

~~STATE OF MAINE~~

~~10-144~~

~~RULES RELATING TO FLUORIDATION  
OF PUBLIC WATER SYSTEMS~~

~~Chapter 228~~

~~DEPARTMENT OF HEALTH AND HUMAN SERVICES  
DIVISION OF ENVIRONMENTAL HEALTH~~

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STATE OF MAINE

RULES RELATING TO FLUORIDATION  
OF PUBLIC WATER SYSTEMS

SUMMARY STATEMENT

~~These rules contain requirements, which must be met by public water systems that adjust the fluoride ion concentration of their water.~~

BASIS STATEMENT

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~~These regulations are promulgated to regulate the manner, methods, and necessary reporting to the state which must be followed when fluoride levels are adjusted by a public water system.~~

AUTHORITY

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~~These relations are established under authority of 22 MRSA sections 2611 and 2651 through 2659.~~

Non-Discrimination Notice

In accordance with Title VI of the Civil Rights Act of 1964, as amended by the Civil Rights Restoration Act of 1991 (42 U.S.C. 1981, 2000e et seq.) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), the Age Discrimination Act of 1975, as amended (42 U.S.C. 6101 et seq.), Title II of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.), and Title IX of the Education Amendments of 1972, the Maine Department of Health and Human Services does not discriminate on the basis of sex, color, national origin, disability or age in admission or access to or treatment or employment in its programs and activities.

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## ~~1. GENERAL PROVISIONS~~

### ~~1.1 Application and Scope~~

~~A. The provisions of these rules shall apply to all public water systems that adjust the fluoride ion concentration in their drinking water by the addition of fluoride.~~

### ~~1.2 Constitutionality~~

~~A. Should any section, paragraph, sentence, clause, or phrase of these rules be declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portion of these rules.~~

## ~~2. DEFINITIONS~~

~~A. CONTAMINANT: Any physical, chemical, biological or radiological substance or matter in water.~~

~~B. DEPARTMENT: State of Maine Department of Health and Human Services~~

~~C. FLUORIDATION: The addition of a chemical to increase the concentration of fluoride ion in drinking water to a predetermined optimum range to reduce the incidence of dental caries (tooth decay).~~

~~D. MAXIMUM CONTAMINANT LEVEL: The maximum concentration of a contaminant allowed under the National Primary Drinking Water Regulations in water supplied for human consumption~~

~~E. NATURAL FLUORIDE LEVEL: The concentration of fluoride that is present in the water source from naturally occurring fluoride.~~

~~F. PUBLIC WATER SYSTEM: Is hereby incorporated by reference as defined in the Chapter 22 M.R.S.A § 2601 and 10-144 CMR 231 Section 2 in the State of Maine Rules Relating to Drinking Water.~~

~~G. SECONDARY MAXIMUM CONTAMINANT LEVEL: The maximum recommended level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of the public water system.~~

~~H. THEORETICAL FLUORIDE DOSE: The calculated dose of fluoride ion added to a drinking water supply.~~

~~I. THEORETICAL FLUORIDE CONCENTRATION: The calculated concentration of fluoride ion in a distribution system which includes the theoretical fluoride dose plus the natural fluoride level.~~

### ~~3. FLUORIDATION IMPLEMENTATION~~

#### ~~3.1 Authorization~~

~~A. In those municipalities which have authorized the addition or discontinuation of fluoride to their water supply pursuant to 22 MRSA section 2653, the municipal clerk shall inform the water system, in writing, of the municipality's authorization, within ten (10) days of the final tabulation by the Secretary of State pursuant to 22 M.R.S.A. §2656(3). The water system shall inform the Department, in writing, within seven (7) days of the water system receiving such notice from the municipal clerk.~~

#### ~~3.2 Department Approval~~

~~A. No public water system shall add or discontinue fluoride to its water supply without having submitted an application to, and obtained written approval from the Department.~~

~~B. Requests for approval of the addition of fluoride to a public water system shall be submitted by application to the Department and shall include complete plans and specifications of the proposed installation~~

#### ~~3.3 Fluoridation Start Up~~

~~A. A Public Water System authorized to fluoridate shall do so within nine (9) months after notification by the municipal clerk~~

### ~~4. APPROVED CHEMICALS~~

~~All fluoridation chemicals shall be certified to meet NSF/ANSI Standard 60 – 2006: Drinking Water Treatment Chemicals – Health~~

