

**PART VIII**  
**GENERAL REQUIREMENTS FOR SURFACE WATER TREATMENT**

**§ 801 PURPOSE**

These regulations establish criteria under which filtration is required as a treatment technique for public water systems supplied by a surface water source and public water systems supplied by a groundwater source under the direct influence of surface water. In addition, these regulations establish treatment technique requirements in lieu of MCLs for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, and turbidity.

**§ 802 GENERAL REQUIREMENTS**

- A. Each public water system with a surface water source or a groundwater source under the direct influence of surface water must provide treatment of that source water that complies with these treatment technique requirements. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:
1. At least 99.9 % (3-log) removal and/or inactivation of *Giardia lamblia* cysts between a point where the raw water is not subject to re-contamination by surface water runoff and a point downstream before or at the first customer; and
  2. At least 99.99 % (4-log) removal and/or inactivation of viruses between a point where the raw water is not subject to re-contamination by surface water runoff and a point downstream before or at the first customer.
- B. A public water system using a surface water source or a groundwater source under the direct influence of surface water is considered to be in compliance with the requirements of subsection (A) of this section if:
1. It meets the requirements for avoiding filtration specified in § 803 and the disinfection requirements in § 804(A) or
  2. It meets the filtration requirements in § 805 and the disinfection requirements in § 804(B).
- C. Each public water system using a surface source or a groundwater source under the direct influence of surface water must be operated by qualified personnel who meet the requirements specified Part XIV.
- D. Additional requirements for systems serving at least 10,000 people. In addition to complying with requirements in this section, systems serving at least 10,000 people must also comply with the requirements in Part XIII.
- E. Additional requirements for systems serving fewer than 10,000 people. In addition to comply with requirements in this subpart, systems serving fewer than 10,000 people must also comply with the requirements in Part 2100 of this part.

**§ 803 CRITERIA FOR AVOIDING FILTRATION**

A public water system that uses a surface water source must meet all of the conditions of subsections (A) and (B) of this section, and is subject to subsection (C)(2) of this section, unless the Director has determined, in writing pursuant to § 2535 of the NNSDWA, that filtration is required. A public water system that uses a groundwater source under the direct influence of surface water must meet all of the conditions of subsections (A) and (B) of this section and is subject to subsection (C)(2) of this section, beginning 18 months after the Director determines that it is under the direct influence of surface water or beginning immediately, if the Administrator has already made that determination, unless the Director has determined, in writing pursuant to § 2535 of the NNSDWA, that filtration is required. Within 18 months of the failure of a public water system using surface water or a groundwater source under the direct influence of surface water to meet any one of the requirements of subsections (A) and (B) of this section, the public water system must have installed filtration and meet the criteria for filtered public water systems specified in § 804(B) and § 805.

- A. Source Water Quality Conditions.
1. The fecal coliform concentration must be equal to or less than 20/100 ml, or the total coliform concentration must be equal to or less than 100/100 ml (measured as specified in Appendix D § 801-D (A)(1) and (2) and (B)(1)), in representative samples of the source water

immediately prior to the first or only point of disinfectant application in at least 90 % of the measurements made for the 6 previous months that the public water system served water to the public on an ongoing basis. If a public water system measures both fecal and total coliforms, the fecal coliform criterion, but not the total coliform criterion, in this subsection must be met.

2. The turbidity level cannot exceed 5 NTU (measured as specified in Appendix D § 801-D (A)(1) and (B)(2)) in representative samples of the source water immediately prior to the first or only point of disinfectant application unless:
  - a. The Director determines that any such event was caused by circumstances that were unusual and unpredictable; and
  - b. As a result of any such event, there have not been more than two events in the past 12 months that the public water system served water to the public, or more than five events in the past 120 months the public water system served water to the public, in which the turbidity level exceeded 5 NTU. An "event" is a series of consecutive days during which at least one turbidity measurement each day exceeds 5 NTU.

