

LCB File No. R088-00

**PROPOSED REGULATION OF THE
STATE BOARD OF HEALTH**

The Bureau of Health Protection Services (BHPS) wishes to make additions to the Nevada Administrative Code (NAC), Chapter 445A, Public Water Systems regarding Water Quality and the Surface Water Treatment Rule. We respectfully request that the proposed changes to these two regulations be forwarded to the Legislative Counsel Bureau for review.

The proposed changes NAC 445A include the requirements of the federal Disinfection Byproducts Rule and the Interim Enhanced Surface Water Treatment Rule. Adoption of these rules will allow us to submit our primacy program revisions to EPA.

The proposed changes were mailed to, and comments solicited from, the affected community water systems as well as several public and private agencies. BHPS held public workshops on these regulations in Elko, Carson City and Las Vegas during January, 2000. Debra Jeppson, DAG has reviewed and commented on them and her comments have been incorporated into these regulations. Additionally, the Human Resources Department has approved these regulations.

BHPS plans to notice the final regulations from LCB in time for the July 14, 2000 State Board of Health meeting.

Proposed Revisions to NAC 445A, Public Water Systems Water Quality

EXPLANATION – matter in ***BOLD Italics*** is new; matter in brackets and strikethrough ~~[omitted material]~~ is material to be omitted.

Section 1. Chapter 445A of NAC is hereby amended by adding thereto the provisions set forth as sections 2 to 6, inclusive, of this regulation.

Sec. 2. Chapter 445A of NAC is hereby amended by adding thereto a new section to read as follows:

Adoption of standards and publications by reference. The following provisions are hereby adopted by reference:

1. The provisions of 40 C.F.R. §§141.1, 141.2, 141.4, 141.5, 141.11 to 141.16, inclusive, 141.21 to 141.30, inclusive, 141.31 to 141.35, inclusive, 141.40 to 141.42, inclusive, 141.61 to 141.63, inclusive, 141.74, 141.80 to 141.91, inclusive, 141.100, 141.101, 141.110, 141.111, 141.130 to 141.135, inclusive, 141.151 to 141.155, inclusive, 141.164 and 141.165 of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999. The publication that contains those provisions is available by mail from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh, Pennsylvania 15250-7954, or by telephone at (202) 512-1800, at a price of \$40.00.

Sec. 3. NAC 445A.453 is hereby amended to read as follows:

NAC 445A.453 Primary standards: Requirements.

1. All public water systems must meet the requirements of NAC 445A.450 to 445A.492, inclusive, and of the "National Primary Drinking Water Regulations," as set forth in the most recently published edition of 40 C.F.R. §§ 141.1, 141.4, 141.5, 141.11 to 141.16, inclusive, 141.61, 141.62, 141.63, 141.80 to 141.91, inclusive, 141.100, 141.101, 141.110, ~~and~~ 141.111,

141.130, 141.135, 141.164 and 141.165 unless the state board of health gives notice that the most recent publication is not suitable for this state pursuant to NAC 445A.4915.

~~[2. The "National Primary Drinking Water Regulations," as set forth in 40 C.F.R. §§ 141.1, 141.4, 141.5, 141.11 to 141.16, inclusive, 141.61, 141.62, 141.63, 141.80 to 141.91, inclusive, 141.100, 141.101, 141.110 and 141.111, 141.130, 141.135, 141.164 and 141.165 are hereby adopted by reference. Copies of those regulations are available for purchase from the office of the Health Division, Capitol Complex, Carson City, Nevada 89710, at a price of \$7 each.]~~

Sec. 4. NAC 445A.454 is hereby amended to read as follows:

NAC 445A.454 Primary standards: Monitoring and analyses.

1. The monitoring requirements for the primary standards contained in NAC 445A.453 must be performed as required by the most recently published edition of 40 C.F.R. §§ 141.21 to 141.30, inclusive, ~~[and]~~ 141.40 to 141.42, inclusive, *and 141.131 to 141.133, inclusive* of the "National Primary Drinking Water Regulations," unless the state board of health gives notice that the most recent publication is not suitable for this state pursuant to NAC 445A.4915. All analyses of the primary standards must be performed in compliance with NAC 445A.458 and in a laboratory that is certified pursuant to NAC 445A.460 to 445A.484, inclusive.

