TITLE 179 PUBLIC WATER SYSTEMS

CHAPTER 4 PUBLIC NOTIFICATION OF DRINKING WATER VIOLATIONS

4-001 SCOPE AND AUTHORITY: These regulations require the owner or operator of each public water system (community, non-transient non-community, and transient non-community water systems) to give notice for all violations of drinking water maximum contaminant levels (MCLs), maximum residual disinfectant levels (MRDLs), treatment techniques (TTs), monitoring requirements, testing procedures, and situations listed in Table 1 of 179 NAC 4. Appendix A of 179 NAC 4 identifies the tier assignment for each specific violation or situation requiring a public notice. The statutory authority for these regulations is found in Neb. Rev. Stat. §§ 71-5301 to 71-5313.

TABLE 1 – VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A PUBLIC NOTICE

1. Drinking water violations:
   a. Failure to comply with an applicable maximum contaminant level (MCL) or maximum residual disinfectant level (MRDL).
   b. Failure to comply with a prescribed treatment technique (TT).
   c. Failure to perform water quality monitoring, as required by Title 179.
   d. Failure to comply with testing procedures as prescribed by a drinking water regulation.
2. Variances and exemptions under 179 NAC 6:
   a. Operation under a variance or an exemption.
   b. Failure to comply with the requirements of any schedule that has been set under a variance or exemption.
3. Special public notices:
   a. Occurrence of a waterborne disease outbreak or other waterborne emergency.
   b. Exceedance of the nitrate MCL by non-community water systems (NCWSs), where granted permission by the Director under 179 NAC 2-002.~~02A1~~04A1.
   c. Exceedance of the secondary maximum contaminant level (SMCL) for fluoride.
   d. Availability of unregulated contaminant monitoring data.
   e. Other violations and situations determined by the Director to require a public notice under 179 NAC 4, not already listed in Appendix A of 179 NAC 4.

4-002 DEFINITIONS

Community water system means a public water system which serves at least 15 service connections used by year round residents or regularly serves 25 year-round residents.

Department means the Division of Public Health of the Department of Health and Human Services ~~Regulation and Licensure~~.

Director means the Director of ~~Regulation and Licensure~~Public Health of the Division of Public Health or his/her authorized representative.

Drinking water standards means the rules and regulations adopted pursuant to Neb. Rev. Stat. § 71-5302, which establish maximum levels for harmful materials which, in the judgement of the Director ~~of Regulation and Licensure~~, may have an adverse effect on the health of persons and which apply only to public water systems.

Maximum contaminant level (MCL) means the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

Non-community water system means a public water system that is not a community water system. A non-community water system is either a "transient non-community water system" (TWS) or a "non-transient non-community water system" (NTNCWS).

Non-transient, non-community water system means a public water system that is not a community water system and that regularly serves at least 25 of the same ~~persons~~ individuals over six months per year.

Operator means the individual or individuals responsible for the continued performance of the water system or any part of such system, during assigned duty hours.

Owner means any person owning or operating a public water system.

Public water system means a system for providing the public with water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least 25 individuals daily at least 60 days per year. Public water system includes (a) any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system and (b) any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Public water system does not include a special irrigation district. A public water system is either a community water system or a non-community water system. Service connection does not include a connection to a system that delivers water by a constructed conveyance other than a pipe if (i) the water is used exclusively for purposes other than residential uses, consisting of drinking, bathing, cooking, and other similar uses, (ii) the Department determines that alternative water to achieve the equivalent level of public health protection provided by the Nebraska Safe Drinking Water Act and rules and regulations under the act is provided for residential or similar uses for drinking and cooking, or (iii) the Department determines that the water provided for residential or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the

provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the Nebraska Safe Drinking Water Act and the rules and regulations under the act.

Special irrigation district means an irrigation district in existence prior to May 18, 1994, that provides primarily agricultural service through a piped water system with only incidental residential or similar use if the system or the residential or similar users of the system comply with exclusion provisions of (ii) or (iii) found in 179 NAC 4-002 definition of Public Water System;

Treatment technique means the use of aeration, settling, filtration, or other physical process and/or the addition of any chemical or chemicals for the purpose of removing, deactivation, or adjusting the level of one or more contaminants present in the raw water supply source.

4-003 GENERAL REQUIREMENTS

4-003.01 Types of Public Notice: Public notice requirements 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 Table 1 of 179 NAC 4 are determined by the tier to which it is assigned. Table 2 provides the definition of each tier. Appendix A to 179 NAC 4 identifies the tier assignment for each specific violation or situation.

TABLE 2 – DEFINITION OF PUBLIC NOTICE TIERS

Tier 1 Public Notice	Required for drinking water standards violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.
Tier 2 Public Notice	Required for all other drinking water standards violations and situations with potential to have serious adverse effects on human health.
Tier 3 Public Notice	Required for all other drinking water standards violations and situations not included in Tier 1 and Tier 2.

4-003.02 Who Must Be Notified

1. Each public water system must provide public notice to persons served by the water system, in accordance with 179 NAC 4. Public water systems that sell or otherwise provide drinking water to other public water systems (i.e., to consecutive systems) are required to give public notice to the owner or operator of the consecutive system; the consecutive system is responsible for providing public notice to the persons it serves.

2. 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 Director may allow the system to limit distribution of the public notice to only persons served by that portion of the system that is out of compliance. The Director must grant written permission to limit distribution of the notice.

3. A copy of the notice must also be sent to the Department in accordance with the requirements under 179 NAC 5-004.03.

4-004 TIER 1 PUBLIC NOTICE – FORM, MANNER AND FREQUENCY OF NOTICE

4-004.01 Violations or Situations Requiring Tier 1 Public Notice: Table 3 lists the violation categories and other situations requiring a Tier 1 public notice. Appendix A to 179 NAC 4 identifies the tier assignment for each specific violation or situation.

