

LCB File No. R126-05

**PROPOSED REGULATION OF THE STATE
ENVIRONMENTAL COMMISSION**

(This proposed regulation was previously adopted as T031-05 by the State Board of Health; the authority for these regulations was transferred to the State Environmental Commission pursuant to SB395, chapter 171, Stats. 2005, page 550)

Petition 2005-06 -- August 15, 2005

EXPLANATION – Matter in *italics are new*; matter in brackets are ~~omitted material~~

AUTHORITY: NRS. §§ 445A

This Regulation Amends NAC 445A.450 through 445A.540

**PUBLIC WATER SYSTEMS
Water Quality**

Section 1. *Frequency of a sanitary survey: The Division of Environmental Protection or the appropriate district board of health shall conduct a sanitary survey on all public water systems at the following frequency:*

- 1. All public water systems using surface water or groundwater under the direct influence of surface water will be subject to a sanitary survey at a minimum of once every three years or on a more frequent basis as determined by the Division of Environmental Protection, hereafter referred to as the (Division); and*
- 2. All public water systems using solely groundwater will be subject to a sanitary survey at a minimum of once every five years or on a more frequent basis as determined by the Division.*

Section 2. *Significant deficiencies in a public water system: Significant deficiency means any deficiency found at a public water system during a sanitary survey that is a violation of NAC 445A.450 through 445A.6731, inclusive, which may have the potential to cause a risk to public health. Significant deficiencies include unsanitary source conditions, treatment plant deficiencies, inadequate CT, or contact time (as defined in 40 CFR §141.2), cross connections, endangerment of sources(s), unsanitary storage and distribution of water, inadequate pressure, inadequate staff, and any other deficiency of comparable significance. Any significant deficiency noted in a sanitary survey must be addressed in writing to the Division or the appropriate district board of health, including a proposed implementation plan and schedule for correction of the deficiency, within 45 days from the public water system's receipt of the sanitary survey report.*

Section 3. Consumer Confidence Reports. *Each community public water system shall deliver to their customers on an annual basis consumer confidence reports which contain information on the quality of the water delivered by the system in accordance with the requirements of 40 CFR §§141.151 to 141.155, inclusive, as adopted by reference in Section 22.*

Section 4. Variances for small systems:

1. *The State Environmental Commission, hereafter referred to as the (Commission) may grant a variance, subject to the provisions of subsection 2 of this section, for compliance with a requirement specifying a maximum contaminant level or treatment technique to:*

(a) Public water systems serving 3,300 or fewer persons; and

(b) With approval from the Federal Government, public water systems serving more than 3,300 persons but fewer than 10,000 persons if the variance meets the requirements of this section.

2. *Variances are available under subsection 1 of this section if:*

(a) The Federal Government has identified a variance technology under 42 U.S.C. 300g-1(b)(15) of the Federal Act that is applicable to the size and source water quality conditions of the public water system;

(b) The public water system installs, operates and maintains, in accordance with guidance or regulations issued by the Federal Government, such treatment technology, treatment technique or other means; and

(c) The Division determines the conditions of subsection 3 of this section are met.

3. *A variance under this section shall only be available to a public water system:*

(a) That cannot afford to comply, in accordance with affordability criteria, with a national drinking water regulation, including compliance through:

(1) Treatment;

(2) Alternative source of water supply; or

(3) Restructuring or consolidation, unless the Division makes a determination that restructuring or consolidation is not practicable.

Qualifying affordability criteria for this subsection include the public water system being in an area in which the average income per household is less than 80 percent of the median household income of the county in which the system is located, and the public water system having water rates equal to or exceeding 1.5 percent of water system median household income upon implementation of a project to achieve compliance with the regulation from which a variance is sought. Median household income of the county in which the system is located shall be from the latest United States Census Bureau data available. Average and median household incomes for the water system shall be from the latest United States Census Bureau data available for the subject tract, unless a site specific survey is conducted using methodologies approved by the Division or the appropriate district board of health.

4. *The Commission must determine that the terms of the variance ensure adequate protection of human health, considering the quality of the source water for the public water system and the removal efficiencies and expected useful life of the treatment technology required by the variance.*

Treatment of Water

Section 5. *Applicability of regulations to a project to treat groundwater: The provisions of Section 5 through Section 19, inclusive, apply to any source of ground water used by a public water system that must be treated to remove or blend a constituent that exceeds primary drinking water maximum contaminant levels as adopted by reference in Section 22 or the secondary drinking water maximum contaminant levels specified by Section 25.*

Section 6. *Prerequisites to commencement of a water project to treat groundwater:*

1. Except as otherwise provided in this section, a public water system, which relies on a source of groundwater, shall, before commencing a water project to treat or blend groundwater:

- (a) Submit to the Division or the appropriate district board of health, pursuant to Section 7 of this regulation, a preliminary engineering report for review and conceptual approval;*
- (b) Upon conceptual approval of the preliminary engineering report, submit to the Division or the appropriate district board of health with the appropriate fees, an application for approval of the water project to treat groundwater that complies with the requirements of Section 9;*
- (c) Obtain written approval from the Division or the appropriate district board of health for the water project to treat groundwater; and*

2. Submit to the Division or the appropriate district board of health a copy of a manual of operations and maintenance for the facility to treat groundwater.

Section 7. *Submission of Preliminary Engineering Report before design of a groundwater treatment facility:*

1. A public water system proposing to:

- (a) Construct a new facility for treatment or blending of groundwater; or*
- (b) Make additions to or modify an existing facility to treat or blend groundwater, must submit a preliminary engineering report to the Division or the appropriate district board of health. The report must be reviewed by the Division or the appropriate district board of health before the supplier begins design of a facility to treat or blend groundwater. A preliminary engineering report must:*
 - (1) Describe the public water system's needs, identify purpose of the water project, analyze alternatives, and propose a preferred course of action, from an engineering and economic perspective;*
 - (2) Identify design alternatives considered and associated design parameters; and*
 - (3) Identify an engineer's recommendation for the final design.*

Section 8. *Proposed design of a groundwater treatment facility:*

1. The design of a groundwater treatment facility must be based upon a pilot plant study. The pilot plant study must identify;

- (a) Hydraulic characteristics such as the optimum process loading rate or the proper blending rates; and*
- (b) The unit process performance such as the optimum chemical feed and the most effective chemicals to use for adequate removal.*

2. If the treatment technology recommended in the preliminary engineering report has been tested on water with similar characteristics, the treatment technology may be approved without a pilot study. Documentation must be provided to verify that the treatment technology has been proven to treat the drinking water to minimum requirements stated in Section 20.

