

**Final Statement of Reasons
Interim Enhanced Surface Water Treatment Rule
Title 22, California Code of Regulations**

All suppliers of domestic water to the public are subject to regulations adopted by the U.S. Environmental Protection Agency (USEPA) under the Safe Drinking Water Act of 1974, as amended (42 U.S.C. § 300f et seq.) as well as by the California Department of Public Health (Department) under the California Safe Drinking Water Act (Health & Saf. Code, div. 104, pt. 12, ch. 4, § 116270 et seq.)

On December 16, 1998, the USEPA promulgated the Interim Enhanced Surface Water Treatment Rule (63 Fed. Reg. 69478; amended Jan. 16, 2001, 66 Fed. Reg. 3770), as required by the Safe Drinking Water Act Amendments of 1996 (SDWAA), which provides increased public protection against microbial pathogens, specifically the protozoan *Cryptosporidium*. Additionally, on June 8, 2001, the USEPA promulgated the Filter Backwash Recycling Rule (66 Fed. Reg. 31086), also as required by the SDWAA.

California has been granted “primacy” for the enforcement of the SDWAA. To receive and maintain primacy, states must promulgate regulations that are no less stringent than the federal regulations. The Department is proposing these regulations to fulfill the federal primacy requirements.

California currently requires water suppliers to filter and disinfect surface water and groundwater under the influence of surface water. (Cal. Code Regs., tit. 22, div. 4, ch. 17, § 64650 et seq.) Pursuant to federal primacy requirements and Health and Safety Code (H&S Code) section 116375, the Department proposes the following regulations that would reduce turbidity limits and increase monitoring requirements for surface water treatment facilities.

The Department proposes the following amendments to chapter 17, division 4, title 22, California Code of Regulations (CCR).

- To amend the following to update references to outdated section numbers:
 - Section 64651.10
 - Section 64658(a)
 - Section 64662(b)

- To amend the following to correct typographical errors:
 - Section 64651.53
 - Sections 64652.5(a) and (c)
 - Sections 64654(c)(1), (2), and (3)
 - Section 64660(b)(1)
 - Section 64664(e) (formerly (d)), references to operating criteria specified in sections 64660(b)(6) and (8) replaced with sections 64660(b)(7) and (9).

- To amend the following to consistently use the term *Giardia lamblia* in lieu of *Giardia*, *Giardia lamblia*, and *Giardia lamblia*:

- Section 64650(a)
 - Section 64651.50
 - Section 64652(a)(1)
 - Sections 64652.5(e), (e)(4), (k)(1), and (l)
 - Sections 64653(b) and (f)
 - Section 64654(a)
 - Section 64660(b)(5)(A)
- To amend the following to accommodate the insertion of new subsections:
 - Former section 64652(d) is re-assigned as 64652(e)
 - Former sections 64655(b)-(d) are re-assigned as 64655(e)-(g)
 - Section 64655(e) (formerly (b)) is amended to update new section references
 - Former sections 64664(d) and (e) are re-assigned as 64664(e) and (f)
 - To revise chapter 17 by adopting the following, pursuant to federal primacy requirements:
 - Section 64651.21 Definition of comprehensive performance evaluation
 - Section 64651.34 Definition of disinfection profile
 - Section 64651.38 Definition of filter profile
 - Section 64651.88 Definition of uncovered finished water storage facility
 - Section 64652(d)
 - Section 64653(c)(3)
 - Section 64653.5
 - Section 64655(h)
 - Section 64657 General requirements
 - Section 64657.10 Criteria for avoiding filtration
 - Section 64657.20 Disinfection profiling and benchmarking
 - Section 64657.30 Filtration
 - Section 64657.40 Filtration sampling
 - Section 64657.50 Supplemental reporting and recordkeeping
 - Section 64660(b)(5)(C)
 - Section 64664(g)
 - To revise chapter 17 by amending the following, pursuant to federal primacy requirements:
 - Section 64650(a)
 - Section 64651.50
 - Sections 64652.5(a) and (i)
 - Section 64653(f)
 - Sections 64662(a)(1) and (b)
 - Sections 64666(a) and (b)

The following proposed amendments contain additional requirements or provisions that are not found in the Federal Register:

- To amend section 64651.60 to correct the definition and update the reference to the approved analytical methods.
- To amend section 64654(b)(2) to clarify compliance requirements.
- To amend section 64655 to provide a more appropriate title for the section.
- To adopt section 64655(b), requiring the monthly monitoring of source water for total coliform and either fecal coliform or *E. coli* bacteria.
- To adopt section 64655(c), requiring the daily monitoring of settled water for turbidity.
- To adopt section 64655(d), requiring the monitoring of recycled backwash water for turbidity and flow.
- To amend section 64661(a) to clarify that all treatment plants shall operate under an approved operations plan.
- To amend section 64661(b) to require the inclusion of a filter media inspection program in the operations plan.
- To amend section 64663(a) to include Department notification whenever monitoring conducted pursuant to section 64657.40 indicates a combined filter effluent in exceedance of 5.0 Nephelometric Turbidity Units (NTU).
- To amend section 64663(b) to include Department notification whenever samples collected pursuant to section 64657.40 exceeds 1 NTU for more than 1 hour or 1.0 NTU for more than 8 hours.
- To adopt section 64664(d) to require in the monthly report the inclusion of analytical results of raw and process water samples collected pursuant to sections 64655(a)-(d).
- To amend section 64664(e) (formerly 64664(d)) to include violations of performance standards specified in section 64657.30.
- To amend section 64666(c) to refer to sections 64463.1 and 64463.4 as a whole, as opposed to specific subsections within those sections.

The net effect would be that:

- Suppliers using an approved surface water source and serving at least 10,000 people would be required to provide at least 99 percent removal of *Cryptosporidium* oocysts, which would be accomplished through the attainment of more stringent turbidity standards.
- Suppliers using an approved surface water source and serving at least 10,000 people would be required to determine their annual average concentration of total trihalomethanes (TTHM) and haloacetic acids (HAA) (five), and if the annual averages exceed or equal either 0.064 mg/L or 0.048 mg/L respectively, the supplier would be required to conduct disinfection profiling and calculate a benchmark.
- All suppliers using an approved surface water source would be required to:
 - Provide the Department with information about filter backwash recycle flows and return such flows to the headworks of the treatment plant.
 - Conduct monthly source water monitoring for bacterial concentrations.
 - Conduct daily monitoring of settled water turbidity.
 - Conduct monitoring of recycled backwash water for turbidity and flow.
 - Include a filter media inspection program in the operations plan.

Adoption of these requirements would satisfy the federal primacy requirements related to the adoption of regulations at least as stringent as the federal.

Documents Incorporated by Reference

The following documents are incorporated by reference in the regulations as it would be too cumbersome, unduly expensive, or impractical to publish these documents into regulation.

- 1) 40 Code of Federal Regulations parts 141.172(a), (b), and (c) (63 Fed. Reg. 69477 (December 16, 1998)), “Interim Enhanced Surface Water Treatment Rule”.
- 2) 40 Code of Federal Regulations parts 141.172(a) and (b) (66 Fed. Reg. 3769 (January 16, 2001)), “Revisions to the Interim Enhanced Surface Water Treatment Rule and Stage 1 Disinfectants and Disinfection Byproducts Rule”.
- 3) 40 Code of Federal Regulations part 141.74(a)(1) (67 Fed. Reg. 65888 (October 29, 2002)), “Approval of Analytical Methods for Chemical and Microbiological Contaminants”.
- 4) “Optimizing Water Treatment Plant Performance Using the Composite Correction Program”, EPA Handbook, Chapter 4, pages 21-65, Office of Research and Development, U.S. Environmental Protection Agency; EPA/625/6-91/027 (revised August 1998).

Article 1. General Requirements and Definitions

AMEND Section 64650 General requirements

An amendment to subsection (a) adds a reference to article 3.5, which establishes treatment techniques in lieu of maximum contaminant limits for *Cryptosporidium* for systems serving a population of at least 10,000 people. This is adopted for conformance with 40 C.F.R. part 141.170(a), but has been revised to reference the applicable state regulation to avoid confusion.

AMEND Section 64651.10 Approved surface water

References to sections 4011 and 4016 are replaced with sections 116525 and 116550, respectively, for consistency with recodified statutes.

ADOPT Section 64651.21 Comprehensive performance evaluation (CPE)

The term “comprehensive performance evaluation” is used and defined in 40 C.F.R part 141.2. It is adopted here to provide clarification for the subsequent requirements and for conformance with the federal regulation, but has been modified to exclude listing the components of a CPE. The CPE components are in Optimizing Water Treatment Plant Performance Using the Composite Correction Program, EPA Handbook, Chapter 4, pages 21-65, Office of Research and Development, U.S. Environmental Protection Agency; EPA/625/6-91/027 (revised August 1998), which is incorporated by reference in section 64657.50(e).

ADOPT Section 64651.34 Disinfection profile

The term “disinfection profile” is used and defined in 40 C.F.R. part 141.2. It is adopted here to provide clarification for the subsequent requirements and for conformance with the federal regulation, but has been revised to include virus inactivation for clarification. Disinfection profiling for virus inactivation is required in 40 C.F.R. part 141.172(b)(5).

ADOPT Section 64651.38 Filter profile

The term “filter profile” is used and defined in 40 C.F.R. part 141.2. It is adopted here to provide clarification for the subsequent requirements and for conformance with the federal regulation, but has been modified by (1) eliminating the redundant term “daily”, as 40 C.F.R. part 141.172(b)(2) already identifies the monitoring frequency as “daily” and (2) replacing “assessment of filter performance with “data collected” for clarification.

AMEND Section 64651.50 Groundwater under the direct influence of surface water

A reference to *Cryptosporidium* is added to the definition, in conformance with 40 C.F.R. part 141.2. “*Giardia lamblia*” is replaced with “*Giardia lamblia*”, as the rules of taxonomy is to show in italics the genus and species of an organism.

AMEND Section 64651.53 Legionella

A typographical error, “... type or pneumonia...” is replaced with “... type of pneumonia...” “*Legionella*” is replaced with “*Legionella*”, as the rules of taxonomy is to show in italics the genus of an organism.

AMEND Section 64651.60 NTU (Nephelometric Turbidity Unit)

Errors in the definition are corrected and the reference to the approved analytical methods for turbidity is updated. This section incorporates by reference the requirements of 40 Code of Federal Regulations, part 141.74(a)(1) (67 Fed. Reg. 65888 (October 29, 2002)), “Approval of Analytical Methods for Chemical and Microbiological Contaminants”, as it would be too cumbersome, unduly expensive, or impractical to publish this document into regulation.

ADOPT Section 64651.88 Uncovered finished water storage facility

This term is used and defined in 40 C.F.R. part 141.2. It is adopted here to provide clarification for the subsequent requirements and for conformance with the federal regulation, but has been revised to provide additional details to avoid confusion regarding the terminology “open to the atmosphere”.

Article 2. Treatment requirement, watershed protection requirements, and performance standards

AMEND Section 64652(a)(1)

The term “*Giardia*” is replaced with “*Giardia lamblia*”. This change is being made throughout the chapter to be consistent with itself and 40 C.F.R. part 141. Use of the term “*Giardia lamblia*” is more specific and provides more clarity.

ADOPT Section 64652(d)

This section requires suppliers serving at least 10,000 people to comply with the additional requirements of article 3.5. This section is adopted for conformance with 40 C.F.R. part 141.70(d), but has been revised to reference the applicable state regulation to avoid confusion.

AMEND Section 64652(e) (formerly 64652(d))

This section, previously assigned 64652(d), is re-assigned as (e) to allow for the insertion of the proposed subsection (d) described above.