TABLE 3 – VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 1 PUBLIC NOTICE

1.	Violation of the MCL for total coliforms when fecal coliform or *E. coli* are present in the water distribution system (as specified in 179 NAC 2-002.~~02C2~~04C2), or when the water system fails to test for fecal coliforms or *E. coli* when any repeat sample tests positive for coliform (as specified in 179 NAC 3-004.05);
2.	Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in 179 NAC 2-002.~~02A~~04A, or when the water system fails to take a confirmation sample within 24 hours of the system's receipt of the first sample showing an exceedance of the nitrate or nitrite MCL, as specified in 179 NAC 3-005.06B;
3.	Exceedance of the nitrate MCL by non-community water systems, where permitted to exceed the MCL by the Director under 179 NAC 2-002.~~02A1~~04A1, as required under 179 NAC 4-011;
4.	Violation of the MRDL for chlorine dioxide, as defined in 179 NAC 2-002.~~02F1~~ 04F1 when one or more samples taken in the distribution system the day following an exceedance of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water system does not take the required samples in the distribution system, as specified in 179 NAC 16-006.03 item 2.a.
5.	Violation of the Surface Water Treatment Rule (SWTR – 179 NAC 13) or Interim Enhanced Surface Water Treatment Rule (IESWTR – 179 NAC 17) or Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR – 179 NAC 19) treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit (as identified in Appendix A), where the Director determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the system learns of the violation.
6.	Occurrence of a waterborne disease outbreak, as defined in 179 NAC 2-001.02, or other waterborne emergency (such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination);
7.	Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the Director on a case-by-case basis.
8.	Detection of *E. coli*, enterococci, or coliphage in source water samples as specified in 179 NAC 8-005.01 and 8-005.02 (under the Ground Water Rule).

4-004.02 When Tier 1 Public Notice Is To Be Provided: Public water systems must:

1. Provide a public notice as soon as practical but no later than 24 hours after the system learns of the violation:

2. Initiate consultation with the Director as soon as practical, but no later than 24 hours after the public water system learns of the violation or situation, to determine additional public notice requirements; and

3. Comply with any additional public notification requirements (including any repeat notices or direction on the duration of the posted notices) that are established as a result of the consultation with the Director. Such requirements may include the timing, form, manner, frequency, and content of repeat notices (if any) and other actions designed to reach all persons served.

4-004.03 Form and Manner of the Public Notice: Public water systems must provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the public water system are to fit the specific situation, but must be designed to reach residential, transient, and non-transient users of the water system. In order to reach all persons served, water systems are to use, at a minimum, one or more of the following forms of delivery:

1. Appropriate broadcast media (such as radio and television);
2. Posting of the notice in conspicuous locations throughout the area served by the water system;
3. Hand delivery of the notice to persons served by the water system; or
4. Another delivery method approved in writing by the Director.

4-005 TIER 2 PUBLIC NOTICE – FORM, MANNER, AND FREQUENCY OF NOTICE

4-005.01 Violations or Situations Requiring a Tier 2 Public Notice: Table 4 lists the violation categories and other situations requiring a Tier 2 public notice. Appendix A to 179 NAC 4 identifies the tier assignment for each specific violation or situation.

TABLE 4 - VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 2 PUBLIC NOTICE

1.	All violations of the MCL, MRDL, and treatment technique requirements, except where a Tier 1 notice is required under 179 NAC 4-004 or where the Director determines that a Tier 1 notice is required;
2.	Violations of the monitoring and testing procedure requirements, where the Director determines that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation~~; and~~
3.	Failure to comply with the terms and conditions of any variance or exemption in place~~.~~; and
4.	Failure to take corrective action or failure to maintain at least 4-log treatment of viruses (using inactivation, removal, or a Department-approved combination of 4-log virus inactivation and removal) before or at the first customer under 179 NAC 8-006.01.

4-005.02 When Tier 2 Public Notice Is To Be Provided

1. Public water systems must provide the public notice as soon as practical, but no later than 30 days after the system learns of the violation. If the public notice is posted, the notice must remain in place for as long as the violation or situation persists, but in no case for less than seven days, even if the violation or situation is resolved. The Director may, in appropriate circumstances, allow additional time for the initial notice of up to three months from the date the system learns of the violation. It is not appropriate for the Director to grant an extension to the 30-day deadline for any unresolved violation or to allow across-the-board extensions by rule or policy for other violations or situations requiring a Tier 2 public notice. Extensions granted by the Director must be in writing.

2. The public water system must repeat the notice every three months as long as the violation or situation persists, unless the Director determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstance may the repeat notice be given less frequently than once per year. It is not appropriate for the Director to allow less frequent repeat notice for an MCL violation under the Total Coliform Rule or a treatment technique violation under the Surface Water Treatment Rule or Interim Enhanced Surface Water Treatment Rule. It is also not appropriate for the Director to allow through his/her rules or policies across-the-board reductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. Director determinations allowing repeat notices to be given less frequently than once every three months must be in writing.

3. For the turbidity violations specified in 179 NAC 4-005.02 item 3, public water systems must consult with the Director as soon as practical but no later than 24 hours after the public water system learns of the violation, to determine whether a Tier 1 public notice under 179 NAC 4-004.01 is required to protect public health. When consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notice of the violation within the next 24 hours (i.e., no later than 48 hours after the system learns of the violation), following the requirements under 179 NAC 4-004.02 and 4-004.03. Consultation with the Director is required for a violation of the SWTR (179 NAC 13), IESWTR (179 NAC 17) or LT1ESWTR (179 NAC 19) treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit.

4-005.03 The Form and Manner of the Tier 2 Public Notice: Public water systems must provide the initial public notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situations and type of water system, but it must at a minimum meet the following requirements:

1. Unless directed otherwise by the Director in writing, community water systems must provide notice by:

a. Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

b. Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice required in 179 NAC 4-005.03 item 1.a. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places served by the system or on the Internet; or delivery to community organizations.

2. Unless directed otherwise by the Director in writing, non-community water systems must provide notice by:

a. Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

b. Any other method reasonably calculated to reach other persons served by the system if they would not normally be reached by the notice required in 179 NAC 4-005.03 item 2.a. Such persons may include those served who may not see a posted notice because the posted notice is not in a location they routinely pass by. Other methods may include: Publication in a local newspaper or newsletter distributed to customers; use of e-mail to notify employees or students; or, delivery of multiple copies in central locations (e.g., community centers).

