TITLE 10 - DEPARTMENT OF NATURAL RESOURCES
DIVISION 60 – SAFE DRINKING WATER COMMISSION
Chapter 8 – Public Notification

PROPOSED AMENDMENT

10 CSR 60-8.030 Consumer Confidence Reports. The commission is amending subsections (2)(C)-(D) and (2)(H), Appendix A, Appendix B, and Appendix C.

PURPOSE: This amendment adopts Revised Total Coliform Rule (RTCR) requirements for Consumer Confidence Reports (CCR). The CCR must include definitions of Level 1 and Level 2 assessments. For fecal coliform and E. coli the CCR must include the highest contaminant level used to determine compliance and the range of detected levels. The amendment includes standard language from the RTCR that must be used for reporting on level 1 and level 2 assessments. The amendment also adopts Ground Water Rule requirements for reporting uncorrected significant deficiencies.

(2) Content of the Reports.

(C) Definitions.

1. Each report must include the following definitions:

A. Maximum contaminant level goal or MCLG—The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety; and

B. Maximum contaminant level or MCL—The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

2. A report for a community water system operating under a variance or an exemption issued under 10 CSR 60-6.010 or 10 CSR 60-6.020 must include the following definition—Variances and exemptions—State permission not to meet an MCL or a treatment technique under certain conditions.

3. A report that contains data on a contaminant that the department regulates using the following terms must use the following definitions as applicable:

A. Treatment technique—A required process intended to reduce the level of a contaminant in drinking water;

B. Action level—The concentration of a contaminant which, if exceeded, triggers treatment or other requirements with which a water system must comply;

C. Maximum residual disinfectant level goal or MRDLG—The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants; and

D. Maximum residual disinfectant level or MRDL—The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

4. A report that contains information regarding a Level 1 or Level 2 Assessment required under 10 CSR 60-4.022 must include the applicable definitions:

A. Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform

bacteria have been found in our water system.

B. Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

(D) Information on Detected Contaminants.

1. Subsection (2)(D) specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring (except *Cryptosporidium*). It applies to—

A. Contaminants subject to an MCL, action level, maximum residual disinfectant level, or treatment technique (regulated contaminants);

B. Contaminants for which monitoring is required by 10 CSR 60-4.110 (unregulated contaminants); and

C. Disinfection by-products or microbial contaminants for which monitoring is required by 40 CFR 141.142 and 141.143, except as provided under paragraph (2)(E)1. of this rule, and which are detected in the finished water.

2. The data relating to these contaminants must be displayed in one (1) table or in several adjacent tables. Any additional monitoring results which a community water system chooses to include in its report must be displayed separately.

3. The data must be derived from data collected to comply with the Environmental Protection Agency and department monitoring and analytical requirements during the previous calendar year except that—

A. Where a system is allowed to monitor for regulated contaminants less often than once a year, the table(s) must include the date and results of the most recent sampling and the report must include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. The system may use the following language or similar language for their statement: "The state has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year-to-year. Some of our data (e.g., for organic contaminants), though representative, is more than one (1) year old." No data older than five (5) years need be included.

B. Results of monitoring in compliance with 40 CFR 141.142 and 141.143 need only be included for five (5) years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

4. For detected regulated contaminants (listed in Appendix A, included herein), the table(s) must contain—

A. The MCL for that contaminant expressed as a number equal to or greater than 1.0 (as provided in Appendix A, included herein);

B. The MCLG for that contaminant expressed in the same units as the MCL;

C. If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level applicable to that contaminant, and the report must include the definitions for treatment technique and/or action level, as appropriate, specified in paragraph (2)(C)3. of this rule;

D. For contaminants subject to an MCL, except turbidity**,** *[and]* total

[coliforms] **coliform, fecal coliform and *E. coli***, the highest contaminant level used to determine compliance with 10 CSR 60-4.030; 10 CSR 60-4.040; 10 CSR 60-4.060; 10 CSR 60-4.090; 10 CSR 60-4.100 and the range of detected levels, as follows (when rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in Appendix A, included herein):

(I) When compliance with the MCL is determined annually or less frequently—the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL;

