TITLE 179 PUBLIC WATER SYSTEMS

CHAPTER 12 CONTROL OF LEAD AND COPPER

12-001 SCOPE AND AUTHORITY: Unless otherwise stated, these regulations apply to community and non-transient, non-community public water systems. These regulations establish a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. The statutory authority is found in Neb. Rev. Stat. §§ 71-5301 to 71-5313.

12-002 DEFINITIONS

Action level means the concentration of lead or copper in water specified in 179 NAC 12-003.01 which determines what treatment requirements contained in 179 NAC 12, if any, a water system is required to complete.

~~Certified operator means a person who holds a certificate of competency issued by the Department.~~

Compliance cycle means the nine-year calendar year cycle during which public water systems must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar year cycle began January 1, 1993 and ended December 31, 2001; the second began January 1, 2002 and ends December 31, 2010; the third begins January 1, 2011 and ~~ended~~ ends December 31, 2019.

Compliance period means a three-year calendar year period within a compliance cycle. Each compliance cycle has three three-year compliance periods. Within the first compliance cycle, the first compliance period ~~runs~~ ran from January 1, 1993 to December 31, 1995; the second from January 1, 1996 to December 31, 1998; the third from January 1, 1999 to December 31, 2001.

Corrosion inhibitor means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

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.

Effective corrosion inhibitor residual means a concentration sufficient to form a passivating film on the interior walls of a pipe.

First draw sample means a one-liter sample of tap water, collected in accordance with 179 NAC 12-009.02B that has been standing in plumbing pipes at least six hours and is collected without flushing the tap.

Large water system means a water system that serves more than 50,000 ~~persons~~individuals.

Lead free

1. When used with respect to solders and flux means solders and flux containing not more than 0.2% lead; and
2. When used with respect to pipes and pipe fittings means pipes and pipe fittings containing not more than 8.0% lead.

Lead service line means a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck or other fitting which is connected to such lead line.

Medium-size water system means a water system that serves greater than 3,300 and less than or equal to 50,000 ~~persons~~individuals.

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

Optimal corrosion control treatment means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate Nebraska's Regulations Governing Public Water Systems.

Service line sample means a one-liter sample of water, collected in accordance with 179 NAC 12-009.02C, that has been standing for at least six hours in a service line.

Single family structure means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

Small water system means a water system that serves 3,300 ~~persons~~ individuals or fewer.

12-003 GENERAL REQUIREMENTS

12-003.01 Lead and Copper Action Levels

12-003.01A The lead action level is exceeded if the concentration of lead in more than 10% of tap water samples collected during any monitoring period conducted in accordance with 179 NAC 12-009 is greater than 0.015 mg/L (*i.e.*, if the "90th percentile" lead level is greater than 0.015 mg/L).

12-003.01B The copper action level is exceeded if the concentration of copper in more than 10% of tap water samples collected during any monitoring period conducted in accordance with 179 NAC 12-009 is greater than 1.3 mg/L (*i.e.*, if the "90th percentile" copper level is greater than 1.3 mg/L).

12-003.01C The 90th percentile lead and copper levels is computed as follows:

1. The results of all lead or copper samples taken during a monitoring period are placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result is assigned a number, ascending by single integers beginning with the number one for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level must be equal to the total number of samples taken.

2. The number of samples taken during the monitoring period is multiplied by 0.9.

3. The contaminant concentration in the numbered sample yielded by the calculation in 179 NAC 12-003.01C item 2 is the 90th percentile contaminant level.

4. Water systems which serve fewer than 100 people and collect five samples per monitoring period must compute the 90th percentile by taking the average of the highest and second highest concentrations.

5. For a public water system that has been allowed by the Director to collect fewer than five samples in accordance with 179 NAC 12-009.03, the sample result with the highest concentration is considered the 90th percentile value.

12-003.02 Corrosion Control Treatment Requirements

12-003.02A All water systems must install and operate optimal corrosion control treatment as defined in 179 NAC 12-002.

12-003.02B Any water system that complies with the applicable corrosion control treatment requirements specified by the Director under 179 NAC 12-004 and 12-005 is deemed in compliance with the treatment requirement contained in 179 NAC 12-003.02 item 1.

12-003.03 Source Water Treatment Requirements: Any system exceeding the lead or copper action level must implement all applicable source water treatment requirements specified by the Director under 179 NAC 12-006.

12-003.04 Lead Service Line Replacement Requirements: Any system exceeding the lead action level after implementation of applicable corrosion control and source water treatment requirements must complete the lead service line replacement requirements contained in 179 NAC 12-007.

12-003.05 Public Education Requirements: Pursuant to 179 NAC 12-008, all water systems must provide a consumer notice of lead tap water monitoring results to persons served at the sites (taps) that are tested. Any system exceeding the lead action level must implement the public education requirements ~~contained in 179 NAC 12-008~~.

12-003.06 Monitoring and Analytical Requirements: Tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under 179 NAC 12 must be completed in compliance with 179 NAC 12-009, 12-010, 12-011 and 12-012.

12-003.07 Reporting Requirements: Systems must report to the Director any information required by the treatment provisions of 179 NAC 12-013.

12-003.08 Recordkeeping Requirements: Systems must maintain records in accordance with 179 NAC 12-014.

12-003.09 Violation of Drinking Water Regulations: Failure to comply with the applicable requirements of 179 NAC 12, including requirements established by the Director pursuant to these provisions, constitutes a violation of the drinking water regulations for lead and/or copper.

12-004 APPLICABILITY OF CORROSION CONTROL TREATMENT STEPS

12-004.01 Systems must complete the applicable corrosion control treatment requirements described in 179 NAC 12-005 by the deadlines established in 179 NAC 12-004.

12-004.01A A large system (serving more than 50,000 ~~persons~~individuals) must complete the corrosion control treatment steps specified in 179 NAC 12-004.04 unless it is deemed to have optimized corrosion control under 179 NAC 12-004.02B or 12-004.02C.

12-004.01B A small system (serving ≤3300 ~~persons~~individuals) and a medium-size system (serving >3,300 and ≤50,000 ~~persons~~individuals) must complete the corrosion control treatment steps specified in 179 NAC 12-004.05 unless it is deemed to have optimized corrosion control under 179 NAC 12-004.02A, 12-004.02B, or 12-004.02C.

12-004.02 A system is deemed to have optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in 179 NAC 12-004 if the system satisfies one of the following criteria. Any such system deemed to have optimized corrosion control under 179 NAC 12-004.02, and which has treatment in place, must continue to operate and maintain optimal corrosion control treatment and meet any requirements that the Director determines appropriate to ensure optimal corrosion control treatment is maintained.

12-004.02A A small or medium-size water system is deemed to have optimized corrosion control if the system meets the lead and copper action levels during each of two consecutive six-month monitoring periods conducted in accordance with 179 NAC 12-009.

12-004.02B Any water system may be deemed by the Director to have optimized corrosion control treatment if the system demonstrates to the satisfaction of the Director that it has conducted activities equivalent to the corrosion control steps applicable to such system under 179 NAC 12-004. If the Director makes this determination, s/he ~~must~~will provide the system with written notice explaining the basis for his/her decision and ~~must~~will specify the water quality control parameters representing optimal corrosion control in accordance with 179 NAC 12-005.06. Water systems deemed to have optimized corrosion control under 179 NAC 12-004.02B must operate in compliance with the Director-designated optimal water quality control parameters in accordance with 179 NAC 12-005.07 and continue to conduct lead and copper tap and water quality parameter sampling in accordance with 179 NAC 12-009.04C and 179 NAC 12-010.04, respectively. A system must provide the Director with the following information in order to support a determination under 179 NAC 12-004.02B:

1. The results of all test samples collected for each of the water quality parameters in 179 NAC 12-005.03C.

2. A report explaining the test methods used by the water system to evaluate the corrosion control treatments listed in 179 NAC 12-005.03A, the results of all tests conducted, and the basis for the system's selection of optimal corrosion control treatment;

3. A report explaining how corrosion control has been installed and how it is being maintained to insure minimal lead and copper concentrations at consumers' taps; and

4. The results of tap water samples collected in accordance with 179 NAC 12-009 at least once every six months for one year after corrosion control has been installed.

12-004.02C Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with 179 NAC 12-009 and source water monitoring conducted in accordance with 179 NAC 12-011 that demonstrates for two consecutive six-month monitoring periods that the difference between the 90th percentile tap water lead level computed under 179 NAC 12-003.01C, and the highest source water lead concentration, is less than the Practical Quantitation Level (PQL) for lead specified in 179 NAC 12-012.01A item 2.

12-004.02C(1) Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under 179 NAC 12-004.02C~~(1)~~ if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive six-month monitoring periods.

12-004.02C(2) Any water system deemed to have optimized corrosion control in accordance with 179 NAC 12-004.02C~~(2)~~ must continue

monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in 179 NAC 12-009.03 and collecting the samples at times and locations specified in 179 NAC 12-009.04D4.

12-004.02C(3) Any water system deemed to have optimized corrosion control pursuant to 179 NAC 12-004.02C~~(3)~~ must notify the Director in writing pursuant to 179 NAC 12-013.01C of any upcoming long-term change in treatment or ~~the~~ addition of a new source as described 179 NAC 12-013.01C. The Director will review and must approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The Director may require any such system to conduct additional monitoring or to take other action the Director deems appropriate to ensure that such systems maintain minimal levels of corrosion in the distribution system.

12-004.02C(4) ~~As of [the effective date of these regulations], a~~A system is not deemed to have optimized corrosion control under 179 NAC 12-004.02C~~(4)~~, and must implement corrosion control treatment pursuant to 179 NAC 12-004.02C(5) unless it meets the copper action level.

12-004.02C(5) Any system triggered into corrosion control because it is no longer deemed to have optimized corrosion control under 179 NAC 12-004.02C~~(5)~~ must implement corrosion control treatment in accordance with the deadlines in 179 NAC 12-004.05. Any such large system must adhere to the schedule specified in 179 NAC 12-004.05 for medium-size systems, with the time periods for completing each step being triggered by the date the system is no longer deemed to have optimized corrosion control under 179 NAC 12-004.02C~~(5)~~.

12-004.03 Any small or medium-size water system that is required to complete the corrosion control steps due to its exceedance of the lead or copper action level may cease completing the treatment steps whenever the system meets both action levels during each of two consecutive monitoring periods conducted pursuant to 179 NAC 12-009 and submits the results to the Director. If any such water system thereafter exceeds the lead or copper action level during any monitoring period, the system (or the Director, as the case may be) must recommence completion of the applicable treatment steps, beginning with the first treatment step which was not previously completed in its entirety. The Director may require a system to repeat treatment steps previously completed by the system where the Director determines that this is necessary to implement properly the treatment requirements of 179 NAC 12-004. The Director ~~must~~will notify the system in writing of such a determination and explain the basis for his/her decision. The requirement for any small- or medium-size system to implement corrosion control treatment steps in accordance with 179 NAC 12-004.05 (including systems deemed to have optimized corrosion control under 179 NAC 12-004.02A) is triggered whenever any small- or medium-size system exceeds the lead or copper action level.

12-004.04 Treatment Steps and Deadlines for Large Systems Serving >50,000 ~~Persons~~Individuals: Except as provided in 179 NAC 12-004.02B and 12-004.02C large

systems must complete the following corrosion control treatment steps (described in the referenced portions of 179 NAC 12-005, 12-009 and 12-010) by the indicated dates (which are included for informational purposes only).