4-006 TIER 3 PUBLIC NOTICE – FORM, MANNER, AND FREQUENCY OF NOTICE

4-006.01 Violations or Situations Requiring a Tier 3 Public Notice: Table 5 lists the violation categories and other situations requiring a Tier 3 public notice. Appendix A to 179 NAC 4 identifies the tier assignment for each specific violation or situation.

TABLE 5 - VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 3 PUBLIC NOTICE

1.	Monitoring violations under Title 179, except where a Tier 1 notice is required under 179 NAC 4-004.01 or where the Director determines that a Tier 2 notice is required;
2.	Failure to comply with a testing procedure established in Title 179, except where a Tier 1 notice is required under 179 NAC 4-004.01 or where the Director determines

	that a Tier 2 notice is required;
3.	Operation under a variance or an exemption granted under 179 NAC 6**;**
4.	Availability of unregulated contaminant monitoring results, as required under 179 NAC 4-009; and
5.	Exceedance of the fluoride secondary maximum contaminant level (SMCL), as required under 179 NAC 4-010.

4-006.02 When Tier 3 Public Notice Is To Be Provided

1. Public water systems must provide the public notice not later than one year after the public water system learns of the violation or situation or begins operating under a variance or exemption. Following the initial notice, the public water system must repeat the notice annually, for as long as the violation, variance, exemption, or other situation persists. If the public notice is posted, the notice must remain in place for as long as the violation, variance, exemption, or other situation persists, but in no case less than seven days (even if the violation or situation is resolved).

2. Instead of individual Tier 3 public notices, a public water system may use an annual report detailing all violations and situations that occurred during the previous 12 months, as long as the timing requirements of 179 NAC 4-006.02 item 1 are met.

4-006.03 The Form and Manner of the Tier 3 Public Notice: Public water systems must provide the initial notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

1. Unless directed otherwise by the Director in writing, community water systems must provide notice by:

   a. Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

   b. Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice required in 179 NAC 4-006.03 item 1.a. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places or on the Internet; or delivery to community organizations.

2. Unless directed otherwise by the Director in writing, non-community water systems must provide notice by:

   a. Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

   b. Any other method reasonably calculated to reach other persons served by the system, if they would not normally be reached by the notice required in 179 NAC 4-006.03 item 2.a. Such persons may include those who may not see a posted notice because the notice is not in a location they routinely pass by. Other methods may include: Publication in a local newspaper or newsletter distributed to customers; use of e-mail to notify employees or students; or, delivery of multiple copies in central locations (e.g., community centers).

4-006.04 Situations in Which the Consumer Confidence Report May Be Used To Meet the Tier 3 Public Notice Requirements: For community water systems, the Consumer Confidence Report (CCR) required under 179 NAC 14 may be used as a vehicle for the initial Tier 3 public notice and all required repeat notices, as long as:

1. The CCR is provided to persons served no later than 12 months after the system learns of the violation or situation as required under 179 NAC 4-006.02;
2. The Tier 3 notice contained in the CCR follows the content requirements under 179 NAC 4-007; and
3. The CCR is distributed following the delivery requirements under 179 NAC 4-006.03.

4-007 CONTENT OF THE PUBLIC NOTICE

4-007.01 Elements That Must Be Included in the Public Notice for Violations of Drinking Water Standards Violations or Other Situations Requiring Public Notice: When a public water system violates a drinking water standard or has a situation requiring public notification, each public notice must include the following elements:

1. A description of the violation or situation, including the contaminant(s) of concern, and (as applicable) the contaminant level(s);
2. When the violation or situation occurred;
3. Any potential adverse health effects from the violation or situation, including the standard language under 179 NAC 4-007.04 item 1 or 2, whichever is applicable;
4. The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water;
5. Whether alternative water supplies should be used;
6. What actions consumers should take, including when they should seek medical help, if known;

7. What the system is doing to correct the violation or situation;
8. When the water system expects to return to compliance or resolve the situation;
9. The name, business address, and phone number of the water system owner, operator, or designee of the public water system as a source of additional information concerning the notice; and
10. A statement to encourage the notice recipient to distribute the public notice to other persons served, using the standard language under 179 NAC 4-007.04 item 3, where applicable.

4-007.02 Elements That Must Be Included in the Public Notice for Public Water Systems Operating under a Variance or Exemption

1. If a public water system has been granted a variance or an exemption, the public notice must contain:

    a. An explanation of the reasons for the variance or exemption;
    b. The date on which the variance or exemption was issued;
    c. A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and
    d. A notice of any opportunity for public input in the review of the variance or exemption.

2. If a public water system violates the conditions of a variance or exemption, the public notice must contain the ten elements listed in 179 NAC 4-007.01.

4-007.03 How the Public Notice Is To Be Presented

1. Each public notice required by 179 NAC 4-007:

    a. Must be displayed in a conspicuous way when printed or posted;
    b. Must not contain overly technical language or very small print;
    c. Must not be formatted in a way that defeats the purpose of the notice;
    d. Must not contain language that nullifies the purpose of the notice.

2. Each public notice required by 179 NAC 4-007 must comply with multilingual requirements, as follows:

    a. For public water systems ~~serving a large proportion of~~that have a population with 5% or more non-English speaking consumers~~, as determined by the Director,~~ the public notice must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance in the appropriate language.
    ~~b. In cases where the Director has not determined what constitutes a large proportion of non-English speaking consumers, the public water system~~

~~must include in the public notice the same information as in 179 NAC 4-007.03 item 2.a., where appropriate to reach a large proportion of non-English speaking persons served by the water system.~~

4-007.04 Standard Language Public Water Systems Must Include in Their Public Notice: Public water systems are required to include the following standard language in their public notice:

1. Standard Health Effects Language for MCL or MRDL Violations, Treatment Technique Violations, and Violations of the Condition of a Variance or Exemption: Public water systems must include in each public notice the health effects language specified in Appendix B to 179 NAC 4 corresponding to each MCL, MRDL, and treatment technique violation listed in Appendix A to 179 NAC 4, and for each violation of a condition of a variance or exemption.