### ~~5. FLUORIDE CONTROL LEVELS~~

~~5.1 Optimum Level: The optimum level of fluoride for dental benefit is 1.2 mg/l in drinking water in Maine~~

~~5.3 Recommended Control Range: The recommended control range is plus (+) or minus (-) 0.2 mg/l (ppm) of the optimum level. The recommended control range helps maintain optimal fluoridation~~

5.4 Secondary Maximum Contaminant Level: The secondary maximum contaminant level for fluoride is 2.0 mg/l (ppm).

5.5 Maximum Contaminant Level: The maximum contaminant level for fluoride is 4.0 mg/l (ppm)

## 6. DESIGN STANDARDS

Fluoride solution feed equipment shall be designed and constructed according to American Water Works Association's Water Fluoridation Principles and Practices Manual of Supply Practices M4, fifth edition or the Recommended Standards for Water Works 2003 edition

## 7. MONITORING

### 7.1 Daily Monitoring

A. All public water systems that fluoridate must monitor and report the daily fluoride concentration at each application point by either an analytical measurement of the fluoride concentration or by calculating a theoretical dosage.

B. All measurements shall be conducted under the direction of a licensed operator.

#### — Daily Analytical Measurement

a. Testing methodology shall be by methods stated in Standard Methods for the Examination of Water and Wastewater 21<sup>st</sup> Edition Section 4500 or by EPA approved test methods.

#### Daily Analytical Measurement

b. Public water systems that take a daily analytical measurement shall continuously monitor for fluoride ion concentration at each fluoride application point unless the conditions of item 7.1.B. 1. c. are met. Automated continuous monitoring shall include or meet the following:

i. Continuous monitors may adapt a specified fluoride testing methodology provided the chemistry, precision and accuracy are equal to or greater than the original testing methodology. See Section 7.1. B.1.a for testing methodology requirements. Calibration shall be according to manufacturer's recommendations.

ii. Instrumentation providing for notification of water operator if fluoride concentration is outside of optimum range.

iii. Instrumentation providing for notification of water operator if there is a failure of the continuous monitoring

e. In lieu of continuous monitoring, a representative daily grab sample(s) may be taken from each fluoridation application point and analyzed daily for fluoride ion concentration.

If the result of a fluoride analysis is outside the optimum range, the sampling and measurement shall be confirmed by re-sampling as soon as practicable. If the repeat sample is greater than 2.0 mg/l, the operator shall take appropriate action to correct the problem and inform the Department within 72 hours. If the repeat sample is less than 1.0 mg/l, the operator shall correct the problem and provide a note on the Monthly Operating Report describing the problem and corrective action.

## 2. Daily Theoretical Calculations

a. Daily theoretical fluoride doses must be calculated for each fluoride application point.

b. Theoretical Fluoride Dose Calculation guidance shall be provided by the Department upon request.

C. If either the daily analytical measurements or the daily theoretical calculations are below the Optimum Range (1.0–2.0 mg/l) for more than 10 days during the month, then the public water system shall collect a minimum of four monthly compliance samples the following month for analysis at a certified laboratory. The four samples shall be collected in four different weeks.

## 7.2 Compliance Samples

A. In addition to the daily monitoring requirements, a monthly compliance sample of fluoridated water from the distribution system shall be submitted at least once each month to a laboratory certified to analyze fluoride. The Department may require additional testing based upon sample results and compliance history.

B. If the monthly compliance sample is below the Optimum Range (1.0–2.0 mg/l), the public water system shall collect a minimum of four monthly compliance samples the following month for analysis at a laboratory certified to analyze fluoride. The four samples shall be collected in four different weeks.

~~C. If any of the additional compliance samples are below the Optimum Range, the public water system must collect a minimum of four samples the following month. The requirement for four samples per month will remain until all compliance samples for the month are within the Optimum Range.~~

### ~~7.3 Consecutive Systems.~~

~~If a public water system receives all of its water from another public water system and does not adjust the fluoride ion concentration, the receiving public water system is not required to monitor fluoride levels in the distribution system.~~

### ~~7.4 Temporary Suspension of Fluoride~~

~~If a public water system suspends the addition of fluoride for more than 30 consecutive days, the public water system must provide public notification as soon as practicable or within 30 days, whichever is sooner, with appropriate Public Notification language. Modifications to the following text must be approved by the Drinking Water Program.~~