~~[2. The "National Primary Drinking Water Regulations," as set forth in 40 C.F.R. §§ 141.21 to 141.30, inclusive, and 141.40 to 141.42, inclusive, and 141.131 to 141.133, inclusive, are hereby adopted by reference. Copies of these regulations are available for purchase from the Superintendent of Documents, United States Government Printing Office, Washington, D.C. 20402, for the price of \$32.]~~

Sec. 5. NAC 445A.458 is hereby amended to read as follows:

NAC 445A.458 Conduct of analysis.

1. Except as otherwise provided in this section, each analysis required by NAC 445A.453 to 445A.457, inclusive, must be performed by a properly certified laboratory.
2. Turbidity measurements may be made by a certified laboratory or by water supply personnel utilizing an instrument capable of meeting the requirements of 40 C.F.R. § 141.22(a). ~~as adopted pursuant to NAC 445A.454.~~
3. Chlorine residual measurements when authorized as a substitute for coliform bacteria monitoring may be made by the water supplier utilizing an instrument and methods capable of meeting the requirements of 40 C.F.R. § 141.74. , ~~as adopted pursuant to NAC 445A.460.~~

Sec. 6. NAC 445A.485 is hereby amended to read as follows:

NAC 445A.485 Reporting, public notification and recordkeeping.

1. The owner or operator of a public water system who fails to perform monitoring as required by 40 C.F.R. § 141.21 of the "National Primary Drinking Water Regulations," as those provisions existed on December 31, 1998, shall notify all persons served by the system within 45 days after the violation or failure. All other activities of reporting, public notification and recordkeeping must be performed as required by 40 C.F.R. §§ 141.31 to 141.35, inclusive, *141.134*, and 141.151 to 141.155, inclusive, of the "National Primary Drinking Water Regulations," as those provisions existed on December 31, 1998, and by NAC 445A.450 to 445A.492, inclusive.
2. Daily turbidity measurements must be compiled on a monthly basis and analyzed as required by 40 C.F.R. § 141.22 of the "National Primary Drinking Water Regulations," as those provisions existed on December 31, 1998. The compiled results must be sent to the health division before the 10th day of the following month. Water suppliers located in Clark County or Washoe County must report to the applicable district health department.

Proposed revisions to NAC 445A, Public Water Systems Surface Water Treatment Rule

EXPLANATION – matter in ***BOLD Italics*** is new; matter in brackets and strikethrough [~~omitted material~~] is material to be omitted.

Section 1. Chapter 445A of NAC is hereby amended by adding thereto the provisions set forth as sections 2 to 17, inclusive, of this regulation.

Sec. 2. Chapter 445A of NAC is hereby amended by adding thereto a new section to read as follows:

Adoption of standards and publications by reference. The following provisions are hereby adopted by reference:

1. The provisions of 40 C.F.R. §§141.2, 141.70 to 141.75, inclusive and 141.170 to 141.175, inclusive, of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999. The publication that contains those provisions is available by mail from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh, Pennsylvania 15250-7954, or by telephone at (202) 512-1800, at a price of \$40.00.

Sec. 3. Chapter 445A.495 of NAC is hereby amended to read as follows:

NAC 445A.495 Definitions. As used in NAC 445A.495 to 445A.540, inclusive, unless the context otherwise requires, the words and terms defined in NAC 445A.496 to 445A.516, inclusive, have the meanings ascribed to them in those sections.

The words and terms defined in 40 C.F.R. § 141.2 have the meaning ascribed to them in that section.

Sec. 4. NAC 445A.518 is hereby amended to read as follows:

Submission of plan for compliance with requirements; date for final compliance.

1. A supplier of water who is notified by the health division that the public water system is not meeting any of the requirements for treatment of NAC 445A.520, 445A.521, ~~445A.523~~, 445A.526, 445A.527 or 445A.529 to 445A.540, inclusive, shall submit a detailed plan to the health division, not less than 120 days after the date of notification, containing a feasible timetable for bringing the system into compliance with these sections.