2. Standard Language for Monitoring and Testing Procedure Violations: Public water systems must include the following language in their notice, including the language necessary to fill in the blanks, for all monitoring and testing procedure violations listed in Appendix A to 179 NAC 4:

   We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we "did not monitor or test" or "did not complete all monitoring or testing" for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time.

3. Standard Language To Encourage the Distribution of the Public Notice to All Persons Served: Public water systems must include in their notice the following language (where applicable):

   Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

4-008 NOTICE TO NEW BILLING UNITS OR NEW CUSTOMERS

4-008.01 Community Water Systems Requirement: Community water systems must give a copy of the most recent public notice for any continuing violation, the existence of a variance or exemption, or other ongoing situations requiring a public notice to all new billing units or new customers prior to or at the time service begins.

4-008.02 Non-Community Water Systems Requirement: Non-community water systems must continuously post the public notice in conspicuous locations in order to inform new consumers of any continuing violation, variance or exemption, or other situation requiring a public notice for as long as the violation, variance, exemption, or other situation persists.

4-009 SPECIAL NOTICE OF THE AVAILABILITY OF UNREGULATED CONTAMINANT MONITORING RESULTS

4-009.01 When the Special Notice Is To Be Given: The owner or operator of a community water system or non-transient, non-community water system required to monitor under the Unregulated Contaminant Monitoring Rule must notify persons served by the system of the availability of the results of such sampling no later than 12 months after the monitoring results are known.

4-009.02 Form and Manner of the Special Notice: The form and manner of the public notice must follow the requirements for a Tier 3 public notice prescribed in 179 NAC 4-006.03 and 4-006.04 items 1 and 3. The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

4-010 SPECIAL NOTICE FOR EXCEEDANCE OF THE SMCL FOR FLUORIDE

4-010.01 When the Special Notice Is To Be Given: Community water systems that exceed the fluoride secondary maximum contaminant level (SMCL) of 2 mg/L as specified in 179 NAC 2-002.~~02A~~ 04A (determined by the last single sample taken in accordance with 179 NAC 3-005), but do not exceed the maximum contaminant level (MCL) of 4 mg/L for fluoride (as specified in 179 NAC 2-002.~~02A~~04A) must provide the public notice in 179 NAC 4-010.03 to persons served. Public notice must be provided as soon as practical but no later than 12 months from the day the water system learns of the exceedance. A copy of the notice must also be sent to the Department and to all new billing units and new customers at the time service begins. The public water system must repeat the notice at least annually for as long as the SMCL is exceeded. If the public notice is posted, the notice must remain in place for as long as the SMCL is exceeded, but in no case less than seven days (even if the exceedance is eliminated). On a case-by-case basis, the Director may require an initial notice sooner than 12 months and repeat notices more frequently than annually.

4-010.02 Form and Manner of the Special Notice: The form and manner of the public notice (including repeat notices) must follow the requirements for a Tier 3 public notice in 179 NAC 4-006.03 and 4-006.04 items 1 and 3.

4-010.03 Mandatory Language That Must Be Contained in the Special Notice: The notice must contain the following language, including the language necessary to fill in the blanks:

> This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than two milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system [name] has a fluoride concentration of [insert value] mg/L.
>
> Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4 mg/L of fluoride (the Nebraska Department of Health and Human Services~~' Regulation and Licensure's~~ standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/L of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/L because of this cosmetic dental problem.

For more information, please call [name of water system contact] of [name of community water system] at [phone number]. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-867-3435.

4-011 SPECIAL NOTICE FOR NITRATE EXCEEDANCES ABOVE MCL BY NON-COMMUNITY WATER SYSTEMS (NCWSs), WHERE GRANTED PERMISSION BY THE DIRECTOR UNDER 179 NAC 2-002.~~02A1~~04A1

4-011.01 When the Special Notice Is To Be Given: The owner or operator of a non-community water system granted permission by the Director under 179 NAC 2-002.~~02A1~~ 04A1 to exceed the nitrate MCL must provide notice to persons served according to the requirements for a Tier 1 notice under 179 NAC 4-004.01 and 4-004.02.

4-011.02 Form and Manner of the Special Notice: Non-community water systems granted permission by the Director to exceed the nitrate MCL under 179 NAC 2-002.~~02A1~~ 04A1 must provide continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effects of exposure, according to the requirements for Tier 1 notice delivery under 179 NAC 4-004.03 and the content requirements under 179 NAC 4-007.

4-012 SPECIAL NOTICE FOR REPEATED FAILURE TO CONDUCT MONITORING OF THE SOURCE WATER FOR *CRYPTOSPORIDUM* AND FOR FAILURE TO DETERMINE BIN CLASSIFICATION OR MEAN *CRYPTOSPORIDIUM* LEVEL

4-012.01 When the special notice for repeated failure to monitor is to be given: The owner or operator of a community or non-community water system that is required to monitor source water under 179 NAC 25-004 must notify persons served by the water system that monitoring has not been completed as specified no later than 30 days after the system has failed to collect any three months of monitoring as specified in 179 NAC 25-004.03. The notice must be repeated as specified in 179 NAC 4-005.02.

4-012.02 When the special notice for failure to determine bin classification or mean *Cryptosporidium* level is to be given: The owner or operator of a community or non-community water system that is required to determine a bin classification under 179 NAC 25-013, or to determine mean *Cryptosporidium* level under 179 NAC 25-015, must notify persons served by the water system that the determination has not been made as required no later than 30 days after the system has failed to report the determination as specified in 179 NAC 25-013.05_ or 25-015.01, respectively. The notice must be repeated as specified in 179 NAC 4-005.02. The notice is not required if the system is complying with a Department-approved schedule to address the violation.