Section 9. *Application for approval of a groundwater treatment facility: An application for approval of a groundwater treatment or blending facility must contain:*

- 1. Complete plans for the treatment or blending facility, including the details of any improvements to be made and all work to be performed on site.*
- 2. Complete specifications to supplement the plans for the facility.*
- 3. A design report that:*
 - (a) Describes the basis for the selection and design of the water project;*
 - (b) Provides the criteria for design, data and other pertinent information defining the water project; and*
 - (c) Establishes the adequacy of the proposed water project to meet the needs of the public water system.*
- 4. Verifies the requirements for fire flow and fire demand.*
- 5. Includes any other pertinent information required by the Division or the appropriate district board of health for review and approval of the water project application.*

Section 10. *Preparation of plans, specifications and design reports to treat groundwater: Duties of an engineer. All initial and final plans, specifications and design report for a facility to treat groundwater must be prepared by, or under the direct supervision of, an engineer. The engineer shall affix his signature, the applicable date and his wet seal or stamp to each sheet of those plans and to each title page for those specifications and design reports in accordance with NAC 625A.610 through 625A.612, inclusive.*

Section 11. *Submission of design of a facility to treat groundwater standards for design:*

- 1. The design for a new facility to treat groundwater must:*
 - (a) Be free of structural and sanitary hazards.*
 - (b) Provide for protection against pollution and contamination by backflow.*
 - (c) Provide equipment for measuring and recording flow.*
 - (d) Be designed to mitigate the effects of events such as earthquakes, fires, floods, freezing and sabotage that are reasonably foreseeable.*
 - (e) Provide access for inspection, maintenance, and monitoring of all unit processes.*
 - (f) Provide, if required by the selected treatment process, for a coagulation process that includes rapid chemical mixing and is based on pilot plant or laboratory scale or equivalent results that demonstrate effectiveness of the coagulant chemicals over the full range of water quality conditions expected.*
 - (g) Provide, if filtration is required, for filter-to-waste for each filter unit.*
 - (h) Provide, if filtration is required, backwash rates and facilities for surface or subsurface wash using air, water or a combination of these to clean the filter.*
 - (i) Provide, if filtration is required, treatment for the removal of solids from filter backwash water if the water is recycled into the treatment process. Recycled backwash water must be returned to the headworks of the treatment plant.*

(j) Provide equipment for disinfection that is of proper size for the full range of expected conditions of flow and capable of automatic feeding accurately at all rates of flow.

(k) Provide for operation of the treatment plant without frequent shutdowns and start-ups.

2. As used in this section, "filter-to-waste" means a provision in the filtration process to allow the water that was filtered first to be wasted or reclaimed.

Section 12. *Approval of facility to treat groundwater project: Prerequisites; effective period; revocation.*

1. The Division or the appropriate district board of health shall not approve a facility to treat groundwater project unless the application for approval of the water project demonstrates that the water project will comply with the applicable provisions of Section 5 to Section 19, inclusive.

2. Approval of a water project is effective for 1 year, except that the Division or the appropriate district board of health may extend this period in 1-year increments if:

(a) Work is being performed on the water project; and

(b) The Division or the appropriate district board of health receives a schedule of work and periodic updates on the progress of the water project.

3. The Division or the appropriate district board of health shall revoke its approval of a water project if work on the water project:

(a) Does not commence within 1 year after the approval of the water project becomes effective; or

(b) Ceases for a continuous period of 1 year.

Section 13. *Standards for disinfection for a facility to treat groundwater: (NRS 445A.860)*

Each public water system to which the disinfection requirements of NAC 445A.66825 applies shall provide disinfection treatment in accordance with the provisions of NAC 445A.66825 to NAC 445A.6685, inclusive and 40 CFR §§141.131 to 141.133, inclusive, and 141.35 as adopted by reference in Section 22.

Section 14. *Inclusion of features for reliability in design and construction of a facility to treat groundwater: The following features for reliability or alternatives acceptable to the Division or the appropriate district board of health must be included in the design and construction of any facility to treat groundwater:*

1. If required, alarm devices to indicate failures in the coagulation, filtration, and disinfection processes. The alarm must notify the person designated by the public water system as responsible for taking corrective action or, if the facility is unmanned, have the capability to shut the plant down until corrective action can be taken.

2. If required, standby replacement equipment to ensure continuous operation and control of unit processes for coagulation, filtration and disinfection.

3. Except as otherwise justified by an engineer and approved by the Division or the appropriate district board of health, multiple filter units are required to provide redundant capacity if filters are out of service for backwash or maintenance.

Section 15. *Certification of persons operating a facility to treat groundwater: (NRS 445A.860, 445A.880) A public water system shall, not later than 6 months after receiving notification from the Division or the appropriate district board of health that it is operating a facility to treat groundwater, ensure that the person(s) who operate(s) the facility to treat groundwater have been issued appropriate operating certificate(s) as required by NAC 445A.626*

Section 16. *Equipment for a facility for disinfection of groundwater. A facility for disinfection of groundwater must be equipped with:*

- 1. A reserve supply of chemicals and backup available parts for the equipment; and*
- 2. An emergency plan to be put into effect if there is a failure in the disinfectant process. The object of the plan must be to prevent delivery to the distribution system of any water that has not been disinfected or that has been disinfected inadequately. The plan must be posted in the treatment plant or in any other place that is accessible to the operator of the plant.*

Section 17. *Requirements for plan of operations for a facility to treat groundwater.*

1. A public water system shall submit a plan of operations for each facility that treats ground water to the Division or the appropriate district board of health for review and approval. The plan must be designed to produce the optimal quality of water from the treatment process. The supplier shall operate the facility in accordance with the approved plan.

2. The plan must include a description of:

- (a) The program for monitoring the performance of the treatment facility;*
- (b) The program for maintaining unit process equipment;*
- (c) The persons who operate the facility, including the number of the staff and the level of their training;*
- (d) The operation of each unit process;*
- (e) The procedures used in the laboratory, if applicable;*
- (f) The procedures used to determine chemical dose rates;*
- (g) Record keeping protocol;*
- (h) The procedure for responding to an emergency at the facility or within the watershed that could conceivably affect the treatment facility; and*
- (i) Any other features that contribute to the reliable operation of the facility.*

Section 18. *Maintenance of records for a facility to treat groundwater:*

1. Each public water system must maintain accurate and complete records of the operation of each facility to treat groundwater. The records must include:

- (a) The results of all monitoring conducted in accordance with Sections 24 and 26;*
- (b) The date of any maintenance or inspection of a filter and the results of the inspection,*
- (c) The quantity of water produced;*
- (d) The quality of water produced;*
- (e) The hours of operation;*
- (f) The rates of flow at the plant;*
- (g) The rates of filtration;*
- (h) The rates of backwash; and*

- (i) *The dates and description of failures of major equipment or unit processes and the action taken to correct these failures.*
2. *The records of a facility to treat groundwater must be retained for a period of not less than 2 years, unless the Division or the appropriate district board of health has determined otherwise.*

Section 19. *Submission of sampling reports for a facility to treat groundwater: The public water system operating a facility to treat or blend groundwater must submit a sampling log every three months to the Division or the appropriate district board of health that verifies the facility is properly treating or blending the water in accordance with NAC 445A.450 to 445A.492, inclusive. The Division or the appropriate district board of health may reduce the frequency for submittal of the sampling log information submittal after the facility provides sampling information verifying that the facility is providing treated or blended water that is consistent with the minimum requirements of NAC 445A.450 to 445A.492, inclusive.*

Section 20. NAC 445A.450 Definitions. (NRS 439.200, 445A.055, 445A.855, 445A.860, 445A.863) As used in NAC 445A.450 to ~~[445A.492]~~ 445A.540, inclusive, unless the context otherwise requires:

1. The Division or the appropriate district board of health (as defined under SB395) ~~["Health authority" means the officers and agents of the health division or the officers and agents of the local boards of health has the meaning ascribed to it in NRS 445A.820.]~~
2. Division of Environmental Protection ~~["Health division" means the health division of the department of human resources]~~ *has the meaning ascribed to it in NRS 232.136. [NRS 445A.825.]*
3. *"Monitoring program" means a program developed by a public water system and approved by the Division or the appropriate district board of health to sample water quality from a sampling point for compliance purposes.*
- ~~[3]~~ 4. "Primary standard" means a standard *determined by the Environmental Protection Agency*, which specifies a maximum contaminant level, *maximum residual disinfectant level or treatment technique* for any constituent found in a public water supply, and ~~[which,]~~ if exceeded, may adversely affect the health of persons.
5. "Public water system" has the meaning ascribed to it in NRS 445A.840 and includes a water authority in a county whose population is 400,000 or more.
6. *"Sampling point" means a location where water samples are taken for compliance purposes in accordance with the requirements for the specific contaminant(s) or water quality parameters(s) being monitored.*
7. *"Sanitary survey" means an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system for the purposes of evaluating the adequacy of such source, facilities, equipment, operating and maintenance for producing and distributing safe drinking water.*
8. *"Secondary maximum contaminant levels" means a maximum contaminant level adopted by the Commission for a constituent found in a public water supply that, if exceeded, may cause aesthetic concerns to a consumer.*
9. *"Supplier of water" means a person who owns, controls or operates a public water system.*
10. *"Treatment technique" means an enforceable water treatment process or procedure, required to be operated at a specified effectiveness for removal of a measurable surrogate*

contaminant, that public water systems must employ to ensure effective removal of other contaminants for which there is no reliable, economical, technically feasible method to measure at levels of concern.