1. Step 1: The system must conduct initial monitoring during two consecutive six-month monitoring periods by January 1, 1993.

2. Step 2: The system must complete corrosion control studies by July 1, 1994.

3. Step 3: The Director must designate optimal corrosion control treatment by January 1, 1995.

4. Step 4: The system must install optimal corrosion control treatment by January 1, 1997.

5. Step 5: The system must complete follow-up sampling by January 1, 1998.

6. Step 6: The Director must review installation of treatment and designate optimal water quality control parameters by July 1, 1998.

7. Step 7: The system must operate in compliance with the optimal water quality control parameters specified by the Director (179 NAC 12-005.07) and continue to conduct tap sampling (179 NAC 12-009.04C and 12-010.04).

12-004.05 Treatment Steps and Deadlines for Small and Medium-Size Systems: Except as provided in 179 NAC 12-004.02, small and medium-size systems must complete the following corrosion control treatment steps (described in the referenced portions of 179 NAC 12-005, 12-009 and 12-010) by the indicated time periods.

1. Step 1: The system must conduct initial tap sampling (179 NAC 12-009.04A and 12-010.02) until the system either exceeds the lead or copper action level or becomes eligible for reduced monitoring under 179 NAC 12-009.04D. A system exceeding the lead or copper action level must recommend optimal corrosion control treatment (179 NAC 12-005.01) within six months after the end of the monitoring period during which it exceeds one of the action levels.

2. Step 2: Within 12 months after the end of the monitoring period during which a system exceeds the lead or copper action level, the Director may require the system to perform corrosion control studies (179 NAC 12-005.02). If the Director does not require the system to perform such studies, the Director ~~must~~will specify optimal corrosion control treatment (179 NAC 12-005.04) within the following time frames:

    a. For medium-size systems, within 18 months after the end of the monitoring period during which such system exceeds the lead or copper action level,.

b. For small systems, within 24 months after the end of the monitoring period during which such system exceeds the lead or copper action level.

3. Step 3: If the Director requires a system to perform corrosion control studies under step 2, the system must complete the studies (179 NAC 12-005.03) within 18 months after the Director requires that such studies be conducted.

4. Step 4: If the system has performed corrosion control studies under step 2, the Director ~~must~~will designate optimal corrosion control treatment (179 NAC 12-005.04) within six months after completion of step 3.

5. Step 5: The system must install optimal corrosion control treatment (179 NAC 12-005.05) within 24 months after the Director designates such treatment.

6. Step 6: The system must complete follow-up sampling (179 NAC 12-009.04B and 179 NAC 12-010.03) within 36 months after the Director designates optimal corrosion control treatment.

7. Step 7: The Director ~~must~~will review the system's installation of treatment and designate optimal water quality control parameters (179 NAC 12-005.06) within six months after completion of step 6.

8. Step 8: The system must operate in compliance with the optimal water quality control parameters that have been designated by the Director (179 NAC 12-005.07) and continue to conduct tap sampling (179 NAC 12-009.04C and 12-010.04).

12-005 DESCRIPTION OF CORROSION CONTROL TREATMENT REQUIREMENTS: Each system must complete the corrosion control treatment requirements described below which are applicable to such system under 179 NAC 12-004.

12-005.01 System Recommendation Regarding Corrosion Control Treatment: Based upon the results of lead and copper tap monitoring and water quality parameter monitoring, small and medium-size water systems exceeding the lead or copper action level must recommend installation of one or more of the corrosion control treatments listed in 179 NAC 12-005.03A which the system believes constitutes optimal corrosion control for that system. The Director may require the system to conduct additional water quality parameter monitoring in accordance with 179 NAC 12-010.02 to assist the Director in reviewing the system's recommendation.

12-005.02 Director Decision to Require Studies of Corrosion Control Treatment (Applicable to Small and Medium-Size Systems): The Director may require any small or medium-size system that exceeds the lead or copper action level to perform corrosion control studies under 179 NAC 12-005.03 to identify optimal corrosion control treatment for the system.

12-005.03 Performance of Corrosion Control Studies

12-005.03A Any public water system performing corrosion control studies must evaluate the effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for that system:

1. Alkalinity and pH adjustment;

2. Calcium hardness adjustment; and

3. The addition of a phosphate or silicate based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

12-005.03B The water system must evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry and distribution system configuration.

12-005.03C The water system must measure the following water quality parameters in any tests conducted under 179 NAC 12-005.03C before and after evaluating the corrosion control treatments listed above:

1. Lead;

2. Copper;

3. pH;

4. Alkalinity;

5. Calcium;

6. Conductivity;

7. Orthophosphate (when an inhibitor containing a phosphate compound is used);

8. Silicate (when an inhibitor containing a silicate compound is used); and

9. Water temperature.

12-005.03D The water system must identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least one of the following:

1. Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; and/or

2. Data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

12-005.03E The water system must evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

12-005.03F On the basis of an analysis of the data generated during each evaluation, the water system must recommend to the Director in writing the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that system. The water system must provide a rationale for its recommendation along with all supporting documentation specified in 179 NAC 12-005.03A through 12-005.03E.

12-005.04 Designation of Optimal Corrosion Control Treatment by the Director

12-005.04A Based upon consideration of available information including, where applicable, studies performed under 179 NAC 12-005.03 and a system's recommended treatment alternative, the Director ~~must~~will either approve the corrosion control treatment option recommended by the system, or designate alternative corrosion control treatment(s) from among those listed in 179 NAC 12-005.03A. When designating optimal treatment the Director ~~must~~will consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

12-005.04B The Director ~~must~~will notify the system of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. If the Director requests additional information to aid its review, the water system must provide the information.

12-005.05 Installation of Optimal Corrosion Control: Each system must properly install and operate throughout its distribution system the optimal corrosion control treatment designated by the Director under 179 NAC 12-005.04.

12-005.06 Director Review of Treatment and Specification of Optimal Water Quality Control Parameters: The Director ~~must~~will evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the water system and determine whether the system has properly installed and operated the optimal corrosion control treatment designated by the Director in 179 NAC 12-005.04. Upon reviewing the results of tap water and water quality parameter monitoring by the system, both before and after the system installs optimal corrosion control treatment, the Director ~~must~~will designate:

1. A minimum value or a range of values for pH measured at each entry point to the distribution system;

2. A minimum pH value, measured in all tap samples. Such value must be equal to or greater than 7.0, unless the Director determines that meeting a pH level of 7.0

is not technologically feasible or is not necessary for the system to optimize corrosion control;

3. If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that the Director determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;

4. If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples;

5. If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

The values for the applicable water quality control parameters listed above must be those that the Director determines to reflect optimal corrosion control treatment for the system. The Director may designate values for additional water quality control parameters determined by the Director to reflect optimal corrosion control for the system. The Director ~~must~~will notify the system in writing of these determinations and explain the basis for its decisions.

12-005.07 Continued Operation and Monitoring: All systems optimizing corrosion control must continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameter values at or above minimum values or within ranges designated by the Director under 179 NAC 12-005.06, in accordance with 179 NAC 12-005.07 for all samples collected under 179 NAC 12-010.04 through 12-010.06. Compliance with the requirements of 179 NAC 12-005.07 must be determined every six months, as specified under 179 NAC 12-010.04. A water system is out of compliance with the requirements of 179 NAC 12-005.07 for a six-month period if it has excursions for any Director-specified parameter on more than nine days during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the Director. Daily values are calculated as follows. The Director has discretion to delete results of obvious sampling errors from this calculation.

1. On days when more than one measurement for the water quality parameter is collected at the sampling location, the daily value must be the average of all results collected during the day regardless of whether they are collected through continuous monitoring, grab sampling, or a combination of both.

2. On days when only one measurement for the water quality parameter is collected at the sampling location, the daily value must be the result of that measurement.

3. On days when no measurement is collected for the water quality parameter at the sampling location, the daily value must be the daily value calculated on the most

recent day on which the water quality parameter was measured at the sample site.

12-005.08 Modification of Treatment Decisions Made by the Director: Upon its own initiative or in response to a request by a water system or other interested party, the Director may modify his/her determination of the optimal corrosion control treatment under 179 NAC 12-005.04 or optimal water quality control parameters under 179 NAC 12-005.06. A request for modification by a system or other interested party must be in writing, explain why the modification is appropriate, and provide supporting documentation. The Director may modify his/her determination where s/he concludes that such change is necessary to ensure that the system continues to optimize corrosion control treatment. A revised determination must be made in writing, set forth the new treatment requirements, explain the basis for the Director's decision, and provide an implementation schedule for completing the treatment modifications.

12-006 SOURCE WATER TREATMENT REQUIREMENTS: Systems must complete the applicable source water monitoring and treatment requirements (described in the referenced portions of 179 NAC 12-006.02, 12-009, and 12-011) by the following deadlines.

12-006.01 Deadlines for Completing Source Water Treatment Steps

1. Step 1: A system exceeding the lead or copper action level must complete lead and copper source water monitoring (179 NAC 12-011.02) and make a treatment recommendation to the Director (179 NAC 12-006.02A) ~~within six months after exceeding~~ no later than 180 days after the end of the monitoring period during which the lead or copper action level was exceeded.

2. Step 2: The Director ~~must~~will make a determination regarding source water treatment (179 NAC 12-006.02B) within six months after submission of monitoring results under step 1.

3. Step 3: If the Director requires installation of source water treatment, the system must install the treatment (179 NAC 12-006.02C) within 24 months after completion of step 2.

4. Step 4: The system must complete follow-up tap water monitoring (179 NAC 12-009.04B) and source water monitoring (179 NAC 12-011.03) within 36 months after completion of step 2.

5. Step 5: The Director will review the system's installation and operation of source water treatment and specify maximum permissible source water levels (179 NAC 12-006.02D) within six months after completion of step 4.

6. Step 6: The system must operate in compliance with the maximum permissible lead and copper source water levels specified by the Director (179 NAC 12-006.02D) and continue source water monitoring (179 NAC 12-011.04).

12-006.02 Description of Source Water Treatment Requirements

12-006.02A System Treatment Recommendation: Any system which exceeds the lead or copper action level will recommend in writing to the Director the installation and operation of one of the source water treatments listed in 179 NAC 12-006.02B. A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

12-006.02B Director Determination Regarding Source Water Treatment: The Director will complete an evaluation of the results of all source water samples submitted by the water system to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If the Director determines that treatment is needed, the Director ~~must~~will either require installation and operation of the source water treatment recommended by the system (if any) or require the installation and operation of another source water treatment from among the following: ion exchange, reverse osmosis, lime softening or coagulation/filtration. If the Director requests additional information to aid in his/her review, the water system must provide the information by the date specified by the Director in his/her request. The Director ~~must~~will notify the system in writing of his/her determination and set forth the basis for his/her decision.

12-006.02C Installation of Source Water Treatment: Each system must properly install and operate the source water treatment designated by the Director under 179 NAC 12-006.02B.

12-006.02D Director Review of Source Water Treatment and Specification of Maximum Permissible Source Water Levels: The Director ~~must~~will review the source water samples taken by the water system both before and after the system installs source water treatment, and determine whether the system has properly installed and operated the source water treatment designated by the Director. Based upon his/her review, the Director will designate the maximum permissible lead and copper concentrations for finished water entering the distribution system. Such levels ~~must~~will reflect the contaminant removal capability of the treatment properly operated and maintained. The Director ~~must~~will notify the system in writing and explain the basis for his/her decision.