4-012.03 Form and manner of the special notice: The form and manner of the public notice must follow the requirements for a Tier 2 public notice prescribed in 179 NAC 4-005.03. The public notice must be presented as required in 179 NAC 4-007.03.

4-012.04 Mandatory language that must be contained in the special notice: The notice must contain the following language, including the language necessary to fill in the blanks.

1. The special notice for repeated failure to conduct monitoring must contain the following language:

   We are required to monitor the source of your drinking water for *Cryptosporidium*. Results of the monitoring are to be used to determine whether water treatment at the (treatment plant name) is sufficient to adequately remove *Cryptosporidium* from your drinking water. We are required to complete this monitoring and make this determination by (required bin determination date). We "did not monitor or test" or "did not complete all monitoring or testing" on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate *Cryptosporidium* removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the deadline required, (date).

   For more information, please call (name of water system contact) or (name of water system) at (phone number.)

2. The special notice for failure to determine bin classification or mean *Cryptosporidium* level must contain the following language:

   We are required to monitor the source of your drinking water for *Cryptosporidium* in order to determine by (date) whether water treatment at the (treatment plant name) is sufficient to adequately remove *Cryptosporidium* from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of (date). For more information, please call (name of water system contact) of (name of water system) at (phone number).

3. Each special notice must also include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

APPENDIX A TO 179 NAC 4 – DRINKING WATER STANDARDS VIOLATIONS REQUIRING PUBLIC NOTICE[1]

Contaminant	**MCL/MRDL/TT violations[2]** **Tier of public notice required**	**Monitoring & testing procedure violations** **Tier of public notice required**
I. Violations of Drinking Water Standards[3]		
A. Microbiological Contaminants		
1. Total coliform	2	3
2. Fecal coliform/*E. coli*	1	[4]1,3
3. Turbidity MCL	2	3
4. Turbidity MCL (average of 2 days' samples >5 NTU)	[5]2,1	3
5. Turbidity (for TT violations resulting from a single exceedance of maximum allowable turbidity level)	[6]2,1	3
6. Surface Water Treatment Rule violations, other than violations resulting from a single exceedance of maximum allowable turbidity level (TT)	2	3
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from a single exceedance of maximum turbidity level (TT)	[7]2	3
8. Filter Backwash Recycling Rule (179 NAC 18) violations	2	3
9. Long Term 1 Enhanced Surface Water Treatment Rule (179 NAC 19) violations	2	3
10. Long Term 2 Enhanced Surface Water Treatment Rule (179 NAC 25) violations	2	[17]2,3
11. Ground Water Rule (179 NAC 8) violations	2	3
B. Inorganic Chemicals (IOCs)		
1. Antimony	2	3
2. Arsenic	2	3
3. Asbestos (fibers>10 µm)	2	3
4. Barium	2	3
5. Beryllium	2	3
6. Cadmium	2	3
7. Chromium (total)	2	3
8. Cyanide	2	3
9. Fluoride	2	3
10. Mercury (inorganic)	2	3
11. Nitrate	1	[8]1, 3
12. Nitrite	1	[8]1, 3
13. Total Nitrate and Nitrite	1	3

Contaminant	MCL/MRDL/TT violations[2] Tier of public notice required	Monitoring & testing procedure violations Tier of public notice required
14. Selenium	2	3
15. Thallium	2	3
C. Lead and Copper Rule (Action Level for lead is 0.015 mg/L, for copper is 1.3 mg/L)		
1. Lead and Copper Rule (TT)	2	3
D. Synthetic Organic Chemicals (SOCs)		
1. 2,4-D	2	3
2. 2,4,5-TP (Silvex)	2	3
3. Alachlor	2	3
4. Atrazine	2	3
5. Benzo(a)pyrene (PAHs)	2	3
6. Carbofuran	2	3
7. Chlordane	2	3
8. Dalapon	2	3
9. Di (2-ethylhexyl) adipate	2	3
10. Di (2-ethylhexyl) phthalate	2	3
11. Dibromochloropropane	2	3
12. Dinoseb	2	3
13. Dioxin (2,3,7,8-TCDD)	2	3
14. Diquat	2	3
15. Endothall	2	3
16. Endrin	2	3
17. Ethylene dibromide	2	3
18. Glyphosate	2	3
19. Heptachlor	2	3
20. Heptachlor epoxide	2	3
21. Hexachlorobenzene	2	3
22. Hexachlorocyclopentadiene	2	3
23. Lindane	2	3
24. Methoxychlor	2	3
25. Oxamyl (Vydate)	2	3
26. Pentachlorophenol	2	3
27. Picloram	2	3
28. Polychlorinated biphenyls (PCBs)	2	3
29. Simazine	2	3
30. Toxaphene	2	3
E. Volatile Organic Chemicals (VOCs)		
1. Benzene	2	3
2. Carbon tetrachloride	2	3
3. Chlorobenzene (monochlorobenzene)	2	3
4. o-Dichlorobenzene	2	3
5. p-Dichlorobenzene	2	3

Contaminant	**MCL/MRDL/TT violations[2]** **Tier of public notice required**	**Monitoring & testing procedure violations** **Tier of public notice required**
6. 1,2-Dichloroethane	2	3
7. 1,1-Dichloroethylene	2	3
8. cis-1,2-Dichloroethylene	2	3
9. trans-1,2-Dichloroethylene	2	3
10. Dichloromethane	2	3
11. 1,2-Dichloropropane	2	3
12. Ethylbenzene	2	3
13. Styrene	2	3
14. Tetrachloroethylene	2	3
15. Toluene	2	3
16. 1,2,4-Trichlorobenzene	2	3
17 1,1,1-Trichloroethane	2	3
18. 1,1,2-Trichloroethane	2	3
19. Trichloroethylene	2	3
20. Vinyl chloride	2	3
21. Xylenes (total)	2	3
F. Radioactive Contaminants		
1. Beta/photon emitters	2	3
2. Alpha emitters	2	3
3. Combined radium (226 & 228)	2	3
4. Uranium	[9]2	[10]3
G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). The Director sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).[11]		
1. Total trihalomethanes (TTHMs)	2	3
2. Haloacetic Acids (HAA5)	2	3
3. Bromate	2	3
4. Chlorite	2	3
5. Chlorine (MRDL)	2	3
6. Chloramine (MRDL)	2	3
7. Chlorine dioxide (MRDL), where any 2 consecutive daily samples at entrance to distribution system only are above MRDL	2	[12]2,3
8. Chlorine dioxide (MRDL), where sample(s) in distribution system the next day are also above		