B. Site-Specific Conditions.

1.
  - a. The public water system must meet the requirements of § 804 (A)(1) at least 11 of the 12 previous months that the public water system served water to the public, on an ongoing basis, unless the public water system fails to meet the requirements during 2 of the 12 previous months that the public water system served water to the public, and the Director determines that at least one of these failures was caused by circumstances that were unusual and unpredictable.
  - b. The public water system must meet the requirements of § 804 (A)(2) at all times that the system serves water to the public.
  - c. The public water system must meet the requirements of § 804 (A)(3) at all times that the system serves water to the public unless the Director determines that any such failure was caused by circumstances that were unusual and unpredictable.
  - d. The public water system must meet the requirements of § 804 (A)(4) on an ongoing basis unless the Director determines that failure to meet these requirements was not caused by a deficiency in treatment of the source water.
2. The public water system must maintain a watershed control program which minimizes the potential for contamination by *Giardia lamblia* cysts and viruses in the source water. The Director must determine whether the watershed control program is adequate to meet this goal. The adequacy of a program to limit potential contamination by *Giardia lamblia* cysts and viruses must be based on: the comprehensiveness of the watershed review; the effectiveness of the public water system's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the public water system has maximized land ownership and/or controlled land use within the watershed. At a minimum, the watershed control program must:
  - a. Characterize the watershed hydrology and land ownership;
  - b. Identify watershed characteristics and activities which may have an adverse effect on source water quality; and
  - c. Monitor the occurrence of activities which may have an adverse effect on source water quality.

The public water system must demonstrate through ownership and/or written agreements with landowners within the watershed that it can control all human activities which may have an adverse impact on the microbiological quality of the source water. The public water system must submit an annual report to the Director that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in the future and describes how the public water system expects to address them. For public water systems using a groundwater source under the direct influence of surface water, an approved wellhead protection program developed by the NNEPA may be used, if the Director deems it appropriate, to meet these requirements.

3. The public water system must be subject to an annual on-site inspection to assess the

watershed control program and disinfection treatment process. Either the Director or a party approved by the Director must conduct the on-site inspection. The inspection must be conducted by competent individuals such as sanitary and civil engineers, sanitarians, or technicians who have experience and knowledge about the operation and maintenance of a public water system, and who have a sound understanding of public health principles and waterborne diseases. A report of the on-site inspection summarizing all findings must be prepared every year and forwarded to the Director. The on-site inspection must indicate to the Director's satisfaction that the watershed control program and disinfection treatment process are adequately designed and maintained. The on-site inspection must include:

- a. A review of the effectiveness of the watershed control program;
  - b. A review of the physical condition of the source intake and how well it is protected;
  - c. A review of the system's equipment maintenance program to ensure there is low probability for failure of the disinfection process;
  - d. An inspection of the disinfection equipment for physical deterioration;
  - e. A review of operating procedures;
  - f. A review of data records to ensure that all required tests are being conducted and recorded and disinfection is effectively practiced; and
  - g. Identification of any improvements which are needed in the equipment, system maintenance and operation, or data collection.
4. The public water system must not have been identified as a source of a waterborne disease outbreak, or if it has been so identified, the system must have been modified sufficiently to prevent another such occurrence, as determined by the Director.
  5. The public water system must comply with the MCL for total coliforms in § 205 at least 11 months of the 12 previous months that the system served water to the public, on an ongoing basis, unless the Director determines that failure to meet this requirement was not caused by a deficiency in treatment of the source water.
  6. The water system must comply with the requirements for total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide in Part XI of these regulations.

C. Treatment Technique Violations.

1. A public water system is in violation of a treatment technique requirement if the system:
  - a. fails to meet any one of the criteria in subsections (A) and (B) of this section and/or which the Director has determined that filtration is required, in writing, pursuant to § 2535 of the NNSDWA, and
  - b. fails to install filtration as required in the introductory paragraph of this section.
2. A public water system that has not installed filtration is in violation of a treatment technique requirement if:
  - a. The turbidity level (measured as specified in § Appendix D § 801-D (A)(1) and (B)(2)) in a representative sample of the source water immediately prior to the first or only point of disinfection application exceeds 5 NTU; or
  - b. The system is identified as a source of a waterborne disease outbreak.

**§ 804 DISINFECTION**

A public water system that uses a surface water source and does not provide filtration treatment must provide the disinfection treatment specified in subsection (A) of this section unless the Director determines, in writing, that filtration is required pursuant to § 2535 of the NNSDWA. A public water system that uses a groundwater source under the direct influence of surface water and does not provide filtration treatment must provide disinfection treatment specified in subsection (A) of this section 18 months after the Director determines that the groundwater source is under the influence of surface

water, or beginning immediately, if the administrator has already made that determination, unless the Director has determined in writing that filtration is required pursuant to §2535 of the NNSDWA. If the Director has determined that filtration is required, the public water system must comply with any interim disinfection requirements the Director deems necessary before filtration is installed. A public water system that uses a surface water source that provides filtration treatment must provide the disinfection treatment specified in subsection (B) of this section beginning when filtration is installed. A public water system that uses a groundwater source under the direct influence of surface water and provides filtration treatment must provide disinfection treatment as specified in subsection (B) of this section beginning when filtration is installed. Failure to meet any requirement specified in this introductory subsection is a treatment technique violation.