~~[6]~~ 11. "Water authority" has the meaning ascribed to it in NRS 377B.040.

~~[7]~~ 12. *As used in this regulation, [F] the* words and terms defined in 40 C.F.R. § 141.2 have the meanings ascribed to them in that section.

Section 21. NAC 445A.451 Applicability. (NRS 445A.855, 445A.860) The provisions of NAC 445A.450 to 445A.492, inclusive, apply to all public water systems unless a public water system:

1. Consists only of distribution and storage facilities and does not have any *production*, 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, apply;
3. Does not sell water to any person; and
4. Is not a carrier which conveys passengers in interstate commerce.

Section 22. NAC 445A.4525 Adoption by reference of certain provisions of "National Primary Drinking Water Regulations." (NRS 445A.855) The provisions of 40 C.F.R. §§ 141.1, 141.2, 141.4, 141.5, *141.6*, 141.11 to ~~[141.16]~~ *141.13*, inclusive, *141.15, 141.16*, 141.21 to 141.30, inclusive, 141.31 to ~~[141.35]~~ *141.33*, inclusive, *141.35*, 141.40~~[, 141.41,]~~ to 141.42, *inclusive, subsections (a) and (d) of 141.43, [141.61] 141.60 to [141.65] 141.66*, inclusive, ~~[141.74]~~ *141.70 to 141.76, inclusive*, 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, *141.170 to 141.175, inclusive, 141.201 to 141.210, inclusive, and 141.500 to 141.571, inclusive* of the "National Primary Drinking Water Regulations," ~~[as those provisions existed on February 16, 1999]~~ *as those provisions existed on July 1, 2003*, are hereby adopted by reference, *unless the Commission gives notice that the requirements are not suitable for this state pursuant to Section 36*. 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]~~ **61**. Copies of those regulations are also available, free of charge, ~~[from the Environmental Protection Agency]~~ at the Internet address ~~[http://www.epa.gov/safewater/mel.html]~~ *http://www.access.gpo.gov/nara/cfr/waisidx_02/40cfr141_02.html* >.

Section 23. NAC 445A.453 Primary standards: Requirements. (NRS 445A.855, 445A.860) All public water systems must meet the requirements of NAC 445A.450 to ~~[445A.492]~~ *445A.540*, inclusive, and of 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 to 141.65, inclusive, 141.80 to 141.91, inclusive, 141.100, 141.101, 141.110, 141.111, 141.130 and 141.135,]~~ as adopted by *reference in Section 22 of these regulations. [NAC 445A.4525]* ~~[Section 22, unless the state board of health gives notice that the requirements are not suitable for this state pursuant to NAC 445A.4915].~~

Section 24. NAC 445A.454 Primary standards: Monitoring, *sampling* and analysis. (NRS 439.200, 445A.855, 445A.863)

1. The monitoring requirements for the primary standards set forth in NAC 445A.453 must be performed as required by 40 C.F.R. §§ 141.21 to 141.30, inclusive, 141.40, 141.41, 141.42, *141.74, 141.86 to 141.89, inclusive*, 141.131, 141.132, ~~and~~ 141.133, *141.172 to 141.174, inclusive, 141.521, 141.530 to 141.536, inclusive, 141.541 to 141.543, inclusive, 141.550 to 141.553, inclusive, and 141.560 to 141.564, inclusive*, as adopted by reference in ~~[NAC 445A.4525] Section 23~~ ~~[, unless the state board of health gives notice that the requirements are not suitable for this state pursuant to NAC 445A.4915].~~

2. *Any analysis conducted to determine compliance with the primary standards referenced in NAC 445A.453 must be performed by* ~~[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 NAC 445A.542 to 445A.54296, inclusive~~[-]~~, *in accordance with:*

(a) *The method or methods listed in, or approved pursuant to, the provisions of NAC 445A.542 to 445A.54296, inclusive, for the selected contaminant or contaminants in the drinking water, or*

(b) *Any method for the selected contaminant or contaminants in the drinking water approved by the United States Environmental Protection Agency as an accepted alternative test procedure for drinking water.*

3. *For water systems which are conducting water quality monitoring at a frequency greater than annually, compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium must be determined during normal operating conditions by a running annual average at any sampling point. A monitoring program identifying the sampling points shall be submitted to the Division or the appropriate district board of health for review and approval. The monitoring program must demonstrate that the average quality of the water served to each customer in the distribution system is below the maximum contaminant level. The Division or the appropriate district board of health will establish the number of samples the public water system must take for calculating the running annual average. The public water systems may not monitor more frequently than specified in the monitoring program by the Division or the appropriate district board of health to determine compliance unless approved in writing by the Division or the appropriate district board of health.*

4. *The following definitions will pertain to this section:*

(a) *“Normal operating conditions” are achieved when the water system operates wells and or treatment plants to supply water for seasonal demands.*

(b) *As used in subsection 3, “Running Annual Average” is defined as the sum of the consecutive twelve-month contaminant sample values divided by the total number of samples taken at one sample point. (Example: $(\sum x_1 + x_2 + \dots + x_n)/n =$ Running Annual Average)*

Section 25. NAC 445A.455 Secondary standards: General requirements ~~[public notice]~~. (NRS 439.200, 445A.855, 445A.860)

1. ~~[Whenever any of the following chemical substances, as measured at representative points in the distribution system, is present in a public water supply in excess of the listed levels, and the health authority determines that there is another more suitable supply of water which is~~

economically feasible, available in a sufficient quantity, and of a significantly higher quality, the supplier of water shall give notice to the public.} *Secondary maximum contaminant levels, which apply to public water systems, are listed in the following table :*

Substance	Level, Milligrams Per Liter
-	-
Chloride.....	250.0
Color.....	15.0 color units
Copper.....	1.0
Foaming Agents.....	0.5
Iron.....	0.3
Magnesium.....	125.0
Manganese.....	0.05
Odor.....	3.0 threshold odor number
pH 6.5-8.5	
Sulfate.....	250.0
TDS (total dissolved solids dried at 180 C).....	500.0
Zinc.....	5.0}

<i>Constituent or Indicator</i>	<i>Secondary Contaminant (milligrams/Liter or mg/L)</i>	<i>Maximum Level</i>
<i>Aluminum</i>	<i>0.2 mg/L</i>	
<i>Chloride</i>	<i>400 mg/L</i>	
<i>Copper</i>	<i>1.0 mg/L</i>	
<i>Foaming Agents</i>	<i>0.5 mg/L</i>	
<i>Iron</i>	<i>0.6 mg/L</i>	
<i>Magnesium</i>	<i>150 mg/L</i>	
<i>Manganese</i>	<i>0.1 mg/L</i>	
<i>Silver</i>	<i>0.1 mg/L</i>	

<i>Sulfate</i>	<i>500 mg/L</i>
<i>Total Dissolved Solids (TDS)</i>	<i>1,000 mg/L</i>
<i>Zinc</i>	<i>5.0 mg/L</i>
	<i>Other units or indicators</i>
<i>Color</i>	<i>15 color units</i>
<i>Odor</i>	<i>3.0 threshold odor number</i>
pH	6.5 to 8.5

2. ~~[The following chemical substances, as measured at representative points in the distribution system, must not be present in a public water supply in excess of the listed levels:~~

[Level,
Substance	Milligrams
	Per Liter
-	-
Chloride.....	400.0
Iron.....	0.6
Magnesium.....	150.0
Manganese.....	0.1
Sulfate.....	500.0
TDS (total dissolved solids dried at 180 °C).....	1000.0]

~~[3.]~~ Except as otherwise provided in NAC 445A.6682, the standard for fluoride in community and nontransient, noncommunity water systems is 2.0 milligrams per liter.