Contaminant	**MCL/MRDL/TT violations[2]** **Tier of public notice required**	**Monitoring & testing procedure violations** **Tier of public notice required**
MRDL	[13]1	1
9. Control of DBP precursors – TOC (TT)	2	3
10. Benchmarking and disinfection profiling	N/A	3
11. Development of monitoring plan	N/A	3
H. Other Treatment Techniques		
1. Acrylamide (TT)	2	N/A
2. Epichlorohydrin (TT)	2	N/A
II. Unregulated Contaminant Monitoring:[14]		
A. Unregulated contaminants	N/A	3
B. Nickel	N/A	3
III. Public Notification for Variances and Exemptions:		
A. Operation under a variance or exemption	3	N/A
B. Violation of conditions of a variance or exemption	2	N/A
IV. Other Situations Requiring Public Notification:		
A. Fluoride secondary maximum contaminant level (SMCL) exceedance	3	N/A
B. Exceedance of nitrate MCL for non-community systems, as allowed by Director	1	N/A
C. Availability of unregulated contaminant monitoring data	3	N/A
D. Waterborne disease outbreak	1	N/A
E. Other waterborne emergency[15]	1	N/A
F. Source Water Sample Positive for GWR Fecal Indicators: *E. coli*, enterococci, or coliphage	1	N/A
~~F~~G. Other situations as determined by the Director	[16]1,2,3	N/A

Appendix A – Endnotes

[1] Violations and other situations not listed in this table (e.g., failure to prepare Consumer Confidence Reports), do not require notice, unless otherwise determined by the Director. The Director may, at his/her option, also require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under 179 NAC 4-004.01 and 4-005.01.

[2] MCL – Maximum contaminant level, MRDL – Maximum residual disinfectant level, TT – Treatment technique.

[3] The term "Violations of Drinking Water Standards" is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

[4] Failure to test for fecal coliform or *E. coli* is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3.

[5] Systems that violate the turbidity MCL of 5 NTU based on an average of measurements over two consecutive days must consult with the Director within 24 hours after learning of the violation. Based on

this consultation, the Director may subsequently decide to elevate the violation to Tier 1. If a system does not make contact with the Director in the 24-hour period, the violation is automatically elevated to Tier 1.

[6] Systems with treatment technique violations involving a single exceedance of a maximum turbidity limit under the Surface Water Treatment Rule (SWTR), the Interim Enhanced Surface Water Treatment Rule (IESWTR) or the Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) are required to consult with the Director within 24 hours after learning of the violation. Based on this consultation, the Director may subsequently decide to elevate the violation to Tier 1. If a system does not make contact with the Director in the 24-hour period, the violation is automatically elevated to Tier 1.

[7] The Surface Water Treatment Rule (SWTR) (179 NAC 13) remains in effect for systems serving at least 10,000 ~~persons~~individuals; the Interim Enhanced Surface Water Treatment Rule (179 NAC 17) adds additional requirements and does not in many cases supercede the SWTR.

[8] Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are Tier 3.

[9] The uranium MCL Tier 2 violation citations are effective December 8, 2003 for all community water systems.

[10] The uranium Tier 3 violation citations are effective December 8, 2003 for all community water systems.

[11] Community and non-transient non-community water systems using surface water or ground water under the direct influence of surface water as a source and serving ≥ 10,000 individuals must comply with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements beginning January 1, 2002. All other community and non-transient non-community systems must meet the MCLs and MRDLs beginning January 1, 2004. Transient non-community systems using surface water or ground water under the direct influence of surface water as a source and serving 10,000 or more ~~persons~~ individuals and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. Transient non-community systems serving fewer than 10,000 ~~persons~~ individuals and using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

[12] Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system is a Tier 2 violation.

[13] If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one or more samples taken in the distribution system the next day exceed the MRDL, Tier 1 notification is required. Failure to take the required samples in the distribution system after the MRDL is exceeded at the entry point also triggers Tier 1 notification.

[14] Some water systems must monitor for certain unregulated contaminants.

[15] Other waterborne emergencies require a Tier 1 public notice under 179 NAC 4-004.01 for situations that do not meet the definition of a waterborne disease outbreak given in 179 NAC 2-001.02 but that still have the potential to have serious adverse effects on health as a result of short-term exposure. These could include outbreaks not related to treatment deficiencies, as well as situations that have the potential to cause outbreaks, such as failures or significant interruption in water treatment processes, natural disasters that disrupt the water supply or distribution system, chemical spills, or unexpected loading of possible pathogens into the source water.

[16] The Director may place other situations in any tier he/she believes appropriate, based on threat to public health

[17]. Failure to collect three or more samples for *Cryptosporidium* analysis is a Tier 2 violation requiring special notice as specified in 179 NAC 4-012. All other monitoring and testing procedure violations are Tier 3.