AMEND Section 64652.5(a)

This section is amended to indicate to a supplier serving at least 10,000 people the necessity to comply with the additional filtration avoidance criteria of section 64657.10 and, if the supplier is not in compliance with section 64657.10, to comply with filtered system requirements. This section is also amended to correct typographical errors by replacing “public water systems” and “system” with “supplier” and by replacing “...Subsections...” with “... subsections...”

AMEND Section 64652.5(c)

This section is amended to correct a typographical error by replacing “...Subsections...” with “... subsections...”

AMEND Section 64652.5(e) and section 64652.5(e)(4)

The term “*Giardia*” is replaced with “*Giardia lamblia*”. This change is being made throughout the chapter to be consistent with itself and 40 C.F.R. part 141. Use of the term “*Giardia lamblia*” is more specific and provides more clarity.

AMEND Section 64652.5(i)

This section is amended to require systems to comply with the requirements for total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide specified in 22 CCR chapter 15.5. Additionally, the Department removed the following language from the section: “unless the Department determines that failure to meet this requirement was not caused by a deficiency in treatment of the unfiltered approved surface water.” This clause is removed for conformance with 40 C.F.R. part 141.71(b)(6).

AMEND Sections 64652.5(k)(1), 64652.5(l), and 64653(b)

The term “*Giardia*” is replaced with “*Giardia lamblia*”. This change is being made throughout the chapter to be consistent with itself and 40 C.F.R. part 141. Use of the term “*Giardia lamblia*” is more specific and provides more clarity.

ADOPT Section 64653(c)(3)

This section requires systems using either conventional or direct filtration and serving at least 10,000 people to comply with the turbidity requirements specified in section 64657.30(a)(2) in lieu of subsections (c)(1) and (c)(2). It is adopted for conformance with 40 C.F.R. part 141.73(a)(3), but has been revised to reference the applicable state regulation to avoid confusion.

AMEND Section 64653(f)

This section is amended to require systems using an alternative filtration technology and serving at least 10,000 people to provide a minimum of 99 percent *Cryptosporidium* oocyst removal, and meet the turbidity performance standards established in section 64657.30(a)(2). This amendment is being made for conformance with 40 C.F.R. part 141.73(d), but has been revised to reference the applicable state regulation to avoid confusion, and to establish minimum turbidity performance standards. In addition, the term “*Giardia*” is replaced with “*Giardia lamblia*”. This change is being made throughout the chapter to be consistent with itself and 40 C.F.R. part 141. Use of the term “*Giardia lamblia*” is more specific and provides more clarity.

ADOPT Section 64653.5

The purpose of this section is to govern the recycling of filter backwash water within the treatment process. It is adopted for conformance with 40 C.F.R. part 141.76 as published in 66 Fed. Reg. 31086 (June 8, 2001). The proposed language has been modified for purposes of clarity, but neither the scope nor the intent of the federal regulation has been changed. Section 64653.5, in conformance with 40 C.F.R. part 141.76(a), indicates which systems are affected by this regulation.

Subsection (a) is adopted for conformance with 40 C.F.R. part 141.76(b). It specifies what information the affected systems must report to the Department.

Subsection (b) is adopted for conformance with 40 C.F.R. part 141.76(c). It specifies how recycle flows are to be handled.

Subsection (c) is adopted for conformance with 40 C.F.R. part 141.76(d). It specifies what records are to be retained by the systems.

AMEND Section 64654(a)

The term “*Giardia*” is replaced with “*Giardia lamblia*”. This change is being made throughout the chapter to be consistent with itself and 40 C.F.R. part 141. Use of the term “*Giardia lamblia*” is more specific and provides more clarity.

AMEND Section 64654(b)(2)

This section is amended to clarify the residual disinfectant compliance requirements. A detectable residual disinfectant shall be detectable in 95 percent of the samples taken each month. The previous language, requiring a detectable residual in “95 percent of the samples taken each month, during each and every two consecutive months” was vague and unclear. By removing the clause “during each and every two consecutive months” the requirement is clarified.

AMEND Sections 64654(c)(1), (2), and (3)

Minor typographical errors are corrected in these three sections to maintain consistency throughout the section.

Article 3. Monitoring Requirements

AMEND Section 64655 Treatment plant process monitoring

This section is amended by changing the title of the section from “Filtration” to the title specified above. This modification provides a title that is more descriptive and appropriate for the section.

ADOPT Section 64655(b)

The purpose of this section is to require suppliers using approved surface water sources to monitor the raw water supply at least monthly for total coliform and either fecal coliform or *E. coli* bacteria using density enumeration techniques. Such monitoring will allow for an on-going assessment of the raw water bacteriological quality and will alert the system to changes in raw water quality that may be associated with changing conditions in the watershed, climatic changes, or most importantly, unexpected changes due to unknown causes. This monitoring allows for tracking of the source water quality and the resultant need for changes in chemical pretreatment and disinfectant dosages.

Total coliforms serve as a generic indicator organism that captures a broad range of potential bacteriological contamination. Fecal coliform and *E. coli* are indicators of specific fecal or human waste contamination. Coliform monitoring has been used by the industry for many years and the Information Collection Rule (61 Fed. Reg. 24354 (May 14, 1996)) database is populated with coliform monitoring data. This regulation specifies coliform monitoring to maintain consistency with existing data sets.

This regulation establishes monthly monitoring as the minimum because monitoring on a less frequent basis would not be sufficient to identify changes in source water quality. Many systems already monitor on a more frequent basis, but many local variables must be taken into consideration when determining whether or not more frequent monitoring is beneficial. Since many systems already monitor more frequently than once per month, and nearly all monitor at least monthly, the impact of this requirement is expected to be minor.

ADOPT Section 64655(c)

The purpose of this section is to require suppliers using conventional filtration to monitor the turbidity of the settled water at least once each day. This monitoring will help both the Department and the supplier determine whether or not the pretreatment processes are optimized. The optimization of each unit process of the treatment plant is critical to overall plant performance. Such optimizing is a key component of the *Cryptosporidium* Action Plan (CAP), which was required by the state Legislature (Health and Safety Code Section 116360). (California Department of Health Services, *Cryptosporidium Action Plan*, April 1995). To optimize the coagulation and sedimentation processes, it is necessary to monitor settled water turbidity. By receiving the results of such monitoring, the Department can review the monthly progress each system is making toward optimization.

The goal of the CAP is to reduce turbidity as much as possible prior to filtration, thereby reducing the solids loading on the filter. Reducing the solids loading on the filter strengthens the effectiveness and reliability of physical removal for particulate matter and microorganisms in

general, thereby reducing the likelihood of the disinfection barrier being over challenged. (63 Fed. Reg. 69482 (December 16, 1998).) Waterborne disease outbreaks have been associated with a high level of particles passing through a water treatment plant. (Fox, K.R.; Lytle, D.A.; *Milwaukee's Crypto Outbreak: Investigation and Recommendations*, Journal AWWA, September 1996 (pg. 87-94).)

Daily monitoring is proposed because it provides sufficient information to determine optimization without creating a monitoring or reporting burden for the suppliers or the Department.

Given that *Cryptosporidium* is very resistant to disinfection, and that consistent removal of *Cryptosporidium* is the only reliable barrier for the protection of public health, every effort should be made to optimize the coagulation and sedimentation processes for the removal of *Cryptosporidium*. (63 Fed. Reg. 69482 (December. 16, 1998).)

Most systems already complete the monitoring and reporting that would be required by this section, and therefore the impact of this requirement is expected to be minor.

ADOPT Section 64655(d)

The purpose of this section is to require suppliers that recycle filter backwash water to monitor the turbidity and determine the flow rate of the recycled water at least once each day or during each recycle event.

This monitoring will help both the Department and the supplier determine whether or not the backwash water treatment processes are optimized. The optimization of each unit process of the treatment plant is critical to overall plant performance. Such optimizing is a key component of the CAP, which the Department has been mandated to implement (H&S Code section 116360). The handling of recycled backwash water is a unit process that is of particular importance, since backwash water has been shown to contain increased concentrations of *Giardia* and *Cryptosporidium*. (66 Fed. Reg. 31087 (June 8, 2001).)

Given that *Cryptosporidium* is very resistant to disinfection, and that consistent removal of *Cryptosporidium* is the only reliable barrier for the protection of public health, every effort should be made to optimize the recycled backwash water process for the removal of *Cryptosporidium*.

Recycled water flow rate and turbidity may have an adverse effect on plant performance, and careful monitoring of these parameters is important to ensure appropriate removals of *Giardia* and *Cryptosporidium*. By reporting to the Department under section 64664(d) the results of such monitoring, the Department can review on a monthly basis the progress each system is making toward optimization.

Monitoring once a day or during each recycle event is proposed because it provides sufficient information to determine optimization without creating a monitoring or reporting burden for the suppliers or the Department.

Most systems already complete the monitoring that would be required by this section, and therefore the impact of this requirement is expected to be minor.

AMEND Section 64655(e) (formerly 64655(b))

This section, previously assigned 64655(b), is re-assigned as (e) to allow for the insertion of the proposed subsections (b-d) described above. In addition, the Department is amending the reference to the former subsection (d) by replacing it with a reference to the re-assigned subsection (g) and adding a reference to subsection (h). The addition of the reference to subsection (h) is necessary to indicate to affected systems that turbidity compliance monitoring will be different than what is required by this section.

AMEND Section 64655(f) (formerly 64655(c))

This section, previously assigned 64655(c), is re-assigned as (f) to allow for the insertion of the proposed subsections (b-d) described above.

AMEND Section 64655(g) (formerly 64655(d))

This section, previously assigned 64655(d), is re-assigned as (g) to allow for the insertion of the proposed subsections (b-d) described above.

ADOPT Section 64655(h)

The purpose of this section is to indicate to affected systems (those using conventional or direct filtration and serving at least 10,000 people) the necessity to conduct turbidity monitoring pursuant to section 64657.40 in lieu of subsection (e). This section is necessary to inform the affected systems that the monitoring requirements presented in subsection (e) (formerly (b)) is no longer applicable.

DESIGNATE New Article 3.5. Enhanced filtration and disinfection

The purpose of this article is to provide an organized section within Chapter 17 that contains the requirements of the federal Interim Enhanced Surface Water Treatment Rule that applies to suppliers using an approved surface water and serving at least 10,000 people. The purpose is to provide an organizational structure that is easy for the regulated community to follow and understand. Systems using an approved surface water and serving at least 10,000 people shall comply with the requirements of this article.

ADOPT Section 64657 General requirements

The purpose of this section is to establish requirements for filtration and disinfection that are in addition to criteria in sections 64653 and 64654. Subsections (a) through (d) are adopted for conformance with 40 C.F.R. part 141.170(a)-(c), but have been revised to reference the applicable state regulations to avoid confusion. The requirements of the watershed control plan referred to in subsection (b) may be found in section 64657.10.

ADOPT Section 64657.10 Criteria for avoiding filtration

The purpose of this section is to establish additional requirements for suppliers that intend to avoid the necessity of providing filtration. It is adopted for conformance with 40 C.F.R. part 141.171, but has been revised to reference the applicable state regulations to avoid confusion.

ADOPT Section 64657.20 Disinfection profiling and benchmarking

The purpose of this section is to establish the record retention and reporting requirements for systems that are required to conduct disinfection profiling and benchmarking pursuant to 40 C.F.R. part 141.172. This section is adopted for conformance with 40 C.F.R. parts 141.172(a), (b), and (c). This section incorporates by reference the requirements of parts 141.172(a), (b), and (c) from 63 Fed. Reg. 69477 (December 16, 1998), “Interim Enhanced Surface Water Treatment Rule” and parts 141.172(a) and (b) from 66 Fed. Reg. 3769 (January 16, 2001), “Revisions to the Interim Enhanced Surface Water Treatment Rule and Stage 1 Disinfectants and Disinfection Byproducts Rule” as it would be too cumbersome, unduly expensive, or impractical to publish these documents into regulation. Since disinfection profiling is required to be completed before this regulation is adopted, it is not necessary for the proposed regulation to include all of the details specified in 40 C.F.R. part 141.172. Subsections (a) and (b) relate to disinfection profiling and disinfection benchmarking, respectively.