(II) When compliance with the MCL is determined by calculating a running annual average of all samples taken at a monitoring location—the highest average of any of the monitoring locations and the range of all monitoring locations expressed in the same units as the MCL. For the MCLs for total trihalomethanes (TTHM) and haloacetic acids 5 (HAA5) in 10 CSR 60-4.090(1)(D), systems must include the highest locational running annual average for TTHM and HAA5 and the range of individual sample results for all monitoring locations expressed in the same units as the MCL. If more than one (1) location exceeds the TTHM or HAA5 MCL, the system must include the locational running annual averages for all locations that exceed the MCL; and

(III) When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all monitoring locations—the average and range of detection expressed in the same units as the MCL. The system is required to include individual sample results for the Initial Distribution System Evaluation (IDSE) conducted under 10 CSR 60-4.092 when determining the range of TTHM and HAA5 results to be reported in the annual consumer confidence report for the calendar year that the IDSE samples were taken;

E. For turbidity, the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in 10 CSR 60-4.050.

(I) The report should include an explanation of the reasons for measuring turbidity, such as: "Turbidity is a measure of the cloudiness of water. We monitor turbidity because it is a good indicator of the effectiveness of our filtration system."

(II) If an explanation of the reasons for measuring turbidity is included, it does not have to be included in the table but may be added as a footnote or narrative associated with the table;

F. For lead and copper, the ninetieth percentile value of the most recent round of sampling, the number of sampling sites exceeding the action level in that round, and the most recent source water results;

G. For total coliform **analytical results until March 31, 2016**.

(I) The highest monthly number of positive compliance samples for systems collecting fewer than forty (40) samples per month; or

(II) The highest monthly percentage of positive compliance samples for systems collecting at least forty (40) samples per month;

H. For fecal coliform *[or]***and** *E. coli*, **until March 31, 2016,** the total number of positive compliance samples; *[and]*

I. The likely source(s) of detected regulated contaminants to the best of the operator's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and should be used when available to the operator. If the operator lacks specific information on the likely source, the report must include one (1) or more

of the typical sources for that contaminant which are most applicable to the system. The typical sources for a given contaminant are listed in Appendix B, included herein**; and**

J. For *E. coli* analytical results under 10 CSR 60-4.022, the total number of positive samples.

5. If a community water system distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table should contain a separate column for each service area and the report should identify each separate distribution system. Alternatively, systems could produce separate reports tailored to include data for each service area.

6. The table(s) must clearly identify any data indicating violations of MCLs or treatment techniques and the report must contain a clear and readily understandable explanation of the violation including: the length of the violation, the potential adverse health effects, and actions taken by the system to address the violation. To describe the potential health effects, the system must use the relevant language of Appendix C, included herein.

7. For detected unregulated contaminants for which monitoring is required (except *Cryptosporidium*), the table(s) must contain the average and range at which the contaminant was detected. When detects of unregulated contaminants are reported, the report may include a brief explanation of the reasons for monitoring for unregulated contaminants using language such as: "Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Information on all the contaminants that were monitored for, whether regulated or unregulated, can be obtained from this water system or the Department of Natural Resources."

(H) Additional Information.

1. The report must contain a brief explanation regarding contaminants which may reasonably be expected to be found in drinking water, including bottled water. The report must include the language of subparagraph (2)(H)1.A. of this rule. This explanation must also include the information contained in subparagraphs (2)(H)1.B.–D. of this rule using this language or comparable language.

A. "Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791)."

B. "The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity."

C. "Contaminants that may be present in source water include:

(I) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(II) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater

discharges, oil and gas production, mining, or farming.

(III) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

(IV) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

(V) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities."

D. "In order to ensure that tap water is safe to drink, the Department of Natural Resources prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Department of Health and Senior Services regulations establish limits for contaminants in bottled water which must provide the same protection for public health."

2. The report must include the telephone number of the owner, operator, or designee of the community water system as a source of additional information concerning the report.