APPENDIX B TO 179 NAC 4 – STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION DRINKING WATER STANDARDS

A. Microbiological Contaminants

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
1a. Total coliform	Zero	See footnote[3]	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
1b. Fecal coliform/*E. coli*	Zero	Zero	Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1c. Fecal indicators (GWR): i. *E. coli* ii. enterococci iii. coliphage	 Zero None None	 TT TT TT	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1d. Ground Water Rule (GWR) TT violations	None	TT	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.
2a. Turbidity (MCL)[4]	None	1 NTU[5]/5 NTU	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
2b. Turbidity (SWTR TT)[6]	None	TT[7]	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
2c. Turbidity (IESWTR TT and LT1ESWTR TT)[8]	None	TT	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

B. Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) and the Filter Backwash Recycling Rule (FBRR) violations

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
3. *Giardia lamblia* (SWTR/IESWTR/LT1ESWTR). 4. Viruses (SWTR/IESWTR/LT1ESWTR). 5. Heterotrophic plate count (HPC) bacteria[9] (SWTR/IESWTR/LT1ESWTR). 6. *Legionella* (SWTR/IESWTR/LT1ESWTR). 7. *Cryptosporidium* (IESWTR/FBRR/LT1ESWTR).	Zero	TT[10]	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

C. Inorganic Chemicals (IOCs)

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
8. Antimony	0.006	0.006	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
9. ~~Arsenic (Effective through January 22, 2006)~~ Arsenic (Effective January 23, 2006)	~~None~~ 0	~~0.05~~ 0.010	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
10. Asbestos (10 µm)	7 MFL[11]	7 MFL	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
11. Barium	2	2	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
12. Beryllium	0.004	0.004	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
13. Cadmium	0.005	0.005	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

Contaminant	**MCLG[1] mg/L**	**MCL[2] mg/L**	**Standard health effects language for public notification**
14. Chromium (total)	0.1	0.1	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
15. Cyanide	0.2	0.2	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
16. Fluoride	4.0	4.0	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth and occurs only in developing teeth before they erupt from the gums.
17. Mercury (inorganic)	0.002	0.002	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
18. Nitrate	10	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
19. Nitrite	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
20. Total Nitrate and Nitrite	10	10	Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
21. Selenium	0.05	0.05	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
22. Thallium	0.0005	0.002	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

D. Lead and Copper Rule

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
23. Lead	Zero	TT[12]	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
24. Copper	1.3	TT[13]	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

E. Synthetic Organic Chemicals (SOCs)

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
25. 2,4-D	0.07	0.07	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
26. 2,4,5-TP (Silvex)	0.05	0.05	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
27. Alachlor	Zero	0.002	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
28. Atrazine	0.003	0.003	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
29. Benzo(a)pyrene (PAHs)	Zero	0.0002	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
30. Carbofuran	0.04	0.04	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
31. Chlordane	Zero	0.002	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
32. Dalapon	0.2	0.2	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
33. Di (2-ethylhexyl) adipate	0.4	0.4	Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement or reproductive difficulties.
34. Di (2-ethylhexyl) phthalate	Zero	0.006	Some people who drink water containing di (2-ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
35. Dibromochloropropane (DBCP)	Zero	0.0002	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
36. Dinoseb	0.007	0.007	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
37. Dioxin (2,3,7,8-TCDD)	Zero	$3x10^{-8}$	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
38. Diquat	0.02	0.02	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
39. Endothall	0.1	0.1	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
40. Endrin	0.002	0.002	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
41. Ethylene dibromide	Zero	0.00005	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
42. Glyphosate	0.7	0.7	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
43. Heptachlor	Zero	0.0004	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
44. Heptachlor epoxide	Zero	0.0002	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
45. Hexachlorobenzene	Zero	0.001	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
46. Hexachlorocyclo-pentadiene	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
47. Lindane	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
48. Methoxychlor	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
49. Oxamyl (Vydate)	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
50. Pentachlorophenol	Zero	0.001	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
51. Picloram	0.5	0.5	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
52. Polychlorinated biphenyls (PCBs)	Zero	0.0005	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
53. Simazine	0.004	0.004	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
54. Toxaphene	Zero	0.003	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

F. Volatile Organic Chemicals (VOCs)

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
55. Benzene	Zero	0.005	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
56. Carbon tetrachloride	Zero	0.005	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
57. Chlorobenzene (monochlorobenzene)	0.1	0.1	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
58. o-Dichlorobenzene	0.6	0.6	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
59. p-Dichlorobenzene	0.075	0.075	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
60. 1,2-Dichloroethane	Zero	0.005	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
61. 1,1-Dichloroethylene	0.007	0.007	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
62. cis-1,2-Dichloroethylene	0.07	0.07	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
63. trans-1,2-Dichloroethylene	0.1	0.1	Some people who drink water containing trans-1,2-dichlorethylene well in excess of the MCL over many years could experience problems with their liver.
64. Dichloromethane	Zero	0.005	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
65. 1,2-Dichloropropane	Zero	0.005	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
66. Ethylbenzene	0.7	0.7	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
67. Styrene	0.1	0.1	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
68. Tetrachloroethylene	Zero	0.005	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
69. Toluene	1	1	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
70. 1,2,4-Trichlorobenzene	0.07	0.07	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
71. 1,1,1-Trichloroethane	0.2	0.2	Some people who drink water containing 1,1,1-trichlorethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
72. 1,1,2-Trichloroethane	0.003	0.005	Some people who drink water containing 1,1,2-trichlorethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
73. Trichloroethylene	Zero	0.005	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
74. Vinyl chloride	Zero	0.002	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
75. Xylenes (total)	10	10	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

G. Radioactive Contaminants

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
76. Beta/photon emitters	Zero	4 mrem/yr[14]	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
77. Alpha emitters	Zero	15 pCi/L[15]	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
78. Combined radium (226 & 228)	Zero	5 pCi/L	Some people who drink water containing radium-226 or -228 in excess of the MCL over many years may have an increased risk of getting cancer.
79. Uranium[16]	Zero	30 µg/L	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

H. Disinfection Byproducts (DBPs), Byproduct Precursors, and Disinfectant Residuals:

Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). The Director sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs)[17]

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
80. Total trihalomethanes (TTHMs)	N/A	~~0.10/~~ 0.080[18,19]	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
81. Haloacetic Acids (HAA)	N/A	0.060 [20]	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
82. Bromate	Zero	0.010	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.