ADOPT Section 64657.30 Filtration

The purpose of this section is to establish filtration performance standards. Subsection (a) is adopted for conformance with 40 C.F.R. part 141.173, but has been revised to reference the applicable state regulations to avoid confusion. Additionally, subsection (a) differs from the federal regulation in that subparagraph (a)(2)(A) has been modified by adding “shall not exceed 1 NTU for more than 1 hour, measured pursuant to section 64657.40.” The reason for this change is that the Department will require continuous compliance monitoring with data recording at intervals no greater than once every 15 minutes, as opposed to the minimum federal compliance sampling interval of once every 4 hours (40 C.F.R. part 141.74(c)). Additionally, subparagraph (a)(2)(C) is added to the proposed language to be consistent with the Department’s existing performance requirements (64653(c)(2)), keeping in mind that a standard of 1 NTU is 50% greater than a standard of 1.0 NTU. The net effect is that the Department’s proposed language is more stringent than the federal language.

Subsection (b) is adopted for conformance with 40 C.F.R. part 141.173(b), but has been revised to reference the applicable state regulations to avoid confusion. In addition, the proposed language is slightly different from the federal regulations to be consistent with the Department’s existing language regarding alternative technologies (64653(f)). Although the language is different, the intent is essentially the same. Whereas the federal language requires a total of 99.9% *Giardia lamblia* cyst removal/inactivation and 99.99% virus removal/inactivation, the Department’s language requires a minimum of 99% *Giardia lamblia* **removal** and 90% virus **removal**. Consistent with the federal regulation, the Department requires a **total** of 99.9% *Giardia* **reduction** and 99.99% virus **reduction** through both removal and inactivation (64652(a)). Essentially, the Department places a minimum **removal** requirement on the filtration technology that the federal language does not. This approach, consistent with the Department’s

existing regulations regarding alternative technologies (64653(f)), ensures a quality “multi-barrier” treatment system and is necessary to ensure the protection of public health.

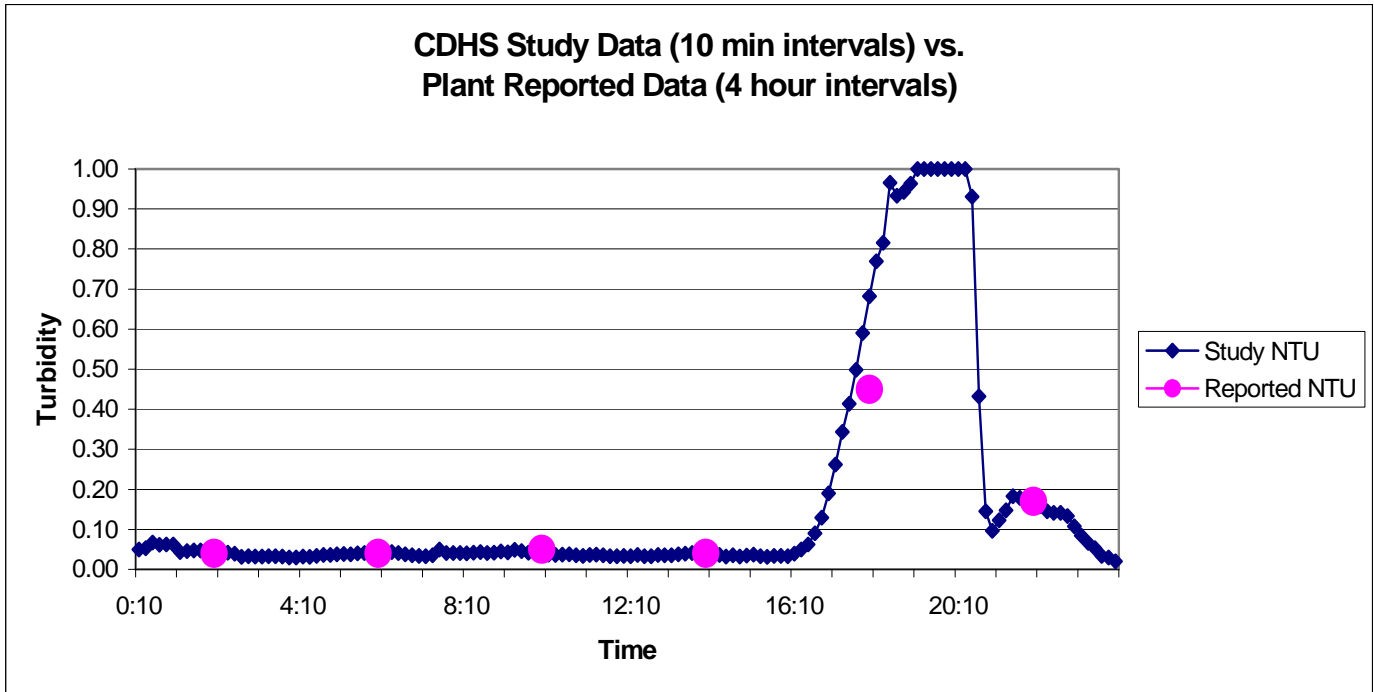
ADOPT Section 64657.40 Filtration sampling

The purpose of this section is to establish the monitoring requirements necessary for determining compliance with section 64657.30. It is adopted for conformance with 40 C.F.R. part 141.174(a) and (b), but has been revised to reference the applicable state regulations to avoid confusion.

In addition, subsections (a) and (b) are revised to require continuous monitoring of turbidity and recording of results at least once every 15 minutes for the combined filter effluent. The federal regulation requires turbidity monitoring every four hours, with compliance based on those samples collected every four hours. The Department’s existing regulation already requires continuous monitoring of the combined filter effluent (64659(a)(3)), and the proposed regulation would require that compliance be based on continuous monitoring results recorded at intervals no greater than every 15 minutes.

The Department has determined that measurements recorded at 15-minute intervals are more representative of water quality leaving the plant than measurements recorded at 4-hour intervals. This was demonstrated during the Department’s 2-year statewide study of particle counters. (Gilbert-Snyder, P.; *Results of California’s Statewide Particle Counting Study*, 1998 AWWA Annual Conference Proceedings, Dallas, Texas, June 21 – 25, pg. 619-644). During this study, over 20 treatment plants were evaluated with on-line particle counters and turbidimeters, recording data at 10-minute intervals. It was found that, although under ideal conditions treatment plant performance is stable, under real-world conditions treatment plant performance may be very dynamic. It is not uncommon for events to occur which cause short-term (less than 4 hour) turbidity spikes. Given that *Cryptosporidium* is very resistant to disinfection, and that consistent removal of *Cryptosporidium* is the only reliable barrier for the protection of public health, every effort should be made to reduce or eliminate these short-term turbidity spikes.

Data collected during the study demonstrated that measurements recorded at 4-hour intervals may not “capture” these short-term events, and therefore are not representative of treatment plant performance. An example of such an event is illustrated in the following graph. The total event lasted 270 minutes. For 180 minutes the combined filter effluent exceeded 0.5 NTU, and for 80 minutes it exceeded 1.0 NTU. Despite the magnitude and duration of the event, the only number reported to the Department during the event was a single reading of 0.42 NTU. If the system’s reporting cycle was 60 minutes earlier, the highest reading would have been less than 0.2 NTU.



The American Water Works Association Research Foundation study titled “National Assessment of Particle Removal by Filtration” (McTigue, N.E. et al., 1998, pg. 81), found that 20% of filter runs experienced mid-run turbidity spikes with an average duration of less than 2 hours. Additionally, the study found that individual filter data collected by systems at 4-hour intervals reported less than half of the turbidity spikes that were recorded using 15-minute intervals. Again, this clearly demonstrates that turbidity measurements recorded at 4-hour intervals may not be representative of actual plant performance.

The EPA Handbook “Optimizing Water Treatment Plant Performance Using the Composite Correction Program” (EPA/625/6-91/027, February 1991, pg. 12) states “The SWTR [Surface Water Treatment Rule] requires turbidity sampling every 4 hours; however, CPE [Composite Performance Evaluation] results have indicated that even this may not be frequent enough to identify significant short-term excursions from acceptable performance.”

The Department chose 15 minute intervals for two reasons: First, this is consistent with the monitoring frequency required by the federal Interim Enhanced Surface Water Treatment Rule for individual filters, and secondly, because the Department believes it is important to capture data from treatment plant spikes that may last as little as 30 to 60 minutes. Statistically, to capture an event that lasts X minutes, sampling should be conducted 1/3 X minutes. Therefore, to capture representative data of events lasting 30 to 60 minutes, one must sample once every 10 to 20 minutes. The Department proposes 15 minutes.

Finally, the manual collection and analysis of samples at 4-hour intervals is subject to errors, which could further cause the data to be non-representative of plant performance. Sample collection and handling is very sensitive to both human errors and instrument errors. Sample

glassware must be meticulously maintained and samples must be collected in a consistent fashion. Differences among procedures used by different operators could produce varying results. The use of automated on-line equipment to measure and record data nearly eliminates the potential for sample handling errors. Sample collection and handling will be identical from sample to sample, and the only opportunity for human error will be in the calibration and verification of the instruments.

Based on its own experience and the experiences reported by others, the Department believes that turbidity measurements recorded at 15 minute intervals are necessary to ensure a representative sample and to ensure consistent compliance with regulatory limits.

The impact of continuous monitoring with data recording at 15-minute intervals is not expected to be overly burdensome. Systems are already required to continuously monitor the combined filter effluent, and data recording at 15-minute intervals is required by federal regulation for each individual filter. Therefore, requiring the same for the combined filter effluent should not be a significant burden.

Subsection (c) is adopted for conformance with 40 C.F.R. part 141.174(a).

Subsection (d) is adopted for conformance with 40 C.F.R. part 141.174(b), but has been revised to address the requirements associated with combined filter effluent monitoring in the case of a failure in the continuous monitoring system. Since the federal rule does not require continuous monitoring of the combined filter effluent, it does not address this issue. In the case of a failure, grab samples will need to be collected every 4 hours and continuous monitoring will need to be reinitiated within 48 hours of failure. Continuous monitoring of the combined filter effluent is necessary to ensure proper operation of the facility and 48 hours is a reasonable period of time to correct the problem.

ADOPT Section 64657.50 Supplemental reporting and recordkeeping

The purpose of this section is to establish the monthly turbidity reporting requirements. It is adopted for conformance with 40 C.F.R. part 141.175, but has been revised to reference the applicable state regulations to avoid confusion, and has been revised in several other ways, as described below.

Subsection (a) differs slightly from the federal language in wording but not intent. The subsection only applies to systems providing conventional filtration or direct filtration, whereas the federal language also applies to alternative filtration technologies. The Department's existing regulatory language (section 64664) applies to alternative filtration technologies and includes all of the requirements of 40 C.F.R. part 141.175(a), therefore repeating the requirements in this section would be redundant.