12-006.02E Continued Operation and Maintenance: Each water system must maintain lead and copper levels below the maximum permissible concentrations designated by the Director at each sampling point monitored in accordance with 179 NAC 12-011. The system is out of compliance with 179 NAC 12-006.02E if the level of lead or copper at any sampling point is greater than the maximum permissible concentration designated by the Director.

12-006.02F Modification of Director Treatment Decisions: Upon his/her own initiative or in response to a request by a water system or other interested party, the Director may modify his/her determination of the source water treatment under 179 NAC 12-006.02, or maximum permissible lead and copper concentrations for finished water entering the distribution system under 179 NAC 12-006.02D. A request for modification by a system or other interested party must be in writing, explain why the modification is appropriate,

and provide supporting documentation. The Director may modify his/her determination where ~~he/she~~s/he concludes that such change is necessary to ensure that the system continues to minimize lead and copper concentrations in source water. A revised determination ~~must~~will be made in writing, set forth the new treatment requirements, explain the basis for the Director's decision, and provide an implementation schedule for completing the treatment modifications.

12-007 LEAD SERVICE LINE REPLACEMENT REQUIREMENTS

12-007.01 Systems that fail to meet the lead action level in tap samples taken pursuant to 179 NAC 12-009.04B, after installing corrosion control and/or source water treatment (whichever sampling occurs later), must replace lead service lines in accordance with the requirements of 179 NAC 12-007. If a system is in violation of 179 NAC 12-004 or 12-006 for failure to install source water or corrosion control treatment, the Director may require the system to commence lead service line replacement under 179 NAC 12-007 after the date by which the system was required to conduct monitoring under 179 NAC 12-009.04B has passed.

12-007.02 Replacement Schedule

12-007.02A A water system must replace annually at least 7% of the initial number of lead service lines in its distribution system. The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins. The system must identify the initial number of lead service lines in its distribution system, including an identification of the portion(s) owned by the system, based on a materials evaluation, including the evaluation required under 179 NAC 12-009.01 and relevant legal authorities (*e.g.*, contracts, local ordinances) regarding the portion owned by the system. The first year of lead service line replacement begins on the ~~date~~ first day following the end of the monitoring period in which the action level was exceeded ~~in tap sampling referenced in~~under 179 NAC 12-007.01. If monitoring is required annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs. If the Director has established an alternate monitoring period, then the end of the monitoring period will be the last day of that period.

12-007.02B Any water system resuming a lead service line replacement program after the cessation of its lead service line replacement program as allowed by 179 NAC 12-007.06 must update its inventory of lead service lines to include those sites that were previously determined not to require replacement through the sampling provision under 179 NAC 12-007.03. The system will then divide the updated number of remaining lead service lines by the number of remaining years in the program to determine the number of lines that must be replaced per year (7% lead service line replacement is based on a 15-year replacement program, so, for example, systems resuming lead service line replacement after previously conducting two years of replacement would divide the updated inventory by 13). For those systems that have completed a 15-year lead service line replacement program, the Director will determine a schedule for replacing or retesting lines that were previously tested out under the replacement program when the system re-exceeds the action level.

12-007.03 A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken pursuant to 179 NAC 12-009.02C, is less than or equal to 0.015 mg/L.

12-007.04 A water system must replace that portion of the lead service line that it owns. In cases where the system does not own the entire lead service line, the system must notify the owner of the line, or the owner's authorized agent, that the system will replace the portion of the service line that it owns and must offer to replace the owner's portion of the line. A system is not required to bear the cost of replacing the privately-owned portion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by state, local or common law. A water system that does not replace the entire length of the service line also must complete the following tasks:

1. At least 45 days prior to commencing with the partial replacement of a lead service line, the water system must provide notice to the resident(s) of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead. The Director may allow the water system to provide notice under the previous sentence less than 45 days prior to commencing partial lead service line replacement where such replacement is in conjunction with emergency repairs. In addition, the water system must inform the resident(s) served by the line that the system will, at the system's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed under 179 NAC 12-009.02C, within 72 hours after the completion of the partial replacement of the service line. The system must collect the sample and report the results of the analysis to the owner and the resident(s) served by the line within three business days of receiving the results. Mailed notices post-marked within three business days of receiving the results are considered "on time."

2. The water system must provide the information required by 179 NAC 12-007.04 item 1 to the residents of individual dwellings by mail or by other methods approved by the Director. In instances where multi-family dwellings are served by the line, the water system must have the option to post the information at a conspicuous location.

12-007.05 The Director will require a system to replace lead service lines on a shorter schedule than that required by 179 NAC 12-007, taking into account the number of lead service lines in the system, where such a shorter replacement schedule is feasible. The Director will make this determination in writing and notify the system of its finding within six months after the system is triggered into lead service line replacement based on monitoring referenced in 179 NAC 12-007.01.

12-007.06 Any system may cease replacing lead service lines whenever first draw samples collected pursuant to 179 NAC 12-009.02B meet the lead action level during each of two consecutive monitoring periods and the system submits the results to the Director. If first

draw tap samples collected in any such water system thereafter exceed the lead action level, the system must recommence replacing lead service lines, pursuant to 179 NAC 12-007.02B.

12-007.07 To demonstrate compliance with 179 NAC 12-007.01 through 12-007.04, a system must report to the Director the information specified in 179 NAC 12-013.05.

12-008 PUBLIC EDUCATION AND SUPPLEMENTAL MONITORING REQUIREMENTS: All water systems must deliver a consumer notice of lead tap water monitoring results to persons served by the water system at sites that are tested, as specified in 179 NAC 12-008.04. A water system that exceeds the lead action level based on tap water samples collected in accordance with 179 NAC 12-009 must deliver the public education materials contained in 179 NAC 12-008.01 ~~and 12-008.02~~ in accordance with the requirements in 179 NAC 12-008.~~03~~02. Water systems that exceed the lead action level must sample the tap water of any customer who requests it in accordance with 179 NAC 12-008.03

12-008.01 Content of Written Public Education ~~Written~~ Materials

12-008.01A Community Water Systems and Non-transient Non-community Water Systems: Water systems must include the following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed below. In addition, language in 179 NAC 12-008.01 items 1 through 2 and 6 must be included in the materials, exactly as written, except for the text in brackets in these paragraphs for which the water system must include system-specific information. ~~A community water system must include the following text in all of the printed materials it distributes through its lead public education program. Systems may delete information pertaining to lead service lines, upon approval by the Director, if no lead service lines exist anywhere in the water system service area. Public education language at 179 NAC 12-008.01A item 4.b.(5) and 12-008.01A item 4.d.(2) may be modified regarding building permit record availability and consumer access to these records, if approved by the Director.~~ Any additional information presented by a water system must be consistent with the information below and be in plain ~~English~~ language that can be understood by ~~lay people~~the general public. Water systems must submit all written public education materials to the Director prior to delivery. The Director may require the system to obtain approval of the content of written public materials prior to delivery.

1. IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF WATER SYSTEM] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water. ~~Introduction: The Nebraska Department of Health and Human Services Regulation and Licensure and [insert name of water supplier] are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under federal and state regulations we are required to have a program in place to~~

~~minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at [insert water system's phone number]. This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.~~

2. Health Effects of Lead: ~~Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain, pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination -- like dirt and dust -- that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.~~Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

3. ~~Lead in Drinking Water~~Sources of Lead

   a. ~~Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20% or more of a person's total exposure to lead.~~Explain what lead is.

   b. ~~Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and~~

in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home/building plumbing materials and service lines that may contain lead.

c. When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of leadDiscuss other important sources of lead exposure in addition to drinking water (e.g., paint).

4. Discuss the Steps steps You the consumers Can can Take take in the Home to Rreduce their Exposure exposure to Lead lead in Drinking drinking Waterwater

a. Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call [insert phone number of water system].Encourage running the water to flush out the lead.

b. Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula. If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

(1) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15-30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it

~~for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than [insert a cost estimate based on flushing two times a day for 30 days] per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.~~

~~(2) Try not to cook with, or drink water from the hot water tap. Hot water can dissolve lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.~~

~~(3) Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.~~

~~(4) If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify the public water system and the Nebraska Department of Health and Human Services Regulation and Licensure and us about the violation.~~

~~(5) Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the city's record of building permits which should be maintained in the files of the [insert name of department that issues building permits]. A licensed plumber can at the same time check to see if~~

~~your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water after our comprehensive treatment program is in place, we are required to replace the portion of the line we own. If the line is only partially owned by the [insert name of the city, county, or water system that owns the line], we are required to provide the owner of the privately-owned portion of the line with information on how to replace the privately-owned portion of the service line, and offer to replace that portion of the line at the owner's expense. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps you can take to minimize exposure to any temporary increase in lead levels that may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement, and to mail or otherwise provide you with the results of that sample within three business days of receiving the results. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.~~

~~(6) Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.~~

c. Explain that boiling water does not reduce lead levels. ~~The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:~~

~~(1) Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse~~

~~osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters *may* reduce lead levels at the tap, however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.~~

~~(2) Purchase bottled water for drinking and cooking.~~

d. Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water. ~~You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:~~

~~(1) [insert the name of city or county department of public utilities] at [insert phone number] can provide you with information about your community's water supply, and a list of local laboratories that have been certified by EPA for testing water quality;~~

~~(2) [insert the name of city or county department that issues building permits] at [insert phone number] can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and~~

~~(3) [insert the name of the State Department of Public Health] at [insert phone number] or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead and how you can have your child's blood tested.~~

e. Suggest that parents have their child's blood tested for lead. ~~The following is a list of some State approved laboratories in your area that you can call to have your water tested for lead. [Insert names and phone numbers of at least two laboratories].~~

5. Explain why there are elevated levels of lead in the system's drinking water (if known) and what the water system is doing to reduce the lead levels in homes/buildings in this area.

6. For more information, call us at [INSERT YOUR NUMBER] [(IF APPLICABLE), or visit our web site at (INSERT YOUR WEB SITE HERE)] For more information on reducing lead exposure around your home/building and the health effects of lead,

visit EPA's web site at *http://www.epa.gov/lead* or contact your health care provider.

12-008.01B ~~Non-Transient Non-~~Community Water Systems: In addition to including the elements specified in 179 NAC 12-008.01A, community water systems must:~~A non-transient non-community water system must either include the text specified in 179 NAC 12-008.01A or must include the following text in all of the printed materials it distributes through its lead public education program. Water systems may delete information pertaining to lead service lines upon approval by the Director if no lead service lines exist anywhere in the water system service area. Any additional information presented by a system must be consistent with the information below and be in plain English that can be understood by lay people.~~

1. Tell consumers how to get their water tested. ~~Introduction: The Nebraska Department of Health and Human Services Regulation and Licensure and [insert name of water supplier] are concerned about lead in your drinking water. Some drinking water samples taken from this facility have lead levels above the action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under state law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation, please give us a call at [insert water system's phone number]. This brochure explains the simple steps you can take to protect yourself by reducing your exposure to lead in drinking water.~~

2. Discuss lead in plumbing components and the difference between low lead and lead free. ~~Health Effects of Lead: Lead is found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain, pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination – like dirt and dust – that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.~~

~~3. Lead in Drinking Water~~

~~a. Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead~~

~~exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that drinking water can make up 20% or more of a person's total exposure to lead.~~

~~b. Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, pipes made of lead that connect houses and buildings to water mains (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.~~

~~c. When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon if the water has not been used all day, can contain fairly high levels of lead.~~

~~4. Steps You Can Take to Reduce Exposure to Lead in Drinking Water~~

~~a. Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in plumbing the more lead it may contain. Flushing the tap means running the cold water faucet for about 15-30 seconds. Although toilet flushing or showering flushes water through a portion of the plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your health. It usually uses less than one gallon of water.~~

~~b. Do not cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and then heat it.~~

~~c. The steps described above will reduce the lead concentrations in your drinking water. However, if you are still concerned, you may wish to use bottled water for drinking and cooking.~~

d. You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

(1) [Insert the name or title of facility official if appropriate] at [insert phone number] can provide you with information about your facility's water supply; and

(2) The [insert the name of the State Department of Public Health] at [insert phone number] or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead.

