

STATEMENT OF CIRCUMSTANCES

64CSR3 PUBLIC WATER SYSTEMS REGULATIONS

To maintain primacy for the federal Safe Drinking Water Act and attendant funding of the Public Water Supply Supervision (PWSS) program and state Drinking Water Treatment Revolving Fund (DWTRF), which amounts to approximately \$825,000 and \$8.3 million per year, the state must adopt drinking water standards that are at least as stringent as the federal requirements. The proposed Public Water Systems Regulations adopt the federal standards by reference. These regulations adopt newly promulgated and published federal standards that have been implemented since the last state adoption of these regulations in 2002. Adoption of these regulations will comply with federal EPA requirements for continued primacy.

Brief Summary
64csr3 -Public Water Systems Regulations

These regulations are revised to adopt current federal regulations governing operation of public water systems that have been enacted since April, 2000. The rules include:

- Arsenic Rule Minor Modifications
- Filter Backwash Recycling Rule

FISCAL NOTE FOR PROPOSED RULES

Rule Title: Public Water Systems Regulations, Title 64 Series 3

Type of Rule: **Legislative** **Interpretive** **Procedural**

Agency: Division of Health
Department of Health and Human Resources

Address: Building 3, Capitol Complex
Charleston, W. Va. 25305

1. Effect of the Proposed Rule	ANNUAL		FISCAL YEAR		
	Increase	Decrease	Current	Next	Thereafter
Estimated Total Cost	\$	\$	\$	\$ 0	\$ 0
Personal Services				0	0
Current Expense				0	0
Repairs & Alterations					
Equipment				0	0
Other					
Revenue					

2. Explanation of above estimates.

Costs for the implementation of the regulations are currently funded.

3. Objectives of this rule:

Update Public Water Systems Regulations include new federal rules promulgated by EPA under the Safe Drinking Water Act as required to maintain primacy and avoid reductions in the federal Public Water Supply Supervision grant and capitalization grant for the Drinking Water Revolving Loan Fund.

4. Explanation of Overall Economic Impact of Proposed Rule.

A. Economic Impact on State Government.

The state is currently implementing the regulations and only minimal additional costs are expected with adoption of these regulations.

B. Economic Impact on Political Subdivisions; Specific Industries; Specific Groups of Citizens.

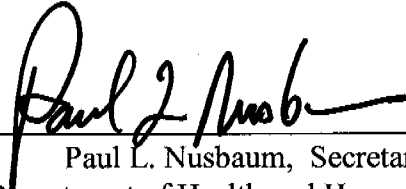
All public water supply systems will be burdened with the additional costs of monitoring and meeting the requirements of the federal Safe Drinking Water Act.

C. Economic Impact on Citizens/Public at Large.

Costs for operating public water supplies will be passed on to the consumer in the form of higher rates.

Date: July 9, 2003

Signature of Agency Head or Authorized Representative

A handwritten signature in black ink, appearing to read "Paul L. Nusbaum", written over a horizontal line.

Paul L. Nusbaum, Secretary
Department of Health and Human Resources

QUESTIONNAIRE

(Please include a copy of this form with each filing of your rule: Notice of Public Hearing or Comment Period, Proposed Rule, and if needed, Emergency and Modified Rule.)

DATE: July 11, 2003

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM: (Agency name, Address & Phone No.) Martha Barnitt

Department of Health and Human Resources

State Capitol Complex, Building 3, Room 206; Charleston, WV 25305

Telephone: (304) 558-5598

LEGISLATIVE RULE TITLE: Public Water Systems

1. Authorizing statute(s) citation: WV Code §§ 16-1-4 and -9a.

2. a. Date filed in State Register with Notice of Hearing or Public Comment Period:

June 3, 2003

b. What other notice, including advertising, did you give of the hearing?

Notice of the proposed rule was sent to newspapers county health departments, and industry associations including the WV Rural Water Association and the American Water Works Ass'n.

c. Date of Public Hearing(s) or Public Comment Period ended:

July 7, 2003

- d. Attach list of persons who appeared at hearing, comments received, amendments, reasons for amendments.