A. Disinfection requirements for public water systems that do not provide filtration. Each public water system that does not provide filtration treatment must provide disinfection treatment as follows:

1. The disinfection treatment must be sufficient to ensure at least 99.9 % (3-log) inactivation of *Giardia lamblia* cysts and 99.99 % (4-log) inactivation of viruses, every day that the system serves water to the public, except any one day each month. Each day a system serves water to the public, the public water system must calculate the CT value(s) from the system's treatment parameters, using the procedure specified in Appendix D § (801-D) (B)(3), and determine whether this value(s) is sufficient to achieve the specified inactivation rates for *Giardia lamblia* cysts and viruses. If a system uses a disinfectant other than chlorine, the system may demonstrate to the Director, through the use of a Director-approved protocol for on-site disinfection challenge studies or other information satisfactory to the Director, that CT<sub>99.9</sub> values other than those specified in Appendix D: Tables 800-D-10 and 800-D-11 or other operational parameters are adequate to demonstrate that the system is achieving minimum inactivation rates required by subsection (A)(1) of this section.
2. The disinfection system must have either:
  - a. redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system, or
  - b. automatic shut-off of water delivery to the distribution system whenever there is less than 0.2 mg/L of residual disinfectant concentration in the water. If the Director determines that automatic shut-off would cause unreasonable risk to health or interfere with fire protection, the public water system must comply with subsection (A)(2)(a) of this section.
3. The residual disinfectant concentration in the water entering the distribution system, measured as specified in Appendix D § 801-D (A)(2) and (B)(5), cannot be less than 0.2 mg/l for more than 4 hours.
4. a. The residual disinfectant concentration in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in Appendix D § 801-D (A)(2) and (B)(6), cannot be undetectable in more than 5 % of the samples each month, for any two consecutive months that the system serves water to the public. Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/ml, measured as heterotrophic plate count (HPC) as specified in Appendix D § 801-D (A)(1), is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Thus, the values "V" in the following formula cannot exceed 5% in one month, for any two consecutive months.

$$V = \frac{c+d+e}{a+b} \times 100$$

where:

- a =number of instances where the residual disinfectant concentration is measured;
- b =number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;
- c =number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;
- d =number of instances where the residual disinfectant concentration is measured but not detected and where the HPC is >500/ml; and

e =number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml.

b. If the Director determines, based on site-specific considerations, that a public water system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by Appendix D § 801-D (A)(1) and that the system is providing adequate disinfection in the distribution system, the requirements of subsection (A)(4)(a) of this section do not apply to that system.

B. Disinfection requirements for public water system which provide filtration. Each public water system that provides filtration treatment must provide disinfection treatment as follows.

1. The disinfection treatment must be sufficient to ensure that the total treatment processes of that public water system achieve at least 99.9 % (3-log) inactivation and/or removal of *Giardia lamblia* cysts and at least 99.99 % (4-log) inactivation and/or removal of viruses, as determined by the Director.

2. The residual disinfectant concentration in the water entering the distribution system, measured as specified in Appendix D § 801-D (A)(2) and (C)(2), cannot be less than 0.2 mg/L for more than 4 hours.

3. a. The residual disinfectant concentration in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in Appendix D § 801-D (A)(2) and (C)(3), cannot be undetectable in more than 5% of the samples each month, for any two consecutive months that the system serves water to the public. Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/ml, measured as HPC as specified in Appendix D § 801-D (A)(1), is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Thus, the value "V" in the following formula cannot exceed 5 % in one month, for any two consecutive months.

$$V = \frac{c+d+e}{a+b} \times 100$$

where:

a =number of instances where the residual disinfectant concentration is measured;  
b =number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;  
c =number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;  
d =number of instances where no residual disinfectant concentration is detected and where the HPC is >500/ml; and  
e =number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml.

b. If the Director determines, based on site-specific considerations, that a public water system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified in Appendix D § 801-D (A)(1) and that the system is providing adequate disinfection in the distribution system, the requirements of subsection (B)(3)(a) of this section do not apply.