12-008.02 Content of Broadcast Materials: A water system must include the following information in all public service announcements submitted under its lead public education program to television and radio stations for broadcasting:

1. Why should everyone want to know the facts about lead and drinking water? Because unhealthy amounts of lead can enter drinking water through the plumbing in your home. That's why I urge you to do what I did. I had my water tested for [insert free or $ per sample]. You can contact the [insert the name of the city or water system] for information on testing and on simple ways to reduce your exposure to lead in drinking water.

2. To have your water tested for lead, or to get more information about this public health concern, please call [insert the phone number of the city or water system].

12-008.03 02 Delivery of a Public Education ProgramMaterials

12-008.02A For public water systems serving a large proportion ofthat have a population with 5% or more non-English speaking consumers, the public education materials 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 public education materials or to request assistance in the appropriate language. 12-008.03A In communities where a significant proportion of the population speaks a language other than English, public education materials must be communicated in the appropriate language(s).

12-008.03B 02B A community water system that exceeds the lead action level on the basis of tap water samples collected in accordance with 179 NAC 12-009 and that is not already repeating conducting public education tasks pursuant to 179 NAC 12-008.03C, 12-008.03G, or 12-008.03Hunder this section, must conduct the public education tasks

under this section, within 60 days after the end of the monitoring period in which the exceedance occurred:

1. Deliver printed materials meeting the content requirements of 179 NAC 12-008.01 to all bill paying customers.Insert notices in each customer's water utility bill containing the information in 179 NAC 12-008.01A, along with the following alert on the water bill itself in large print: "SOME HOMES IN THIS COMMUNITY HAVE ELEVATED LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN POSE A SIGNIFICANT RISK TO YOUR HEALTH. PLEASE READ THE ENCLOSED NOTICE FOR FURTHER INFORMATION." A community water system having a billing cycle that does not include a billing within 60 days of exceeding the action level, or that cannot insert information in the water utility bill without making major changes to its billing system, may use a separate mailing to deliver the information in 179 NAC 12-008.01A as long as the information is delivered to each customer within 60 days of exceeding the action level. Such water systems must also include the "alert" language specified in 179 NAC 12-008.03B item 1.

2. Other Contacts

   a. Contact customers who are most at risk by delivering education materials that meet the content requirements of 179 NAC 12-008.01 to local public health agencies even if they are not located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users. The water system must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community based organizations serving target populations, which may include organizations outside the service area of the water system. If such lists are provided, systems must deliver education materials that meet the content requirements of 179 NAC 12-008.01 to all organizations on the provided lists.Submit the information in 179 NAC 12-008.01A to the editorial departments of the major daily and weekly newspapers circulated throughout the community.

   b. Contact customers who are most at risk by delivering materials that meet the content requirements of 179 NAC 12-008.01 to the following organizations listed below that are located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users:

      (1) Public and private schools or school boards.
      (2) Women, Infants and Children (WIC) and Head Start programs.
      (3) Public and private hospitals and medical clinics.
      (4) Pediatricians.
      (5) Family planning clinics.
      (6) Local welfare agencies.

c. Make a good faith effort to locate the following organizations within the service area and deliver materials that meet the content requirements of 179 NAC 12-008.01 to them, along with an informational notice that encourages distribution to all potentially affected customers or users. The good faith effort to contact at-risk customers may include requesting a specific contact list of these organizations from the local public health agencies, even if the agencies are not located within the water system's service area:

(1) Licensed childcare centers.
(2) Public and private preschools.
(3) Obstetricians-Gynecologists and Midwives.

3. No less often than quarterly, provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the following statement exactly as written except for the text in brackets for which the water system must include system-specific information: [INSERT NAME OF WATER SYSTEM] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF WATER SYSTEM] [or visit (INSERT YOUR WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the Director; specifically, the Director may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.

~~3. Deliver pamphlets and/or brochures that contain the public education materials in 179 NAC 12-008.01A items 2 and 4 to facilities and organizations, including the following:~~

~~a. Public schools and/or local school boards;~~

~~b. City or county health department;~~

~~c. Women, Infants, and Children and/or Head Start Program(s) whenever available;~~

~~d. Public and private hospitals and/or clinics;~~

~~e. Pediatricians;~~

~~f. Family planning clinics; and~~

~~g. Local welfare agencies.~~

4. Post material meeting the content requirements of 179 NAC 12-008.01 on the water system's web site if the system serves a population greater than 100,000. ~~Submit the public service announcement in 179 NAC 12-008.02 to at least five of the radio and television stations with the largest audiences that broadcast to the community served by the water system.~~

5. Submit a press release to newspaper, television and radio stations.

6. In addition to 179 NAC 12-008.02B items 1-5, systems must implement at least three activities from one or more categories listed below. The educational content and selection of these activities must be determined in consultation with the Director.

   a. Public service announcements.
   b. Paid advertisements.
   c. Public area informational displays.
   d. E-mails to customers.
   e. Public Meetings.
   f. Household deliveries.
   g. Targeted individual customer contact.
   h. Direct material distribution to all multi-family homes and institutions.
   i. Other methods approved by the Director.

7. For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the Director has established an alternate monitoring period, the last day of that period.

12-008.~~03C~~ 02C As long as a community water system exceeds the action level, it must repeat the activities pursuant to 179 NAC 12-008.02B as described in the following paragraphs. ~~A community water system must repeat the tasks contained in 179 NAC 12-008.03B items 1, 2, and 3 every 12 months, and the tasks contained in 179 NAC 12-008.03B item 4 every six months for as long as the system exceeds the lead action level.~~

1, A community water system must repeat the tasks contained in 179 NAC 12-008.02B items 1, 2, and 6 every 12 months.

2. A community water system must repeat tasks contained in 179 NAC 12-008.02B item 3 with each billing cycle.

3. A community water system serving a population greater than 100,000 must post and retain material on a publicly accessible web site pursuant to 179 NAC 12-008.02B item 4.

4. A community water system must repeat the task in 179 NAC 12-008.02B item 5 twice every 12 months on a schedule agreed upon with the Director. The Director can allow activities in 179 NAC 12-008.02B to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the Director in advance of the 60-day deadline.

12-008.~~03D~~ 02D Within 60 days after the end of the monitoring period in which the exceedance occurred ~~it exceeds the lead action level~~ (unless it already is repeating

public education tasks pursuant to 179 NAC 12-008.~~03E~~02E), a non-transient non-community water system must deliver the public education materials specified by 179 NAC 12-008.01~~A or the public education materials specified by 179 NAC 12-008.01B~~ as follows:

1. Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and

2. Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the non-transient non-community water system. The Director may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.

3. For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the Director has established an alternate monitoring period, the last day of that period.

12-008.~~03E~~ 02E A non-transient non-community water system must repeat the tasks contained in 179 NAC 12-008.~~03D~~ 02D at least once during each calendar year in which the system exceeds the lead action level. The Director can allow activities in 179 NAC 12-008.02D to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension must be approved in writing by the Director in advance of the 60-day deadline.

12-008.~~03F~~ 02F A water system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month monitoring period conducted pursuant to 179 NAC 12-009. Such a system must recommence public education in accordance with 179 NAC 12-008 if it subsequently exceeds the lead action level during any monitoring period.

12-008.~~03G~~ 02G A community water system may apply to the Director, in writing, to use only the text specified in 179 NAC 12-008.~~01B~~ 01A in lieu of the text in 179 NAC 12-008.01A and 12-008.01B and to perform the tasks listed in 179 NAC 12-008.~~03D~~ 02D and 12-008.~~03E~~ 02E in lieu of the tasks in 179 NAC 12-008.~~03B~~ 02B and 12-008.~~03C~~ 02C if:

1. The system is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and

2. The system provides water as part of the cost of services provided and does not separately charge for water consumption.

12-008.~~03H~~ 02H Communities Serving 3,300 or Fewer People: ~~12-008.03H1~~ A community water system serving 3,300 or fewer people may ~~omit the task contained in 179 NAC 12-008.03B item 4. As long as it distributes notices containing the information~~

~~contained in 179 NAC 12-008.01A to every household served by the system, such systems may further~~ limit certain aspects of their public education programs as follows:

1. With respect to the requirements of 179 NAC 12-008.02B item 6, a system serving 3,300 or fewer must implement at least one of the activities listed in that paragraph.

2. With respect to the requirements of 179 NAC 12-008.02B item 2, a system serving 3,300 or fewer people may limit the distribution of the public education materials required under that paragraph to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.

3. With respect to the requirements of 179 NAC 12-008.02B item 5, the Director may waive this requirement for systems serving 3,300 or fewer persons as long as the system distributes notices to every household served by the system.

~~1. Systems serving 500 or fewer people may forego the task contained in 179 NAC 12-008.03B item 2. Such a system may limit the distribution of the public education materials required under 179 NAC 12-008.03B item 3 to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children, unless it is notified by the Director in writing that it must make a broader distribution.~~

~~2. If approved by the Director in writing, a system serving 501 to 3,300 people may omit the task in 179 NAC 12-008.03B item 2 and/or limit the distribution of the public education materials required under 179 NAC 12-008.03B item 3 to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.~~

~~12-008.03H2 A community water system serving 3,300 or fewer people that delivers public education in accordance with 179 NAC 12-008.03H1 must repeat the required public education tasks at least once during each calendar year in which the system exceeds the lead action level.~~

12-008.~~04~~ 03 Supplemental Monitoring and Notification of Results: A water system that fails to meet the lead action level on the basis of tap samples collected in accordance with 179 NAC 12-009 must offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.

12-008.04 Notification of Results

12-008.04A Reporting Requirement: All water systems must provide a notice of the individual tap results from lead tap water monitoring carried out under the requirements of 179 NAC 12-009 to the persons served by the water system at the specific sampling

site from which the sample was taken (e.g., the occupants of the residence where the tap was tested).

12-008.04B Timing of Notification: A water system must provide the consumer notice as soon as practical, but no later than 30 days after the system learns of the tap monitoring results.

12-008.04C Content: The consumer notice must include the results of lead tap water monitoring for the tap that was tested, an explanation of the health effects of lead, a list of steps consumers can take to reduce exposure to lead in drinking water and contact information for the water utility. The notice must also provide the maximum contaminant level goal and the action level for lead and the definitions for these two terms from 179 NAC 14-004.03.

12-008.04D Delivery: The consumer notice must be provided to persons served at the tap that was tested, either by mail or by another method approved by the Director. For example, upon approval by the Director, a non-transient non-community water system could post the results on a bulletin board in the facility to allow users to review the information. The system must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.