Attached _____ No comments received X

- e. Date you filed in State Register the agency approved proposed Legislative Rule following public hearing (be exact):

July 11, 2003

- f. Name, title, address and phone/fax/e-mail numbers of agency person(s) to receive all written correspondence regarding this rule (please type):

Martha Barnitt

Policy Development & Regulatory Affairs - - DHHR

Building 3 - Room 206

Charleston, West Virginia 25305 Tel: 558-5598 Fax: 558-7075

- g. IF DIFFERENT FROM ITEM 'f', please give Name, title, address and phone number(s) of agency person(s) who wrote and/or has responsibility for the contents of this rule (please type):

Vic Wilford, Director - Environmental Engineering Division

Office of Environmental Health Services - DHHR

815 Quarrier Street, Suite 418

Charleston, West Virginia 25305 Tel: 558-2981

3. If the statute under which you promulgated the submitted rules requires certain findings and determinations to be made as a condition precedent to their promulgation:

- a. Give the date upon which you filed in the State Register a notice of the time and place a hearing for the taking of evidence and a general description of the issues to be decided.

N/A

b. Date of hearing or comment period:

N/A

c. On what date did you file in the State Register the findings and determinations required together with the reasons therefore?

N/A

d. Attach findings and determinations and reasons:

Attached N/A

TITLE 64
LEGISLATIVE RULE
BUREAU FOR PUBLIC HEALTH

SERIES 3
PUBLIC WATER SYSTEMS

FILED

2003 JUL 11 A 9:31

OFFICE WEST VIRGINIA
SECRETARY OF STATE**§64-3-1. General.**

1.1. Scope. -- This legislative rule establishes State standards and procedures and adopts national drinking water standards for public water systems. It establishes standards for the production and distribution of bottled drinking water, and also adopts federal standards for the certification of laboratories performing analyses of drinking water. This rule should be read in conjunction with W. Va. Code §16-1-9 and -9a. The W. Va. Code is available in public libraries and on the Legislature's web page, <http://www.legis.state.wv.us/>.

1.2. Authority. -- W. Va. Code §§16-1-9a and 16-1-4.

1.3. Filing Date. -- ~~April 17, 2002~~

1.4. Effective Date. -- ~~July 1, 2002~~

1.5. ~~Supersession or Repeal~~ Amendment of Former Regulations. -- This rule amends ~~and reenacts~~ Public Water Systems, West Virginia Administrative Rules, Division of Health, 64CSR3, ~~1999~~ 2002.

§64-3-2. Application and Enforcement.

2.1. Application. -- This rule applies to public drinking water systems, to bottled water treatment plants and distributors, and to laboratories desiring certification to perform analytic tests of drinking water.

2.2. Enforcement. -- This rule is enforced by the commissioner of the Bureau for Public Health or his or her designee. ~~division of health.~~

§64-3-3. Definitions.

3.1. Bottled Water. -- Water that is intended for human consumption and is sealed in bottles or other containers with no added ingredients except that it may ~~optionally~~ contain safe and suitable antimicrobial agents, and includes bottled mineral waters.

3.2. Bottled Water Distributor. -- A person who buys and sells bottled water on a wholesale basis.

3.3. Commissioner -- Commissioner of the bureau for public health or his or her designee.

3.4. Community Water System. -- A public water system which serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents.

3.5. Non-Community Water System. -- Any public water system that is not a community water system.

3.6. Person. -- An individual, partnership, association, syndicate, company, firm, trust, corporation, government corporation, institution, department, division, bureau, agency, federal agency or any other entity recognized by law.

3.7. Public Water System. --

3.7.a. A public water system is any water supply or system that regularly supplies or offers to supply water for human consumption through pipes or other constructed conveyances, if serving at least an average of twenty-five (25) individuals per day for at least sixty (60) days per year, or which has at least fifteen (15) service connections, and shall include: (1) Any collection, treatment, storage, and distribution facilities under the control of the owner or operator of the system and used primarily in connection with the system; and (2) Any collection or pretreatment storage facilities not under such control which are used primarily in connection with the system. A public water system does not include a system which meets all of the following conditions: (1) Which consists only of distribution and storage facilities (and does not have any collection and treatment facilities); (2) Which obtains all of its water from, but is not owned or operated by a public water system that otherwise meets the definition; (3) Which does not sell water to any person; and (4) Which is not a carrier conveying passengers in interstate commerce.

3.8. Sanitary Survey. -- An on-site review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of the source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water, as described in the federal regulations adopted in this rule.

§64-3-4. Public Water System Construction, Alteration or Renovation; Standards; Exceptions.

4.1. No person shall construct, alter, renovate or award a contract for any construction, alteration or renovation of a public water system without obtaining a permit from the commissioner.