3. In communities with a large proportion of non-English speaking residents, as determined by the department, the report must contain information in the appropriate language(s) regarding the importance of the report. The report may use a notice based on the following wording: "This report contains very important information about your drinking water. Translate it or speak with someone who understands it." The report may also contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

4. The report must include information (e.g., time and place of regularly scheduled board meetings) about opportunities for public participation in decisions that may affect the quality of the water.

5. The systems may include such additional information as they deem necessary for public education consistent with, and not detracting from, the purpose of the report.

6. Systems required to comply with the Ground Water Rule.

A. Any ground water system that receives notice from the department of a significant deficiency or notice from a laboratory of a fecal indicator-positive ground water source sample that is not invalidated by the department under 10 CSR 60-4.025(3)(D) must inform its customers of any significant deficiency that is uncorrected or of any fecal indicator-positive ground water source sample in the next report. The system must continue to inform the public annually until the department determines that the significant deficiency is corrected or the fecal contamination in the ground water source is addressed under 10 CSR 60-4.025(4)(A). Each report must include the following:

(I) The nature of the particular significant deficiency or the source of the fecal contamination (if the source is known) and the date the significant deficiency was identified by the department or the dates of the fecal indicator-positive ground water source samples;

(II) If the fecal contamination in the ground water source has been addressed under 10 CSR 60-4.025(4)(A) and the date of such action;

(III) For each significant deficiency or fecal contamination in the ground water source that has not been addressed under 10 CSR 60-4.025(4)(A), the department-approved plan and schedule for correction, including interim measures, progress to date, and any

interim measures completed; and

(IV) If the system receives notice of a fecal indicator-positive ground water source sample that is not invalidated by the department under 10 CSR 60-4.025(3)(D), the potential health effects using the health effects language of Appendix C of this rule.

B. If directed by the department, a system with significant deficiencies that have been corrected before the next Consumer Confidence Report is issued must inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction under subparagraph (2)(H)6.A. of this rule.

7. Systems required to comply with 10 CSR 60-4.022.

A. Any system required to comply with the Level 1 assessment requirement or a Level 2 assessment requirement that is not due to an *E. coli* MCL violation must include in the report the text found in parts (2)(H)7.A.(I)-(III) of this rule as appropriate, filling in the blanks accordingly and the text found in parts (2)(H)7A.(I) and (II) of this rule if appropriate.

(I) Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

(II) During the past year we were required to conduct [INSERT NUMBER OF LEVEL 1ASSESSMENTS] Level 1 assessment(s). [INSERT NUMBER OF LEVEL 1 ASSESSMENTS] Level 1 assessment(s) were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

(III) During the past year [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] Level 2 assessments were required to be completed for our water system. [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] Level 2 assessments were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

(IV) Any system that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate:

(a) During the past year we failed to conduct all of the required assessment(s).

(b) During the past year we failed to correct all identified defects that were found during the assessment.

B. Any system required to conduct a Level 2 assessment due to an *E. coli* MCL violation must include in the report the text found in parts (2)(H)7.B.(I) and (II) of this rule, filling in the blanks accordingly and the text found in subparts (2)(H)7.B.(III) (a) and (b) of this rule, if appropriate.

(I) *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

(II) We were required to complete a Level 2 assessment because we found *E. coli* in our water system. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

(III) Any system that has failed to complete the required assessment or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate:

(a) We failed to conduct the required assessment.

(b) We failed to correct all sanitary defects that were identified during the assessment that we conducted.

C. If a system detects *E. coli* and has violated the *E. coli* MCL, in addition to completing the table as required in paragraph (D) 4. of this section, the system must include one or more of the following statements to describe any noncompliance, as applicable:

(I) We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample.

(II) We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample.

(III) We failed to take all required repeat samples following an *E. coli*-positive routine sample.

(IV) We failed to test for *E. coli* when any repeat sample tests positive for total coliform.

D. If a system detects *E. coli* and has not violated the *E. coli* MCL, in addition to completing the table as required in paragraph (D) 4., the system may include a statement that explains that although they have detected *E. coli*, they are not in violation of the *E. coli* MCL.