## § 805 FILTRATION

A public water system that uses a surface water source or a groundwater source under the direct influence of surface water, and does not meet all of the criteria in § 803 (A) and (B) for avoiding filtration, must provide treatment consisting of both disinfection, as specified in § 804 (B), and filtration treatment which complies with the requirements of subsections (A), (B), (C), or (D) of this section within 18 months of the failure to meet any one of the criteria for avoiding filtration in § 803 (A) and (B). Failure to meet any requirement specified in this introductory subsection is a treatment technique violation.

A. Conventional filtration treatment or direct filtration.

1. For public water systems using conventional filtration or direct filtration, the turbidity

level of representative samples of a system's filtered water must be less than or equal to 0.5 NTU in at least 95% of the measurements taken each month, measured as specified in Appendix D § 801-D (A)(1) and (C)(1), except that if the Director determines that the system is capable of achieving at least 99.9 % removal and/or inactivation of *Giardia lamblia* cysts at some turbidity level higher than 0.5 NTU in at least 95 % of the measurements taken each month, the Director may substitute this higher turbidity limit for that system. However, in no case may the Director approve a turbidity limit that allows more than 1 NTU in more than 5 % of the samples taken each month, measured as specified in Appendix D § 801-D (A)(1) and (C)(1).

2. The turbidity level of representative samples of a public water system's filtered water must at no time exceed 5 NTU measured as specified in Appendix D § 801-D (A)(1) and (C)(1).
3. Public water systems serving at least 10,000 people must meet the turbidity requirements in §1305 (A).
4. Beginning January 14, 2005, systems serving fewer than 10,000 people must meet the turbidity requirements in §§2106(A)-(D).

B. Slow sand filtration.

1. For public water systems using slow sand filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 1 NTU in at least 95% of the measurements taken each month, measured as specified in Appendix D § 801-D (A)(1) and (C)(1), except that if the Director determines there is no significant interference with disinfection at a higher turbidity level, the Director may substitute this higher turbidity limit for that system.
2. The turbidity level of representative samples of a public water system's filtered water must at no time exceed 5 NTU, measured as specified in Appendix D § 801-D (A)(1) and (C)(1).

C. Diatomaceous earth filtration.

1. For public water systems using diatomaceous earth filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 1 NTU in at least 95% of the measurements taken each month, measured as specified in Appendix D § 801-D (A)(1) and (C)(1).
2. The turbidity level of representative samples of a public water system's filtered water must at no time exceed 5 NTU, measured as specified in Appendix D § 801-D (A)(1) and (C)(1).

D. Other filtration technologies.

A public water system may use a filtration technology not listed in subsections (A)-© of this section if it demonstrates to the Director, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of § 804 (B), consistently achieves 99.9 % removal and/or inactivation of *Giardia lamblia* cysts and 99.99 % removal and/or inactivation of viruses. For a system that makes this demonstration, the requirements of subsection (B) of this section apply. Public water systems serving at least 10,000 people must meet the requirements for other filtration technologies in § 1305(B). Beginning January 14, 2005, systems serving fewer than 10,000 people must meet the requirements for other filtration technologies in §§2106(A)-(D).

**§ 806 REPORTING AND RECORDKEEPING REQUIREMENTS**

- A. A public water system that uses a surface water source and does not provide filtration treatment must report monthly to the Director the information specified in this subsection (A), unless the Director has determined in writing that filtration is required pursuant to § 2535 of the NNSDWA, in which case the Director may specify alternative reporting requirements, as appropriate, until filtration is in place. A public water system that uses a groundwater source under the direct influence of surface water and does not provide filtration treatment must report monthly to the Director the information specified in this subsection (A) 6 months after the Director determines that the groundwater source is under the direct influence of surface water, or beginning immediately, if the Administrator has already made that determination unless the Director has determined, in writing, that filtration is required pursuant to § 2535 of the NNSDWA, in which case the Director may specify alternative reporting requirements, as appropriate, until filtration is in place.