4.2. Application for a permit to construct, alter or renovate shall be made to the commissioner on forms prescribed by the commissioner at least forty-five (45) days prior to the date on which approval by the commissioner is desired. The application shall be accompanied by an engineering report, maps, and detailed plans and specifications of the proposed construction, alteration or renovation prepared by or under the direction of a registered professional engineer.

4.3. The commissioner may revoke a permit to construct, alter or renovate for failure of the public water system to comply with this rule.

4.4. A permit to construct, alter or renovate is valid for two (2) years from the date of issuance.

4.5. The public water system shall be constructed, altered or renovated in accordance with the plans and specifications approved by the commissioner in accordance with the Division of Health rule, "Public Water System Design Standards," 64 CSR 77.

4.6. To the extent practical, all new or expanded facilities shall be located outside the one-hundred-year (100) flood plain.

4.7. The commissioner may issue an order requiring a change in the source of the water supply for the system or in the manner of collection, treatment, storage, or distribution before delivery to the consumer as may be necessary to safeguard the public health.

4.8. A permit to construct, alter or renovate is not required for any minor addition to, or alteration or renovation of an existing public water system which will not significantly affect the quality or quantity of the water supply service rendered. The work shall be done in accordance with the provisions of the Division of Health rule, "Public Water System Design Standards," 64 CSR 77.

4.9. A public water system shall submit a written description of the proposed additions, alterations or renovations to the commissioner no less than ten (10) working days prior to implementing the additions, alterations or renovations under this provision. The commissioner shall notify the system whether or not the proposed additions, alterations or renovations qualify under this provision within five (5) days of receipt of the description.

4.10. All public water supply systems using a raw water source which is open to the atmosphere or subject to surface runoff shall, at a minimum, provide filtration treatment.

§64-3-5. Permit to Operate a Public Water System.

5.1. A public water system shall be operated in accordance with this rule and the federal regulations adopted in this rule.

5.2. The commissioner may develop a program for the issuance of a permit to operate a public water system. The permit is renewable annually and may be revoked for failure to comply with the requirements of this rule or the federal standards adopted in this rule. The commissioner shall administer the permit program uniformly and shall not grant a permit until after he or she has completed a sanitary survey.

5.3. In the event of a proposed change in the ownership of a public water system, the new owner shall submit a written application to the commissioner at least fifteen (15) days before the proposed change to transfer the permit to operate.

5.4. The current permit to operate shall be posted in a conspicuous place at the public water system's treatment plant or main office.

§64-3-6. Inspections and Sanitary Surveys of Public Water Systems.

6.1. The commissioner shall inspect public water systems and conduct sanitary surveys in accordance with the federal regulations adopted in this rule.

6.2. The commissioner has the right of access to all parts of a public water system. The public water system shall furnish the commissioner access to all information and records required to be kept by this rule and the federal regulations adopted in this rule.

§64-3-7. Public Water System Disinfection Requirements.

7.1. Disinfection with chlorine, chlorine dioxide, chloramine or ozone is required of all public water systems, provided the requirements of Subsection 7.6 of this section are met.

7.2. The disinfectant shall be applied during treatment at a point before entering the distribution system which will provide effective contact time.

7.3. The minimum chlorine contact time for groundwater systems not influenced by surface waters is

thirty (30) minutes from the point of application to the point of delivery to the first consumer or as stipulated in the Division of Health rule, "Public Water System Design Standards", 64 CSR 77. At the end of the chlorine contact time, minimum free chlorine residuals shall comply with the requirements of Table 64-3A at the end of this rule. For these systems, the amount of residual disinfectant in the drinking water at the treatment plant and in the distribution system shall be determined at least once per day, or more often if considered necessary by the commissioner.

7.4. Surface water systems and groundwater systems under the direct influence of surface waters shall meet the disinfection requirements of the federal regulations adopted in this rule.

7.5. Chlorine residual testing equipment shall enable measurement of free and total chlorine residuals to the nearest 0.2 milligrams per liter in the range of 0.0 milligrams per liter to 2.0 milligrams per liter.

7.6. For all public water systems, at least 0.2 milligrams per liter of total chlorine residual shall be maintained throughout the distribution system at all times.

7.7. The commissioner may authorize variances in the chlorine disinfection parameters specified in this section.

§64-3-8. Public Water System Fluoridation.