~~[4. If a public water system exceeds one of the standards set by subsection 2 or 3 or the state board of health grants a variance from the requirement concerning that contaminant level, the supplier of water shall give notice to the public.~~

5. The notices required by subsections 1 and 4 must be:

- ~~(a) Published in a newspaper of general circulation in the area served by the system not more than 30 days after the standard is exceeded;~~
- ~~(b) Delivered personally or by mail to each person served by the system not more than 45 days after the standard is exceeded; and~~
- ~~(c) Published and delivered annually thereafter as provided in this section if the standard continues to be exceeded.]~~

Section 26. NAC 445A.456 Secondary standards: Monitoring.

1. ~~[Analysis for all public water systems must be completed by June 24, 1979. Analysis]~~ *The monitoring frequency for secondary maximum contaminant levels shall be annually for public water systems which have surface water sources or ground water sources under the direct influence of surface water, and ~~[must be repeated]~~ at least once during every 3-year compliance period for systems with groundwater sources, ~~[intervals or at lesser intervals if required]~~ unless otherwise required by the Division or the appropriate district board of health. ~~[by the health authority.]~~ Samples shall be collected at sample points, which are representative of each source after any treatment.*

2. If the result of an analysis made pursuant to subsection 1 indicates that ~~[the level of any contaminant]~~ *any secondary maximum contaminant level* listed in ~~[NAC 445A.455]~~ **Section 25** is exceeded~~[s the maximum level]~~, the supplier of water must report *that result* to the *Division or the appropriate district board of health* within 30 days and initiate 3 additional analyses at the same sampling point within 90 days. When the average of four analyses made pursuant to this subsection exceeds the *secondary maximum contaminant level*, the supplier of water must notify the *Division or the appropriate district board of health* and give notice to the public *pursuant to Section 29, subsection 3.* ~~[Notice to the public must be in such form and manner as prescribed by the health authority and must ensure that the public using the system is adequately informed.]~~

3. Monitoring after public notification must be at a frequency designated by the *Division or the appropriate district board of health* and must continue until the level has not been exceeded ~~[in two successive samples]~~ *during two successive quarterly periods* or until a monitoring schedule as a condition to a variance or enforcement action *to achieve compliance* becomes effective.

4. A supplier of water is not required to report results to the *Division or the appropriate board of health* where a state laboratory performs the analysis and reports the results *directly* to the *Division or the appropriate district board of health.* *Except as otherwise provided, the public water system must provide the results of any analysis performed pursuant to this section to the Division or the appropriate district board of health by the 10th day of the month following receipt of the results.*

5. *The public water system shall, within six months of the notice required by subsection 2 of this section, develop a plan to return the water system to compliance. This plan must be submitted to, and be approved by, the Division or the appropriate district board of health and may include:*

- a. Acquisition of another suitable supply of water which is economically feasible to obtain, available in sufficient quantity, and of significantly higher or acceptable quality;*
- b. Consolidation with an adjacent public water system that provides water of sufficient quantity and quality;*
- c. Treatment of the source water; or*
- d. Any other actions sufficient to return the water system to compliance.*

Section 27. NAC 445A.457 Secondary standards: Analysis. Any analysis conducted to determine compliance with ~~[NAC 445A.455]~~ ~~[Section 24 or]~~ **Section 25** must be made in accordance with ~~[one of the following methods]:~~

1. ~~[Any]~~ *The method for the selected contaminant or contaminants in the drinking water* listed in ~~[40 C.F.R. Part 143. A copy of Part 143 may be purchased from the Superintendent of~~

~~Documents, U.S. Government Printing Office, Washington, D.C. 20402, at a cost of \$41.] NAC 445A.542 to 445A.54296, inclusive; or~~

~~2. [Any method listed in 40 C.F.R. Part 136. A copy of Part 136 may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, for the price of \$41.]~~

~~[3.]~~ Any method *for the selected contaminant or contaminants in the drinking water* approved by the United States Environmental Protection Agency as an accepted alternative test procedure for drinking water.

Section 28. NAC 445A.458 Conduct of analysis. (NRS 439.200, 445A.855, 445A.863)

1. Except as otherwise provided in this section, each analysis required by NAC 445A.4525 to 445A.457, inclusive, must be performed by a ~~[properly certified]~~ laboratory *certified pursuant to NAC 445A.542 to 445A.54296, inclusive.*

2. Turbidity measurements may be made by a ~~[certified]~~ laboratory *certified pursuant to NAC 445A.542 to 445A.54296, inclusive* or by **public** water ~~[supply]~~ system 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.4525]~~ *Section 22.*

3. Chlorine residual measurements ~~[when authorized as a substitute for coliform bacteria monitoring may]~~ *must* be made by ~~[the]~~ **public** water ~~[supplier]~~ system personnel utilizing an instrument and methods capable of meeting the requirements of *subsection (a)(2) of 40 C.F.R. § 141.74*, as adopted by reference in ~~[NAC 445A.4525]~~ *Section 22.*

4. Temperature and pH measurements must be made by the public water system utilizing an instrument and methods capable of meeting the requirements of subsection (k)(1) of 40 CFR § 141.23, as adopted by reference in Section 22.

5. Public water systems may direct the laboratory, which analyzes water samples to submit the results of the sample to the Division or the appropriate district board of health.

Section 29. NAC 445A.485 ~~[Reporting,]~~ Public Notification ~~[and recordkeeping:]~~ (NRS 445A.855, 445A.860)

1. The owner or operator of a public water system must provide notice to the Division or the appropriate district board of health of the occurrence of any of the events listed in, Section 54 in accordance with the requirements of that section.

~~[1]~~**2. Public notice of violations of primary drinking water regulations, and other situations with potential adverse health effects, is required as follows:**

~~(a) The owner or operator of a public water system [who fails to perform monitoring as required by 40 C.F.R. § 141.21, as adopted by reference in NAC 445A.4525, shall notify all persons served by the system within 45 days after the violation or failure.]~~ *must provide notice to persons served by the system for all violations of the primary standards, treatment techniques, monitoring requirements, testing procedures, and other situations listed in this regulation, pursuant to the requirements of this section and 40CFR 141. 201 to 141.210, as adopted by reference pursuant to Section 22:*

(1) Violations of regulations:

(I) Failure to comply with an applicable primary standard;

(II) Failure to comply with a prescribed treatment technique;

(III) Failure to perform water quality monitoring, as required by this regulation; or

- (IV) Failure to comply with testing procedures as prescribed by a drinking water regulation;*
- (2) Variances and exemptions under Section 4 and Section 30 to Section 34, inclusive, of this regulation:*
 - (I) Operation under a variance or an exemption; or*
 - (II) Failure to comply with the requirements of any schedule that has been set under a variance or exemption.*
- (3) Special public notices:*
 - (I) Occurrence of a waterborne disease outbreak or other waterborne emergency;*
 - (II) Exceedance of the nitrate MCL by non-community water systems (NCWS), where granted permission by the primacy agency under 40 CFR §141.11(d);*
 - (III) Exceedance of the secondary maximum contaminant level for fluoride subsection 2 of Section 25;*
 - (IV) Availability of unregulated contaminant monitoring data; or*
 - (V) Other violations and situations determined by the Division or the appropriate district board of health to require a public notice under this regulation, not already listed in Appendix A to 40 CFR141.201 to 141.210.*

(b) Public notices are divided into three tiers to take into account the seriousness of the violation or situation and of any potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in subsection 2(a) of this section are determined by the tier to which it is assigned. The federal public notification regulations, 40CFR141.201 to 141.210, including Appendices A, B, and C, adopted by reference pursuant to Section 23, provide the criteria for the tier assignment for each specific violation or situation, and the requirements for the content, form, manner, and frequency of the notice.