2. The date for final compliance must not be later than June 29, 1993, or 18 months after notification by the health division that ground water is under the direct influence of surface water, whichever is later, unless an extension is granted by the health division.

Sec. 5. NAC 445A.520 is hereby amended to read as follows:

NAC 445A.520 General requirements for treatment.

1. Each supplier of water shall treat the water in accordance with ~~the provisions of this section and~~ NAC 445A.521 and 445A.526, *and as required by 40 C.F.R. §§ 141.70 and 141.170 of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999*, except as otherwise provided in subsection 3. ~~treatment must ensure:~~

~~[(a) At least 99.9 percent or 3-log removal or inactivation of pathogenic cysts such as Giardia lamblia; and]~~

~~[(b) At least 99.99 percent or 4-log removal or inactivation of enteric viruses.]~~

2. A supplier of water who meets the standards of performance in ~~NAC 445A.523~~ *this section* and 445A.526 and the operating criteria in NAC 445A.533 will be considered to be in compliance with the requirements of subsection 1.

3. The health division may require a higher degree of treatment than required by subsection 1, depending on the degree of contamination within the source water.

4. The state board of health will not grant a variance from the provisions of this section.

Sec. 6. NAC 445A.521 is hereby amended to read as follows:

NAC 445A.521 Filtration: Acceptable methods of treatment, *standards of performance*.

1. Each supplier of water shall treat the water ~~using:~~ *as required by 40 C.F.R. §§ 141.73 and 141.173 of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999.*

~~[(a) Conventional filtration;]~~

~~[(b) Direct filtration;]~~

~~[(c) Diatomaceous earth filtration; or]~~

~~[(d) Slow sand filtration;~~

~~unless an alternative process of filtration has been approved by the health division pursuant to NAC 445A.524 or approval to avoid filtration has been granted by the health division pursuant to NAC 445A.525.]~~

2. The state board of health will not grant a variance from the provisions of this section.

Sec. 7. NAC 445A.522 is hereby amended to read as follows:

NAC 445A.522 Filtration: Applicable efficiencies for removal.

1. For the purposes of meeting the levels of treatment set forth in NAC 445A.520:

(a) Treatment by conventional filtration is presumed capable of achieving at least 99.7 percent or 2.5 log removal of Giardia cysts and 99 percent or 2-log removal of viruses if the process is in compliance with the operating criteria in NAC 445A.533 and the standards of performance in *NAC 445A.521* ~~[NAC 445A.523]~~; and

(b) Treatment by direct filtration, diatomaceous earth filtration and slow sand filtration is presumed capable of achieving at least a 99 percent or 2-log removal of Giardia cysts and a 90

percent or 1-log removal of viruses if the process is in compliance with the criteria and standards set forth in paragraph (a).

2. The health division may grant higher efficiencies for removal than those specified in this section if the supplier of water demonstrates to the division that the higher efficiency for removal can be obtained reliably.

Sec. 8. NAC 445A.524 is hereby amended to read as follows:

NAC 445A.524 Filtration: Use of alternative technology.

1. The use of an alternative filtration technology, including packaged treatment plants, may be approved by the health division if the following requirements are met:

- (a) The supplier of water demonstrates that the technology proposed provides a minimum of 99 percent or 2-log removal of Giardia cysts and a 90 percent or 1-log removal of viruses. The process must meet the standards of performance established in *NAC 445A.521*. ~~[subsection 1 of NAC 445A.523.(b)]~~ An engineering report is submitted to the health division documenting the results of experiments done at pilot plants or tests completed on a full-scale installation that is treating water with similar characteristics and exposed to similar hazards as the water proposed for treatment.

2. If the use of an alternative filtration technology is approved by the health division, the supplier of water shall submit an engineering report, not less than 6 months after the system becomes operational, verifying that the alternative technology meets the standards established for performance under actual conditions of operation.

3. If the supplier of water does not meet these standards, he shall submit to the health division a timetable for the correction of the deficiencies.

Sec. 9. NAC 445A.525 is hereby amended to read as follows:

NAC 445A.525 Filtration: Avoidance of requirements.