Contaminant	**MCLG[1] mg/L**	**MCL[2] mg/L**	**Standard health effects language for public notification**
83. Chlorite	0.08	1.0	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
84. Chlorine	4 (MRDLG)[21]	4.0 (MRDL) [22]	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
85. Chloramines	4 (MRDLG)	4.0 (MRDL)	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
86a. Chlorine dioxide, where any two consecutive daily samples taken at the entrance to the distribution system are above the MRDL	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. *Add for public notification only:* The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system that delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.
86b. Chlorine dioxide, where one or more distribution system samples are above the MRDL	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. *Add for public notification only:* The chlorine dioxide violations reported today include exceedances of the Department of Health and Human Services ~~Regulation and Licensure~~ standard within the distribution system that delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.
87. Control of DBP precursors (TOC)	None	TT	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

I. Other Treatment Techniques

Contaminant	**MCLG[1] mg/L**	**MCL[2] mg/L**	**Standard health effects language for public notification**
88. Acrylamide	Zero	TT	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
89. Epichlorohydrin	Zero	TT	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

Appendix B – Endnotes

1. MCLG – Maximum contaminant level goal.
2. MCL – Maximum contaminant level.
3. For water systems analyzing at least 40 samples per month, no more than 5.0% of the monthly samples may be positive for total coliforms. For systems analyzing fewer than 40 samples per month, no more than one sample per month may be positive for total coliforms.
4. There are various regulations that set turbidity standards for different types of systems, including the 1989 Surface Water Treatment Rule (179 NAC 13), the 1998 Interim Enhanced Surface Water Treatment Rule (179 NAC 17), and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule (179 NAC 19). The MCL for the monthly turbidity average is 1 NTU; the MCL for the 2-day average is 5 NTU for systems that are required to filter but have not yet installed filtration.
5. NTU – Nephelometric turbidity unit.
6. There are various regulations that set turbidity standards for different types of systems, including the 1989 Surface Water Treatment Rule (179 NAC 13), the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR 179 NAC 17)), and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule (179 NAC 19). Systems subject to the Surface Water Treatment Rule (both filtered and unfiltered) may not exceed 5 NTU. In addition, in filtered systems, 95% of the samples each month must not exceed 0.5 NTU in systems using conventional or direct filtration and must not exceed 1 NTU in systems using slow sand or diatomaceous earth filtration or other filtration technologies approved by the Director.
7. TT – Treatment technique.
8. There are various regulations that set turbidity standards for different types of systems, including the 1989 Surface Water Treatment Rule (179 NAC 13) and the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR) (179 NAC 17), and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule LT1ESWTR (179 NAC 19). For systems subject to 179 NAC 17 (systems serving at least 10,000 people, using surface water or ground water under the direct influence of surface water), that use conventional filtration or direct filtration, after January 1, 2002, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95% of the monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. Systems subject to the IESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the Director. For systems subject to the LT1ESWTR (systems serving fewer than 10,000 people, using surface water or ground water under the direct influence of surface water) that use conventional filtration or direct filtration, after January 14, 2005 the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95% of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. Systems

subject to the LT1ESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the Director.

9. The bacteria detected by heterotrophic plate count (HPC) are not necessarily harmful. HPC is simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.
10. SWTR, IESWTR, and LT1ESWTR treatment technique violations that involve turbidity exceedances may use the health effects language for turbidity instead.
11. Million fibers per liter.
12. Action Level = 0.015 mg/L
13. Action Level = 1.3 mg/L
14. Millirems per year
15. Picocuries per liter
16. The uranium MCL is effective December 8, 2003 for all community water systems.
17. Surface water systems and ground water systems under the direct influence of surface water (GWUDI) are regulated under 179 NAC 13. Surface water and GWUDI ~~Community~~ community and non-transient non-community systems serving ≥ 10,000 individuals must comply with Title 179 NAC 16 DBP MCLs~~,~~ and disinfectant maximum residual disinfectant levels MRDLs, ~~and related monitoring requirements~~ beginning January 1, 2002. All other community and non-transient non-community systems must ~~meet the~~comply with 179 NAC 16 ~~MCLs~~DBP MCLs and disinfectant MRDLs beginning January 1, 2004. Transient non-community systems using surface water or ground water under the direct influence of surface water as a source serving > 10,000 ~~or more~~ ~~persons~~ individuals and ~~using~~ that use chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. ~~Transient~~ All other transient non-community systems ~~using surface water or ground water under the influence of surface water as a source and serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water and using~~that use chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.
18. ~~The MCL of 0.10 mg/L for TTHMs is in effect until January 1, 2002 for community water systems using surface water or ground water under the direct influence of surface water as a source serving 10,000 or more. This MCL is in effect until January 1, 2004 for community water systems with a population of 10,000 or more using only ground water not under the direct influence of surface water. After these deadlines, the MCL will be 0.080 mg/L. On January 1, 2004, all systems serving less than 10,000 will have to comply with the new MCL as well.~~Community and non-transient non-community systems must comply with Title 179 NAC 24 TTHM and HAA5 MCLs of 0.080 mg/L and 0.060 mg/L, respectively (with compliance calculated as a locational running annual average) on the schedule in 179 NAC 24-003.
19. The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.
20. The MCL for haloacetic acids is the sum of the concentrations of the individual haloacetic acids.
21. MRDLG – Maximum residual disinfectant level goal.
22. MRDL – Maximum residual disinfectant level.

APPENDIX C to 179 NAC 4 – LIST OF ACRONYMS USED IN PUBLIC NOTIFICATION REGULATION

CCR	Consumer Confidence Report
CWS	Community Water System
DBP	Disinfection Byproduct
GWR	Ground Water Rule
HPC	Heterotrophic Plate Count
IESWTR	Interim Enhanced Surface Water Treatment Rule
IOC	Inorganic Chemical
LCR	Lead and Copper Rule
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MRDL	Maximum Residual Disinfectant Level
NCWS	Non-Community Water System
NTNCWS	Non-Transient Non-Community Water System
NTU	Nephelometric Turbidity Unit
PN	Public Notification
PWS	Public Water System
SDWA	Safe Drinking Water Act
SMCL	Secondary Maximum Contaminant Level
SOC	Synthetic Organic Chemical
SWTR	Surface Water Treatment Rule
TCR	Total Coliform Rule
TT	Treatment Technique
TWS	Transient Non-Community Water System
VOC	Volatile Organic Chemical