(c) Each public water system must provide public notice to persons served by the water system in accordance with this section. Public water systems that sell or otherwise provide drinking water to other public water systems are required to give notice to the owners or operators of those systems, which are then responsible for providing public notice to the persons they serve. If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the Division or the appropriate district board of health may allow the system to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance. Permission by the Division or the appropriate district board of healthy for limiting distribution of the notice must be granted in writing.

(d) A copy of the notice must also be sent to the Division or the appropriate district board of health in accordance with the requirements under subsection d of 40 CFR §141.31.

3. Public notice of secondary standards violations is required as follows:

(a) When a secondary maximum contaminant level exceeds the levels or units specified in subsection 1 of Section 25, the public water system shall within 90 days, but no more than one sample per month, collect and analyze three additional samples from the same sample point. If the average contaminant level of the four samples exceeds the secondary maximum contaminant level, the public water system shall notify the Division or the appropriate district board of health and shall provide notice of the exceedance to the public as follows:

(1) For community public water systems:

- (I) Publish in a newspaper of general circulation in the area served by a system not more than 30 days after the standard is exceeded; or*
- (II) Deliver personally or by mail to each person served by the system not more than 30 days after the standard is exceeded; and*
- (III) Publish and deliver annually thereafter as provided in the annual consumer confidence report prepared pursuant to Section 3 of this regulation if the standard continues to be exceeded.*

(2) For noncommunity water systems:

- (I) Deliver personally or by mail to each person served by the system no more than 30 days after the standard is exceeded; or*
- (II) Post within 30 days after the standard is exceeded in a prominent location for consumers of the water system to read; and*
- (III) Post, or deliver annually thereafter if the standard continues to be exceeded.*

(b) If the Commission grants a variance pursuant to Section 4, Section 30, and Section 31 of this regulation from the requirement concerning a secondary maximum contaminant level, the public water system shall give notice to the public as required in subsection 3(a)(1) or (2), as required by type of system, of this section.

(c) In a fluoridated public water system, if the concentration for fluoride does not meet the concentrations specified in subsection 3 of NAC 445A.6682, the public water system must report the incident to the Division or the appropriate district board of health as required in subsection 12(j) of NAC 445A.6682.

(d) Notice to the public must be in such form and manner as prescribed by the Division or the appropriate district board of health and must ensure that the public using the system is adequately informed.

4. The Commission will not grant a variance from the provisions of public notification required by this regulation.

~~[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, as adopted by reference in NAC 445A.4525, 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, as adopted by reference in NAC 445A.4525. 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.]~~

Section 30. NAC 445A.487 Variances: Conditions and procedure for granting.

1. The ~~[state board of health]~~ **Commission** may grant a variance from a primary drinking water regulation to a public water system which cannot meet a requirement respecting a maximum contaminant level specified in such drinking water regulation because of characteristics of the

raw water source or sources which are reasonably available to the system ~~[despite application of]~~ *A variance may be issued to a system on the condition that the public water system install the best available technology, treatment techniques or other means which the [board] Commission finds are reasonably available after taking costs into consideration and based on an evaluation satisfactory to the [board] Commission that indicates that alternative sources of water are not reasonably available to the public water system.* Before such a variance may be granted, the *Commission [board]* must find that the variance will not result in an unreasonable risk to health.

2. The *Commission [state board of health]* may grant a variance to a public water system from any provision of a primary drinking water regulation, which requires the use of a specified treatment technique with respect to a contaminant. Prior to the issuance of such a variance, the public water system must demonstrate to the satisfaction of the *Commission [board]* that the treatment technique is not necessary to protect the health of persons because of the nature of the raw water source of the system.

3. The *Commission [state board of health]* may grant a variance from a secondary drinking water regulation to a public water system in accordance with the procedures for seeking variances from the *Commission [state board of health]* set forth in chapter 439 of NAC.

4. Public hearings and other procedures for consideration of requests for variances from NAC 445A.450 to 445A.492, inclusive, must be conducted in accordance with the procedures for seeking variances from the *Commission [state board of health]* as set forth in chapter 439 of NAC.

Section 31. NAC 445A.488 Variances: Prescription of additional control measures and schedules for compliance.

1. The *Commission [state board of health]* will, when it grants a variance *pursuant to Section 4, Section 30 and Section 31 of this regulation* to a public water system, prescribe:

(a) A schedule for compliance, including increments of progress, with the contaminant level requirement with respect to which the variance was granted.

(b) Such additional control measures as it may require for the contaminant during the period ending on the date compliance with the requirement is required.

2. *The Commission will require, when it grants a variance to a public water system pursuant to Section 4, Section 30 and Section 31 of this regulation, unless an exemption is granted to a public water system pursuant to Section 32 and Section 33 of this regulation, compliance with the conditions of the variance not later than 3 years after the date on which the variance was granted, except that a public system may be granted up to 2 additional years to comply with a variance technology, to secure an additional source of water, restructure or consolidate if the Division or the appropriate district board of health determines that additional time is necessary for capital improvements, or to allow for financial or technical assistance from any other federal or state program.*

3. No such schedule for compliance or effectuation may take effect until the *Division or the appropriate district board of health [board]* has approved, or approved with modifications, the schedule after notice and a public hearing held in the same manner as the variance hearing.

~~[3]~~ 4. A schedule approved by the ~~[state or district board]~~ *Commission* must require compliance by the *public* water system with each contaminant level requirement for which the variance was granted, as expeditiously as the board determines to be practicable.

Section 32. NAC 445A.489 Exemptions: Conditions and procedure for granting.

1. The **Commission** ~~[state board of health]~~ may grant an exemption from any requirement respecting a maximum contaminant level or treatment technique of an applicable primary drinking water regulation to:

(a) A public water system which was in operation on the effective date of the requirement if:

(1) Because of compelling factors, including economic considerations *such as qualification of the public water system as serving a disadvantaged community*, the public water system is unable to comply *or to implement measures to develop an alternative source of supply*; ~~[and]~~

(2) The granting of the exemption will not result in an unreasonable risk to health; *and*

(3) *Management or restructuring changes, or both, cannot reasonably be made that will result in compliance with the primary drinking water standards, or if compliance cannot be achieved, improve the quality of the drinking water*; *or*

(b) A public water system which was not in operation on the effective date of the requirement if:

(1) Because of compelling factors, including economic considerations *such as the qualification of the public water system as serving a disadvantaged community*, the public water system is unable to comply *or to implement measures to develop an alternative source of supply*;

(2) There is no reasonable alternative source of drinking water available to the public water system; ~~[and]~~

(3) The granting of the exemption will not result in an unreasonable risk to health; *and*

(4) *Management or restructuring changes, or both, cannot reasonably be made that will result in compliance with primary drinking water standards, or if compliance cannot be achieved, improve the quality of the drinking water.*

2. Public hearings and other procedures for consideration of requests for exemptions from NAC 445A.450 to 445A.540, inclusive, must be conducted in accordance with the procedures for seeking variances from the **Commission** ~~[state board of health]~~ set forth in chapter 439 of NAC.