12-009 MONITORING REQUIREMENTS FOR LEAD AND COPPER IN TAP WATER

12-009.01 Sample Site Location

12-009.01A Each water system must complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of 179 NAC 12-009, and which is sufficiently large to ensure that the water system can collect the number of lead and copper tap samples required in 179 NAC 12-009.03. All sites from which first draw samples are collected must be selected from this pool of targeted sampling sites. Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

12-009.01B The system must seek to collect the following information where possible in the course of its normal operations (*e.g.*, checking service line materials when reading water meters or performing maintenance activities):

1. All plumbing codes, permits, and records in the files of the building department(s) which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system;

2. All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system; and

3. All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system,

indicating locations that may be particularly susceptible to high lead or copper concentrations.

12-009.01C The sampling sites selected for a community water system's sampling pool ("tier 1 sampling sites") must consist of single family structures that:

1. Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

2. Are served by a lead service line. When multiple-family residences comprise at least 20% of the structures served by a water system, the system may include these types of structures in its sampling pool.

12-009.01D Any community water system with insufficient tier 1 sampling sites must complete its sampling pool with "tier 2 sampling sites", consisting of buildings, including multiple-family residences that:

1. Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

2. Are served by a lead service line.

12-009.01E Any community water system with insufficient tier 1 and tier 2 sampling sites must complete its sampling pool with "tier 3 sampling sites", consisting of single family structures that contain copper pipes with lead solder installed before 1983. A community water system with insufficient tier 1, tier 2, and tier 3 sampling sites must complete its sampling pool with representative sites throughout the distribution system. For the purpose of 179 NAC 12-009.01E, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

12-009.01F The sampling sites selected for a non-transient non-community water system ("tier 1 sampling sites") must consist of buildings that:

1. Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

2. Are served by a lead service line.

12-009.01G A non-transient non-community water system with insufficient tier 1 sites that meet the targeting criteria in 179 NAC 12-009.01F must complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the non-transient non-community water system must use representative sites throughout the distribution system. For the purpose of 179 NAC 12-009.01G, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

12-009.01H Any water system whose distribution system contains lead service lines must draw 50% of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50% of the samples from sites served by a lead service line. A water system that cannot identify a sufficient number of sampling sites served by a lead service line must collect first-draw samples from all of the sites identified as being served by such lines.

12-009.02 Sample Collection Methods

12-009.02A All tap samples for lead and copper collected in accordance with 179 NAC 12, with the exception of lead service line samples collected under 179 NAC 12-007.03, and samples collected under 179 NAC 12-009.02E, must be first-draw tap samples.

12-009.02B Each first-draw tap sample for lead and copper must be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours. First draw samples from residential housing must be collected from the cold-water kitchen tap or bathroom sink tap. First-draw samples from a non-residential building must be one liter in volume and must be collected at an interior tap from which water is typically drawn for consumption. Non-first-draw samples collected in lieu of first-draw samples pursuant to 179 NAC 12-009.02E must be one liter in volume and must be collected at an interior tap from which water is typically drawn for consumption. First draw samples may be collected by the system or the system may allow residents to collect first draw samples after instructing the residents of the sampling procedures specified in 179 NAC 12-009.02B. To avoid problems of residents handling nitric acid, acidification of first-draw samples may be done up to 14 days after the sample is collected. After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

12-009.02C Each service line sample must be one liter in volume and have stood motionless in the lead service line for at least six hours. Lead service line samples must be collected in one of the three following ways:

1. At the tap after flushing the volume of water between the tap and the lead service line. The volume of water must be calculated based on the interior diameter and length of the pipe between the tap and the lead service line;

2. Tapping directly into the lead service line; or

3. If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature that would be indicative of water that has been standing in the lead service line.

12-009.02D A water system must collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the water

system cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

12-009.02E A non-transient non-community water system, or a community water system that meets the criteria of 179 NAC 12-008.~~03G~~ 02G ~~items 1 and 2~~ that does not have enough taps that can supply first draw samples, as defined in 179 NAC 12-002, may apply to the Director in writing to substitute non-first draw samples. Such systems must collect as many first draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The Director has the discretion to waive the requirement for prior Director approval of non-first draw sample sites selected by the system, either through Department regulation or written notification to the system.

12-009.03 Number of Samples: Water systems must collect at least one sample during each monitoring period specified in 179 NAC 12-009.04 from the number of sites listed in the "Number of Sites (Standard Monitoring)" column below. A system conducting reduced monitoring under 179 NAC 12-009.04D must collect at least one sample from the number of sites specified in the last column below during each monitoring period specified in 179 NAC 12-009.04D. Such reduced monitoring sites must be representative of the sites required for standard monitoring. A public water system that has fewer than five drinking water taps that can be used for human consumption meeting the sample site criteria of 179 NAC 12-009.01 to reach the required number of sample sites listed below, must collect at least one sample from each tap and then must collect additional samples from those taps on different days during the monitoring period to meet the required number of sites. Alternatively the Director may allow these public water systems to collect a number of samples less than the number of sites specified below, provided that 100% of all taps that can be used for human consumption are sampled. The Director will approve this reduction of the minimum number of samples in writing based on a request from the system or onsite verification by the Director. The Director may specify sampling locations when a system is conducting reduced monitoring. The table is as follows:

System Size (# People Served)	**Number of Sites (Standard Monitoring)**	**Number of sites (Reduced Monitoring)**
>100,000	100	50
10,001-100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
≤100	5	5

12-009.04 Timing of Monitoring

12-009.04A Initial Tap Sampling: The first six-month monitoring period for small, medium-size and large systems began on the following dates which are included for convenience:

System Size (# People Served)	**Monitoring Date**
>50,000	January 1,1992
3,301 to 50,000	July 1, 1992
≤3,300	July 1, 1993

12-009.04A1 All large systems must monitor during two consecutive six-month periods.

12-009.04A2 All small and medium-size systems must monitor during each six-month monitoring period until:

1. The system exceeds the lead or copper action level and is therefore required to implement the corrosion control treatment requirements under 179 NAC 12-004, in which case the system must continue monitoring in accordance with 179 NAC 12-009.04B, or

2. The system meets the lead and copper action levels during two consecutive six-month monitoring periods, in which case the system may reduce monitoring in accordance with 179 NAC 12-009.04D.

12-009.04B Monitoring after Installation of Corrosion Control and Source Water Treatment

12-009.04B1 Any large system which installs optimal corrosion control treatment pursuant to 179 NAC 12-004.04 item 4 must monitor during two consecutive six-month monitoring periods by the date specified in 179 NAC 12-004.04 item 5.

12-009.04B2 Any small or medium-size system which installs optimal corrosion control treatment pursuant to 179 NAC 12-004.05 item 5 must monitor during two consecutive six-month monitoring periods by the date specified in 179 NAC 12-004.05 item 6.

12-009.04B3 Any system which installs source water treatment pursuant to 179 NAC 12-006.01 item 3 must monitor during two consecutive six-month monitoring periods by the date specified in 179 NAC 12-006.01 item 4.

12-009.04C Monitoring after the Director Specifies Water Quality Parameter Values for Optimal Corrosion Control: After the Director specifies the values for water quality control parameters under 179 NAC 12-005.06, the system must monitor during each

subsequent six-month monitoring period, with the first monitoring period to begin on the date the Director specifies the optimal values under 179 NAC 12-005.06.

12-009.04D Reduced Monitoring

12-009.04D1 A small or medium-size water system that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the number of samples in accordance with 179 NAC 12-009.03, and reduce the frequency of sampling to once per year. A small or medium water system collecting fewer than five samples as specified in 179 NAC 12-009.03, that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the frequency of sampling to once per year. In no case can the system reduce the number of samples required below the minimum of one sample per available tap. This sampling must begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

12-009.04D2 Any water system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Director under 179 NAC 12-005.06 during each of two consecutive six-month monitoring periods may reduce the frequency of monitoring to once per year and reduce the number of lead and copper samples in accordance with 179 NAC 12-009.03 if it receives written approval from the Director. This sampling must begin during the calendar year immediately following the end of the second consecutive six-month monitoring period. The Director ~~must~~will review monitoring, treatment, and other relevant information submitted by the water system in accordance with 179 NAC 12-013 and ~~must~~will notify the system in writing when it determines the system is eligible to commence reduced monitoring pursuant to 179 NAC 12-009.04D2. The Director ~~must~~will review, and where appropriate, revise his/her determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

12-009.04D3 A small or medium-size water system that meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years. Any water system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the Director under 179 NAC 12-005.06 during three consecutive years of monitoring may reduce the frequency of monitoring from annually to once every three years if it receives written approval from the Director. Samples collected once every three years must be collected no later than every third calendar year. The Director ~~must~~will review monitoring, treatment, and other relevant information submitted by the water system in accordance with 179 NAC 12-013, and ~~must~~will notify the system in writing when s/he determines the system is eligible to reduce the frequency of monitoring to once every three years. The Director ~~must~~will review, and where appropriate, revise his/her determination

when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

12-009.04D4 A water system that reduces the number and frequency of sampling must collect these samples from representative sites included in the pool of targeted sampling sites identified in 179 NAC 12-009.01. Systems sampling annually or less frequently must conduct the lead and copper tap sampling during the months of June, July, August or September unless the Director has approved a different sampling period in accordance with 179 NAC 12-009.04D4 item 1.

1. The Director, at his/her discretion, may approve a different period for conducting the lead and copper tap sampling for systems collecting a reduced number of samples. Such a period must be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. For a non-transient non-community water system that does not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the Director ~~must~~ will designate a period that represents a time of normal operation for the system. This sampling must begin during the period approved or designated by the Director in the calendar year immediately following the end of the second consecutive six-month monitoring period for systems initiating annual monitoring and during the three-year period following the end of the third consecutive calendar year of annual monitoring for systems initiating triennial monitoring.

2. Systems monitoring annually, that have been collecting samples during the months of June through September and that receive Director approval to alter their sample collection period under 179 NAC 12-009.04D4 item 1, must collect their next round of samples during a time period that ends no later than 21 months after the previous round of sampling. Systems monitoring triennially that have been collecting samples during the months of June through September, and receive Director approval to alter the sampling collection period as per 179 NAC 12-009.04D4 item 1, must collect their next round of samples during a time period that ends no later than 45 months after the previous round of sampling. Subsequent rounds of sampling must be collected annually or triennially, as required by 179 NAC 12-009. Small systems with waivers, granted pursuant to 179 NAC 12-009.07, that have been collecting samples during the months of June through September and receive Director approval to alter their sample collection period under 179 NAC 12-009.04D4 item 1 must collect their next round of samples before the end of the nine-year period.

12-009.04D5 Any water system that demonstrates for two consecutive six-month monitoring periods that the tap water lead level computed under 179 NAC 12-003.01C is less than or equal to 0.005 mg/L and the tap water copper level computed under 179 NAC 12-003.01C is less than or equal to 0.65 mg/L may reduce the number of samples in accordance with 179 NAC 12-009.03 and reduce the frequency of sampling to once every three calendar years.

12-009.04D6 Exceedance Under Reduced Monitoring

12-009.04D6a A small or medium-size water system subject to reduced monitoring that exceeds the lead or copper action level must resume sampling in accordance with 179 NAC 12-009.04C and collect the number of samples specified for standard monitoring under 179 NAC 12-009.03. Such a system must also conduct water quality parameter monitoring in accordance with 179 NAC 12-010.02, 12-010.03 or 12-010.04 (as appropriate) during the monitoring period in which it exceeded the action level. Any such system may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in 179 NAC 12-009.03 after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of 179 NAC 12-009.04D1, and/or may resume triennial monitoring for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either 179 NAC 12-009.04D3 or 179 NAC 12-009.04D5.

