

**ADOPTED REGULATION OF THE
STATE BOARD OF HEALTH**

LCB File No. R088-00

Effective August 3, 2001

EXPLANATION – Matter in *italics* is new; matter in brackets ~~omitted material~~ is material to be omitted.

AUTHORITY: §§1, 2, 5-9, 24-27 and 29, NRS 445A.855; §§3, 4, 10-23 and 28, NRS 445A.860.

Section 1. Chapter 445A of NAC is hereby amended by adding thereto the provisions set forth as sections 2 and 3 of this regulation.

Sec. 2. *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, 141.41, 141.42, 141.61 to 141.65, inclusive, 141.74, 141.80 to 141.91, inclusive, 141.100, 141.101, 141.110, 141.111, 141.130 to 141.135, inclusive, and 141.151 to 141.155, inclusive, of the “National Primary Drinking Water Regulations,” as those provisions existed on February 16, 1999, are hereby adopted by reference. A copy of a publication containing those provisions is available 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, for the price of \$47. Copies of those regulations are also available, free of charge, from the Environmental Protection Agency at the Internet address <<http://www.epa.gov/safewater/mcl.html>>.*

Sec. 3. *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, are hereby adopted by reference. A copy of a publication containing those provisions is available 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, for the price of \$47. Copies of those regulations are also available, free of charge, from the Environmental Protection Agency at the Internet address <<http://www.epa.gov/safewater/mcl.html>>.

Sec. 4. NAC 445A.2268 is hereby amended to read as follows:

445A.2268 “Surface water” ~~[has the meaning ascribed to it in NAC 445A.513.]~~ *means all water open to the atmosphere and subject to surface runoff.*

Sec. 5. NAC 445A.451 is hereby amended to read as follows:

445A.451 *The provisions of* NAC 445A.450 to 445A.492, inclusive, *and section 2 of this regulation* apply to all public water systems unless a public water system:

1. Consists only of distribution and storage facilities and does not have any collection or treatment facilities;
2. Obtains all of its water from, but is not owned or operated by, a public water system to which NAC 445A.450 to 445A.492, inclusive, *and section 2 of this regulation* apply;
3. Does not sell water to any person; and
4. Is not a carrier which conveys passengers in interstate commerce.

Sec. 6. NAC 445A.453 is hereby amended to read as follows:

445A.453 ~~[1.]~~ All public water systems must meet the requirements of NAC 445A.450 to 445A.492, inclusive, *and section 2 of this regulation*, 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,]~~ *to 141.65, inclusive*, 141.80 to 141.91, inclusive, 141.100, 141.101, 141.110, ~~[and]~~ 141.111, *141.130 and 141.135, as adopted by reference in section 2 of this regulation*, unless the state board of health gives notice

that the ~~[most recent publication is]~~ *requirements are* 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, 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. 7. NAC 445A.454 is hereby amended to read as follows:

445A.454 ~~[H.]~~ The monitoring requirements for the primary standards set forth 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, 141.41 ~~[and 141.42 of the “National Primary Drinking Water Regulations,”]~~, *141.42, 141.131, 141.132 and 141.133, as adopted by reference in section 2 of this regulation*, unless the state board of health gives notice that the ~~[most recent publication is]~~ *requirements are* not suitable for this state pursuant to NAC 445A.4915. Each analysis of the primary standards must be performed in compliance with NAC 445A.458 and in a laboratory that is certified pursuant to the provisions of sections 2 to 45, inclusive, of ~~[this regulation.~~

~~—2.—The “National Primary Drinking Water Regulations,” as set forth in 40 C.F.R. §§ 141.21 to 141.30, inclusive, and 141.40, 141.41 and 141.42 are hereby adopted by reference. Copies of those regulations are available from the Superintendent of Documents, United States Government Printing Office, P.O. Box 371954, Pittsburgh, Pennsylvania, 15250-7954, for the price of \$40. Copies of those regulations are also available, free of charge, from the Environmental Protection Agency at the Internet address~~