3. As used in this section, “disadvantaged community” means an area served by a public water system in which the average income per household is less than 80 percent of the median household income of the county.

Section 33. NAC 445A.490 Exemptions: Prescription of control measures and schedules for compliance.

1. ~~[The state board of health]~~ **The Commission** will, when it grants an exemption to a public water system, prescribe:

(a) A schedule for compliance, including increments of progress *or measures to develop an alternative source of water supply*, with the contaminant level or treatment technique requirement with respect to which the exemption was granted.

(b) Such control measures as it may require for the contaminant during the period ending on the date compliance with the requirement is required.

2. No such schedule for compliance or effectuation may take effect until the **Commission** ~~[state or district]~~ *or the appropriate district board of health* has approved, or approved with modifications, the schedule after notice and a public hearing held in the same manner as the exemption hearing.

3. A schedule approved by the ~~[state or district]~~ **Commission or the appropriate district board of health** ~~[state board of health]~~ *must* require compliance by the water system with each contaminant level requirement for which the exemption was granted as expeditiously as the **Commission or appropriate district board of health** determines to be practicable except ~~[:]~~

~~[(a) In the case of an exemption granted with respect to a contaminant level or treatment technique requirement prescribed by the "National Primary Drinking Water Regulations" adopted pursuant to § 300g-1(a) of the Federal Act, not later than June 19, 1987;~~

~~(b) In the case of an exemption granted with respect to a contaminant level or treatment technique requirement prescribed by the "National Primary Drinking Water Regulations," other than for a regulation adopted pursuant to § 300g-1(a) of the Federal Act, not later than 12 months after the date of the issuance of the exemption; or~~

~~(c) A] as otherwise provided by the Federal Act.~~

4. No exemption shall be granted unless the public water system establishes that:

(a) The public water system cannot meet the standard without the capital improvements which cannot be completed prior to the date established by the Federal Act;

(b) In the case of a public water system which needs financial assistance for the necessary improvements, the public water system has entered into an agreement to obtain such financial assistance, from any other state or federal program, or any such assistance is reasonably likely to be available within the period of the exemption; or

(c) The public water system has entered into an enforceable agreement to become part of a regional public water system; and the public water system is taking all practicable steps to meet the standard.

5. In the case of a public water system which does not serve more than a population of 3,300 and which needs financial assistance for the necessary improvements, an exemption granted under subsection 4 of this section may be renewed for one or more additional two-year periods, but not to exceed a total of 6 years, if the system establishes that it is taking all practicable steps to meet the requirements of subsection 4 of this section.

6. A public water system may not receive an exemption under this section if the system was granted a variance under Section 4, Section 30, and Section 31 of this regulation.

Section 34. NAC 445A.491 Variances and exemptions: Appeals.

1. Any supplier of water who feels himself aggrieved by the action of ~~[district board]~~ *the Division or the appropriate district board of health* in approving or approving with modifications any schedule for compliance or effectuation submitted pursuant to a variance or an exemption may appeal the action to the *Commission or the appropriate district board of health* ~~[state board of health]~~ by filing a written notice of appeal ~~[with the district health department health authority]~~ within 30 days of the written decision on the schedule.

~~2. [The district health department must forward to the secretary of the state board of health the full record of the proceedings, including all exhibits, the original application and the written decision within 10 days of the filing of the notice of appeal.]~~

3. Users of the *public* water ~~[supply]~~ *system* who feel themselves aggrieved by the action of the ~~[district board of health]~~ *Division or the appropriate district board of health* may appeal in the same manner as the ~~[supplier of water]~~ *public water system*. Such an appeal must be supported by a minimum of 10 percent of the users of the *public water* system for *public water* systems serving a population of less than 5,000 and by a minimum of 5 percent for ~~[larger]~~ *public water* systems *servicing a population greater than 5,000*.

4. The *Commission or the appropriate district board of health* ~~[state board of health]~~ will consider all such appeals at regularly scheduled public hearings, ~~[no later than 60 days]~~ after receipt of the record on appeal.

5. Evidence presented to the *Commission* ~~[state board of health]~~ on appeal is limited to that introduced before the ~~[district board of]~~ *Division or the appropriate district board of health*.

6. At the conclusion of the hearing, the matter stands submitted and the ~~[state board of health]~~ *Commission or the appropriate district board of health* will enter a written decision, including findings of fact, within 14 days of the hearing date.

Section 35. NAC 445A.4915 Determination of suitability for this state of revision of publication adopted by reference. If any publication adopted by reference pursuant to NAC 445A.450 to ~~[445A.492]~~ *445A.540*, inclusive, is revised, the ~~[state board of health]~~ *Commission* will review the revision to determine its suitability for this state. If the *Commission* ~~[board]~~ determines that the revision is not suitable for this state, it will hold a public hearing to review its determination and give notice of that hearing within 6 months after the date of the publication of the revision. If, after the hearing, the *Commission* ~~[board]~~ does not revise its determination, the *Commission* ~~[board]~~ will give notice that the revision is not suitable for this state within 30 days after the hearing. If the *Commission* ~~[board]~~ does not give such notice, the revision becomes part of the publication adopted by reference pursuant to NAC 445A.450 to ~~[445A.492]~~ *445A.540*, inclusive.

Section 36. NAC 445A.492 Severability. If any of the provisions of NAC 445A.450 to ~~[445A.492]~~ *445A.540*, inclusive, or any application thereof to any person, thing or circumstance is held invalid, it is intended that such invalidity not affect the remaining provisions, or their application, that can be given effect without the invalid provision or application.

Section 37. NAC 445A.510 "Outbreak of water-borne disease" defined. "Outbreak of water-borne disease" means the significant occurrence of acute infectious illness, associated epidemiologically with the ingestion of water from a public water system that has been determined by the ~~[health division]~~ *Division or the appropriate district board of health* to be deficient in treatment.

Section 38. NAC 445A.517 Applicability. The provisions of NAC 445A.495 to 445A.540, inclusive, apply to:

1. Any public water system using surface water or ground water under the direct influence of surface water; and
2. Any supplier of water who owns, controls or operates such a *public water* system.

Section 39. NAC 445A.518 Submission of plan for compliance with requirements; date for final compliance. (NRS 445A.860)

1. A supplier of water who is notified by the ~~[health division]~~ *Division or the appropriate district board of health* that the public water system is not meeting any of the requirements for treatment set forth in the *Federal Regulations adopted pursuant to* ~~[NAC 445A.5175]~~ *Section 22, [445A.520] Section 40, [445A.521] Section 41* or NAC 445A.526 to 445A.540, inclusive, shall submit a detailed plan to the ~~[health division]~~ *Division or the appropriate district board of health*, 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]~~ *Division or the appropriate district board of health* that

ground water is under the direct influence of surface water, whichever is later, unless an extension is granted by the ~~[health division]~~ *Division or the appropriate district board of health*.