12-009.04D6b Any water system subject to the reduced monitoring frequency that fails to meet the lead action level during any four-month monitoring period or that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the Director under 179 NAC 12-005.06 for more than nine days in any six-month period specified in 179 NAC 12-010.04 must conduct tap water sampling for lead and copper at the frequency specified in 179 NAC 12-009.04C, collect the number of samples specified for standard monitoring under 179 NAC 12-009.03, and must resume monitoring for water quality parameters within the distribution system in accordance with 179 NAC 12-010.04. This standard tap water sampling must begin no later than the six-month period beginning January 1 of the calendar year following the lead action level exceedance or water quality parameter excursion. Such a system may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:

1. The system may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in 179 NAC 12-009.03 after it has completed two subsequent six-month rounds of monitoring that meet the criteria of 179 NAC 12-009.04D2 and the system has received written approval from the Director that it is appropriate to resume reduced monitoring on an annual frequency.

This sampling must begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

2. The system may resume triennial monitoring for lead and copper at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either 179 NAC 12-009.04D3 or 12-009.04D5 and the system has received written approval from the Director that it is appropriate to resume triennial monitoring.

3. The system may reduce the number of water quality parameter tap water samples required in accordance with 179 NAC 12-010.05A and the frequency with which it collects such samples in accordance with 179 NAC 12-010.05B. Such a system may not resume triennial monitoring for water quality parameters at the tap until it demonstrates, in accordance with the requirements of 179 NAC 12-010.05B, that it has re-qualified for triennial monitoring.

12-009.04D7 Any water system subject to a reduced monitoring frequency under 179 NAC 12-009.04D ~~that either adds a new source of water or changes any water treatment~~ must ~~inform~~ notify the Director in writing in accordance with 179 NAC 12-013.01C of any upcoming long-term change in treatment or addition of a new source as described in that section. The Director will review and must approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The Director may require the system to resume sampling in accordance with 179 NAC 12-009.04C and collect the number of samples specified for standard monitoring under 179 NAC 12-009.03 or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

12-009.05 Additional Monitoring by Systems: The results of any monitoring conducted in addition to the minimum requirements of 179 NAC 12-009 will be considered by the system and the Director in making any determinations (*i.e.*, calculating the 90th percentile lead or copper level) under 179 NAC 12.

12-009.06 Invalidation of Lead or Copper Tap Water Samples: A sample invalidated under 179 NAC 12-009.06 does not count toward determining lead or copper 90th percentile levels under 179 NAC 12-003.01C or toward meeting the minimum monitoring requirements of 179 NAC 12-009.03.

12-009.06A The Director may invalidate a lead or copper tap water sample if at least one of the following conditions is met.

1. The laboratory establishes that improper sample analysis caused erroneous results.

2. The Director determines that the sample was taken from a site that did not meet the site selection criteria of 179 NAC 12-009.

3. The sample container was damaged in transit.

4. There is substantial reason to believe that the sample was subject to tampering.

12-009.06B The system must report the results of all samples to the Director and all supporting documentation for samples the system believes should be invalidated.

12-009.06C To invalidate a sample under 179 NAC 12-009.06A, the decision and the rationale for the decision must be documented in writing. The Director may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

12-009.06D The water system must collect replacement samples for any samples invalidated under 179 NAC 12-009 if, after the invalidation of one or more samples, the system has too few samples to meet the minimum requirements of 179 NAC 12-009.03. Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the Director invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period must not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples must be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

12-009.07 Monitoring Waivers for Small Systems: Any small system that meets the criteria of 179 NAC 12-009.07 may apply to the Director to reduce the frequency of monitoring for lead and copper under 179 NAC 12-009 to once every nine years (*i.e.*, a "full waiver") if it meets all of the materials criteria specified in 179 NAC 12-009.07A and all of the monitoring criteria specified in 179 NAC 12-009.07B. Any small system that meets the criteria in 179 NAC 12-009.07A and 12-009.07B only for lead, or only for copper, may apply to the Director for a waiver to reduce the frequency of tap water monitoring to once every nine years for that contaminant only (*i.e.*, a "partial waiver").

12-009.07A Materials Criteria: The system must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials and/or copper-containing materials, as those terms are defined below:

1. Lead: To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead (*i.e.*, a "lead waiver"), the water system must provide certification and supporting documentation to the Director that the system is free of all lead-containing materials, as follows:

a. It contains no plastic pipes that contain lead plasticizers, or plastic service lines that contain lead plasticizers; and

b. It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless the fittings and fixtures meet the specifications of any standard established pursuant to 42 U.S.C. 300 g-6(e) (Attachment 1).

2. Copper: To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper (*i.e.*, a "copper waiver"), the water system must provide certification and supporting documentation to the Director that the system contains no copper pipes or copper service lines.

12-009.07B Monitoring Criteria for Waiver Issuance: The system must have completed at least one six-month round of standard tap water monitoring for lead and copper at sites approved by the Director and from the number of sites required by 179 NAC 12-009.03 and demonstrate that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing and/or copper-containing materials, as appropriate, meet the following criteria.

1. Lead Levels: To qualify for a full waiver, or a lead waiver, the system must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/L.

2. Copper Levels: To qualify for a full waiver, or a copper waiver, the system must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/L.

12-009.07C Director Approval of Waiver Application: The Director ~~must~~will notify the system of his/her waiver determination in writing, setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the Director may require the system to perform specific activities (*e.g.*, limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of lead or copper concentration of concern in tap water. The small system must continue monitoring for lead and copper at the tap as required by 179 NAC 12-009.04A through 12-009.04D, as appropriate, until it receives written notification from the Director that the waiver has been approved.

12-009.07D Monitoring Frequency for Systems with Waivers

12-009.07D1 A system with a full waiver must conduct tap water monitoring for lead and copper in accordance with 179 NAC 12-009.04D4 at the reduced number of sampling sites identified in 179 NAC 12-009.03 at least once every nine years and provide the materials certification specified in 179 NAC 12-009.07A for both lead and copper to the Director along with the monitoring results. Samples collected every nine years must be collected no later than every ninth calendar year.

12-009.07D2 A system with a partial waiver must conduct tap water monitoring for the waived contaminant in accordance with 179 NAC 12-009.04D4 at the reduced number of sampling sites specified in 179 NAC 12-009.03 at least once every nine years and provide the materials certification specified in 179 NAC 12-009.07A pertaining to the waived contaminant along with the monitoring results. The system also must continue to monitor for the non-waived contaminant in accordance with requirements of 179 NAC 12-009.04A through 12-009.04D, as appropriate.

12-009.07D3 ~~If a~~ Any water system with a full or partial waiver ~~adds a new source of water or changes any water treatment, the system~~ must notify the Director in writing in accordance with 179 NAC 12-013.01C of any upcoming long-term change in treatment or addition of a new source, as described in that section. The Director will review and must approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The Director has the authority to require the system to add or modify waiver conditions [*e.g.*, require recertification that the system is free of lead-containing and/or copper-containing materials, require additional round(s) of monitoring], if s/he deems the modifications are necessary to address treatment or source water changes at the system.

12-009.07D4 If a system with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate, (*e.g.*, as a result of new construction or repairs), the system must notify the Director in writing no later than 60 days after becoming aware of such a change.

12-009.07E Continued Eligibility: If the system continues to satisfy the requirements of 179 NAC 12-009.07D, the waiver will be renewed automatically, unless any of the conditions listed in 179 NAC 12-009.07E items 1 through 3 occurs. A system whose waiver has been revoked may re-apply for a waiver at the time it again meets the appropriate materials and monitoring criteria of 179 NAC 12-009.07A and 12-009.07B.

1. A system with a full waiver or a lead waiver no longer satisfies the materials criteria of 179 NAC 12-009.07A item 1 or has a 90th percentile lead level greater than 0.005 mg/L.

2. A system with a full waiver or a copper waiver no longer satisfies the materials criteria of 179 NAC 12-009.07A item 2 or has a 90th percentile copper level greater than 0.65 mg/L.

3. The Director notifies the system in writing that the waiver has been revoked, setting forth the basis of his/her decision.

12-009.07F Requirements Following Waiver Revocation: A system whose full or partial waiver has been revoked by the Director is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

1. If the system exceeds the lead and/or copper action level, the system must implement corrosion control treatment in accordance with the deadlines specified in 179 NAC 12-004.05, and any other applicable requirements of 179 NAC 12.

2. If the system meets both the lead and the copper action level, the system must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sample sites specified in 179 NAC 12-009.03.

12-010 MONITORING REQUIREMENTS FOR WATER QUALITY PARAMETERS: All large systems, and all small and medium-size systems that exceed the lead or copper action level must monitor water quality parameters in addition to lead and copper in accordance with 179 NAC 12-010. These monitoring requirements are summarized in the table at the end of 179 NAC 12-010.

12-010.01 General Requirements

12-010.01A Sample Collection Methods

12-010.01A1 Tap samples must be representative of water quality throughout the distribution system taking into account the number of ~~persons~~ individuals served, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Tap sampling under 179 NAC 12-010 is not required to be conducted at taps targeted for lead and copper sampling under 179 NAC 12-009.01. [Note: Systems may find it convenient to conduct tap sampling for water quality parameters at sites used for coliform sampling.]

12-010.01A2 Samples collected at the entry point(s) to the distribution system must be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.*, when water is representative of all sources being used).

12-010.01B Number of Samples

12-010.01B1 Systems must collect two tap samples for applicable water quality parameters during each monitoring period specified under 179 NAC 12-010.02 ~~to~~ through 12-010.05 from the following number of sites.

System Size (# People Served)	**# of Sites For Water Quality Parameters**
>100,000	25
10,001-100,000	10
3,301 to 10,000	3

501 to 3,300	2
101 to 500	1
≤100	1

12-010.01B2 Except as provided in 179 NAC 12-010.03C, systems must collect two samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in 179 NAC 12-010.02. During each monitoring period specified in 179 NAC 12-010.03 to 12-010.05, systems must collect one sample for each applicable water quality parameter at each entry point to the distribution system.

12-010.02 Initial Sampling: All large water systems must measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each six-month monitoring period specified in 179 NAC 12-009.04A. All small and medium-size systems must measure the applicable water quality parameters at the locations specified below during each six-month monitoring period specified in 179 NAC 12-009.04A during which the system exceeds the lead or copper action level.

12-010.02A At taps:

1. pH;

2. Alkalinity;

3. Orthophosphate, when an inhibitor containing a phosphate compound is used;

4. Silica, when an inhibitor containing a silicate compound is used;

5. Calcium;

6. Conductivity; and

7. Water temperature.

12-010.02B At each entry point to the distribution system: all of the applicable parameters listed in 179 NAC 12-010.02A.

12-010.03 Monitoring after Installation of Corrosion Control: Any large system which installs optimal corrosion control treatment pursuant to 179 NAC 12-004.04 item 4 must measure the water quality parameters at the locations and frequencies specified below during each six-month monitoring period specified in 179 NAC 12-009.04B1. Any small or medium-size system which installs optimal corrosion control treatment must conduct such monitoring during each six-month monitoring period specified in 179 NAC 12-009.04B2 in which the system exceeds the lead or copper action level.