1. A supplier of water may apply to the health division to operate without installing a system for filtration. The health division may grant this request if the supplier of water, not later than December 30, 1991, or 18 months after notification by the health division that a ground water system is under the direct influence of surface water, whichever is later, *meets the requirements of 40 C.F.R. §§ 141.71 and 141.171 of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999, except that for systems at Lake Tahoe, the supplier of water shall demonstrate that a level of protection equivalent to watershed control is provided by the location of the intake structure.*

~~[(a) Demonstrates compliance with subsection 1 of NAC 445A.520.]~~

~~[(b) Demonstrates an ability to provide disinfection in accordance with NAC 445A.526 and meets the operating criteria for 3-log removal of Giardia found in paragraph (b) (3) of 40 C.F.R. § 141.74.]~~

~~[(c) Equips the public water system with a system for disinfection that has redundant components, including an auxiliary power supply that starts automatically and an alarm to ensure that the application of disinfectant is maintained continuously while water is being delivered to the distribution system. Alternatively, the system may provide for an automatic shut-off of delivery of water to the distribution system whenever there is less than 0.2 milligrams per liter of residual disinfectant in the water if the supplier demonstrates to the health division that this does not cause an unreasonable risk to public health or interfere with fire protection.]~~

~~[(d) Demonstrates water quality that does not exceed a level of turbidity of 5 units of nephelometric turbidity, as measured at a point before the application of the disinfectant.]~~

~~[(e) Demonstrates, for the last 6 months of operation, a bacteriological quality of water that does not exceed 100 colonies per 100 milligrams total coliform concentration or 20 colonies per 100 milligrams concentration of fecal coliform in at least 90 percent of the representative samples taken. The samples must be taken immediately before the first point of the application of the disinfectant. If a system measures both fecal and total coliforms, the fecal coliform criterion, but not the total coliform criterion must be met.]~~

~~[(f) Has a comprehensive program for controlling activities concerning the watershed and demonstrates that the public water system has control of all human activities which may have an adverse effect on the microbiological quality of the water source through land use planning, any water quality discharge controls established by the division of environmental protection, land ownership or written agreements with agencies that have management authority or landowners who control portions of the watershed. Alternatively, for systems at Lake Tahoe, the supplier of water shall demonstrate that by the location of the intake structure, a level of protection equivalent to watershed control is provided.]~~

~~[(g) Verifies that the system has not been identified by the health division as a source of water-borne disease or, if it has, that the system has been modified sufficiently to prevent another such occurrence.]~~

~~[(h) Demonstrates compliance with the total maximum levels of contaminant for trihalomethane adopted pursuant to NAC 445A.453.]~~

~~[(i) Demonstrates compliance with the total maximum levels of containment for total coliform as set forth in 40 C.F.R. Part 141 as it existed on July 1, 1989, and becomes effective on December 31, 1990.]~~

~~[(j) Demonstrates the effectiveness of the program for watershed control and processes of treatment for disinfection through an annual on-site inspection of the system by the health division or its designee. As used in this subsection, division of environmental protection means the division of environmental protection of the state department of conservation and natural resources.]~~

2. To avoid the requirements for filtration a supplier of water must comply with the provisions that are set forth in paragraph (b) of 40 C.F.R. § 141.74 and paragraph (a) of 40 C.F.R. § 141.75.

~~[These sections are hereby adopted by reference as they existed on June 29, 1989. Copies of these sections are available at no charge from the health division, 505 E. King Street, Room 103, Carson City, Nevada 89710.]~~ Additional information on obtaining approval to operate without

filtration is outlined in the Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water, October, 1989 edition (#PB90-148-016/AS). This document is available at a cost of \$45 from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

Sec. 10. NAC 445A.526 is hereby amended to read as follows:

NAC 445A.526 Standards for disinfection.