1. Source water quality information must be reported to the Director within 10 days after the end of each month that the system serves water to the public. Information that must be reported includes:
  - a. The cumulative number of months for which results are reported.
  - b. The number of fecal and/or total coliform samples, whichever are analyzed during the month (if a system monitors for both, only fecal coliforms must be reported), the dates of sample collection, and the dates when the turbidity level exceeded 1 NTU.
  - c. The number of samples during the month that had equal to or less than 20/100ml fecal coliforms and/or equal to or less than 100/100 ml total coliforms, whichever are analyzed.
  - d. The cumulative number of fecal or total coliform samples, whichever are analyzed, during the previous six months that the system served water to the public.
  - e. The cumulative number of samples that had equal to or less than 20/100 ml fecal coliforms or equal to or less than 100/100 ml total coliforms, whichever are analyzed, during the previous six months that the system served water to the public.
  - f. The percentage of samples that had equal to or less than 20/100 ml fecal coliforms or equal to or less than 100/100 ml total coliforms, whichever are analyzed, during the previous six months that the system served water to the public.
  - g. The maximum turbidity level measured during the month, the date(s) of occurrence for any measurement(s) which exceeded 5 NTU, and the date(s) that the occurrence(s) was reported to the Director.
  - h. For the first 12 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after one year of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 12 months that the system served water to the public.
  - I. For the first 120 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after 10 years of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 120 months that the system served water to the public.
2. Disinfection information specified in Appendix D § 801-D (B) must be reported to the Director within 10 days after the end of each month that the system serves water to the public. Information that must be reported includes:
  - a. For each day, the lowest measurement of residual disinfectant concentration (in mg/L) in water entering the distribution system.
  - b. The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/L and when the Director was notified of the occurrence.
  - c. The daily residual disinfectant concentration(s) (in mg/L) and disinfectant contact time(s) (in minutes) used for calculating the CT value(s).
  - d. If chlorine is used, the daily measurement(s) of pH of disinfected water following each point of chlorine disinfection.
  - e. The daily measurement(s) of water temperature in °C following each point of disinfection.
  - f. The daily CTcalc and CTcalc/CT99.9 values for each disinfectant measurement or sequence and the sum of all CTcalc/CT99.9 values ((CTcalc/CT99.9)) before or at the first customer.
  - g. The daily determination of whether disinfection achieves adequate *G.lambliia* cysts and virus inactivation, i.e., whether (CTcalc/CT99.9) is at least 1.0 or, where

disinfectants other than chlorine are used, other indicator conditions that the Director determines are appropriate, are met.

h. The following information on the samples taken in the distribution system in conjunction with total coliform sampling pursuant to § 804:

1. Number of instances where the residual disinfectant concentration is measured;
2. Number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;
3. Number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;
4. Number of instances where residual disinfectant concentration is detected and where HPC is >500/ml;
5. Number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml;
6. For the current and previous month that the system served water to the public, the value of "V" in the following formula:

$$V = \frac{c+d+e}{a+b} \times 100$$

where

a = the value in subsection (A)(2)(h)(1) of this section,  
b = the value in subsection (A)(2)(h)(2) of this section,  
c = the value in subsection (A)(2)(h)(3) of this section,  
d = the value in subsection (A)(2)(h)(4) of this section, and  
e = the value in subsection (A)(2)(h)(5) of this section.

7. If the Director determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by Appendix D § 801-D (A)(1) and that the system is providing adequate disinfection in the distribution system, the requirements of subsection (A)(2)(h)(1)-(6) of this section do not apply to that system.

I. A system need not report the data listed in subsections (A)(2)(a)-(c-f) of this section if all data listed in subsections (A)(2)(a)-(h) of this section remain on file at the system, and the Director determines that:

- a. The system has submitted to the Director all the information required by subsections (A)(2)(a)-(h) of this section for at least 12 months; and
- b. The Director has determined that the system is not required to provide filtration treatment.

3. No later than ten days after the end of each federal fiscal year (September 30), each system must provide to the Director a report which summarizes its compliance with all watershed control program requirements specified in § 803(B)(2).

4. No later than ten days after the end of each federal fiscal year (September 30), each system must provide to the Director a report of the on-site inspection conducted during that year pursuant to § 803 (B)(3), unless the on-site inspection was conducted by the Director. If the inspection was conducted by the Director, the Director must provide a copy of his/her report to the public water system.

5. a. Each system, upon discovering that a waterborne disease outbreak potentially attributable to that system has occurred, must report that occurrence to the Director as soon as possible, but no later than by the end of the next business day.

b. If at any time the turbidity exceeds 5 NTU, the system must consult with the

NNEPA-PWSSP as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under § 605 (B)(3).