Section 40. NAC 445A.520 General requirements for treatment. (NRS 445A.860)

1. Except as otherwise provided in this section, each supplier of water shall treat the water in accordance with ~~[NAC 445A.521]~~ *Section 41* and ~~[445A.526]~~ *Section 45* and 40 C.F.R. §§ 141.70, *141.76*, ~~[and]~~ 141.170, *and 141.500 through 141.503, inclusive*, as adopted by reference in ~~[NAC 445A.5175]~~ *Section 22*.
2. A supplier of water who meets the standards of performance set forth in this section and ~~[NAC 445A.521]~~ *Section 41* and ~~[445A.526]~~ *Section 45* and meets the operating criteria set forth in ~~[NAC 445A.533]~~ *Section 50* will be considered to be in compliance with the requirements of subsection 1.
3. The ~~[health division]~~ *Division or the appropriate district board of health* 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]~~ *Commission* will not grant a variance from the provisions of this section.

Section 41. NAC 445A.521 Filtration: Acceptable methods of treatment. (NRS 445A.860)

1. Each supplier of water shall treat the water in accordance with 40 C.F.R. §§ 141.73, ~~[and]~~ 141.173, *and 141.550 through 141.553, inclusive*, as adopted by reference in ~~[NAC 445A.5175]~~ *Section 22*.
2. The ~~[state board of health]~~ *Commission* will not grant a variance from the provisions of this section.

Section 42. NAC 445A.522 Filtration: Applicable efficiencies for removal. (NRS 445A.860)

1. For the purposes of meeting the levels of treatment set forth in ~~[NAC 445A.520]~~ *Section 40*:
 - (a) 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]~~ *Section 50* and the standards of performance set forth in ~~[NAC 445A.521]~~ *Section 41*; 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]~~ *Division or the appropriate district board of health* 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.

Section 43. NAC 445A.524 Filtration: Use of alternative technology. (NRS 445A.860)

1. The use of an alternative filtration technology, including packaged treatment plants, may be approved by the ~~[health division]~~ *Division or the appropriate district board of health* if the following requirements are met:

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.]~~ *99*

percent or 2-log removal of Cryptosporidium oocysts. The process must meet the standards of performance established in ~~[NAC 445A.521]~~ *Section 41.*

(b) An engineering report is submitted to the ~~[health-division]~~ *Division or the appropriate district board of health* 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]~~ *Division or the appropriate district board of health*, 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]~~ *Division or the appropriate district board of health* a timetable for the correction of the deficiencies.

Section 44. NAC 445A.525 Filtration: Avoidance of requirements. (NRS 445A.860)

1. A supplier of water may apply to the ~~[health-division]~~ *Division* to operate without installing a system for filtration. The ~~[health-division]~~ *Division or the appropriate district board of health* may grant this request if the supplier of water, not later than December 30, 1991, or 18 months after notification by the ~~[health-division]~~ *Division or the appropriate district board of health* that a ground water system is under the direct influence of surface water, whichever is later, meets the requirements set forth in 40 C.F.R. §§ 141.71, ~~[and]~~ 141.171, *141.520, 141.521, and 141.522*, as adopted by reference in ~~[NAC 445A.5175]~~ *Section 22* ~~[, 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,]~~ *which minimizes the potential for contamination by Giardia lamblia cysts, viruses, and Cryptosporidium oocysts*, is provided by the location of the intake structure *and a watershed control program. The watershed control program must include the periodic performance of a watershed survey as required by NAC 445A.539, and the water system must be subject to annual on-site inspections to assess the watershed control program.*

2. To avoid the requirements for filtration, a supplier of water must comply with the provisions that are set forth in 40 C.F.R. §§ 141.74(b) and 141.75(a), as adopted by reference in *Section 22.* ~~[NAC 445A.5175]~~

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 Sources*, 1991 edition (#PB93-222933INZ). This document is available at a cost of \$101 from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

Section 45. NAC 445A.526 Standards for disinfection. (NRS 445A.860)

1. Each supplier of water shall provide disinfection treatment in accordance with 40 C.F.R. §§ 141.72, ~~[and]~~ 141.172, *and 141.530 through 141.544, inclusive*, as adopted by reference in ~~[NAC 445A.5175]~~ *Section 22.*

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

Section 46. NAC 445A.527 Requirements for monitoring. (NRS 445A.860)

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 set forth in 40 C.F.R. §§ 141.74, ~~and~~ 141.174, *and 141.560 through 141.564, inclusive*, as adopted by reference in ~~[NAC 445A.5175]~~ *Section 22*.

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:

- (a) The temperature of the disinfected water;
- (b) The pH of the disinfected water, if chlorine is used as a disinfectant;
- (c) The disinfectant contact time; and
- (d) The concentration of the residual disinfectant before or at the point the water reaches the first customer.

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]~~ *Division or the appropriate district board of health* 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.

Section 47. NAC 445A.529 Submission of engineering report for system of treatment installed before November 29, 1990. (NRS 445A.860) A supplier of water that has installed a system for treatment before November 29, 1990, which does not consist of technologies pursuant to which the supplier of water shall treat water in compliance with ~~[NAC 445A.521]~~ *Section 41* or which was not designed to comply with the operating criteria in ~~[NAC 445A.531]~~ *Section 49* and ~~[445A.533]~~ *Section 50*, shall submit to the ~~[health-division]~~ *Division or the appropriate district board of health* an engineering report which demonstrates that the plant can be operated to supply water meeting the requirements for performance contained in ~~[NAC 445A.521]~~ *Section 41* and ~~[445A.526]~~ *Section 45*. 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.

Section 48. NAC 445A.530 Submission of engineering report before construction or modification of facility; standards for design.

1. A supplier of water proposing to:

- (a) Construct a new facility for filtration and disinfection; or
 - (b) Make additions to or modify significantly an existing facility for treatment,
- must submit an engineering report to the ~~[health-division]~~ *Division or the appropriate district board of health*. The report must be approved by the ~~[division]~~ *Division or the appropriate district board of health* before the supplier begins construction. The report must also describe how the facility will be designed to ensure that it complies with this section and ~~[NAC 445A.531]~~ *Section 49*.

2. A new facility for filtration and disinfection must:

- (a) Be designed to attain an average daily effluent turbidity goal of 0.2 units of nephelometric turbidity when using conventional, direct, and diatomaceous earth filtration plants.
- (b) Be free of structural and sanitary hazards.

- (c) Provide for protection against contamination by backflow.
 - (d) Provide equipment for measuring and recording flow.
 - (e) Be designed to mitigate the effects of events such as earthquakes, fires, floods, freezing and sabotage that are reasonably foreseeable.
 - (f) Provide reasonable access for inspection, maintenance, and monitoring of all unit processes.
 - (g) Provide for a coagulation process that includes rapid chemical mixing and is based on pilot plant or laboratory scale or equivalent results that demonstrate effectiveness of the coagulant chemicals over the full range of water quality conditions expected.
 - (h) Provide for filter-to-waste for each filter unit or addition of coagulant chemicals or organic polymers to the water used for backwashing.
 - (i) Provide backwash rates and facilities for surface or subsurface wash using air, water or a combination of these to clean the filter.
 - (j) Provide treatment for the removal of solids from filter backwash water if the water is recycled into the treatment process. Recycled backwash water must be returned to the headworks of the treatment plant.
 - (k) Make provision for facilities for pretreatment in the design of direct filtration, slow sand filtration, or diatomaceous earth filtration plants.
 - (l) Provide equipment for disinfection that is of proper size for the full range of expected conditions of flow and capable of feeding accurately at all rates of flow.
 - (m) Provide for operation of the treatment plant without frequent shutdowns and start-ups.
3. As used in this section, "filter-to-waste" means a provision in the filtration process to allow the water that was filtered first to be wasted or reclaimed.