Appendix A to 10 CSR 60-8.030

Converting MCL Compliance Values for Consumer Confidence Reports
Key
AL = Action Level
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
MFL = million fibers per liter
mrem/year = millirems per year (a measure of radiation absorbed by the body)
NTU = Nephelometric Turbidity Units

pCi/L = picocuries per liter (a measure of radioactivity)
ppm = parts per million, or milligrams per liter (mg/L)
ppb = parts per billion, or micrograms per liter (µg/L)
ppt = parts per trillion, or nanograms per liter
ppq = parts per quadrillion, or picograms per liter
TT = Treatment Technique

Contaminant	MCL in compliance units (mg/L)	multiply by	MCL in CCR units	MCLG in CCR units
Microbiological Contaminants				
1. Total Coliform Bacteria ***Until March 31, 2016.** --- **Total Coliform Bacteria** ***Beginning April 1, 2016.**	(Systems that collect 40 or more samples per month) ≥5% of monthly samples are positive; (systems that collect fewer than 40 samples per month) 1 positive monthly sample. --- **TT**	----------	(Systems that collect 40 or more samples per month) ≥5% of monthly samples are positive; (systems that collect fewer than 40 samples per month) 1 positive monthly sample. --- **TT**	0 --- **0**
2. Fecal coliform and *E. coli*. ***Until March 31, 2016.** --- ***E. coli*.** ***Beginning April 1, 2016.**	0 --- **Routine and repeat samples are total coliform – positive and either is *E coli* – positive or system fails to take repeat samples following *E coli*- positive routine sample or system fails to analyze total coliform – positive repeat sample for *E coli*.**	----------	A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive. --- **Routine and repeat samples are total coliform – positive and either is *E coli* – positive or system fails to take repeat samples following *E coli*- positive routine sample or system fails to analyze total coliform – positive repeat sample for *E coli.***	0 --- **0**
3. Total organic carbon (ppm)	TT		TT	N/A
4. Turbidity	TT		TT (NTU)	N/A
5. Fecal TT Indicators	TT			N/A

(enterococci or coliphage)				
Radioactive Contaminants				
6. Beta/photon emitters	4 mrem/yr		4 mrem/yr	0
7. Alpha emitters	15 pCi/L		15 pCi/L	0
8. Combined radium	5 pCi/L		5 pCi/L	0
9. Uranium (pCi/L)	30µg/L		30	0
Inorganic Contaminants				
10. Antimony	.006	1000	6 ppb	6
11. Arsenic	0.05* 0.010**	1000	50 ppb* 10 ppb**	N/A* 0**
*These arsenic values are effective until Jan. 23, 2006. **These arsenic values are effective Jan. 23, 2006.				
12. Asbestos	7 MFL		7 MFL	7
13. Barium	2		2 ppm	2
14. Beryllium	0.004	1000	4 ppb	4
15. Bromate (ppb)	0.010	1000	10	0
16. Cadmium	0.005	1000	5 ppb	5
17. Chloramines (ppm)	MRDL=4		MRDL=4	4
18. Chlorine (ppm)	MRDL=4		MRDL=4	4
19. Chlorine dioxide (ppb)	MRDL=.8	1000	MRDL=.8	800
20. Chlorite (ppm)	1		1	0.8
21. Chromium	0.1	1000	100 ppb	100
22. Copper	AL=1.3		AL=1.3 ppm	1.3
23. Cyanide	0.2	1000	200 ppb	200
24. Fluoride	4		4 ppm	4
25. Lead	AL=.015	1000	AL=15 ppb	0
26. Mercury (inorganic)	0.002	1000	2 ppb	2
27. Nitrate (as Nitrogen)	10		10 ppm	10
28. Nitrite (as Nitrogen)	1		1 ppm	1
29. Selenium	0.05	1000	50 ppb	50
30. Thallium	0.002	1000	2 ppb	0.5
Synthetic Organic Contaminants Including Pesticides and Herbicides				
31. 2,4-D	0.07	1000	70 ppb	70
32. 2,4,5-TP [Silvex]	0.05	1000	50 ppb	50
33. Acrylamide			TT	0
34. Alachlor	0.002	1000	2 ppb	0
35. Atrazine	0.003	1000	3 ppb	3
36. Benzo(a)pyrene [PAH]	0.0002	1,000,000	200 ppt	0
37. Carbofuran	0.04	1000	40 ppb	40
38. Chlordane	0.002	1000	2 ppb	0
39. Dalapon	0.2	1000	200 ppb	200
40. Di(2-ethylhexyl)adipate	0.4	1000	400 ppb	400
41. Di(2-ethylhexyl)phthalate	0.006	1000	6 ppb	0
42. Dibromochloropropane	0.0002	1,000,000	200 ppt	0
43. Dinoseb	0.007	1000	7 ppb	7
44. Diquat	0.02	1000	20 ppb	20