Although the federal language specifies only one reporting option (40 C.F.R. part 141.175(a)(1) through (3)), the Department is providing two options. The first option is specified in sections 64657.50(a) and (a)(1). Subsection(a) is identical to the federal language. The first requirement in paragraph (a)(1) is different than the federal requirement in that it requires the supplier to

report the turbidity achieved 50, 90, 95, 98, and 99 percent of the time. Based on the turbidity achieved 95 percent of the time, compliance with the appropriate standard (0.3 NTU for conventional and direct filtration) can be determined. This is slightly different than the federal approach, which requires the supplier to report the number and percentage of turbidity measurements taken during the month that are less than or equal to the specified turbidity limits. The federal approach requires the reporting of a “percent of time,” which in order to be in compliance must be 95% or greater, and the Department’s approach requires a reporting of the turbidity value achieved 95% of the time, which in order to be in compliance must be 0.3 NTU or less. The end result is the same; it will be easy to verify whether or not the system is in compliance with the turbidity requirement. The additional data reported to the Department (the turbidity achieved 50, 90, 98, and 99 percent of the time) will allow the Department to monitor overall plant performance from month to month and quickly determine whether or not there may be a decline in performance that needs attention. The second requirement in paragraph (a)(1) is identical to the federal language, except that the turbidity reporting limit was changed from “1 NTU” to “1.0 NTU”. This change is needed to determine compliance with the performance standard of section 64657.30(a)(2)(C).

The second reporting option consists of the requirements specified in section 64657.50(a) and (a)(2). As discussed above, subsection(a) is identical to the federal language. The first requirement in paragraph (a)(2) requires the reporting of turbidity measurements recorded at intervals no greater than every 4 hours, which is identical to the Department’s existing Surface Water Treatment Rule monitoring and reporting requirements of sections 64655(b)[reassigned (e)] and 64664(b)(1), respectively. The second requirement in paragraph (a)(2) requires the reporting of all results that exceed 0.3 NTU, recorded at intervals no greater than every 15 minutes. Reporting of this data will allow the Department to review overall plant performance and determine whether or not there may be a decline in performance that needs attention. The third requirement of paragraph (a)(2) is identical to the requirements of 40 C.F.R. part 141.175(a)(2), except that the frequency measurements are recorded has been added for clarity.

Subsection (b) requires that the data submitted according to subsection (a) be accurate and not compromised by maintenance procedures or technical malfunctions. The intent of the section is to ensure that erroneous data are not used for compliance determinations.

Subsections (c) through (e) are consistent with the requirements of 40 C.F.R. part 141.175(b). However, the intent of subparagraph (c)(2)(B) has been modified from the federal intent. The federal language sets an individual filter effluent “trigger level” of 0.5 NTU, but it only applies at the point that the filter has been in continuous operation for 4 hours. The Department proposes to set in paragraph (c)(2)(B), the “trigger level” at 0.3 NTU and to have it apply at all times after the filter has been in continuous operation for 60 minutes.

The Department is reducing the “trigger level” to 0.3 NTU because the sedimentation and filtration processes are the most effective *Cryptosporidium* barriers. Additionally, since the *Cryptosporidium* oocysts are so resistant to disinfection, the Department places extra emphasis on the concept of filter optimization. The federal IESWTR sets the 95th percentile turbidity limit for the combined filter effluent at 0.3 NTU. After a filter has been returned to service and the

initial “start-up spike” has dissipated, the filter should run in a relatively stable state and it should perform at least as well as what is required from the combined plant effluent. If a ripened filter is producing water with a turbidity that exceeds 0.3 NTU, the combined filter effluent is meeting its limit essentially through dilution. If an individual filter cannot meet the turbidity limit set for the combined filter effluent, the filter’s performance should be scrutinized.

In addition, the *Cryptosporidium* Action Plan (CAP) (Health and Safety Code Section 116360), recognizing the importance of *Cryptosporidium* removal and the limitations of disinfection, emphasizes individual filter optimization. The Department believes individual filters should be optimized, and that an optimized filter should produce water with a turbidity of 0.3 NTU or less (CAP goal for an optimized filter is 0.1 NTU). Exceedance of the 0.3 NTU individual filter turbidity “trigger level” is not a violation; it is a trigger that requires additional reporting, and possibly an investigation into filter performance. (See sections 64657.50(c)(2) and (c)(2)(B)).

The Department is reducing the trigger point to 60 minutes after filter start-up because it believes that a filter start-up spike should drop to below 0.3 NTU in less than 60 minutes. A survey conducted by the Department of 50 conventional, direct, and in-line filtration plants serving populations of 10,000 or more found that 72% could always achieve a turbidity of 0.3 NTU after only 30 minutes of filter runtime, and 96% of the plants could achieve that goal at least 90% of the time. The Department believes that if a filter takes longer than 60 minutes to drop below 0.3 NTU there is a potential problem with either the filter or the pretreatment processes, and that the performance should be evaluated.

The Department is extending the trigger point throughout the remainder of the filter run because it believes that the filter should continue to perform with an effluent of 0.3 NTU or less throughout the remainder of its run after properly ripening. The Department does not believe that filter performance should be evaluated based on one specific portion of the filter run (i.e., at 1 or 4 hours of continuous run time). If a filter begins producing water with a turbidity of greater than 0.3 NTU after it has ripened, it is likely that the filter is either beginning to breakthrough or being hydraulically “stressed,” or there is a pretreatment problem. If the filter is beginning to breakthrough, the run should be terminated. If there is a pretreatment problem or hydraulic loading issue, it should be investigated. The intent of the proposed regulation is to ensure that the appropriate corrective actions take place.

The consequences of exceeding the 0.3 NTU “trigger level” are identical to those specified in the federal regulation for exceeding the 0.5 NTU “trigger level”. Exceeding the 0.3 NTU level is not a violation; it is a trigger that requires additional reporting under section 64657.50(c). Exceeding the 0.3 NTU “trigger level” does not require public notification and it is not required to be included in the Consumer Confidence Report distributed to the water system’s customers.

Subsection (e) also incorporates by reference the requirements of 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) as it would be too cumbersome, unduly expensive, or impractical to publish this document into regulation.

Article 4. Design Standards

AMEND Section 64658(a)

References to sections 4011 and 4016 are replaced with references to sections 116525 and 116550, respectively, for consistency with recodified statutes.

AMEND Section 64660(b)(1)

This section is modified to correct typographical errors. The erroneous terms “simple media” are replaced with the correct term, “single media”.

AMEND Section 64660(b)(5)

The term “*Giardia*” is replaced with “*Giardia lamblia*.” This change is being made throughout the chapter to be consistent with itself and 40 C.F.R. part 141. Use of the term “*Giardia lamblia*” is more specific and provides more clarity.

To facilitate the insertion of subparagraph (C), some grammatical changes were made by removing the “and” that preceded subparagraph (B) and inserting it at the end of subparagraph (B).

Subparagraph (C) is added to be consistent with the requirements for alternative technologies. The Department considers filters that are operating at more than 2 times the rates specified in paragraphs (b)(1) through (3) as alternative filtration technologies, and as such, must meet the requirements shown as amendments to section 64653(f). Subparagraph (C) is added to be consistent with those requirements.

AMEND Section 64661(a)

This section is amended to clarify that all treatment plants are required to operate under an approved operations plan and that the plans must be updated whenever modifications are made. Operation plans specify how plants will be operated on a daily basis and how compliance monitoring will be conducted. Keeping the plans up-to-date will help to ensure the protection of public health.

AMEND Section 64661(b)

This section is amended to require that the operations plan include a description of the utility’s filter media inspection program. The filtration portion of a surface water treatment facility is the final barrier for removing pathogens such as *Giardia*, *Cryptosporidium*, and viruses. The removal of *Cryptosporidium* during the filtration process is very important since it is difficult to inactivate with most disinfectants, effectively eliminating the typical “multi-barrier” concept. Furthermore, in direct filtration facilities, the filtration step is the only barrier for *Giardia*, *Cryptosporidium*, and virus removal. The Department believes a regular schedule of formal filter inspections is necessary to ensure proper filter operation. A physical inspection of the filters may provide an initial indication of future filter performance problems and would give the utility an historical record of the condition of the filter media. The results of the inspections may be used to determine if the media needs to be added to, modified, or replaced. Potential problems with underdrain systems may also be detected during filter inspections. The

Department believes routine inspections of all filters will reduce the likelihood of performance problems at treatment facilities.

AMEND Section 64662(a)(1)

Amendments to this section extend the existing record keeping requirements to include monitoring data collected pursuant to sections 64657.20, 64657.40, and 64657.50. This requirement is consistent with existing regulatory requirements for record keeping.

AMEND Section 64662(b)

The first amendment to this section extends the record retention requirement from two years to three years. It is amended for conformance with 40 C.F.R. part 141.175(b). The second amendment to this section replaces references to sections 4031 and 4038 with references to 116625 through 116675 and 116725 through 116730, respectively, for consistency with recodified statutes.

AMEND Section 64663(a)

Amendments to this section extend Department notification requirements to include notification whenever combined filter effluent turbidity measurements collected pursuant to section 64657.40 exceeds 5.0 NTU. This requirement is consistent with existing regulatory requirements for Department notification.

AMEND Section 64663(b)

Two amendments are made to this section. First, the section is amended to include Department notification whenever turbidity measurements conducted pursuant to section 64657.40 exceeds 1 NTU for more than 1 hour. Since the Department is requiring the use of continuous on-line turbidimeters and such instruments operate automatically and are not subject to continuous human oversight, it is possible that the automated system may malfunction and provide erroneously elevated results. The Department recognizes that it may take an operator a short period of time to react to elevated measurements and determine whether or not the measurements are truly representative of plant performance. Therefore the Department would permit a 1-hour period of time for determining compliance status and responding to the event. If after 1 hour either the erroneous instrumentation is not fixed or removed from service, or the actual “event” has not been remedied, Department notification is required. (See sections 64657.30(a)(2)(A) and 64663(b)).

The second amendment requires Department notification whenever turbidity measurements conducted pursuant to section 64657.40 exceeds 1.0 NTU for more than 8 consecutive hours. This amendment is consistent with the existing requirements specified in this section.

ADOPT Section 64664(d)

The purpose of this section is to specify the reporting requirements for data collected pursuant to sections 64655(a) through (d). In order for the Department to evaluate and monitor overall plant performance it is important that this data be reported to the Department in a timely manner.

AMEND Section 64664(e) (formerly 64664(d))

This section, previously assigned 64664(d), is being re-assigned as (e) to allow for the insertion of the proposed subsection (d) described above. To be consistent with existing reporting requirements, the requirements of this section are extended to include any violation of performance standards specified in section 64657.30. Additionally, replacing the reference to sections 64660(b)(6) and (8) with a reference to sections 64660(b)(7) and (9) corrects a typographical error.

AMEND Section 64664(f) (formerly 64664(e))

This section, previously assigned 64664(e), is being re-assigned as (f) to allow for the insertion of the proposed section (d) described above.

ADOPT Section 64664(g)

This section is adopted to indicate to a supplier using conventional filtration or direct filtration and serving at least 10,000 people the necessity to comply with the additional reporting requirements of section 64657.50.

AMEND Section 64666(a)

This section is amended to include public notification whenever there is a failure to comply with the treatment requirements specified in sections 64653.5(b), 64657.30(a)(2), or 64657.30(b). It is amended for conformance with 40 C.F.R. part 141.76 (66 Fed. Reg. 25982 (June 8, 2001)). Additionally, to clarify the intent of the section, the phrase “any of” is inserted into the section. This amendment clarifies that the intent is that notification is required whenever there is a failure to meet any of the specified requirements.

AMEND Section 64666(c)

This section is amended to refer to sections 64463.1 and 64463.4 as a whole, as opposed to specific subsections within those sections, in order to provide clarification that the public notification requirements are inclusive of the entire sections, including the manner and timeframe that notification must be given.

AMEND Section 64666(d)

This section is amended to include public notification whenever there is a failure to comply with the monitoring requirements specified in section 64657.40. It is amended for conformance with 40 C.F.R. part 141.204.