8.1. ~~Except for water systems operated by public schools,~~ Average concentrations of fluoride present in the drinking water of a public water system, which artificially adjusts fluoride concentrations, shall be no less than the minimum and no higher than the maximum concentrations shown in Table 64-3B at the end of this rule.

~~8.2. Average concentrations of fluoride present in a public school drinking water system shall be no less than three (3.0) milligrams per liter and no higher than six (6.0) milligrams per liter, with an optimum concentration of four and one-half (4.5) milligrams per liter.~~

~~8.3. 8.2.~~ The drinking water of fluoridated or defluoridated public water systems shall be monitored once per day for fluoride concentration. Records of the monitoring shall be maintained in accordance with Sections 9 and 10 of this rule.

~~8.4.8.3.~~ At least once a month, the public water system shall submit a sample of drinking water to the commissioner or to a certified laboratory for fluoride analysis.

~~8.5. The requirements of Subsection 8.2 of this section supersede the requirements of the National Secondary Drinking Water Regulations, 40 CFR Part 143, as applicable to fluoridation of public school drinking water.~~

§64-3-9. Public Water System Control Tests and Record Maintenance.

9.1. A public water system shall retain records of microbiological, turbidity, radiological and chemical analyses, or a summary of the records, at a convenient location on or near the premises of the public water system. The public water system shall keep turbidity, radiological and chemical analytical records for ten (10) years; they shall keep control test, microbiological and operational records for five (5) years. The commissioner shall certify a laboratory to conduct all tests and analyses required by this rule or the federal regulations adopted in this rule, with the exception of on-site water system operational tests.

9.2. The records shall include the date, place and time of sampling; the name of the person who collected the sample; identification as to whether it was a routine distribution system sample, resample, raw or drinking water sample, or other special purpose sample; the date of the analysis; the laboratory and person responsible for performing the analysis; the analytical technique or method used for microbiological testing; and the results of the analysis.

9.3. A public water system shall keep records of action taken to correct violations of this rule or the federal regulations adopted in this rule for three (3) years after the corrective action is completed.

9.4. A public water system shall keep copies of written reports relating to sanitary surveys of the system for ten (10) years.

9.5. A public water system shall keep records concerning a variance or exemption from this rule or the federal regulations adopted in this rule for at least five (5) years following the expiration of the variance or exemption.

§64-3-10. Adoption of Federal Regulations.

10.1. The following federal regulations promulgated and published as final rules prior to adoption of this rule are hereby adopted by reference:

10.1.a. National Primary Drinking Water Regulations, 40 C.F.R. Part 141;

10.1.b. National Primary Drinking Water Regulations Implementation, ~~Subparts F and G of 40 C.F.R. Part 142, except for Sections 142.57, 142.60, 142.61, and 142.62(c)-142.62(h)~~ 40 C.F.R. 142.20(b), 142.21, 142.62, 142.63, 142.64 and 142.65; and

10.1.c. National Secondary Drinking Water Regulations, 40 C.F.R. Part 143.

10.2. The commissioner shall use the provisions of 40 C.F.R. ~~Part 142, Subparts F and G~~ 142.20(b), as adopted in this rule as applicable in granting exemptions.

10.3. In the event of a conflict between a federal standard adopted in this rule and a state standard adopted in this rule, the more stringent standard applies, except as stated in Subsection 8.5 of this rule.

10.4. These regulations can be viewed on the internet at <www.epa.gov/safewater/regs>. Copies of these regulations are available in hard copy from:

U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103

§64-3-11. Bottled Water Treatment Plants and Distributors.

11.1. No person shall operate a bottled water treatment plant in this State without first receiving from the commissioner a permit to bottle and distribute water ~~from the commissioner~~.

11.2. No person shall distribute bottled water in this State without first receiving from the commissioner a permit to distribute bottled water ~~from the commissioner~~.

11.3. Application for a permit to bottle and distribute water shall be made to the commissioner on forms prescribed by the commissioner. Four (4) sets of completed applications, and plans and specifications for the treatment plant shall be submitted to the commissioner for approval at least forty-five (45) days prior to the date on which a permit from the commissioner is desired.

11.4. The source of the water to be bottled and the bottled water shall comply with Beverages, 21 C.F.R., §165 final regulations promulgated and published as final rules prior to the adoption of this rule, with the exception of Sections 165.3(b), 165.110(a)(2)(ii) and 165.110(b)(2).