45. Dioxin [2,3,7,8-TCDD]	0.00000003	1,000,000,000	30 ppq	0
46. Endothall	0.1	1000	100 ppb	100
47. Endrin	0.002	1000	2 ppb	2
48. Epichlorohydrin	TT		TT	0
49. Ethylene dibromide	0.00005	1,000,000	50 ppt	0
50. Glyphosate	0.7	1000	700 ppb	700
51. Heptachlor	0.0004	1,000,000	400 ppt	0
52. Heptachlor epoxide	0.0002	1,000,000	200 ppt	0
53. Hexachlorobenzene	0.001	1000	1 ppb	0
54. Hexachloro-cyclopentadiene	0.05	1000	50 ppb	50
55. Lindane	0.0002	1,000,000	200 ppt	200
56. Methoxychlor	0.04	1000	40 ppb	40
57. Oxamyl [Vydate]	0.2	1000	200 ppb	200
58. PCBs [Polychlorinated biphenyls]	0.0005	1,000,000	500 ppt	0
59. Pentachlorophenol	0.001	1000	1 ppb	0
60. Picloram	0.5	1000	500 ppb	500
61. Simazine	0.004	1000	4 ppb	4
62. Toxaphene	0.003	1000	3 ppb	0
Volatile Organic Contaminants				
63. Benzene	0.005	1000	5 ppb	0
64. Carbon tetrachloride	0.005	1000	5 ppb	0
65. Chlorobenzene	0.1	1000	100 ppb	100
66. o-Dichlorobenzene	0.6	1000	600 ppb	600
67. p-Dichlorobenzene	0.075	1000	75 ppb	75
68. 1,2-Dichloroethane	0.005	1000	5 ppb	0
69. 1,1-Dichloroethylene	0.007	1000	7 ppb	7
70. cis-1,2-Dichloroethylene	0.07	1000	70 ppb	70
71. trans-1,2-Dichloroethylene	0.1	1000	100 ppb	100
72. Dichloromethane	0.005	1000	5 ppb	0
73. 1,2-Dichloropropane	0.005	1000	5 ppb	0
74. Ethylbenzene	0.7	1000	700 ppb	700
75. Haloacetic Acids (HAA) (ppb)	0.060	1000	60	n/a
76. Styrene	0.1	1000	100 ppb	100
77. Tetrachloroethylene	0.005	1000	5 ppb	0
78. 1,2,4-Trichlorobenzene	0.07	1000	70 ppb	70
79. 1,1,1-Trichloroethane	0.2	1000	200 ppb	200
80. 1,1,2-Trichloroethane	0.005	1000	5 ppb	3
81. Trichloroethylene	0.005	1000	5 ppb	0
82. TTHMs [Total	0.10/.080	1000	100/80 ppb	n/a

trihalomethanes]				
83. Toluene	1		1 ppm	1
84. Vinyl Chloride	0.002	1000	2 ppb	0
85. Xylenes	10		10 ppm	10

Appendix B to 10 CSR 60-8.030
Regulated Contaminants

Key

AL=Action Level
MCL=Maximum Contaminant Level
MCLG=Maximum Contaminant Level Goal
MFL=million fibers per liter
mrem/year=millirems per year (a measure of radiation absorbed by the body)
NTU=Nephelometric Turbidity Units
pCi/L=picocuries per liter (a measure of radioactivity)
ppm=parts per million, or milligrams per liter (mg/L)
ppb=parts per billion, or micrograms per liter (µg/L)
ppt=parts per trillion, or nanograms per liter
ppq=parts per quadrillion, or picograms per liter
TT=Treatment Technique