~~<<http://www.epa.gov/safewater/mcl.html>>.]~~ *LCB File No. 203-99, which was adopted by the state board of health and filed with the secretary of state on August 1, 2001.*

Sec. 8. NAC 445A.458 is hereby amended to read as follows:

445A.458 1. Except as otherwise provided in this section, each analysis required by NAC 445A.453 to 445A.457, inclusive, *and section 2 of this regulation* 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 by reference pursuant to ~~[NAC 445A.454.]~~ *section 2 of this regulation.*

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 by reference in section 2 of this regulation.*

Sec. 9. NAC 445A.485 is hereby amended to read as follows:

445A.485 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.]~~, *as adopted by reference in section 2 of this regulation*, 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.]~~ *as adopted by reference in section 2 of this regulation*, and by NAC 445A.450 to 445A.492, inclusive ~~[.]~~, *and section 2 of this regulation.*

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.]~~, *as adopted by reference in section 2 of this regulation*. 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 shall report to the applicable district health department.

Sec. 10. NAC 445A.495 is hereby amended to read as follows:

445A.495 As used in NAC 445A.495 to 445A.540, inclusive, *and section 3 of this regulation*, unless the context otherwise requires ~~[, the]~~ :

1. *The* words and terms defined in NAC ~~[445A.496]~~ *445A.497* to 445A.516, inclusive, have the meanings ascribed to them in those sections ~~[.]~~; *and*

2. *The words and terms defined in 40 C.F.R. § 141.2, as adopted by reference pursuant to section 3 of this regulation, have the meanings ascribed to them in that section.*

Sec. 11. NAC 445A.518 is hereby amended to read as follows:

445A.518 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]~~ *set forth in* NAC 445A.520, 445A.521, ~~[445A.523,]~~ 445A.526, 445A.527 or 445A.529 to 445A.540, inclusive, *or section 3 of this regulation* 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. 12. NAC 445A.520 is hereby amended to read as follows:

445A.520 1. ~~Each~~ *Except as otherwise provided in this section, each* supplier of water shall treat the water in accordance with ~~the provisions of this section and~~ NAC 445A.521 and

445A.526 ~~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.], and 40 C.F.R. §§ 141.70 and 141.170, as adopted by reference in section 3 of this regulation.~~

2. A supplier of water who meets the standards of performance *set forth* in *this section and* NAC ~~445A.523 and~~ *445A.521 and* 445A.526 and *meets* the operating criteria *set forth* 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. 13. NAC 445A.521 is hereby amended to read as follows:

445A.521 1. Each supplier of water shall treat the water ~~using:~~

~~(a) Conventional filtration;~~

~~(b) Direct filtration;~~

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

~~(d) Slow sand filtration,~~

FLUSH ~~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.~~ in accordance with 40 C.F.R. §§ 141.73 and 141.173, as adopted by reference in section 3 of this regulation.

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

Sec. 14. NAC 445A.522 is hereby amended to read as follows:

445A.522 1. For the purposes of meeting the levels of treatment set forth in NAC 445A.520:

(a) ~~Treatment by conventional~~ *Conventional* filtration *treatment* is presumed *to be* 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 *set forth* in NAC 445A.533 and the standards of performance *set forth* in NAC ~~445A.523;~~ *455A.521*; 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. 15. NAC 445A.524 is hereby amended to read as follows:

445A.524 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 ~~[subsection 1 of NAC 445A.523.]~~
NAC 445A.521.

(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. 16. NAC 445A.525 is hereby amended to read as follows:

445A.525 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 ~~is~~:

~~—(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.~~

FLUSH ~~As used in this subsection, division of environmental protection means the division of environmental protection of the state department of conservation and natural resources.] , *meets the requirements set forth in 40 C.F.R. §§ 141.71 and 141.171, as adopted by reference in section 3 of this regulation, except that, for systems located at Lake Tahoe, the supplier of water must demonstrate that a level of protection, which is equivalent to watershed control, is provided by the location of the intake structure.*~~

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]~~ *§§ 141.74(b) and 141.75(a), as* 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.]~~ *in section 3 of this regulation.* 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).]~~ *Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources, 1991 edition (#PB93-222933INZ)*. This document is available at a cost of ~~[\$45]~~ **\$101** from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