STATEMENTS OF DETERMINATIONS AND BUSINESS IMPACT

In 1998, the USEPA promulgated the Interim Enhanced Surface Water Treatment Rule [Federal Register 63 (241), 69478-69521, December 16, 1998], with a revision published in 2001 [Federal Register 66 (10), 3770-3780, January 16, 2001], as required by the Safe Drinking Water Act (SDWA) Amendments of 1996, which provides increased public health protection against microbial pathogens, specifically the protozoan *Cryptosporidium*. Additionally, in 2001 the USEPA promulgated the Filter Backwash Recycling Rule [Federal Register 66 (111), 31086-31105, June 8, 2001], also as required by the SDWA.

California currently requires water suppliers to filter and disinfect surface water and ground water under the influence of surface water pursuant to Chapter 17 [commencing with section 64650 of Title 22, Division 4 of the California Code of Regulations]. Since California must adopt federal regulations to maintain primacy for the Drinking Water Program, the proposed regulation package incorporates all the federal revisions. The proposed regulation package also includes provisions that are in addition to the federal revisions.

The net effect of the proposed amendments to the Chapter 17 requirements would be that:

1. Suppliers using an approved surface water source and serving at least 10,000 people would be required to provide at least 99 percent removal of *Cryptosporidium* oocysts, which would be accomplished through the attainment of more stringent turbidity standards.
2. Suppliers using an approved surface water source and serving at least 10,000 people would be required to determine their annual average concentration of total trihalomethanes and haloacetic acids (five), and if the annual averages exceed or equal either 0.064 mg/L or 0.048 mg/L respectively, the supplier would be required to conduct disinfection profiling and calculate a benchmark.
3. All suppliers using an approved surface water source would be required to:
 - a. Provide the Department with information about filter backwash recycle flows and return such flows to the headworks of the treatment plant.
 - b. Conduct monthly source water monitoring for bacterial concentrations.
 - c. Conduct daily monitoring of settled water turbidity.
 - d. Conduct monitoring of recycled backwash water for turbidity and flow.
 - e. Include a filter media inspection program in the operations plan.

The most significant incremental cost impact of this proposed regulation would be the federal requirement to provide at least 99 percent removal of *Cryptosporidium* oocysts, through the attainment of more stringent turbidity standards. The estimated annual incremental cost is \$40 million for improved turbidity treatment and \$19.9 million for turbidity start-up and monitoring. The incremental cost impact of the state-only requirements is not significant when compared to the cost of meeting the federal requirements. The estimated annual incremental cost is zero to \$0.04 million for state-only monitoring and reporting.

The Department has determined that the proposed regulations would not have a significant adverse impact on businesses, including the ability of California businesses to compete with businesses in other states.

The Department has determined that the regulations will not significantly affect the following:

1. The creation or elimination of jobs within the State of California. The requirements summarized above should not have any affect in this area in that there would not be any change in water system or regulatory personnel needed for compliance with the proposed requirements.
2. The creation of new businesses or the elimination of existing businesses within the State of California. The nature of the water industry is such that the proposed regulation will not result in the creation or elimination of water systems. The impact of these regulations will be insignificant.
3. The expansion of businesses currently doing business within the State of California. Since water system size is basically a function of the number of service connections (consumers) served, the proposed regulations should not have any affect on expansion.

The Department has determined that the proposed regulations would not affect small business, since Government Code Chapter 3.5, Article 2, Section 11342.610 excludes drinking water utilities from the definition of small business.

Alternatives Considered

The Department has determined that no alternative considered by the Department would be more effective in carrying out the purpose for which the amendments to the regulations are being proposed or would be as effective and less burdensome to affected private persons.

Local Mandate Determination

The proposed regulation would not impose a mandate on local agencies that requires state reimbursement. Local agencies should not incur costs as a result of this regulation. However, if they were to incur costs, those costs would be of the following nature:

First, some local agencies would incur costs in their operation of public water systems. These costs would not be the result of a “new program or higher level of service” within the meaning of Article XIII B, Section 6 of the California Constitution because they apply generally to all individuals and entities that operate public water systems in California and do not impose unique requirements on local governments. Therefore, no state reimbursement of these costs would be required.

Second, some local agencies could incur additional costs in discharging their responsibility to enforce the new regulations for the small public water systems (under 200 service connections)

that they regulate. However, the Department has determined that any increase in the local agency costs resulting from enforcing this regulation would be insignificant. Furthermore, local agencies are authorized to assess fees to pay reasonable expenses incurred in enforcing statutes and regulations related to small public water systems, Health and Safety Code section 101325. Therefore, no reimbursement of any incidental costs to local agencies in enforcing this regulation would be required, Government Code section 17556(d).

Supplement 1 – Revisions Following Public Comment Period Ending 3/30/2007

As a result of an internal review, the Department of Public Health (Department) proposes to amend section 64650(a). The term “Legionella” should be “*Legionella*”, as the rules of taxonomy is to show in italics the genus of an organism.

Supplement 2 – Revisions Following Public Comments

Pursuant to California Public Health Act of 2006 (Act; S. B. 162, Section 1, Chap. 241, Stats. 2006), effective July 1, 2007, the California Department of Public Health has authority to adopt the subject regulations. Therefore, multiple references to "California Department of Health Services" have been deleted and replaced with "California Department of Public Health" and statutory authority and references for each proposed new, amended, or repealed regulation have been appropriately modified.

Following both public comment periods, the Department became aware that existing language for two sections, 64654(b)(1) and 64660(b)(4), had been erroneously presented to the public. The pertinent portions of the two sections as they were presented are provided below, with the correct existing language following in italics. Because the language presented to the public was substantially identical to the actual existing language, the regulatory text was subsequently amended to reflect the correct language and constitutes a change with no regulatory effect.

64654(b) Disinfection treatment shall comply with the following performance standards:

(1) Water delivered to the distribution system shall contain a disinfectant residual of not less than 0.2 mg/l for more than four hours in any 24 hour period.

(1) Water delivered to the distribution system shall not contain a disinfectant residual of less than 0.2 mg/l for more than four hours in any 24 hour period.

(2)...

64660(b) Filtration facilities shall be operated in accordance with the following requirements:

(1) ...

(2)...

(3)...

(4) In order to obtain approval for filtration rates higher than, but not more than twice, those specified in paragraphs (b)(1), (b)(2), and (b)(3), a water supplier shall demonstrate to the Department that the filters can comply with the performance requirements of section 64653.

(4) In order to obtain approval for filtration rates higher than, but not more than twice, those specified in section 64660(b)(1), (b)(2), and (b)(3), a water supplier shall demonstrate to the Department that the filters can comply with the performance requirements of section 64653.

Additionally, note that the Department finds that adoption of the subject regulations constitutes action by a regulatory agency, which action is expressly authorized by state statute for protection

of the environment and does not involve the relaxation of any standard for protection of the environment; and is therefore categorically exempt from compliance with the California Environmental Quality Act (CEQA) as a Class 8 exemption pursuant to CEQA Guidelines, 14 CCR 15308. The Department further finds that the adoption of the subject regulations does not fall within any exception to categorically exempt projects described in Public Resources Code 21084.

Addendum 1

Response to Comments, Period Ending 3/30/2007

The Department solicited written comments on proposed regulation package R-20-01. Eight sets of comments were received. There was no public hearing.

Commentator #	Commentator	Representation
1	Mr. Andrew DeGraca	San Francisco Public Utilities Commission
2	Mr. Kent Nelson	Contra Costa Water District
3	Mr. Bruce Cabral	Santa Clara Valley Water District
4	Mr. Jim Horen	Zone 7 Agency, Alameda County Flood Control and Water Conservation District
5	Ms. Krista Clark	Association of California Water Agencies
6 ^(a)	Mr. Mic H. Stewart	Metropolitan Water District of Southern California
7	Mr. Douglas G. Chun	Alameda County Water District
8	Mr. Paul Gilbert-Snyder	East Bay Municipal Utility District

(a) Comments were received on April 2, 2007, and considered by the Department.

General Comments:

Commentators 1, 2, 4, 5, 6, and 7 appreciated the opportunity to review and/or provide comments on the proposed regulations. Commentators 5, 6, and 7 appreciated the Department's review and/or consideration of the comments and/or recommendations provided.

The Department appreciates the comments.

Commentator 1 stated that "We understand that most of the proposed regulatory requirements is consistent with the corresponding federal rule governing the enhanced filtration, disinfection, reporting, and notification requirements. There are some differences between the federal version and the Proposed Rule, and the rationales for these differences are summarized in the Initial Statement of Reasons (ISOR) in the proposed rule package."

The Department appreciates the comments.

Commentator 2 applauded the Department's efforts to satisfy the existing federal primacy requirements, as well as providing greater protection for public health resulting from the new regulation; generally supported the proposed IESWTR as reflected in the draft language; offered comments that "...could improve the water industry's ability to meet the intent and purpose the Proposed IESWTR," supported the comments submitted by the Association of California Water Agencies (ACWA); and intended to remain active in state regulatory activities through its involvement with ACWA.

The Department appreciates the comments and the comments ACWA referenced by Commentator 2 are addressed below.

Commentator 4 stated that they generally support the proposed changes identified in the proposed regulation; understands that the state is required to adopt requirements at least as stringent as the federal IESWTR and federal FBRR; stated that some of the new state provisions such as the monitoring of settled water turbidity, raw water coliform levels, and filter media inspection programs, are good operational practices and have been required of most systems in California via the permit process for some time; and noted their concern, however, with several areas in which the state has chosen to make the proposed regulation significantly more stringent than the federal requirements.

The Department appreciates the comments. Commentator 4's specific comments are addressed in the section specific comment summaries below.

Commentator 5 stated that, "While it is true of all Federal SDWA rules, it is especially true that the suite of D/DBP rules promulgated by USPEA, including the IESWTR, have gone through a lengthy and comprehensive technical and public review process (far greater than what is done at the State level due to resource issues). In some cases, formal agreements were reached, some of which may be lost by State primacy agencies, but which can result in significantly increased regulatory burden without there being a similarly complete public review process to consider all technical, feasibility and cost/benefit issues. Some subtle but significant changes, not discussed during the more intense federal rule development, can result in significant operational and capital costs. New regulatory costs are becoming a greater concern to utilities due to limited new resources (rate pressures) and other costs (deferred infrastructure investments). ACWA's members – and their customers – will support any meaningful regulatory change that improves public health protection but there needs to be a thorough process to ensure that the best decisions on investment of the public's funds can be made."

The Department appreciates the comments.

Commentator 7 requested clarification on which sections apply to alternative technologies.

The requirements of the proposed regulation apply to a supplier using an alternative filtration technology, except for those sections that are only applicable to (1) a supplier using an approved filtration technology (e.g., conventional filtration, direct filtration, diatomaceous earth filtration, or slow sand filtration) or (2) to a supplier meeting the criteria for avoiding filtration. Item 1 is accomplished by specifying the approved filtration technology in the regulatory language [see sections 64653(c)(3), 64655(c) and (h), 64657.30(a), 64657.40, 64657.50, and 64664(g)]. Item 2 is accomplished by specifying the criteria in regulations (see section 64657.10). Therefore, no change is needed.

64650(b) Commentator 7 suggested correcting "its" to "it" in the last sentence.

The comment refers to a subsection that is not part of the regulation proposal. No response is required.

64652.5(c)(2)(B) Commentator 7 requested that "event" be defined in the phrase "As a result of any such event...".

The comment refers to a subparagraph that is not part of the regulation proposal. No response is required. However, the commentator should note that “event” is defined in the last sentence of the subparagraph.

Commentator 7 recommended that the Department put more stringent requirements on unfiltered systems by limiting the number of consecutive days that turbidity measurements can exceed 5 NTU.

The comment refers to a subparagraph that is not part of the regulation proposal. No response is required.