Contaminant (units)	MCLG	MCL	Major sources in drinking water
Microbiological Contaminants			
1. Total Coliform Bacteria ***Until March 31, 2016.**	0	(Systems that collect 40 or more samples per month) ≥5% of monthly samples are positive; (systems that collect fewer than 40 samples per month) 1 positive monthly sample.	Naturally present in the environment.
---------- **Total Coliform Bacteria** ***Beginning April 1, 2016.**	------- **N/A**	---------- **TT**	---------- **Naturally present in the environment.**
2. Fecal coliform and *E. coli* ***Until March 31, 2016.**	0	A routine sample and a repeat sample	Human and animal fecal waste.

		are total coliform positive, and one is also fecal coliform or *E. coli* positive.	
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E. coli ***Beginning April 1, 2016**	**0**	**TT**	**Human and animal fecal waste.**
3. Total organic carbon (ppm)	N/A	TT	Naturally present in the environment.
4. Turbidity	N/A	TT	Soil runoff.
5. Fecal N/A Indicators (enterococci or coliphage)	TT		Human and animal fecal waste.
Radioactive Contaminants			
6. Beta/photon emitters (mrem/yr)	0	4	Decay of natural and man-made deposits.
7. Alpha emitters (pCi/L)	0	15	Erosion of natural deposits.
8. Combined radium (pCi/L)	0	5	Erosion of natural deposits.
9. Uranium	0	30	Erosion of natural deposits.
Inorganic Contaminants			
10. Antimony (ppb)	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
11. Arsenic (ppb)	*[N/A[1]]* 0*[2]*	*[50[1]]* 10*[2]*	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
[[1]These arsenic values are effective until Jan. 23, 2006. *[2]These arsenic values are effective Jan. 23, 2006.]*			
12. Asbestos (MFL)	7	7	Decay of asbestos cement water mains; Erosion of natural deposits.
13. Barium (ppm)	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
14. Beryllium (ppb)	4	4	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries.
15. Bromate (ppb)	0	10	By-product of drinking water disinfection.
16. Cadmium (ppb)	5	5	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints.
17. Chloramines (ppm)	MRDLG=4	MRDL=4	Water additive used to control microbes.
18. Chlorine (ppm)	MRDL=4	MRDL=4	Water additive used to control microbes
19. Chlorine dioxide (ppb)	MRDLG=800	MRDL=800	Water additive used to control microbes
20. Chlorite (ppm)	0.8	1	By-product of drinking water disinfection.
21. Chromium (ppb)	100	100	Discharge from steel and pulp mills;

			Erosion of natural deposits.
22. Copper (ppm)	1.3	AL=1.3	Corrosion of household plumbing systems; Erosion of natural deposits.
23. Cyanide (ppb)	200	200	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
24. Fluoride (ppm)	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
25. Lead (ppb)	0	AL=15	Corrosion of household plumbing systems; Erosion of natural deposits.
26. Mercury [inorganic] (ppb)	2	2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland.
27. Nitrate [as Nitrogen] (ppm)	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
28. Nitrite [as Nitrogen] (ppm)	1	1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
29. Selenium (ppb)	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
30. Thallium (ppb)	0.5	2	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories.
Synthetic Organic Contaminants **Including Pesticides and Herbicides**			
31. 2,4-D (ppb)	70	70	Runoff from herbicide used on row crops.
32. 2,4,5-TP [Silvex] (ppb)	50	50	Residue of banned herbicide.
33. Acrylamide	0	TT	Added to water during sewage/wastewater treatment.
34. Alachlor (ppb)	0	2	Runoff from herbicide used on row crops.
35. Atrazine (ppb)	3	3	Runoff from herbicide used on row crops.
36. Benzo(a)pyrene [PAH] (nanograms/l)	0	200	Leaching from linings of water storage tanks and distribution lines.
37. Carbofuran (ppb)	40	40	Leaching of soil fumigant used on rice and alfalfa.
38. Chlordane (ppb)	0	2	Residue of banned termiticide.
39. Dalapon (ppb)	200	200	Runoff from herbicide used on rights of way.
40. Di(2-ethylhexyl)adipate (ppb)	400	400	Discharge from chemical factories.
41. Di(2-ethylhexyl)phthalate (ppb)	0	6	Discharge from rubber and chemical factories.
42. Dibromochloropropane (ppt)	0	200	Runoff/leaching from soil fumigant