Sec. 17. NAC 445A.526 is hereby amended to read as follows:

445A.526 1. Each supplier of water shall provide ~~[for continuous disinfection 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.] disinfection treatment in accordance with 40 C.F.R. §§ 141.72 and 141.172, as adopted by reference in section 3 of this regulation.~~

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

Sec. 18. NAC 445A.527 is hereby amended to read as follows:

445A.527 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 ~~†~~:

~~—(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) Measure], meet the requirements set forth in 40 C.F.R. §§ 141.74 and 141.174, as adopted by reference in section 3 of this regulation.~~

2. *A supplier of water shall 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) Measure]~~

3. *A supplier of water shall 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. 19. NAC 445A.529 is hereby amended to read as follows:

445A.529 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]~~ *technologies pursuant to which the supplier of water shall treat water in compliance with* 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]~~ *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. 20. NAC 445A.532 is hereby amended to read as follows:

445A.532 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 ~~[-~~

~~—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.] a certificate to operate the facility as required by NAC 445A.626.~~

Sec. 21. NAC 445A.537 is hereby amended to read as follows:

445A.537 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.

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:~~

$$\frac{(c+d+e)}{V = 100 X \left(1 - \frac{(a+b)}{(a+b)}\right)}$$

- ~~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:~~

$$\frac{V}{a} = 100 X (1 - \frac{c}{a})$$

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

(a) A written explanation of the cause of any violation of the standards of performance *set forth* in NAC ~~[445A.523]~~ *445A.521* and 445A.526 and the operating criteria *set forth* 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.]~~ *The information required by 40 C.F.R. §§ 141.75 and 141.175, as adopted by reference in section 3 of this regulation.*

Sec. 22. NAC 445A.539 is hereby amended to read as follows:

445A.539 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 *of the system* to meet the requirements of NAC 445A.520, ~~[445A.523,]~~ *445A.521*, 445A.526 and 445A.529 to 445A.540, inclusive; and

(f) Any recommendations for corrective actions,

FLUSH must be submitted to the health division not less than 60 days after the completion of the survey.

Sec. 23. NAC 445A.540 is hereby amended to read as follows:

445A.540 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)]~~ 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. 24. NAC 278.260 is hereby amended to read as follows:

278.260 A developer shall submit all the following items of information to the health division or local agency for its review of a tentative map:

1. A map showing the topographic features of the subdivision, including contours at intervals of 2 feet for slopes of 10 percent or less and intervals of 5 feet for slopes of over 10 percent.
2. Two copies of the map showing the tentative design of the subdivision, including the arrangement of lots, the alignment of roads and easements.
3. If a system for subsurface disposal of sewage will be used in the subdivision, a report on the soil, including the types of soil, a table showing seasonal high water levels and the rate of percolation at the depth of any proposed system for absorption by soil.
4. A statement of the type of water system to be used and the water source, for example, private wells or a public water system.
5. Unless water for the subdivision is to be supplied from an existing public water system, a report of the analyses of four 1-gallon samples taken in or adjacent to the subdivision from different wells. The analyses must show that the water meets the standards prescribed in NAC 445A.450 to 445A.492, inclusive **[H]**, *and section 2 of this regulation.*
6. A map of the 100-year flood plain for the applicable area. The map must have been prepared by recognized methods or by an appropriate governmental agency for those areas subject to flooding.
7. A description of the subdivision in terms of 40-acre parts of a designated section, township and range, or any other description which provides a positive identification of the location of the subdivision.
8. A map of the vicinity of the subdivision, showing the location of the proposed subdivision relative to the nearest city or major highway.
9. The names and addresses of the owners and developers of the subdivision.

10. A master plan showing the future development and intended use of all land under the ownership or control of the developer in the vicinity of the proposed subdivision.