1. Each supplier of water shall provide ~~[for continuous]~~ disinfection *treatment as required by 40 C.F.R. §§ 141.72 and 141.172 of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999.* ~~[of the water and ensure that the public water system meets the requirements for reduction in subsection 1 of NAC 445A.520.]~~

~~[2. The concentration of residual disinfectant in the water entering the distribution system must not be less than 0.2 milligrams per liter for more than 4 hours in any 24-hour period. The state board of health will not exempt any supplier of water from the requirement of this subsection.]~~

~~[3. Except as otherwise provided in subsection 4, the concentration of residual disinfectant in samples of water collected from the distribution system must be detectable in at least 95 percent of the samples taken each month for any 2 consecutive months that the system serves water to the public. Water in the distribution system with a concentration of heterotrophic bacteria less than or equal to 500 colonies per milliliter, measured as heterotrophic plate count, will be considered equivalent to a detectable level of residual disinfectant.]~~

~~[4. The health division may waive the requirements of subsection 3 if a public water system:~~

~~(a) Is unable to deliver a sample of water under the requisite conditions for time and temperature to a certified laboratory; and]~~

~~[(b) Demonstrates that it provides disinfection which meets the requirements of subsection 2, and is carrying out an adequate program of cross connection control.]~~

~~[5]~~ 2. The state board of health will not grant a variance *nor exempt any supplier of water* from the provisions of this section.

Sec. 11. NAC 445A.527 is hereby amended to read as follows:

NAC 445A.527 Requirements for monitoring.

1. Except as otherwise provided in this section, each supplier of water shall, on or after June 29, 1993, or on the date the system for filtration is installed, whichever is later, *meet the requirements of 40 C.F.R. §§ 141.74 and 141.174 of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999.*

~~[(a) Determine the level of turbidity of the raw supply of water by collecting and analyzing a daily grab sample. Continuous turbidity measurements may be used in lieu of grab sampling if the system validates the accuracy of the measurements each week.]~~

~~[(b) Determine the level of turbidity of representative samples of the combined filter effluent before clearwell storage at least once every 4 hours that the system is in operation. A supplier of water using slow sand filtration or serving fewer than 500 persons that remains in compliance with NAC 445A.520, 445A.523, 445A.526 and 445A.533 may reduce the monitoring of turbidity to one sample per day if the health division determines that less frequent monitoring is sufficient to determine whether the filtration is effective. Continuous turbidity measurements may be used in lieu of grab sampling if the system validates the accuracy of the measurements each week.]~~

~~[(c) Measure and record continuously the concentration of residual disinfectant in the water being delivered to the distribution system. If there is a failure of the equipment that performs this measurement, grab sampling of the water every 4 hours may be conducted in lieu of continuous measuring and recording for not more than 5 working days after the failure of the equipment. A supplier of water serving less than 500 persons may collect and analyze one grab sample of water for residual disinfectant each day. A supplier serving 500 to 1,000 persons may collect and analyze two grab samples of water for residual disinfectant each day. If the concentration of residual disinfectant falls below 0.2 milligrams per liter, samples of water in addition to those required by this subsection must be collected and analyzed every 4 hours until the concentration of residual disinfectant is equal to or greater than 0.2 milligrams per liter.]~~

~~[(d)]~~ **2. Each supplier of water shall** ~~[M]~~**m**measure and record the parameters that are needed to determine compliance with the requirements for concentration times time including, but not limited to:

~~[(1)]~~ **(a)** The temperature of the disinfected water;

~~[(2)]~~ **(b)** The pH of the disinfected water, if chlorine is used as a disinfectant;

~~[(3)]~~ (c) The disinfectant contact time; and

~~[(4)]~~ (d) The concentration of the residual disinfectant before or at the point the water reaches the first customer.

~~[(e)]~~ 3. Measure the concentration of residual disinfectant or heterotrophic plate count within the distribution system at the same frequency and at the same time and location as total coliforms are measured. A supplier of water that uses both a source of surface water or ground water under the direct influence of surface water, and a source of ground water that is not under the direct influence of surface water, may petition the health division for alternate sampling locations if he demonstrates that these sampling points are more representative of the disinfected surface water or ground water under the direct influence of surface water in the distribution system.