Section 49. NAC 445A.531 Inclusion of features for reliability in design and construction of plant. The following features for reliability or alternatives acceptable to the ~~Health Division~~ *Division or the appropriate district board of health* must be included in the design and construction of any plant that treats surface water or ground water under the direct influence of surface water:

1. Alarm devices to indicate failures in the coagulation, filtration, and disinfection processes. The alarm must notify the person designated by the public water system as responsible for taking corrective action ~~or~~ *and*, if the facility is unmanned, have the capability to shut the plant down until corrective action can be taken.
2. Standby replacement equipment to ensure continuous operation and control of unit processes for coagulation, filtration and disinfection.
3. Multiple filter units to provide redundant capacity if filters are out of service for backwash or maintenance.

Section 50. NAC 445A.533 Standards for operation of facility for filtration. A facility for filtration must be operated in accordance with the following requirements:

1. A plant for conventional and direct filtration must be operated at a rate of flow not to exceed 3 gallons per minute per square foot for single media filters and 6 gallons per minute per square foot for deep bed, dual or mixed media filters under conditions of gravity flow. For pressure filters, the rates of filtration must not exceed 2 gallons per minute per square foot for single media filters and 3 gallons per minute per square foot for dual, mixed media, or deep bed filters.
2. A slow sand filter must be operated at a rate of filtration not to exceed 0.1 gallons per minute per square foot. The filter bed must not be dewatered except for cleaning and maintenance.

3. A diatomaceous earth filter must be operated at a rate not to exceed 1 gallon per minute per square foot.
4. During normal operating conditions, any filter removed from service must be backwashed upon start-up.
5. Rates of filtration must be increased gradually when placing filters back into service after backwashing or any other interruption in the operation of the filter.
6. In a plant using conventional and direct filtration, the turbidity of filtered water from any individual filter after backwashing or any other interruption must be less than 0.5 units of nephelometric turbidity after 4 hours of the initial operation of the filter, and the individual turbidity of the filter effluent must be less than or equal to 1 unit of nephelometric turbidity in at least 90 percent of interruption events during any consecutive 12-month period. The level of turbidity must never exceed 2 units of nephelometric turbidity before placing the filter back into operation. Compliance with this requirement will be determined by using data from the previous 12 months.
7. A pressure filter must be inspected physically and evaluated annually for occurrences such as media condition, formation of balls of mud and short circuiting. A written record of the inspection must be maintained at the treatment plant.
8. Coagulation and flocculation unit processes must be in use at all times when a plant using conventional and direct filtration is in operation. The effectiveness and optimization of these processes must be demonstrated by jar testing, pilot filter column testing or other means acceptable to the ~~[health division]~~ *Division or the appropriate district board of health*.
9. The level of turbidity of filtered water from each filter unit must be monitored with a continuous turbidity meter and recorder, or with a sampling program approved by the ~~[health division]~~ *Division*. If this monitoring indicates that any filter unit is not performing as required by subsection 6, the filter must be taken out of service and inspected to determine the cause of its inadequate performance. The filter unit must not be returned to service until its deficiencies have been corrected and tests have been made to ensure that the filter unit meets these requirements.
10. To obtain approval for rates higher than those specified in subsections 1, 2 and 3 of this section, a supplier of water must demonstrate to the ~~[health division]~~ *Division* that his filters can ensure the same water quality at the increased rates of flow.

Section 51. NAC 445A.535 Requirements for plan of operations.

1. A supplier of water shall submit a plan of operations for each facility that treats surface water or ground water under the direct influence of surface water to the ~~[health division]~~ *Division or the appropriate district board of health* for review and approval. The plan must be designed to produce the optimal quality of water from the treatment process. The supplier shall operate the facility in accordance with the approved plan.
2. The plan must include a description of:
 - (a) The program for monitoring the performance of the treatment plant;
 - (b) The program for maintaining unit process equipment;
 - (c) The persons who operate the facility, including the number of the staff and the level of their training;
 - (d) The operation of each unit process;
 - (e) The procedures used in the laboratory, if applicable;
 - (f) The procedures used to determine chemical dose rates;
 - (g) The records of the facility;

- (h) The procedure for responding to an emergency at the plant or involving the watershed; and
- (i) Any other features that contribute to the reliable operation of the plant.

Section 52. NAC 445A.536 Maintenance of records.

1. Each supplier of water must maintain accurate and complete records of the operation of each treatment plant using surface water or ground water under the direct influence of surface water. The records must include:

- (a) The results of all monitoring conducted in accordance with ~~[NAC 445A.527]~~ *Section 46*;
- (b) The date of any maintenance or inspection of a filter and the results of the inspection, including any evaluation of a pressure filter required by subsection 7 of ~~[NAC 445A.533]~~ *Section 50*;
- (c) The quantity of water produced;
- (d) The hours of operation;
- (e) The rates of flow at the plant;
- (f) The rates of filtration;
- (g) The rates of backwash; and
- (h) The dates and description of failures of major equipment or unit processes and the action taken to correct these failures.

2. The records of a treatment plant must be retained for not less than 2 years, unless the ~~[health division]~~ *Division or the appropriate district board of health* has determined otherwise.

Section 53. NAC 445A.537 Submission of monthly reports. (NRS 445A.860)

1. Each supplier of water shall submit to the ~~[health division]~~ *Division or the appropriate district board of health*, 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:

- (a) A written explanation of the cause of any violation of the standards of performance set forth in ~~[445A.521]~~ *Section 41* and ~~[445A.526]~~ *Section 45* and the operating criteria set forth in ~~[NAC 445A.533]~~ *Section 50*, and
- (b) The information required by 40 C.F.R. §§ 141.75, ~~[and]~~ 141.175, *141.570, and 141.571* as adopted by reference in ~~[NAC 445A.5175]~~ *Section 22*.

Section 54. NAC 445A.538 Events for which notification of ~~[health division]~~ *Division or the appropriate district board of health* required. Beginning on or after June 29, 1993, or on the date the system for filtration is installed, whichever is later, each supplier of water shall notify the ~~[health division]~~ *Division or the appropriate district board of health* by telephone as soon as possible, but not later than the end of the next business day, whenever:

- 1. The turbidity of the filter effluent exceeds: ~~[5-units-of-nephelometric-turbidity.]~~
 - (a) *For conventional, direct filtration and absorption clarifier filtration systems, 1 unit of nephelometric turbidity.*
 - (b) *For diatomaceous earth and slow sand filtration and systems which have filtration avoidance status, 5 units of nephelometric turbidity.*
 - (c) *For alternative technologies, the turbidity level specified upon approval.*

2. More than two consecutive samples of the turbidity of the combined filter effluent taken every 4 hours exceed 1 unit of nephelometric turbidity.
3. There is a failure to maintain at least 0.2 milligrams per liter of residual disinfectant in the water being delivered to the distribution system, regardless of whether the residual level of disinfectant was restored to at least 0.2 milligrams per liter within 4 hours.
4. An event occurs which may affect the ability of the treatment plant to produce safe, potable water including, but not limited to, spills of hazardous materials in the watershed and failures of the unit treatment process.
5. An outbreak of water-borne disease that is potentially attributable to the water system occurs.
6. *There is a failure to meet the minimum concentration times time for any given day.*

Section 55. ~~[NAC 445A.486 Obtaining results of analyses of water supplies. A copy of the results of the analysis of water supplies throughout Nevada may be obtained from the Department of Human Resources, Health Division, Office of the State Health Officer, 505 E. King Street, Carson City, Nevada 89710.]~~

Section 56. ~~[NAC 445A.507 "Health division" defined. "Health division" means the health division of the department of human resources.]~~

Section 57. ~~[NAC 445A.5175 Adoption by reference of certain provisions of "National Primary Drinking Water Regulations." (NRS 445A.860) 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>>.]~~