Sec. 25. NAC 278.400 is hereby amended to read as follows:

278.400 1. Except as otherwise provided in subsection 3, if a public water system is to be used for the subdivision, the system must have:

(a) Necessary facilities to treat water to meet the standards provided in NAC 445A.450 to 445A.492, inclusive ~~[§]~~, *and section 2 of this regulation.*

(b) The capacity to meet the demands upon the system.

2. Except as otherwise provided in subsection 3, the health division or local agency shall not approve a subdivision with respect to water quality if the subdivision is in an area where:

(a) The water is to be supplied from individual wells and the water does not meet the standards established by the state board of health in NAC 445A.450 to 445A.492, inclusive ~~[§]~~, *and section 2 of this regulation;* or

(b) ~~[Where there]~~ *There* is a community water supply and the water is treated by the use of individual units in single-family dwellings.

3. Water furnished in a subdivision from a public water system or from individual wells is not required to comply with the maximum contaminant level for arsenic.

4. Upon the approval of the final map of a subdivision whose water system or water supply exceeds the maximum contaminant level for arsenic, the subdivider shall cause to be published a notice that the water system or water supply exceeds that level. The notice must be:

(a) Published in a newspaper of general circulation in the area served by the water system or water supply not more than 20 days after receipt of the approval;

(b) Published in that manner annually thereafter if the maximum contaminant level continues to be exceeded; and

(c) Provided in writing to any prospective purchaser of real property within the subdivision before any such sale is consummated.

5. As used in this section, “maximum contaminant level for arsenic” means the maximum contaminant level for that element established by 40 C.F.R. § 141.11, as adopted by reference in ~~NAC 445A.453.~~ *section 2 of this regulation.*

Sec. 26. NAC 278.400 is hereby amended to read as follows:

SECOND
PARALLEL
SECTION

278.400 1. If a public water system is to be used for the subdivision, the system must have:

(a) Necessary facilities to treat water to meet the standards provided in NAC 445A.450 to 445A.492, inclusive ~~§~~, *and section 2 of this regulation.*

(b) The capacity to meet the demands upon the system.

2. The health division or local agency shall not approve a subdivision with respect to water quality if the subdivision is in an area where:

(a) The water is to be supplied from individual wells and the water does not meet the standards established by the state board of health in NAC 445A.450 to 445A.492, inclusive ~~§~~, *and section 2 of this regulation;* or

(b) Where there is a community water supply and the water is treated by the use of individual units in single-family dwellings.

Sec. 27. NAC 461A.560 is hereby amended to read as follows:

461A.560 1. Any person providing camping spaces for vehicles shall provide an adequate supply of drinking water from an approved source. It must be of a safe, sanitary quality, meeting the requirements of NAC 445A.450 to 445A.492, inclusive ~~[]~~, *and section 2 of this regulation.*

2. The development of an independent water supply to serve the camping vehicles must not be made without prior approval by the health authority.

3. Water must be available within 100 feet of every camping space for vehicles. Overflow from faucets must empty into a drain connected to a disposal system or sump approved by the health authority.

4. Persons providing camping spaces for vehicles must conspicuously post unapproved sources in the immediate vicinity as unfit for drinking if, in the opinion of the health authority, there is a likelihood of these sources being used for human consumption.

Sec. 28. NAC 445A.496, 445A.499, 445A.500, 445A.501, 445A.502, 445A.503, 445A.504, 445A.505, 445A.506, 445A.511, 445A.512, 445A.513, 445A.515, 445A.523 and 445A.528 are hereby repealed.

Sec. 29. 1. This section and sections 1 to 25, inclusive, 27 and 28 of this regulation become effective upon filing with the secretary of state.

2. Section 25 of this regulation expires by limitation upon the adoption by the United States Environmental Commission of a final rule establishing a maximum contaminant level for arsenic in public water systems and the adoption of that standard by the state board of health.

3. Section 26 of this regulation becomes effective upon the adoption by the United States Environmental Commission of a final rule establishing a maximum contaminant level for arsenic in public water systems and the adoption of that standard by the state board of health.

TEXT OF REPEALED SECTIONS

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.

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.

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.

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.

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.

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

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

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.

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.

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

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.

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

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

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.

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.