~~[2. As used in this section, "grab sample" means a single sample of water collected at a particular time and place that represents the composition of the water only at that time and place.]~~

Sec. 12. NAC 445A.529 is hereby amended to read as follows:

NAC 445A.529 Submission of engineering report for system of treatment installed before November 29, 1990. A supplier of water that has installed a system for treatment before November 29, 1990, which does not consist of the approved technologies listed in NAC 445A.521 or which was not designed to comply with the operating criteria in NAC 445A.531 and 445A.533, shall submit to the health division an engineering report which demonstrates that the plant can be operated to supply water meeting the requirements for performance contained in ~~[NAC 445A.523]~~ **NAC 445A.521** and 445A.526. This report must include an analysis of the previous 12 months of operating data and any special studies conducted to test the performance of the plant under conditions of adverse water quality.

Sec. 13. NAC 445A.532 is hereby amended to read as follows:

NAC 445A.532 Certification of persons operating facility. A supplier of water shall, not later than ~~[12]~~ 6 months after receiving notification from the health division that its public water system is using surface water or ground water under the direct influence of surface water, ensure that the persons who operate the facility for treatment have ~~[received:]~~ *received a certificate to operate the facility as required by NAC 445A.626.*

~~[1. A certificate of competency in water treatment operations issued by the Association of Boards of Certification, P.O. Box 786, Ames, Iowa 50010-0786; or]~~

~~[2. A certificate issued by the American Water Works Association, California-Nevada Section, P.O. Box 5429, San Bernardino, California 92412.]~~

Sec. 14. NAC 445A.537 is hereby amended to read as follows:

NAC 445A.537 Submission of monthly reports.

1. Each supplier of water shall submit to the health division, on or after June 29, 1993, or on the date the system for filtration is installed, whichever is later, a monthly report on the operation of each facility not later than the 10th day of the following month. *The monthly report must include the information as required by 40 C.F.R. §§ 141.75 and 141.175 of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999.*

~~[2. The monthly report must include the following results of the monitoring of turbidity of the combined filter effluent:]~~

~~[(a) A tabular summary of the results of all monitoring data;]~~

~~[(b) A calculated average daily level of turbidity;]~~

~~[(c) The number and percentage of turbidity measurements taken during the month that are less than or equal to the standards of performance contained in NAC 445A.523; and]~~

~~[(d) The date and value of any turbidity measurements that exceed the standards set forth in paragraph (c).]~~

~~[3. The monthly report must include the following results of monitoring for disinfection:~~

~~[(a) Daily reports of]~~

~~[(1) The lowest measurement of the concentration of residual disinfectant, in milligrams per liter, in water entering the distribution system; and]~~

~~[(2) The calculated concentration times time value during peak hourly flow.]~~

~~[(b) The date and duration of each instance when the residual disinfectant in the water supplied to the distribution system is less than 0.2 milligrams per liter and the date the health division was notified of the occurrence.]~~

~~[(c) The following information on samples taken from the distribution system:]~~

~~[(1) The number of samples where the residual disinfectant was measured.]~~

~~[(2) The number of samples where only the heterotrophic plate count was measured.]~~

~~[(3) The number of measurements where no residual disinfectant was found and no heterotrophic plate count was measured.]~~

~~[(4) The number of measurements where no residual disinfectant was found and the heterotrophic plate count was greater than 500 colony forming units per milliliter.]~~

~~[(5) The number of measurements where only the heterotrophic plate count was measured and it was more than 500 colony forming units per milliliter.]~~

~~[(6) For the current and previous month that the supplier has served water to the public, the value of V in the following formula:~~

~~(c+d+e)~~

~~$V = 100 \times (1 \text{—————})$~~

~~(a+b)~~

~~Where a = the value in subparagraph (1) of paragraph (c) of this subsection.~~

~~b = the value in subparagraph (2) of paragraph (c) of this subsection.~~

~~c = the value in subparagraph (3) of paragraph (c) of this subsection.~~

~~d = the value in subparagraph (4) of paragraph (c) of this subsection.~~

~~e = the value in subparagraph (5) of paragraph (c) of this subsection.~~

~~V = the percent of distribution samples with a detectable residual level of disinfectant.~~

~~For systems which do not measure heterotrophic plate count the equation simplifies to:~~