11.4.a. The name of the water from a subsurface saturated zone that is under a pressure equal to or greater than atmospheric pressure is "ground water". Ground water found to be under the direct influence of surface water as defined in 40 C.F.R. §141.2, as adopted by this rule, shall be treated by a method approved by the commissioner.

11.4.b. The ~~public water system bottler~~ shall conduct microbiological monitoring not less than weekly on the finished product. The ~~public water system bottler~~ shall determine microbiological acceptability in accordance with 40 C.F.R. §141.63, as adopted by this rule.

11.5. A bottled water treatment plant shall be operated in accordance with the provisions of the federal standards, Current Good Manufacturing Practice in Manufacturing, Packaging or Holding Human Food, 21 C.F.R. Part 110, and Processing and Bottling of Bottled Drinking Water, 21 C.F.R. §129, final regulations promulgated and published as a final rule prior to the adoption of this rule.

11.6. The commissioner shall inspect each in - state bottled water treatment plant every twelve (12) months or as he or she otherwise determines.

11.7. An out-of-state bottled water treatment plant desiring to distribute bottled water in West Virginia shall apply for a permit to bottle and distribute bottled water on forms approved by the commissioner. Four (4) copies of all materials shall be submitted. The out-of-state treatment plant shall comply with the requirements of this rule and the federal regulations adopted in this rule for in-state bottled water treatment plants. Subsequent to the initial evaluation, monitoring of the treatment plant by the regulatory agency of the state in which the treatment plant is located is considered acceptable for the purposes of this rule. The out-of-state treatment plant shall notify the commissioner of any corrective action it is required to take by its state regulatory authority and shall notify the commissioner of any change in ownership or in the event that it closes.

11.8. A person wishing to distribute bottled water in the State who does not operate a bottled water treatment plant shall apply for a permit to distribute bottled water on a form approved by the commissioner. The applicant shall identify the location of the plants from which the bottled water is obtained and any distributor other than the bottled water plant from which the bottled water is obtained and shall provide other information required by the commissioner. The commissioner shall grant a permit to distribute bottled water if the bottled water complies with the requirements of this rule.

11.9. The commissioner may revoke a permit for failure to comply with provisions of this rule.

§64-3-12. Public Water System Reporting Requirements.

12.1. Unless otherwise specified in this rule or the federal regulations adopted in this rule, a public water system shall report to the commissioner the results of any test, measurement or analysis required to be made by this rule or the federal regulations adopted in this rule within forty (40) days of the system's receipt of the test, measurement or analysis.

~~12.2. A public water system shall report to the commissioner analytical results for total trihalomethane (TTHM) analyses within thirty (30) days of the system's receipt of the results.~~

~~12.3. 12.2.~~ If a public water system fails to comply with this rule or the federal regulations adopted in this rule, it shall be reported to the commissioner within forty-eight (48) hours of the discovery of the violation.

~~12.4. 12.3.~~ Analytical results of tests performed by the laboratory of the bureau for public health are not required to be reported.

~~12.5. 12.4.~~ A public water system shall submit a written summary of the public water system operation, test data, and other information as may be required by the commissioner to the commissioner at least once per month. The commissioner may require more frequent reports in cases where there are public health concerns.

~~12.6. 12.5.~~ All reports and summaries required by this rule or federal regulations adopted in this rule shall be submitted in a manner or form approved by the commissioner.

12.6. A public water system shall distribute a public notice for any failure to comply with this rule or the federal regulations adopted in this rule. The content, distribution, recordkeeping, and reporting of the public notification shall be performed in a time and manner as specified in the federal rules adopted, by reference, in this rule.

~~12.7. The water supply system shall submit to the commissioner a representative copy of each type of notice distributed, posted or made available to the public or media within seven (7) days following any public notification of violations of this rule or federal regulations adopted in this rule.~~

§64-3-13. Certification of Laboratories to Conduct Drinking Water Tests.

13.1. All laboratories providing drinking water testing results for purposes of this rule or the federal regulations adopted in this rule shall be certified by the commissioner or by the federal Environmental Protection Agency.

