive months1. Within 14 days of the exceedance, the supplier shall conduct a self-assessment of the filter. The self-assessment shall consist of the following components as a minimum: assessment of

filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report; 2. A supplier serving fewer than 10,000 persons shall conduct a self-assessment unless a comprehensive performance evaluation (CPE) was conducted pursuant to an exceedance of subparagraph (G); and 3. A supplier serving fewer than 10,000 persons and monitoring pursuant to footnote (c) of table 64655 shall conduct a self-assessment of each individual filter. (G) 2.0 NTU for two consecutive months1. The supplier shall arrange with the State Board for the conduct of a CPE pursuant to "Optimizing Water Treatment Plant Performance Using the Composite Correction Program," EPA Handbook, Chapter 4, pg. 21-65, Office of Research and Development, USEPA, EPA/625/6-91/027 (revised August 1998), which is incorporated by reference; Performance Trigger at Any Time During the First Four Hours of OperationRequired Follow-Up Actions 2. If a supplier serves 10,000 or more persons, the CPE shall be conducted no later than 30 days following the exceedance; and 3. If a supplier serves fewer than 10,000 persons, the CPE shall be conducted no later than 60 days following the exceedance. If a CPE was completed within the prior 12 months or the supplier and State Board are jointly participating in an ongoing comprehensive technical assistance project at the water system, a new CPE is not required. _____ (a) For a supplier monitoring pursuant to footnote (c) of table 64655, the individual filter turbidity performance triggers of table 64660 shall apply to the combined filter effluent.

(8)

Pressure filters shall be physically inspected and evaluated annually for such factors as media condition, mudball formation, and short circuiting. A written record of the inspection shall be maintained at the treatment plant; and

(9)

Coagulation and flocculation unit processes shall be in use at all times during which conventional and direct filtration treatment plants are in operation. The effectiveness of these processes shall be demonstrated by either at least an 80 percent reduction through the filters of the monthly average raw water turbidity or jar testing, pilot testing, or other means to demonstrate that optimum coagulation is being achieved.

(c)

Disinfection facilities shall be operated in accordance with the following requirements: (1) A supply of chemicals necessary to provide continuous operation of disinfection facilities shall be maintained as a reserve or demonstrated to be available; and (2) An emergency plan shall be developed prior to initiating operation of the disinfection facilities. The plan shall be implemented in the event of disinfection failure to prevent delivery to the distribution system of any undisinfected or inadequately disinfected water. The plan shall be posted in the treatment plant or other place readily accessible to the plant operator.

(1)

A supply of chemicals necessary to provide continuous operation of disinfection facilities shall be maintained as a reserve or demonstrated to be available; and

(2)

An emergency plan shall be developed prior to initiating operation of the disinfection facilities. The plan shall be implemented in the event of disinfection failure to prevent delivery to the distribution system of any undisinfected or inadequately disinfected water. The plan shall be posted in the treatment plant or other place readily accessible to the plant operator.