64653(c)(1) Commentator 7 stated that the turbidity limits of this section appear to contradict the federal rule that limits turbidity to less than or equal to 0.3 NTU in 95% of the measurements.

The comment refers to an existing paragraph that is not part of the regulation proposal. No response is required. However, the commentator should note that the requirement of paragraph (c)(1) applies to a supplier serving less than 10,000 people (i.e., a supplier that is not subject to the federal IESWTR).

64653.5 Commentator 7 suggested correcting “use” to “uses” in the phrase “A supplier that use conventional filtration...”. Similarly, Commentator 8 stated that “use” and “recycle” should both be plural in the first sentence.

The Department agrees with the commentators and has made the appropriate changes to the proposed regulations.

64654(a) Commentator 4 stated that there is an issue with the term “continuous” [in the phrase “continuous disinfection treatment”] with respect to how it is defined, how compliance with the subsection is determined, and how the subsection is interpreted by Department field engineers. Commentator 4 recommended that some language be added to specify the manner in which compliance is determined. Commentator 4 offered some examples.

The comment refers to an existing section that is being amended with a non-substantive change [change “Giardia” to read “Giardia lamblia”] and is not part of the regulation proposal (i.e., the federal IESWTR and FBRR do not propose changes to disinfection treatment requirements). As a result, no response is required.

However, the Department values the commentator’s concerns and refers the commentator to the existing section 64661, which contains the requirements for a Department approved operations plan. The operations plan is required to (1) be designed to produce the optimal water quality from the treatment process and (2) include a description of the utility’s treatment plant performance monitoring program, which provides the manner in which compliance with section 64654(a) is determined.

64655(b), (c), (d), and (e); 64657040(a) [commentator appears to have had a typographical error on the section number, which should be **64657.40(a)**]; and **64661(a)** and **(b)**

Commentator 1 stated that both “Operations Plan” and “Operation Plan” are used in the proposed regulations and suggested using only one of the terms for consistency.

The Department agrees with the commentator and has made the appropriate editorial changes to sections 64655(b), (c), (d), and (e) and 64657.40(a).

64655(b) Commentator 6 commented on the trigger organism and the sample holding time.

Commentator 6 stated that “Since the promulgation of the SWTR in 1991, the United States Environmental Protection Agency (USEPA) has approved newer technologies, i.e., chromogenic methods, for detection and enumeration of *E. coli* in source waters. Chromogenic methods (e.g., Colilert Quanti-Tray and MI agar) provide ease of use and reduced analytical time compared to the traditional lactose-fermentation methods (e.g., multiple-tube fermentation (MTF) or MTF using lauryl tryptose broth (LTB)). For *E. coli*, the chromogenic methods and the lactose-fermentation methods produce similar results (Table 1) [provided by commentator]. For total coliforms, however, differences of several logs are not uncommon between the chromogenic and the lactose-based methods. The chromogenic method may have total coliform results 3 logs higher than the lactose-fermentation methods.”

Additionally, Commentator 6 stated that “The 1991 *Surface Water Treatment Rule Guidance Manual* (Appendix B, Table B-1) indicates that when the monthly median total coliform level in raw water exceeds 1000 total coliforms per 100 mL, the plant treatment requirements are 4-log *Giardia* and 5-log virus removal. The 1000 total coliforms per 100 mL level is based on results from traditional lactose-based methods and may severely impact utilities that use the chromogenic methods, which produce higher total coliform levels than the traditional methods. Utilities using the chromogenic methods may frequently exceed 1000 total coliforms per 100 mL and may needlessly be required to provide additional disinfection to the distribution system. Furthermore, analytical method selection (particularly with lactose-based methods) may be restricted when interference from source water heterotrophic plate count (HPC) bacteria causes repeated sample invalidation.”

Commentator 6 also stated that “*E. coli* and/or fecal coliforms are more reliable indicators of source water contamination while total coliforms are known to inhabit and proliferate in and around natural vegetation.” Commentator 6 recommended that the trigger organism be changed from total coliforms to *E. coli* or fecal coliforms.

The purpose of this section is to allow for tracking of the source water quality and the resultant need for changes in chemical pretreatment and disinfectant dosage; it is not to make an evaluation with respect to the 1991 SWTR Guidance Manual (Appendix B, Table B-1).

*The USEPA has established approved methods for the analysis of total coliform and fecal coliform under the SWTR (40 CFR Part 141.74) and *E. coli* under the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR)(40 CFR Part 141.704). The specific method used by a supplier would be described in the Department approved operations plan (section 64661). USEPA’s list of approved methods are periodically updated as a result of the promulgation of new federal rules or new analytical methods. Several analytical methods are available for each*

parameter to ensure that at least one method is suitable for use by a supplier. There is no requirement that a supplier use one approved method over another approved method.

Monitoring for total coliform is necessary due to natural and man-made activities on the watershed that are not of fecal origin (e.g., erosion), which may affect chemical pretreatment and disinfectant dosage. Therefore, a change is not appropriate.

Commentator 6 stated that, “In an internal study conducted from June 14, 2004, to February 27, 2006, Metropolitan analyzed over 50 weekly influent water samples from each of the treatment plants – Diemer, Jensen, Mills, Skinner, and Weymouth. Each sample was split and analyzed for total coliforms, fecal coliforms, and *E. coli* by *Standard Methods* MTF (SM9221) method using LTB, brilliant green bile broth (BGB), EC medium, and EC+MUG medium, respectively. Total coliforms and *E. coli* were analyzed by membrane filtration (MF) recovered on MI agar (EPA 1604), and fecal coliforms were analyzed by MTF recovered on A-1 medium (SM9221). All coliform values were expressed in colony-forming units (CFU) or most probable number (MPN) per 100 mL. In general, the average and median total coliform levels were one log higher with the MI method over the MTF-LTB method for each plant (Table 1) [provided by commentator]. The outcome of exceeding the ‘1000 total coliforms per 100 mL’ trigger level at the plant influent averaged 15 times more with the MI (or chromogenic) method than the MTF method while the *E. coli* fecal coliform levels were comparable between the methods. Thus, using an *E. coli* or fecal coliform indicator would avoid this discrepancy in methods.” As a result, Commentator 6 recommended that a new guidance level, based on *E. coli* or fecal enumeration, be established when source waters may be compromised and additional treatment or operational action may be needed.

The comment refers to revising the 1991 SWTR Guidance Manual (Appendix B, Table B-1), which is not part of the regulation proposal. No response is required. However, on January 5, 2006, the USEPA promulgated the LT2ESWTR (71 Fed. Reg. 654; amended Jan. 30, 2006, 71 Fed. Reg. 4968 and Feb. 6, 2006, 71 Fed. Reg. 24, 6136) to further protect public health against Cryptosporidium. Under the LT2ESWTR, a supplier is required to perform source water monitoring for Cryptosporidium, E. coli, and/or turbidity, depending on filtration status (i.e., filtered system or unfiltered system) and population served. Results of Cryptosporidium and/or E. coli monitoring are used to determine if additional Cryptosporidium treatment is required. Monitoring for E. coli and turbidity is to further evaluate these parameters as indicators to identify drinking water sources that are susceptible to high concentrations of Cryptosporidium.

Commentator 6 stated that, “For remote locations, an 8-hour sample holding time may not be enough time from collection to analysis without incurring a significant increase in cost and labor for sample transportation to the laboratories. During transportation, the temperature of the samples will be maintained between 0°C and 10°C, but not frozen.” Commentator 6 recommended that the holding time for the source water samples be extended from 8 hours to 30 hours as with the *E. coli* samples for the LT2ESWTR.

The comment refers to a sample holding time that is not part of the regulation proposal. No response is required. However, requirements concerning the E. coli sample holding time, as

well as the sample temperature during storage and transit to the laboratory, is included in the analytical method requirement for E. coli under the LT2ESWTR (40 part 141.704(b)).

64655(c) Commentator 2 suggested clarifying the requirement for treatment facilities with more than one settling basin. Commentator 2 offered some suggested language.

Monitoring of the settled water is site-specific and is to be conducted in accordance with a Department approved operations plan (section 64661). No change is needed.

64655(d) Commentator 7 stated that the section does not specify whether the recycled water monitoring requirement applies to membrane plants.

The section applies to a supplier recycling filter backwash water; it is not dependant on the type of filtration technology used.

64657.30 Commentators 4 and 5 stated that the section essentially requires that any alternative technology provide both filtration and disinfection. Commentators 4 and 5 stated that the federal requirement allows systems to meet the pathogen reduction requirement with any combination of the two, up to and including filtration only or disinfection only. Commentator 4 stated that (1) the section is significantly more stringent than the federal requirement, (2) has no technical basis, and (3) if a technology has been shown to achieve a particular level of pathogen reduction, it should be allowed to be used as such, provided appropriate monitoring and reliability features are in place,. Commentator 5 recommended that the "...proposed California rule adopt the federal requirements, which are the result of a vigorous and thorough review."

Section 64657.30(a) begins with the phrase "except as specified in subsection (b)". Section 64657.30(b), establishes requirements for alternative filtration technologies (AFTs); it does not require AFTs to provide both filtration (removal) and disinfection (inactivation) for Cryptosporidium. Section 64653(f), which is referenced in section 64657.30(b), establishes Cryptosporidium removal requirements for AFTs; it does not establish Cryptosporidium inactivation requirements for AFTs. The Department is adopting the regulations [sections 64653(f) and 64657.30(b)] in conformance with the federal IESWTR. No change is needed.

Commentator 4 stated that, "For example, if a membrane filtration system has been shown to remove 3-log *Giardia lamblia*, it should be allowed to be used to satisfy a systems' 3-log reduction requirement, without an additional 0.5-log *Giardia lamblia* inactivation requirement. The objective of the regulation is to decrease the exposure of the consumers to the pathogen; the specific manner in which it is achieved (removal or inactivation) is irrelevant. Requiring the extra 0.5-log inactivation limits systems' ability to simultaneously meet both the microbiological requirements and the disinfection byproduct requirements, and unfairly penalizes water agencies using newer technologies. It is also inconsistent with the fact that some systems are permitted to avoid filtration altogether."

The comment refers to Giardia lamblia removal and inactivation requirements, and simultaneous compliance with other federal rules, both which are not part of the federal IESWTR. The comment also appears to question the Department's multibarrier approach (i.e., filtration and disinfection) for Giardia lamblia. The multibarrier approach is specified in the

existing SWTR [sections 64650(b) and 64652(a)] and is not part of the proposed regulation. Therefore, no response is required.

Water systems that seek to avoid filtration are required to comply with the requirements of section 64657.10 (criteria for avoiding filtration), which the Department is adopting in conformance with the federal IESWTR.

Commentator 4 stated that, “Some water systems in California are meeting this more-stringent removal + inactivation requirement for *Giardia* and viruses, but it cannot be met for *Cryptosporidium*, since this pathogen is much more difficult to inactivate. The proposed rule requires both filtration and inactivation of the first two pathogens, but allows just filtration for the latter pathogen. This is not a technically sound policy.” Commentator 4 recommended that the state adopt the federal language of pathogen reduction, and not specify minimum levels of removal or inactivation.

*The comment refers to existing SWTR requirements concerning removal and inactivation of *Giardia lamblia* and viruses, which is not part of the federal IESWTR. No response is required.*

*The federal IESWTR requires removal (filtration) of *Cryptosporidium*; the federal IESWTR does not allow the *Cryptosporidium* removal requirement to be met by inactivation (disinfection). The Department must adopt regulations that are equal to or more stringent than the federal requirements. The Department is adopting the federal language of *Cryptosporidium* removal and the regulation [section 64653(f), which is referenced in section 64657.30(b)] in conformance with the federal IESWTR. No change is needed.*

64657.30(a)(2), 64657.40, and 64657.50 Commentator 1 stated that, “The Proposed Rule contains additional and different requirements of filtration performance standards (Section 64657.30(a)(2) in lieu of Sections 64653(c)(1) and (c)(2)), turbidity monitoring (Section 64657.40 in lieu of Section 64655(e)), and reporting (Section 64657.50 in lieu of Section 64664(b)) for a water supplier that serves at least 10,000 people using conventional or direct filtration. Although the Proposed Rule has some of these new requirements explicitly spelled out this system’s characteristic (e.g., serving more than 10,000 people and using conventional or direct filtration), not all of them have this clarification. We suggest adding the phrase ‘serving at least 10,000 people’ consistently to all relevant and applicable regulatory provisions to minimize confusions in future implementation of the regulations.”