~~e~~

~~$V = 100 X (1 - \text{---})$~~

~~A]~~

~~[4] 2. The monthly report must also include:~~

~~(a) A written explanation of the cause of any violation of the standards of performance in NAC~~

~~[445A.523] 445A.521 and 445A.526 and the operating criteria in NAC 445A.533. [; and]~~

~~[(b) A summary of:]~~

~~[(1) The complaints made due to the water quality; and]~~

~~[(2) Any report of gastrointestinal illness.]~~

Sec. 15. NAC 445A.539 is hereby amended to read as follows:

NAC 445A.539 Periodic performance of sanitary survey of watershed; report of survey.

1. A sanitary survey of the watershed of a public water system must be performed by a qualified professional engineer or other person approved by the health division at least once every 5 years.

2. A report of the survey, including:

(a) A physical and hydrogeological description of the watershed;

- (b) A summary of the data compiled in monitoring the quality of the water;
 - (c) A description of activities and sources of contamination;
 - (d) A description of any significant changes that have occurred since the last survey which could affect the quality of the water;
 - (e) A description of the system's ability to meet the requirements of NAC 445A.520, ~~445A.523,~~ 445A.526 and 445A.529 to 445A.540, inclusive; and
 - (f) Any recommendations for corrective actions,
- must be submitted to the health division not less than 60 days after the completion of the survey.

Sec. 16. NAC 445A.540 is hereby amended to read as follows:

NAC 445A.540 Requirements for notification of persons served by system.

1. A supplier of water shall notify persons served by the public water system:

~~[(a) Whenever there is a failure to comply with paragraph (d) of subsection 1 of NAC 445A.525, if he is not required to install a system for filtration in his public water system;]~~

~~[(b)] (a)~~ If he has not installed a system for filtration by June 29, 1993, and has not met the requirements of NAC 445A.525; or

~~[(e)] (b)~~ Whenever an outbreak of water-borne disease occurs.

2. Beginning on or after June 29, 1993, or on the date a system for filtration is installed, whichever is later, a supplier of water shall notify persons served by the public water system whenever there is a failure to comply with:

(a) The requirements for treatment or the standards of performance specified in NAC 445A.520, ~~445A.523~~ **445A.521** or 445A.526; or

(b) The monitoring requirements specified in NAC 445A.527.

3. The notification required by:

(a) Subsection 1, and paragraph (a) of subsection 2 must be given in the manner required for violations of techniques of treatment as set forth in subsection 1 of NAC 445A.485; and

(b) Paragraph (b) of subsection 2 must be given in accordance with the general requirements for notification set forth in subsection 1 of NAC 445A.485.

4. If there is a failure to comply with the requirements set forth in paragraph (a) of subsection 2, the notice must include the following language:

The health division of the department of human resources sets standards for drinking water and has determined that the presence of microbiological contaminants in water is a health concern at certain levels of exposure. If water is treated inadequately, microbiological contaminants in that water may cause disease. Symptoms may include diarrhea, cramps, nausea, and jaundice, and any associated headaches and fatigue. These symptoms, however, are not only associated with disease-causing organisms in drinking water but also may be caused by a number of factors other than your drinking water. The United States Environmental Protection Agency has set standards for treating drinking water to reduce the risk of these adverse health effects. Treatment such as filtering and disinfecting the water removes or destroys microbiological contaminants. Drinking water that is treated to meet these standards is associated with little to none of this risk and should be considered safe.

Sec. 17. NAC 445A.496, NAC 445A.499, NAC 445A.500, NAC 445A.501, NAC 445A.502, NAC 445A.503, NAC 445A.504, NAC 445A.505, NAC 445A.506, NAC 445A.511, NAC 445A.512, NAC 445A.513, NAC 445A.515, NAC 445A.523, NAC 445A.528 are hereby repealed.

TEXT OF REPEALED SECTIONS

NAC 445A.496 "Coagulation" defined. "Coagulation" means a process of mixing coagulant chemicals where colloidal and suspended material are destabilized and agglomerated into settleable or filterable flocs.