- c. If at any time the residual falls below 0.2 mg/L in the water entering the distribution system, the system must notify the Director as soon as possible, but no later than by the end of the next business day. The system also must notify the Director by the end of the next business day whether or not the residual was restored to at least 0.2 mg/L within 4 hours.

B. A public water system that uses a surface water source or a groundwater source under the direct influence of surface water and provides filtration treatment must report monthly to the Director the information specified in this subsection (B) when filtration is installed,

- 1. Turbidity measurements as required by Appendix D § 801-D (C)(1) must be reported within 10 days after the end of each month that the system serves water to the public. Information that must be reported includes:

- a. The total number of filtered water turbidity measurements taken during the month.
- b. The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limits specified in § 805 for the filtration technology being used.
- c. The date and value of any turbidity measurements taken during the month which exceed 5 NTU.

- 2. Disinfection information specified in Appendix D § 801-D<sup>®</sup> must be reported to the Director within 10 days after the end of each month that the system serves water to the public. Information that must be reported includes:

- a. For each day, the lowest measurement of residual disinfectant concentration in mg/L in water entering the distribution system.
- b. The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/L and when the Director was notified of the occurrence.
- c. The following information on the samples taken in the distribution system in conjunction with total coliform sampling pursuant to § 804:

- 1. Number of instances where the residual disinfectant concentration is measured;
- 2. Number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;
- 3. Number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;
- 4. Number of instances where no residual disinfectant concentration is detected and where HPC is > 500/ml;
- 5. Number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml;
- 6. For the current and previous month that the system serves water to the public, the value of "V" in the following formula:

$$V = \frac{c+d+e}{a+b} \times 100$$

where

- a = the value in subsection (B)(2)(c)(1) of this section,
- b = the value in subsection (B)(2)(c)(2) of this section,
- c = the value in subsection (B)(2)(c)(3) of this section,
- d = the value in subsection (B)(2)(c)(4) of this section, and,

e = the value in subsection (B)(2)(c)(5) of this section.

7. If the Director determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory within the requisite time and temperature conditions specified by Appendix D § 801-D (A)(1) and that the system is providing adequate disinfection in the distribution system, the requirements of subsection (B)(2)(c)(1)-(6) of this section do not apply.

d. A system need not report the data listed in subsections (B)(2)(a) of this section if all data listed in subsections (B)(2)(a)-(c) of this section remain on file at the system and the Director determines that the system has submitted all the information required by subsections (B)(2)(a)-(c) of this section for at least 12 months.

3. a. Each system, upon discovering that a waterborne disease outbreak potentially attributable to that system has occurred, must report that occurrence to the Director as soon as possible, but no later than by the end of the next business day.

b. If at any time the turbidity exceeds 5 NTU, the water system must consult with the NNEPA-PWSSP as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under § 605(B)(3).

c. If at any time the residual falls below 0.2 mg/L in the water entering the distribution system, the system must notify the Director as soon as possible, but no later than by the end of the next business day. The system also must notify the Director by the end of the next business day whether or not the residual was restored to at least 0.2 mg/L within 4 hours.

## § 807 RECYCLE PROVISIONS

### A. Applicability

All Part VIII systems that employ conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must meet the requirements in subsections (B) through (D) of this section.

### B. Reporting

A public water system subject to this section as provided in subsection (A) must notify the Director in writing by December 8, 2003, if the system recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification must include, at a minimum, the information specified in subsections (B)(1) and (2) of this section.

1. A plant schematic showing the origin of all flows which are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport them, and the location where they are re-introduced back into the treatment plant.

2. Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and Director-approved operating capacity for the plant where the Director has made such determinations.

### C. Treatment technique requirement

By June 8, 2004, any system that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of a system's existing conventional or direct filtration system as defined in § 104 or at an alternate location approved by the Director. If capital improvements are required to modify the recycle location to meet this requirement, all capital improvements must be completed no later than June 8, 2006.

### D. Recordkeeping

The system must collect, and retain on file, recycle flow information specified in subsections (D)(1) through (6) of this section for review and evaluation by the Director, beginning June 8, 2004.

1. Copy of the recycle notification and information submitted to the Director under subsection (B) of this section.

2. List of all recycle flows and the frequency with which they are returned.
3. Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.
4. Typical filter run length and a written summary of how filter run length is determined.
5. The type of treatment provided for the recycle flow.
6. Data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use and frequency at which solids are removed if applicable.