			used on soybeans, cotton, pineapples, and orchards.
43. Dinoseb (ppb)	7	7	Runoff from herbicide used on soybeans and vegetables.
44. Diquat (ppb)	20	20	Runoff from herbicide use.
45. Dioxin [2,3,7,8-TCDD] (ppq)	0	30	Emissions from waste incineration and other combustion; Discharge from chemical factories.
46. Endothall (ppb)	100	100	Runoff from herbicide use.
47. Endrin (ppb)	2	2	Residue of banned insecticide.
48. Epichlorohydrin	0	TT	Discharge from industrial chemical factories; An impurity of some water treatment chemicals.
49. Ethylene dibromide (ppt)	0	50	Discharge from petroleum refineries.
50. Glyphosate (ppb)	700	700	Runoff from herbicide use.
51. Heptachlor (ppt)	0	400	Residue of banned termiticide.
52. Heptachlor epoxide (ppt)	0	200	Breakdown of heptachlor.
53. Hexachlorobenzene (ppb)	0	1	Discharge from metal refineries and agricultural chemical factories.
54. Hexachlorocyclopentadiene (ppb)	50	50	Discharge from chemical factories.
55. Lindane (ppt)	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens.
56. Methoxychlor (ppb)	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, and livestock.
57. Oxamyl [Vydate] (ppb)	200	200	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes.
58. PCBs [Polychlorinated biphenyls] (ppt)	0	500	Runoff from landfills; Discharge of waste chemicals.
59. Pentachlorophenol (ppb)	0	1	Discharge from wood preserving factories.
60. Picloram (ppb)	500	500	Herbicide runoff.
61. Simazine (ppb)	4	4	Herbicide runoff.
62. Toxaphene (ppb)	0	3	Runoff/leaching from insecticide used on cotton and cattle.
Volatile Organic Contaminants			
63. Benzene (ppb)	0	5	Discharge from factories; Leaching from gas storage tanks and landfills.
64. Carbon tetrachloride (ppb)	0	5	Discharge from chemical plants and other industrial activities.
65. Chlorobenzene (ppb)	100	100	Discharge from chemical and agricultural chemical factories.
66. o-Dichlorobenzene (ppb)	600	600	Discharge from industrial chemical factories.
67. p-Dichlorobenzene (ppb)	75	75	Discharge from industrial chemical factories.
68. 1,2-Dichloroethane (ppb)	0	5	Discharge from industrial chemical factories.

69. 1,1-Dichloroethylene (ppb)	7	7	Discharge from industrial chemical factories.
70. cis-1,2-Dichloroethylene (ppb)	70	70	Discharge from industrial chemical factories.
71. trans-1,2-Dichloroethylene (ppb)	100	100	Discharge from industrial chemical factories.
72. Dichloromethane (ppb)	0	5	Discharge from pharmaceutical and chemical factories.
73. 1,2-Dichloropropane (ppb)	0	5	Discharge from industrial chemical factories.
74. Ethylbenzene (ppb)	700	700	Discharge from petroleum refineries.
75. Haloacetic Acids (HAA) (ppb)	n/a	60	By-product of drinking water disinfection.
76. Styrene (ppb)	100	100	Discharge from rubber and plastic factories; Leaching from landfills.
77. Tetrachloroethylene (ppb)	0	5	Discharge from factories and dry cleaners.
78. 1,2,4-Trichlorobenzene (ppb)	70	70	Discharge from textile-finishing factories.
79. 1,1,1-Trichloroethane (ppb)	200	200	Discharge from metal degreasing sites and other factories.
80. 1,1,2-Trichloroethane (ppb)	3	5	Discharge from industrial chemical factories.
81. Trichloroethylene (ppb)	0	5	Discharge from metal degreasing sites and other factories.
82. TTHMs [Total trihalomethanes] (ppb)	n/a	100/80	By-product of drinking water disinfection.
83. Toluene (ppm)	1	1	Discharge from petroleum factories.
84. Vinyl Chloride (ppb)	0	2	Leaching from PVC piping; Discharge from plastics factories.
85. Xylenes (ppm)	10	10	Discharge from petroleum factories; Discharge from chemical factories.