12-010.03A At taps, two samples for:

1. pH;

2. Alkalinity;

3. Orthophosphate, when an inhibitor containing a phosphate compound is used;

4. Silica, when an inhibitor containing a silicate compound is used;

5. Calcium, when calcium carbonate stabilization is used as part of corrosion control.

12-010.03B Except as provided in 179 NAC 12-010.03C, at each entry point to the distribution system, one sample no less frequently than every two weeks (bi-weekly) for:

1. pH;

2. When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and

3. When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

12-010.03C Any ground water system can limit entry point sampling described in 179 NAC 12-010.03B to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated ground water sources mixes with water from treated ground water sources, the system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under 179 NAC 12-010.03C, the system must provide to the Director written information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

12-010.04 Monitoring after the Director Specifies Water Quality Parameter Values for Optimal Corrosion Control: After the Director specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under 179 NAC 12-005.06, all large systems must measure the applicable water quality parameters in accordance with 179 NAC 12-010.03 and determine compliance with the requirements of 179 NAC 12-005.07 every six months with the first six-month period to begin on ~~the date~~ either January 1 or July 1, whichever comes first, after the Director specifies the optimal values under 179 NAC 12-005.06. Any small or medium-size system must conduct such monitoring during each six-month period specified in 179 NAC 12-010.04 in which the system exceeds the lead or copper action level. For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to 179 NAC 12-009.04D at the time of the action level exceedance, the ~~end~~ start of the applicable six-month period under 12-010.04 must coincide

with the ~~end~~ start of the applicable monitoring period under 179 NAC 12-009.04D. Compliance with the Director-designated optimal water quality parameter values ~~must~~will be determined as specified under 179 NAC 12-005.07.

12-010.05 Reduced Monitoring

12-010.05A Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under 179 NAC 12-010.04 must continue monitoring at the entry point(s) to the distribution system as specified in 179 NAC 12-010.03B. The system may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each six-month monitoring period.

System Size (# People Served)	**Reduced # of Sites for Water Quality Parameters**
>100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

12-010.05B Systems Maintaining Range of Water Quality Parameters Reflecting Optimal Corrosion Control

12-010.05B1 Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Director under 179 NAC 12-005.06 during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in 179 NAC 12-010.05A from every six months to annually. This sampling begins during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs. Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Director under 179 NAC 12-005.06 during three consecutive years of annual monitoring under 179 NAC 12-010.05B1 may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in 179 NAC 12-010.05A from annually to every three years. This sampling begins no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

12-010.05B2 A water system may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in 179 NAC 12-010.05A to every three years if it demonstrates during two consecutive monitoring

periods that its tap water lead level at the 90th percentile is less than or equal to the PQL for lead specified in 179 NAC 12-012.01A item 2, that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L for copper in 179 NAC 12-003.01B, and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the Director under 179 NAC 12-005.06. Monitoring conducted every three years must be done no later than every third calendar year.

12-010.05C A water system that conducts sampling annually must collect these samples evenly throughout the year so as to reflect seasonal variability.

12-010.05D Any water system subject to reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the Director under 179 NAC 12-005.06 for more than nine days in any six-month period specified in 179 NAC 12-005.07 must resume distribution system tap water sampling in accordance with the number and frequency requirements in 179 NAC 12-010.04. The system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in 179 NAC 12-010.05A after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of 179 NAC 12-010.05A and/or may resume triennial monitoring for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either 179 NAC 12-010.05B1 or 12-010.05B2.

12-010.06 Additional Monitoring by Systems: The results of any monitoring conducted in addition to the minimum requirements of 179 NAC 12-010 will be considered by the system and the Director in making any determinations (*i.e.*, determining concentrations of water quality parameters) under 179 NAC 12-010 or 12-005.

SUMMARY OF MONITORING REQUIREMENTS FOR WATER QUALITY PARAMETERS[1]

Monitoring Period	Parameters[2]	Location	Frequency
Initial Monitoring	pH, alkalinity, orthophosphate or silica[3], calcium, conductivity, temperature.	Taps and at entry point(s) to distribution system	Every six months
After Installation of Corrosion Control	pH, alkalinity, orthophosphate or silica[3], calcium[4].	Taps	Every six months
	pH, alkalinity, dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5].	Entry point(s) to distribution system[6]	No less frequently than every two weeks
After Director Specifies Parameter Values For Optimal Corrosion Control	pH, alkalinity, orthophosphate or silica[3], calcium[4].	Taps	Every six months
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5].	Entry point(s) to distribution system[6]	No less frequently than every two weeks

Reduced Monitoring	pH, alkalinity, orthophosphate or silica[3], calcium[4].	Taps	Every six months; annually[7] or every three years[8]; reduced number of sites
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5].	Entry point(s) to distribution system[6]	No less frequently than every 2 weeks

[1] Table is for illustrative purposes; consult the text of 179 NAC 12-010 for precise regulatory requirements.
[2] Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.
[3] Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing a silicate compound is used.
[4] Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.
[5] Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.
[6] Ground water systems may limit monitoring to representative locations throughout the system.
[7] Water systems may reduce frequency of monitoring for water quality parameters at the tap from every six months to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during three consecutive years of monitoring.
[8] Water systems may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every three years if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during three consecutive years of annual monitoring. Water systems may accelerate to triennial monitoring for water quality parameters at the tap if they have maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65 mg/L, and the range of water quality parameters designated by the Director under 179 NAC 12-005.06 as representing optimal corrosion control during two consecutive 6-month monitoring periods.

12-011 MONITORING REQUIREMENTS FOR LEAD AND COPPER IN SOURCE WATER

12-011.01 Sample Location, Collection Methods, and Number of Samples

12-011.01A A water system that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with 179 NAC 12-009 must collect lead and copper source water samples in accordance with the following requirements regarding sample location, number of samples, and collection methods:

1. Ground water systems must take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). The system must take one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

2. Surface water systems must take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point). The system must take each

sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

Note: For the purposes of 179 NAC 12-011.01A item 2, surface water systems include systems with a combination of surface and ground sources.

3. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.*, when water is representative of all sources being used).

4. The Director may reduce the total number of samples which must be analyzed by allowing the use of compositing. Compositing of samples must be done by certified laboratory personnel. Composite samples from a maximum of five samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, then either:

   a. A follow-up sample must be taken and analyzed within 14 days at each sampling point included in the composite; or

   b. If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the system may use these instead of resampling.

12-011.01B Where the results of sampling indicate an exceedance of maximum permissible source water levels established under 179 NAC 12-006.02D, the Director may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks after the results are known) at the same sampling point. If a Director-required confirmation sample is taken for lead or copper, then the results of the initial and confirmation sample must be averaged in determining compliance with the maximum permissible levels specified by the Director. Any sample value below the detection limit is considered to be zero. Any value above the detection limit but below the PQL is either considered as the measured value or as one-half the PQL.

12-011.02 Monitoring Frequency after System Exceeds Tap Water Action Level: Any system which exceeds the lead or copper action level at the tap must collect one source water sample from each entry point to the distribution system ~~within~~ no later than six months after the ~~exceedance~~end of the monitoring period during which the lead or copper action level was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the Director has established an alternate monitoring period, the last day of that period.

12-011.03 Monitoring Frequency after Installation of Source Water Treatment: Any system which installs source water treatment pursuant to 179 NAC 12-006.01 item 3 must collect an

additional source water sample from each entry point to the distribution system during two consecutive six-month monitoring periods by the deadline specified in 179 NAC 12-006.01 item 4.

12-011.04 Monitoring Frequency after the Director Specifies Maximum Permissible Source Water Levels or Determines that Source Water Treatment is Not Needed

12-011.04A A system must monitor at the frequency specified below in cases where the Director specifies maximum permissible source water levels under 179 NAC 12-006.02D or determines that the system is not required to install source water treatment under 179 NAC 12-006.02B.

12-011.04A1 A water system using only ground water must collect samples once during the three-year compliance period in effect when the applicable Director determination under 179 NAC 12-011.04A is made. The systems must collect samples once during each subsequent compliance period. Triennial samples must be collected every third calendar year.

12-011.04A2 A water system using surface water (or a combination of surface and ground water) must collect samples once during each calendar year, the first annual monitoring period to begin ~~on the date on~~ during the year in which the applicable Director determination is made under 179 NAC 12-011.04A.

12-011.04B A system is not required to conduct source water sampling for lead and/or copper if the system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the system under 179 NAC 12-011.04A1 or 12-011.04A2.

12-011.05 Reduced Monitoring Frequency

12-011.05A A water system using only ground water may reduce the monitoring frequency for lead and~~/or~~ copper in source water to once during each nine-year compliance cycle provided that the samples are collected no later than every ninth calendar year and if the system meets one of the following criteria:

1. The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the Director in 179 NAC 12-006.02D during at least three consecutive compliance periods under 179 NAC 12-011.04A; or

2. The Director has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under 179 NAC 12-011.04A, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

12-011.05B A water system using surface water (or a combination of surface and ground water) may reduce the monitoring frequency in 179 NAC 12-011.04A to once during each nine-year compliance cycle (as that term is defined in 179 NAC 12-002) provided that the samples are collected no later than every ninth calendar year and if the system meets one of the following criteria:

1. The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the Director in 179 NAC 12-006.02D for at least three consecutive years; or

2. The Director has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

12-011.05C A water system that uses a new source of water is not eligible for reduced monitoring for lead and/or copper until concentrations in samples collected from the new source during three consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified by the Director in 179 NAC 12-006.01 item 5.

12-012 ANALYTICAL METHODS

12-012.01 Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature must be conducted with the methods found in 179 NAC 3-005.11A.

12-012.01A Analyses for alkalinity, calcium, conductivity, orthophosphate, pH, silica, and temperature may be performed by any Grade IV, III, II or I ~~certified~~ licensed water operator or a person who has been trained to take the samples. If a licensed operator does not take the sample, Attachment 1, which is incorporated herein by reference must be completed and sent to the Department. Analyses under 179 NAC 12 for lead and copper must only be conducted by the Public Health ~~Department~~ Environmental Laboratory or a laboratory which has entered into agreement with the Department pursuant to 179 NAC 3-009. To obtain certification to conduct analyses for lead and copper, laboratories must:

1. Analyze performance evaluation samples which include lead and copper, provided by EPA, the Department or by a third party (with the approval of the Department or EPA) at least once a year by each method for which the laboratory desires certification; and

2. Achieve quantitative acceptance limits as follows:

   a. For Lead: ±30% of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.005 mg/L. The Practical Quantitation Level, or PQL for lead is 0.005 mg/L.

b. For Copper: ±10% of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.050 mg/L. The Practical Quantitation Level, or PQL for copper is 0.050 mg/L;

3. Achieve the method detection limit (MDL) for lead of 0.001 mg/L according to the procedures in Appendix B of Part 136 of the Code of Federal Regulations, incorporated herein as Attachment 2. This need only be accomplished if the laboratory will be processing source water composite samples under 179 NAC 12-011.01A item ~~3.~~4.

12-012.01B All lead and copper levels measured between the PQL and the MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in 179 NAC 12-012.01A item 2. All levels below the lead and copper MDLs must be reported as zero.

12-012.01C All copper levels measured between the PQL and the MDL must be either reported as measured or they can be reported as one-half the PQL (0.025 mg/L). All levels below the copper MDL must be reported as zero.

12-013 REPORTING REQUIREMENTS: All water systems must report all of the following information to the Director in accordance with 179 NAC 12-013.