The Department reviewed the proposed regulations and finds that (1) sections 64650(a) and 64657(a) clearly indicate that systems serving at least 10,000 people are required to comply with the requirements of Article 3.5, sections 64657 through 64657.50, and (2) sections under Article 3.5 clearly indicate which are applicable to systems using conventional filtration or direct filtration.

A review of section 64657.10(a) shows that it contains a phrase (“that uses an approved surface water and serves at least 10,000 people”) that was presented earlier in section 64657(a). The Department has made the appropriate change to section 64657.10(a) to delete the duplicative phrase for clarification, as it may have contributed to the commentator’s confusion.

64657.30(a)(2) and 64657.40(b) Commentator 4 stated that, "Section 64657.30(a)(2) includes the requirement that the combined filter effluent (CFE) turbidity be less than 0.3 NTU in 95% of the samples collected each month. This is consistent with the federal rule. However, the sampling frequency for determining compliance with this section under the proposed state rule is every fifteen minutes [section 64657.40(b)], which is significantly higher than the every-four-hour frequency under the federal rule. The federal rule was developed after much discussion and technical evaluation among all stakeholders, including regulators from California. We recommend that the state adopt the federal turbidity compliance criteria, not the more-stringent criteria in this proposal."

Monitoring the combined filter effluent continuously and recording the data every 15 minutes is necessary to determine compliance with the requirement of section 64657.30(a)(2)(A) [shall not exceed 1 NTU for more than 1 hour] and ensure public health protection for the reasons presented in the Statement of Reasons (see pages 12 through 14). The Department believes that turbidity measurements recorded at 15 minute intervals are necessary to ensure representative sampling for comparison with the regulatory limits. Therefore, the Department does not believe a change is appropriate.

64657.30(a)(2)(A) Commentators 1 and 5 stated that it is unclear how the limit of 1-hour duration will be determined. Commentator 1 stated that it is unclear whether or not the limit of 1 hour is an accumulative duration for the whole month. Commentator 5 stated that, "It should be made very clear that the limit of one hour is NOT cumulative for the whole month." Commentators 1 and 5 requested clarification.

The Department agrees with the commentators and has made the appropriate change to the proposed regulation for clarification.

Commentator 5 requested access to any available data that supports the significantly more stringent sampling frequency than what is required in the federal rule.

Available information was provided in the Initial Statement of Reasons [Section 64657.40] during the 45-day comment period.

64657.30(a)(2)(B) Commentator 1 stated that Subsection [the term should be "subparagraph"] (B) is superfluous and contrary to Subsection (A) and that it appears that the two requirements are conflicting. Similarly, Commentator 5 stated that Subsection (A) appears to contradict the requirements of Subsection (B). Commentator 5 recommended that the contradictory requirement in Subsection (A) be deleted.

In response to comments concerning section 64657.30(a)(2)(A), the Department has revised the regulatory language to read, "shall not exceed 1 NTU for more than 1 continuous hour." With this change, the Department believes the clarity issue between subparagraph (A) [1 continuous hour] and subparagraph (B) [four-hour interval] has been adequately addressed. No change is needed to subparagraph (B). However, the Department revised the regulatory language in 64663(b) to maintain consistency with subparagraph (B).

The Department is adopting subparagraph (B) in conformance with the federal IESWTR.. A review of subparagraph (B) shows that the term “measured” is unnecessary, and may lead to confusion. The term “measured” has been deleted for clarity.

64657.40(d) Commentator 1 stated that, “Although the ISOR states that 48-hour is a reasonable period of time to correct the continuous turbidity monitoring problem, it does not provide any data substantiating this claim.” Commentator 5 noted concern that the ISOR does not provide sufficient data substantiating the claim that 48-hours is a reasonable period of time to correct the continuous turbidity monitoring problem. Commentator 1 asked if the Department has any data or survey and Commentator 5 wanted to see any available data that shows most of the continuous monitoring problem for turbidity measurement can be fixed within 48 hours.

Commentators 1 and 5 felt that limiting the collection of 4-hour grab samples as an alternative for only 48 hours is too stringent and does not account for special situations such as 3-day holidays.

Commentator 2 stated that, “We propose to revise the draft language to allow water agencies a maximum period of five working days before continuous turbidity is reinstated on combined filter effluent following system failure or maintenance interruption. Allowing a maximum of only 48 hours is an unreasonable amount of time to have a replacement unit or replacement parts orders, shipped and installed. Applying a limit of 5-working days for combined filter effluent would also be consistent with the proposed limitation on outages for individual filter effluent monitoring.”

Commentator 7 stated that, “The 48 hour requirement is difficult for the following reasons: (1) there is insufficient time for timely ordering, delivery and installation of replacement parts or hardware, (2) alternatively, providing redundant CFE instrumentation is financially burdensome and unnecessary if IFE turbidity monitoring effectively provides this redundancy, and (3) this regulation implies that the CFE continuous monitoring is more important to identifying filter problems than continuous IFE monitoring.” Commentator 7 stated that, “ACWD would argue that CFE monitoring is more of a confirmation of the IFE monitoring. It is more important to know in real time the turbidity of each IFE since IFE continuous measurements will allow for identification of the filter with a problem and allow for its immediate correction.” Commentator 7 recommended five working days for reinitiating the CFE continuous monitoring similar to the IFEs monitoring.

The existing SWTR (section 64659) requires that standby replacement equipment be available to assure continuous operation and control of unit processes for coagulation, filtration, and disinfection. Standby replacement equipment must be provided to assure proper treatment if continuous operation of a treatment plant is needed to meet system demands. The use of approved groundwater sources of supply in lieu of surface water sources during times of equipment failures is an acceptable alternative to backup equipment. Standby equipment required of all facilities is equipment that may be installed when needed. If it can be shown that a plant can shutdown for the time period needed to install the necessary equipment, it may not be necessary to have redundant equipment on-line.

As noted in the Statement of Reasons (page 12), CFE turbidity measurements recorded at 15-minute intervals are more representative of water quality leaving the plant than measurements recorded at 4-hour intervals. Monitoring at 4-hour intervals, during times of failure in monitoring equipment or interruptions due to system maintenance, results in ~94% fewer measurements in a 24-hour period when compared to measurements recorded at 15-minute intervals. The Department believes that this is a significant loss of critical information. While monitoring of the IFE helps a system to assess the performance of an individual filter, monitoring of the CFE is necessary to ensure proper operation of the plant and to determine if a system is in compliance with the treatment technique requirement for Cryptosporidium.

Given the existing regulatory requirement concerning standby replacement equipment and the intent of the proposed requirement as described above, the Department believes that returning to continuous monitoring within 48-hours is a reasonable period of time and provides necessary public health assurances that outweigh the burden of implementation; especially when one considers the population served by such systems. Therefore, the Department does not believe a change is appropriate.

Commentator 1 stated that, “The Proposed Rule does not spell out whether or not it will be a monitoring violation if a supplier cannot fix or restore the required continuous turbidity monitoring within 48 hours of system failure or maintenance interruption of the combined effluent, albeit that we believe it will be the case.” Commentator 1 indicated that clarification would be helpful. Similarly, Commentator 5 requested clarification on whether or not it will be a monitoring violation if a supplier cannot fix or restore the required continuous turbidity monitoring within 48 hours of system failure or maintenance interruption of the combined effluent.

Failure to reinitiate continuous monitoring within 48 hours of system failure or maintenance interruption for the combined effluent is a monitoring violation. Monitoring violations for section 64657.40 are addressed under section 64666(d).

64657.50 Commentator 4 stated, “Finally, we are concerned about the large investment in computer/SCADA programming time required to determine compliance with the proposed regulations, and to generate the numerous reports. Particularly for plants with multiple filters, thousands of data points must be stored, and these data sets tested against all of the numerous “exceedance” criteria and regulatory reporting requirements, and various reports generated each month. In 1998, when the federal Interim Enhanced Surface Water Treatment Rule was finalized, most plants made significant modifications to their SCADA systems’ monitoring and reporting capability in order to comply with the federal rule. Similarly, additional changes were made when the federal filter backwash rule was finalized in 2001. If the state rule is finalized as proposed, additional resources will be necessary to ensure compliance with these new state requirements. This is not, as stated in the Initial Statement of Reasons, ‘not a significant burden’, as thousands of dollars are spent on reprogramming. Presumably, when the state adopts the next set of federal rules (Long Term 1 and Long Term 2 Enhanced Surface Water Treatment Rules) there will be further changes. We recommend that the state maintain consistency with the federal requirements.”

Commentator 5 stated, “In several sections within the proposed rule, the Department requires significant additional investment in computer/SCADA programming changes to comply with reporting and compliance requirements. A large majority of water utilities previously invested large amounts of time and funding to modify their technological systems in 1998 when the federal Interim Enhanced Surface Water Treatment Rule was finalized. Additional changes were made when the federal filter backwash rule was completed in 2001. ACWA disagrees that the proposed requirements would not be a significant burden and recommends that the state maintain consistency with the federal requirements.”

As noted in the Statement of Reasons (see page 14), systems are already required to continuously monitor the combined filter effluent and having data recorded at 15-minute intervals is already required by federal regulation for each individual filter. So, while implementing the proposed requirements may not be “burdenless”, the Department continues to believe that meeting the requirement should not be overly burdensome given the extent of the existing requirements. The intent of the proposed requirement, ensuring representative sampling for comparison with the regulatory limits, provides necessary public health assurances that outweigh the burden of implementation; especially when one considers the population served by such systems. Therefore, the Department does not believe a change is appropriate.

64657.50(a)(1) Commentator 7 stated that, “...CDHS is planning on requiring that the supplier report the turbidity level achieved 50, 90, 95, 98, and 99 percent of the time. For well-running plants, this reporting requirement is unnecessary. Suggest that this be used only when needed, e.g., when a comprehensive plant evaluation is warranted, and not be a routine requirement. Alternately, this information could be provided annually, similar to what is now being done by utilities participating in the Partnership for Safe Water Program.”

Under section 64657.50(a), a supplier is required to report according to paragraph (a)(1) or (a)(2); a supplier is not required to report according to only paragraph (a)(1). No change is needed.

64657.50(a)(2) Commentator 7 requested clarification in reference to the phrase “The results of turbidity measurements recorded at intervals no greater than every 4 hours,...” regarding how to report the data collected including grab data and the continuous measurements.

The purpose of this section is to establish what to report under the monthly turbidity reporting requirements. How the data is reported is an implementation issue.

64657.50(b) Commentator 8 stated that the section “...seems to have lost some text.” Commentator 8 offers some suggested language.

The Department agrees with the commentator and has made the appropriate changes to the proposed regulations for clarification.

64657.50(c)(2)(B) Commentator 4 stated, “Further, Section 64657.50(c)(2)(B) requires that a report be made to the state whenever an individual filter effluent has an ‘exceedance’ of 0.3 NTU in two consecutive samples taken no more than 15 minutes apart after the filter has been in continuous operation for 60 minutes or more. The federal rule requires that turbidity data be

collected and stored every 15 minutes, but that compliance is based on samples collected every four hours. The federal rule was developed after much discussion and technical evaluation among all stakeholders, including regulators from California. We recommend that the state adopt the federal turbidity compliance criteria, not the more-stringent criteria in this proposal.”