#### ~~PUBLIC NOTIFICATION~~

#### ~~TEMPORARY FLUORIDATION SUSPENSION~~

~~Dear User,~~

~~The fluoridation adjustment in your community drinking water in your community will be (or has been) temporarily suspended due to: (-).~~

~~Fluoridation is scheduled to be restored by the following date: (-).~~

## ~~8. REPORTING~~

~~A. Each water system adjusting the fluoride level must report monthly, to the Department using a format approved by the Department.~~

~~B. The reports shall be submitted by the tenth day of the month following the period covered by the report and may include the following for each fluoride application point:~~

~~1. Volume of water treated per day.~~

~~2. Weight or volume of fluoride compound added per day.~~

~~3. Results of daily sample analyses for fluoride ion concentration.~~

~~4. Type of chemical used, the available fluoride ion (AFI), and chemical purity.~~

~~5. Remarks pertaining to irregular feed rates throughout the month.~~

~~6. The daily theoretical fluoride concentrations, which includes the natural fluoride level plus the theoretical dose.~~

6. Results of certified fluoride lab sample(s) including those analyzed at the Health and Environmental Testing Laboratory.

## 9. ENFORCEMENT

### 9.1 General

A. The Division of Environmental Health shall represent the Department in carrying out the provisions of the above rules.

B. All authorized representatives of the Department shall be permitted to inspect, examine, and test all water treatment plants, equipment, and facilities used for the addition of fluoride to a public water supply and to take such samples of water, and fluoride compounds as they may deem necessary to insure compliance with these requirements.

C. Compliance Sample(s) Results. Based upon the analytical results from a certified laboratory, the following will be used to determine the necessary enforcement action.

Fluoride Level	Action
<1.0 mg/l (50 percent or more of the sample results per month)*	Public notification language required in the water system's Consumer Confidence Report. (See Section 9.2)
≥1.0 mg/l and ≤2.0 mg/l	Acceptable range. No enforcement action taken.
>2.0 mg/l and ≤4.0 mg/l	See State of Maine Rules Relating to Drinking Water, 10-144 C.M.R. Ch. 231, for requirements when the sample results exceed the Secondary MCL.
>4.0 mg/l	See State of Maine Rules Relating to Drinking Water, 10-144 C.M.R. Ch. 231, for requirements when the sample results exceed the Primary MCL.
* Does not apply when a system is required to take only one compliance sample per month.	

Failure to Monitor. If a public water system fails to collect any compliance sample(s), the public water system must provide Public Notification of the failure to monitor in the annual Consumer Confidence Report.

**Fluoride Monitoring/Reporting Violation:** In (identify reporting period)\_\_\_\_, our water system failed to test and report monthly fluoride results to the State of Maine Drinking Water Program. Fluoride levels must be maintained between .5-1.2 mg/l, for those water systems that fluoridate the water. Since this violation, fluoride testing and monthly reporting have resumed on schedule.

Water systems that have temporarily taken their fluoridation off line due to malfunctions or maintenance are not required to collect a compliance sample while the fluoridation equipment is off line

## 9.2 Public Notification Language.

### A. Compliance Samples below Optimum Range

The following statement must be included in the public water system's annual Consumer Confidence Report:

Fluoride levels must be maintained between 1-2 ppm, for those water systems that fluoridate the water. Fluoride levels below 1.0 ppm have little or no dental health benefit. Fluoride levels were below 1.0 mg/l during the following month(s) (identify months in question)

### B. Failure to Monitor

The following statement must be included in the public water system's annual Consumer Confidence Report

**Fluoride Monitoring/Reporting Violation:** In (identify reporting period)\_\_\_\_, our water system failed to test and report monthly fluoride results to the State of Maine Drinking Water Program. Fluoride levels must be maintained between 1-2 ppm, for those water systems that fluoridate the water. Since this violation, fluoride testing and monthly reporting have resumed on schedule.

### C. Temporary Fluoride Suspension

Modifications to the following text must be approved by the Drinking Water Program.

**PUBLIC NOTIFICATION**

**TEMPORARY FLUORIDATION SUSPENSION**

Dear User,

The fluoridation adjustment in your community drinking water in your community will be (or has been) temporarily suspended due to: (-).

Fluoridation is scheduled to be restored by the following date: (-).

Those who wish to continue receiving the benefits of fluoride, without interruption, should contact their dentist or healthcare provider. Questions regarding this notice should be directed to: (-) at (-)