12-013.01 Reporting Requirements for Tap Water Monitoring for Lead and Copper and for Water Quality Parameter Monitoring

12-013.01A Except as provided in 179 NAC 12-013.01A item 7, a water system must report the information specified below for all tap water samples specified in 179 NAC 12-009 and for all water quality parameter samples specified in 179 NAC 12-010 within the first ten days following the end of each applicable monitoring period specified in 179 NAC 12-009 and 12-010 (*i.e.*, every six months, annually, every three years, or every nine years). For monitoring periods with a duration less than six months, the end of the monitoring period is the last date samples can be collected during that period as specified in 179 NAC 12-009 and 12-010.

1. The results of all tap samples for lead and copper including the location of each site and the criteria under 179 NAC 12-009.01C, 12-009.01D, 12-009.01E, 12-009.01F, and/or 12-009.01G under which the site was selected for the system's sampling pool;

2. Documentation for each tap water lead or copper sample for which the water system requests invalidation pursuant to 179 NAC 12-009.06B;

3. The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period (calculated in accordance with 179 NAC 12-003.01C unless the

Director calculates the system's 90th percentile lead and copper levels under 179 NAC 12-013.08);

4. With the exception of initial tap sampling, the system must designate any site which was not sampled during previous monitoring periods, and include an explanation of why sampling sites have changed;

5. The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under 179 NAC 12-010.02 to 12-010.05;

6. The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under 179 NAC 12-010.02 to 12-010.05;

7. A water system must report the results of all water quality parameter samples collected under 179 NAC 12-010.03 through 12-010.06 during each six-month monitoring period specified in 179 NAC 12-010.04 within the first ten days following the end of the monitoring period unless the Director has specified a more frequent reporting requirement.

12-013.01B For a non-transient non-community water system, or a community water system meeting the criteria of 179 NAC 12-008.~~03G~~ 02G items 1 and 2, that does not have enough taps that can provide first draw samples, the system must either:

1. Provide written documentation to the Director identifying standing times and locations for enough non-first draw samples to make up its sampling pool under 179 NAC 12-009.02E by the start of the first applicable monitoring period under 179 NAC 12-009.04 that commences after April 11, 2000, unless the Director has waived prior Director approval of non-first draw sample sites selected by the system pursuant to 179 NAC 12-009.02E; or

2. If the Director has waived prior approval of non-first draw sample sites selected by the system, identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to 179 NAC 12-009.02E and include this information with the lead and copper tap sample results required to be submitted pursuant to 179 NAC 12-013.01A item 1.

12-013.01C ~~No later than 60 days after~~At a time specified by the Director, or if no specific time is designated by the Director, then as early as possible prior to the addition of a new source or any long-term change in water treatment, ~~unless the Director requires earlier notification,~~ a water system deemed to have optimized corrosion control under 179 NAC 12-004.02C, a water system subject to reduced monitoring pursuant to 179 NAC 12-009.04D, or a water system subject to a monitoring waiver pursuant to 179 NAC 12-009.07, must ~~send~~ submit written documentation to the Director describing the change or addition. The Director will review and must approve the addition of a new source or long-term change in treatment before it is implemented by the water system.

Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (e.g., alum to ferric chloride), and switching corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can include dose changes to existing chemicals if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes.

12-013.01D Any small system applying for a monitoring waiver under 179 NAC 12-009.07, or subject to a waiver granted pursuant to 179 NAC 12-009.07C, must provide the following information to the Director in writing by the specified deadline:

1. By the start of the first applicable monitoring period in 179 NAC 12-009.04, any small water system applying for a monitoring waiver must provide the documentation required to demonstrate that it meets the waiver criteria of 179 NAC 12-009.07A and 12-009.07B.

2. No later than nine years after the monitoring previously conducted pursuant to 179 NAC 12-009.07B or 12-009.07D1, each small system desiring to maintain its monitoring waiver must provide the information required by 179 NAC 12-009.07D1 and 12-009.07D2.

3. No later than 60 days after it becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each small system with a monitoring waiver must provide written notification to the Director, setting forth the circumstances resulting in the lead-containing and/or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials.

12-013.01E Each ground water system that limits water quality parameter monitoring to a subset of entry points under 179 NAC 12-010.03C must provide, by the commencement of the monitoring, written correspondence to the Director that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

12-013.02 Source Water Monitoring Reporting Requirements

12-013.02A A water system must report the sampling results for all source water samples collected in accordance with 179 NAC 12-011 within the first ten days following the end of each source water monitoring period (*i.e.*, annually, per compliance period, per compliance cycle) specified in 179 NAC 12-011.

12-013.02B With the exception of the first round of source water sampling conducted pursuant to 179 NAC 12-011.02, the system must specify any site which was not

sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

12-013.03 Corrosion Control Treatment Reporting Requirements: By the applicable dates under 179 NAC 12-004, systems must report the following information to the Director:

1. For systems demonstrating that they have already optimized corrosion control, information required in 179 NAC 12-004.02B or 12-004.02C.

2. For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under 179 NAC 12-005.01.

3. For systems required to evaluate the effectiveness of corrosion control treatments under 179 NAC 12-005.03, the information required by 179 NAC 12-005.03.

4. For systems required to install optimal corrosion control designated by the Director under 179 NAC 12-005.04, a letter certifying that the system has completed installing that treatment.

12-013.04 Source Water Treatment Reporting Requirements: By the applicable dates in 179 NAC 12-006, systems must provide the following information to the Director:

1. If required under 179 NAC 12-006.02A, their recommendation regarding source water treatment;

2. For systems required to install source water treatment under 179 NAC 12-006.02B, a letter certifying that the system has completed installing the treatment designated by the Director within 24 months after the Director designated the treatment.

12-013.05 Lead Service Line Replacement Reporting Requirements: Systems must report the following information to the Director to demonstrate compliance with the requirements of 179 NAC 12-007:

1. ~~Within~~ No later than 12 months after the end of a monitoring period in which a system exceeds the lead action level in sampling referred to in 179 NAC 12-007.01, the system must ~~demonstrate in writing~~ submit written documentation to the Director ~~that it has conducted a~~of the material~~s~~ evaluation, ~~including the evaluation~~conducted as required in 179 NAC 12-009.01, ~~to~~ identify the initial number of lead service lines in its distribution system at the time the system exceeds the lead action level, and ~~must~~ provide ~~the Director with~~ the system's schedule for annually replacing ~~annually~~ at least 7% of the initial number of lead service lines in its distribution system.

2. ~~Within~~ No later than 12 months after the end of a monitoring period in which a system exceeds the lead action level in sampling referred to in 179 NAC 12-007.01, and every 12 months thereafter, the system must demonstrate to the Director in writing that the system has either:

a. Replaced in the previous 12 months at least 7% of the initial lead service lines (or a greater number of lines specified by the Director under 179 NAC 12-007.05) in its distribution system, or

b. Conducted sampling which demonstrates that the lead concentration in all service line samples from an individual line(s), taken pursuant to 179 NAC 12-009.02C, is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced and/or which meet the criteria in 179 NAC 12-007.03 must equal at least 7% of the initial number of lead lines identified under 179 NAC 12-013.~~01~~ 05 item 1 (or the percentage specified by the Director under 179 NAC 12-007.05).

3. The annual letter submitted to the Director under 179 NAC 12-013.05 item 2 must contain the following information:

a. The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule;

b. The number and location of each lead service line replaced during the previous year of the system's replacement schedule;

c. If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

4. Any system that collects lead service line samples following partial lead service line replacement required by 179 NAC 12-007 must report the results to the Director within the first ten days of the month following the month in which the system receives the laboratory results, or as specified by the Director. The Director, at his/her discretion, may eliminate this requirement to report these monitoring results. Systems must also report any additional information as specified by the Director, and in a time and manner prescribed by the Director, to verify that all partial lead service line replacement activities have taken place.

12-013.06 Public Education Program Reporting Requirements

12-013.06A Any water system that is subject to the public education requirements in 179 NAC 12-008 must, within ten days after the end of each period in which the system is required to perform public education tasks in accordance with 179 NAC 12-008.~~03~~02, send written documentation to the Director that contains:

1. A demonstration that the system has delivered the public education materials that meet the content requirements in 179 NAC 12-008.01 ~~and 12-008.02~~ and the delivery requirements in 179 NAC 12-008.~~03~~02; and

2. A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the system delivered public education materials

during the period in which the system was required to perform public education tasks.

12-013.06B Unless required by the Director, a system that previously has submitted the information required by 179 NAC 12-013.06A item 2 need not resubmit the information required by 179 NAC 12-013.06A item 2, as long as there have been no changes in the distribution list and the system certifies that the public education materials were distributed to the same list submitted previously.

12-013.06C No later than 3 months following the end of the monitoring period, each system must mail a sample copy of the consumer notification of tap results to the Director along with a certification that the notification has been distributed in a manner consistent with the requirements of 179 NAC 12-008.04.

12-013.07 Reporting of Additional Monitoring Data: Any system which collects sampling data in addition to that required by 179 NAC 12 must report the results to the Director within the first ten days following the end of the applicable monitoring period under 179 NAC 12-009, 12-010, and 12-011 during which the samples are collected.

12-013.08 Reporting of 90th Percentile Lead and Copper Concentrations Where the Director Calculates a System's 90th Percentile Concentrations: A water system is not required to report the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by 179 NAC 12-013.01A item 4 if:

1. The Director has previously notified the water system that it will calculate the water system's 90th percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to 179 NAC 12-013.08 item 2.a., and has specified a date before the end of the applicable monitoring period by which the system must provide the results of lead and copper tap water samples;

2. The system has provided the following information to the Director by the date specified in 179 NAC 12-013.08 item 1:

   a. The results of all tap samples for lead and copper including the location of each site and the criteria under 179 NAC 12-009.01C, 12-009.01D, 12-009.01E, 12-009.01F, and/or 12-009.01G under which the site was selected for the system's sampling pool, pursuant to 179 NAC 12-013.01A item 1; and

   b. An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed; and

3. The Director has provided the results of the 90th percentile lead and copper calculations, in writing, to the water system before the end of the monitoring period.

12-014 RECORDKEEPING REQUIREMENTS: Any system subject to the requirements of 179 NAC 12 must retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, Director determinations, and any other information required by 179 NAC 12-004 through 12-011. Each water system must retain the records required by 179 NAC 12-014 for no fewer than 12 years.

179 NAC 12 ATTACHMENT 1

Sampling Training For Individuals Other Than Licensed Operators

PWS System or Community Name: _____

Name of person taking samples: _____

Parameter(s) sampled routinely by the above person:

_____

Trainer and Title: _____

Training material used: _____

Handouts given to the above person:

_____

I certify that on _____ I personally provided the necessary sampling
(Date)

training to assure quality data and approve the above person as qualified to perform the

above sampling tasks.

X _____
(Signature of Trainer) (License Number)

I certify that I did receive said training and I understand how to properly sample the above parameters.

X _____
(Signature of Approved Sampling Person)

When the above-named trained person no longer takes the samples the person has been trained to take, I will inform the Nebraska Department of Health and Human Services Division of Public Health, Field Services Program Manager at (402) 471-0521 within seven days.
Acknowledged by System Owner or Operator in Charge:

X _____ Date: _____
(Signature)
(Keep a copy for your records and submit original within seven days to DHHS, Division of Public Health, Public Water Program at P. O. Box 95026, Lincoln, NE 68509-5026)