In the federal IESWTR, compliance with the individual filter turbidity effluent performance standards is based on not exceeding specified turbidity levels in two consecutive measurements taken no more than 15 minutes apart; compliance is not based on samples collected every four hours. No change is needed.

64657.50(e) Commentator 1 stated that the Composite Correction Program Handbook reference in the proposed regulation is old and that the new version is February 1991.

The proposed regulation references the August 1998 version of the Composite Correction Program Handbook. This is the current version of the publication.

64659 Commentator 1 stated that the existing section 64659 is completely omitted and the associated requirements are neither addressed in the ISOR nor included in other sections of the proposed regulation. Commentator 1 requests clarification if existing section 64659 is deleted.

As section 64659 is not being amended or repealed. Therefore, there is no need to include it in the proposed regulations or ISOR. The requirements of section 64659 remain in effect.

64660(b)(7)(A), (B), and (C) Commentator 7 stated that the requirements are confusing and compete with the proposed regulation that sets the IFE trigger point at 0.3 NTU after 60 minutes of operation, as stated in section 64657.50(c)(2)(B).

The comment refers to existing subparagraphs that are not part of the regulation proposal. No response is required. However, the requirements of sections 64660(b)(7)(A),(B), and (C) do not compete with the requirement of section 64657.50(c)(2)(B), as the compliance determinations (e.g., turbidity values and frequency of monitoring) are different. The requirement in section 64657.50(c)(2)(B) is in addition to those specified in sections 64660(b)(7)(A), (B), and (C).

64661(b) Commentator 6 stated that, “Filter media inspections can be very lengthy and expensive, so Metropolitan requests the Department to define ‘a regular schedule of formal filter inspection necessary to ensure proper filter operation’ (e.g., by stating the frequency and describing the extent of the inspections).”

Section 64661(b) is being amended to require that the operations plan include a description of the utility’s filter media inspection program, which will be site-specific. It is not the intent of the subsection to regulate the scope of the filter media inspection program or inspection frequency, so no definition is needed.

64663(a) Commentator 7 stated that the CFE turbidity exceedance of 5.0 NTU at any time, which triggers Department notification, appears to contradict the federal limit of 1 NTU.

The purpose of section 64663(a) is to maintain consistency with existing regulatory requirements for Department notification. It does not contradict the federal 1 NTU limit, as the CFE turbidity exceedances that require Department notification under the federal IESWTR are contained in section 64663(b). A review of subsection (b) shown that the phrase “1 NTU at four-hour intervals” was inadvertently omitted, which may have contributed to the commentator’s confusion. The Department has made the appropriate changes to subsection (b) for clarification.

64663(b) Commentator 7 stated, in reference to a bulleted statement on page 3 of the ISOR (“To amend section 64663(b) to include Department notification whenever samples collected pursuant to section 64657.40 exceeds 1 NTU for more than 1 hour or 1.0 NTU for more than 8 hours”), that “The subtle difference between 1 NTU and 1.0 NTU will likely create confusion for operators and will necessitate significant effort to reprogram plant controls. It is suggested that CDHS adopt the same standard as the federal rule instead, i.e., no exceedance of 1 NTU in four hour grab samples.”

The Department is adopting (1) section 64657.30(a)(2)(A) [CFE turbidity shall not exceed 1 NTU for more than 1 (continuous) hour], as the Department will require continuous monitoring with data recording every 15 minutes, (2) section 64657.30(a)(2)(B) [CFE turbidity shall not exceed 1 NTU at 4-hour intervals] in conformance with the federal IESWTR, and (3) section 64657.30(a)(2)(C) [CFE turbidity shall not exceed 1.0 NTU for more than 8 consecutive hours] to maintain consistency with existing regulations [section 64653(c)(2)].

Although the values of 1.0 NTU and 1 NTU appear similar, a value of 1 NTU is 50% greater than a value of 1.0 NTU due to the difference in significant figures. Treatment plant operators will need to be able to differentiate between these numerical values (1.0 NTU and 1 NTU) to determine if the treated water meets the turbidity performance standards.

Operators would need to make this differentiation even if the Department did not adopt section 64657.30(a)(2)(A), as subparagraph (2)(B) specifies 1 NTU [federal requirement] and subparagraph (2)(C) specifies 1.0 NTU [existing state requirement]. Operators would also need to make this differentiation under the federal IESWTR, as the USEPA established turbidity performance standards of 1.0 NTU and 1 NTU for the individual filter effluent and combined filter effluent, respectively. Therefore, the Department does not believe a change is appropriate.

Commentator 7 also stated that this section “...requires that an operator respond to an event within a 1-hour period when combined filter effluent (CFE) turbidity exceeds 1 NTU. Suggest that the 1-hour time requirement be the maximum time allowed to initiate a response to the exceedance. This will permit time to quickly assess the situation and activate a contingency plan if a problem is not readily correctable due to instrumentation failure, for instance.”

The purpose of this section is to establish Department notification requirements when turbidity exceeds 1 NTU for more than 1 hour. As discussed in the Statement of Reasons (page 18), the Department would permit a 1-hour period of time for determining compliance status and responding to the event. The Department appreciates the commentator’s concurrence with the 1-hour period of time.

64664(c)(2)(F) Commentator 1 stated that with the proposed changes made to section 64654(b)(2), a corresponding change is needed in Subsection [the term should be “subparagraph”](F) concerning the calculation of V (percent of distribution system samples with a detectable residual). Commentator 1 offered some suggested language.

The Department agrees with the commentator and has made the appropriate changes to the proposed regulations.

64664(d)(2), (3), and (4) Commentator 3 stated that, “...if more than one raw water coliform is taken in a month or more than one settled water turbidity or recycled water turbidity measurement is taken in a day, a utility should be allowed to report the average of all samples taken similar to what is allowed under (d)(1) for raw water turbidity. Currently, only (d)(1) explicitly allows averaging additional monitoring results.” Commentator 5 stated that, “In paragraph (1) the proposed regulation allows averaging additional monitoring results if more than one raw water turbidity measurement is taken in a day. ACWA believes a utility should be allowed to report the average of all samples taken in subsections [the term should be “paragraphs”] (2), (3), and (4), similar to what is allowed under (d)(1) for raw water turbidity.”

The commentators appear to be concerned about reporting all the data when more than the minimum number of samples is collected in a month for coliform monitoring and each day for settled water turbidity and recycled filter backwash water turbidity.

The purpose of paragraph (d)(2) is to allow for an on-going assessment of the raw water bacteriological quality and to alert the system to changes in raw water quality that may be associated with changing conditions in the watershed, climatic changes, or most importantly, unexpected changes due to unknown causes. The Department encourages and supports a system’s efforts in collecting more than the minimum of 1 sample a month. However, the Department does not believe that reporting an average for the month would provide meaningful information considering the monitoring time frame (a month) and the changing conditions that may occur during that month. Therefore, the Department does not believe a change is appropriate for paragraph (d)(2).

In regard to settled water turbidity and recycled filter backwash water turbidity, daily monitoring is required to help the Department and systems determine if pretreatment process and the backwash water treatment process are optimized. The optimization of each unit process of the treatment plant is critical to overall plant performance. Such optimization is a key component of the Cryptosporidium Action Plan (CAP). Under CAP, systems have been reporting to the Department the highest raw water turbidity and highest settled water turbidity for each day. These highest values for each day represent the worst-case situation and the greatest challenge when trying to optimize plant performance. Given this situation/challenge and the monitoring time frame (a day), the Department believes that providing the highest value each day would provide meaningful information. The Department has made the appropriate changes to paragraphs (d)(1), (3), and (4) to allow for reporting of the highest value, instead of all the values, when more than 1 sample is collected each day.

64664(d)(4) Commentators 3 and 5 stated that there is no requirement for reporting recycled water flow that is required to be monitored under section 64655(d). Commentators 3 and 5 asked if this is an oversight or if it is intended to allow utilities to capture flow data in-house and not have to include this data in the monthly report. Commentator 5 asked for clarification.

The Department appreciates the comments; this was an oversight and the Department has made the appropriate changes to the regulation proposal.

Addendum 2

Response to Comments, Period Ending 8/13/2007

The Department solicited written comments on proposed regulation package R-20-01. Two sets of comments were received. There was no public hearing.

Commentator #	Commentator	Representation
1	Mr. Mic Stewart	Metropolitan Water District of Southern California
2	Mr. Douglas G. Chun	Alameda County Water District

General Commentator 1 appreciated the opportunity to further comment on the proposed regulations. Commentator 1 also stated that, “Attached is the comment letter we had submitted previously”.

The Department appreciates the comment. The Department acknowledges prior receipt of the comment letter, as described and addressed in Addendum 1 of this Final Statement of Reasons.

64653(c)(1) Commentator 2 stated that the turbidity limits of this section appear to contradict the federal rule that limits turbidity to less than or equal to 0.3 NTU in 95% of the measurements.

The comment refers to an existing paragraph that is not part of the regulation proposal. Therefore, no response is required. However, the comment is identical to that provided by the commentator during the 45-day comment period and the commentator may want to review the Department’s response to the original comment (see Addendum 1), which provides some clarification.

64660(b)(7)(A), (B), and (C) Commentator 2 stated that the requirements are confusing and compete with the proposed regulation that sets the IFE trigger point at 0.3 NTU after 60 minutes of operation, as stated in section 64657.50(c)(2)(B).

The comment refers to an existing paragraph that is not part of the regulation proposal. Therefore, no response is required. However, the comment is identical to that provided by the commentator during the 45-day comment period and the commentator may want to review the Department’s response to the original comment (see Addendum 1), which provides some clarification.

64663 Commentator 1 stated that, “Subsection(d) of this section requires the water supplier to notify the California Department of Public Health ‘no later than the end of the next business day, or within 24 hours, whichever is less, ...whenever...an event occurs which may affect the ability of the treatment plant to produce a safe, potable water including but not limited to spills of hazardous materials in the watershed and unit treatment process failures.’ Metropolitan requests the Department to clarify the distance of such an event from the treatment plant, or define the hazardous spills in the watershed that would have an immediate impact on water quality at Metropolitan’s five treatment plants. Metropolitan is concerned that hazardous spills that may occur in the Bay Delta region, for example, may not be known by Metropolitan or reported to the

Department in a timely manner because of the great distance. In addition, some smaller hazardous spills in the watershed may not necessarily have an impact on water quality in Southern California.”

The comment refers to a subsection that is not part of the regulation proposal. No response is required. However, the commentator is referred to the local District Office to discuss this existing regulatory requirement with respect to the commentator’s water treatment plants.

64663(a) Commentator 2 stated that the CFE turbidity exceedance of 5.0 NTU at any time, which triggers Department notification, appears to contradict the federal limit of 1 NTU.

Only those revisions made subsequent to the first public comment are open for comment. Therefore, no response is necessary. However, the comment is identical to that provided by the commentator during the 45-day comment period and the commentator may want to review the Department’s response to the original comment (see Addendum 1), which provides some clarification.

Supplement 3 – Revisions Added to the Rulemaking File on 12/12/2007

Reporting Requirement

The Department has made the determination that these proposed regulations require reports from businesses, and it is necessary for the health, safety, or welfare of the people of California that the proposed regulations apply to businesses.

California Conference of Local Health Officers Review

Pursuant to H&S Code Section 131205, the Department provided a copy of the public notice document, including the text of the proposed regulation text and the Initial Statement of Reasons, to the California Conference of Local Health Officers for review and comment.

Public Hearing

At the time of the public notice, a public hearing was not scheduled and a public hearing was not subsequently requested.