13.2. A certified laboratory shall:

13.2.a. Comply with the requirements and criteria contained in the sections titled "Types of Certification", "Other Considerations for Laboratory Certification," "Requirements for Maintaining Certification Status", "Criteria and Procedures for Downgrading/Revoking Certification Status", and "Laboratory Quality Assurance Plan" of Chapter III, and in Chapters IV, V and VI of the federal Environmental Protection Agency's Manual for the Certification of Laboratories Analyzing Drinking Water, Fourth Edition, March 1997 including all changes made to date and promulgated and published as a final rule prior to the adoption of this rule; or any other accreditation determined to be equivalent by the commissioner; or

13.2.b. Comply with the requirements of this rule and hold a certificate of recognition from the National Environmental Laboratory Accreditation Program (NELAP) for the analysis of drinking water.

13.3. An in-state laboratory shall submit an application form when seeking initial approval at least sixty (60) days prior to the date certification is desired.

13.4. A laboratory located outside the boundaries of this state shall be certified by the commissioner if:

13.4.a. It has been certified by the federal Environmental Protection Agency; or

13.4.b. It has been certified by a program for the certification of laboratories equivalent to the program of this state as determined by the commissioner. If the program of the state in which the laboratory is located is not judged equivalent, the laboratory may request an on-site evaluation and full certification review by the commissioner.

13.5. An out-of-state laboratory shall submit an application form when seeking initial approval and shall include with its application evidence of compliance with Subsection ~~13.4.a.1~~ 13.4.a. or ~~13.4.b.2.~~ 13.4.b. of this section. The out-of-state laboratory shall notify the commissioner immediately of any change in its certification status under Subsection 13.4.a. or 13.4.b. of this rule.

13.6. The commissioner shall conduct on-site inspections of in-state laboratories to determine compliance with this rule and the federal standards adopted in this rule initially prior to certification, and at least every three (3) years thereafter. The division has the right of entry upon proper identification at any time considered necessary during operating hours in order to conduct the inspections.

13.7. The commissioner shall issue certificates of approval upon initial approval and shall renew the certificates on an annual basis thereafter pursuant to the conditions listed in this rule. Certificates issued shall contain the name and location of the laboratory, a laboratory code number, the name of the laboratory director and the date of expiration of the certificate.

13.8. Certified laboratories shall notify the commissioner when there is a change in ownership, laboratory director, technical personnel or location of the laboratory.

13.9. The commissioner shall administer and use the criteria and procedures of the section titled "Criteria and Procedures for Downgrading/Revoking Certification Status" of the Manual for the Certification of Laboratories Analyzing Drinking Water referenced in Subsection 13.2. of this section.

§64-3-14. Penalties.

Any person who violates any provision of this rule or orders issued under this rule, ~~is guilty of a misdemeanor, and upon conviction thereof, shall be fined not less than fifty dollars (\$50) nor more than five hundred dollars (\$500), and each day's violation constitutes a separate offense. In addition, the commissioner or his or her authorized representative may seek injunctive relief in the circuit court of the county in which all or part of the public water system is situated for threatened or continuing violations. For a willful violation of this rule or orders issued under this rule, a person, upon a finding by the circuit court of the county in which the violation occurs, is subject to a civil penalty of not more than five thousand dollars (\$5,000), and each day's violation is grounds for a separate penalty.~~ is subject to injunction, criminal prosecution, and criminal, civil and administrative fines, all as provided in W. Va. Code §§16-1-9, -9a, -17 and -18.

§64-3-15. Administrative Due Process.

Those persons adversely affected by the enforcement of this rule desiring a contested case hearing to determine any rights, duties, interests or privileges shall do so in accordance with the Division of Health rule, "Rules and Procedures for Contested Case Hearings and Declaratory Rulings," 64 CSR 1.

TABLE 64-3A.

**Minimum Levels of Free Chlorine Residual at Various
Water Sample pH Levels**

<u>pH VALUE</u>	<u>FREE CHLORINE RESIDUAL</u>
Up to 7.0	0.4 mg/l
7.1 to 8.0	0.6 mg/l
8.1 to 9.0	1.0 mg/l

TABLE 64-3B.

**Average Acceptable Range of Fluoride Concentration
at Various Annual Average Maximum Daily Air
Temperatures**

<u>ANNUAL AVERAGE MAXIMUM DAILY AIR TEMPERATURE</u>	<u>FLUORIDE CONCENTRATION IN MILLIGRAMS PER LITER</u>		
	Lower	Optimum	Upper
53.8 -- 58.3° F 12.1 -- 14.6° C	0.8	1.1	1.5
58.4 -- 63.8° F 14.7 -- 17.7° C	0.8	1.0	1.3
63.9 -- 70.6° F 17.7 -- 21.4° C	0.7	0.9	1.2