NAC 445A.499 "Conventional filtration" defined. "Conventional filtration" means a series of treatment processes including coagulation, flocculation, sedimentation and filtration resulting in the substantial removal of particulates.

NAC 445A.500 "Diatomaceous earth filtration" defined. "Diatomaceous earth filtration" means a process used to remove particulates where a precoat cake of graded diatomaceous earth filter media is deposited on a support membrane or septum. Water is filtered by passing through the cake on the septum. Additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

NAC 445A.501 "Direct filtration" defined. "Direct filtration" means a series of processes including coagulation, flocculation and filtration, but excluding sedimentation, resulting in the substantial removal of particulates.

NAC 445A.502 "Disinfectant contact time" defined. "Disinfectant contact time" means the time in minutes that it takes water to move from the point of the application of disinfectant to a point before or at the location where the concentration of residual disinfectant is measured. The time of disinfectant contact in pipelines must be calculated based on the conditions of plug flow by dividing the internal volume of the pipe by the maximum hourly rate of flow through the pipe. The time of disinfectant contact within mixing basins and storage reservoirs must be determined by tracer studies or an equivalent demonstration.

NAC 445A.503 "Disinfection" defined. "Disinfection" means a process that inactivates pathogenic organisms in water by using chemical oxidants or equivalent agents.

NAC 445A.504 "Filtration" defined. "Filtration" means a process for removing particulate matter from water by passing the water through porous media.

NAC 445A.505 "Flocculation" defined. "Flocculation" means a process to enhance agglomeration or the collection of smaller floc particles into larger particles that are more settleable or filterable using gentle stirring by hydraulic or mechanical means.

NAC 445A.506 "Ground water under the direct influence of surface water" defined.

"Ground water under the direct influence of surface water" means any water beneath the surface of the ground that the health division has determined to have:

1. A significant occurrence of insects or other macroorganisms;
2. Algae or large-diameter pathogens such as *Giardia lamblia*; or
3. Significant and rapid shifts in water characteristics such as turbidity, temperature, conductivity or pH which closely parallel climatological or surface water conditions.

NAC 445A.511 "Sedimentation" defined. "Sedimentation" means a process before filtration for removal of settleable solids by gravity or separation.

NAC 445A.512 "Slow sand filtration" defined. "Slow sand filtration" means a process where raw water is passed through a bed of sand at a velocity of less than 0.1 gallons per minute per square foot that results in the substantial removal of particulates by physical and biological mechanisms.

NAC 445A.513 "Surface water" defined. "Surface water" means all water open to the atmosphere and subject to surface runoff.

NAC 445A.515 "Virus" defined. "Virus" means a virus that originates in feces and which may infect humans through water-borne transmissions.

NAC 445A.523 Filtration: Standards of performance.

1. Except as otherwise provided in this subsection, the level of turbidity of representative samples of filtered water must be less than or equal to 0.5 units of nephelometric turbidity in at least 95 percent of the measurements taken each month for a public water system using conventional filtration, direct filtration or diatomaceous earth filtration. The division may allow a higher level of turbidity, not to exceed 1 unit of nephelometric turbidity, if the system demonstrates compliance with subsection 1 of NAC 445A.520 at the higher level of turbidity. The level of turbidity must not exceed 5 units of nephelometric turbidity.

2. Except as otherwise provided in this subsection, the level of turbidity of representative samples of filtered water must be less than or equal to 1 unit of nephelometric turbidity in at least 95 percent of the samples taken each month for a public water system using slow sand filtration. A supplier of water may request permission from the health division to operate at a higher level of effluent turbidity if he demonstrates compliance with subsection 1 of NAC 445A.520 while operating at this alternative level. The level of turbidity must not exceed 5 units of nephelometric turbidity.

NAC 445A.528 Adoption of analytical methods by reference. The analytical methods to be used to demonstrate compliance with NAC 445A.525 and 445A.527 are set forth in paragraph (a) of 40 C.F.R. § 141.74. This section is hereby adopted by reference as it existed on June 29, 1989. Copies of the section are available at no charge at the office of the health division, 505 East King Street, Room 103, Carson City, Nevada 89710.