Appendix C to 10 CSR 60-8.030
Health Effects Language

Microbiological Contaminants

(1) Total Coliform. **Until March 31, 2016,** "Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems." **Beginning April 1, 2016, "Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in the water treatment or distribution. When this occurs, we are**

required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments."

(2) *[Fecal coliform/]**E.coli*. **Until March 31, 2016,** "Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems." **Beginning April 1, 2016, "*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems."**

(3) Total organic carbon. "Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs5). Drinking water containing these by-products in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer."

(4) Turbidity. "Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches."

(5) Fecal Indicators under the Ground Water Rule (*E. coli*, enterococci or coliphage). "Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems."

Radioactive Contaminants

*[5]***(6)** Beta/photon emitters. "Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer."

*[6]***(7)** Alpha emitters. "Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer."

*[7]***(8)** Combined Radium 226/228. "Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer."

*[8]***(9)** Uranium. "Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity."

Inorganic Contaminants

*[9]***(10)** Antimony. "Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar."

*[10]***(11)** Arsenic. "Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer."

*[11]***(12)** Asbestos. "Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps."

*[12]***(13)** Barium. "Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure."

*[13]***(14)** Beryllium. "Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions."

*[14]***(15)** Bromate. "Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer."

*[15]***(16)** Cadmium. "Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage."

*[16]***(17)** Chloramines. "Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia."

*[17]***(18)** Chlorine. "Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort."

*[18]***(19)** Chlorine dioxide. "Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia."

*[19]***(20)** Chlorite. "Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia."

*[20]***(21)** Chromium. "Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis**."**

*[21]***(22)** Copper. "Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor."

*[22]***(23)** Cyanide. "Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid."

*[23]***(24)** Fluoride. "Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums."

*[24]***(25)** Lead. "Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show

slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure."

*[25]***(26)** Mercury (inorganic). "Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage."

*[26]***(27)** Nitrate. "Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome."

*[27]***(28)** Nitrite. "Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome."

*[28]***(29)** Selenium. "Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation."

*[29]***(30)** Thallium. "Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver."

Synthetic Organic Contaminants Including Pesticides and Herbicides

*[30]***(31)** 2,4-D. "Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands."

*[31]***(32)** 2,4,5-TP (Silvex). "Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems."

*[32]***(33)** Acrylamide. "Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer."

*[33]***(34)** Alachlor. "Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer."

*[34]***(35)** Atrazine. "Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties."

*[35]***(36)** Benzo(a)pyrene (PAH). "Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer."

*[36]***(37)** Carbofuran. "Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems."

*[37]***(38)** Chlordane. "Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer."

*[38]***(39)** Dalapon. "Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes."

*[39]***(40)** Di(2-ethylhexyl)adipate. “Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement, or possible reproductive difficulties.”

*[40]***(41)** Di(2-ethylhexyl)phthalate. “Some people who drink water containing di(2-ethylhexyl)phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.”

*[41]***(42)** Dibromochloropropane (DBCP). “Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.”

*[42]***(43)** Dinoseb. “Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.”

[43](**44**) Dioxin (2,3,7,8-TCDD). “Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.”

*[44]***(45)** Diquat. “Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.”

*[45]***(46)** Endothall. “Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.”

*[46]***(47)** Endrin. “Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.”

*[47]***(48)** Epichlorohydrin. “Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.”

*[48]***(49)** Ethylene dibromide. “Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.”

*[49]***(50)** Glyphosate. “Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.”

*[50]***(51)** Heptachlor. “Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.”

*[51]***(52)** Heptachlor epoxide. “Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.”

*[52]***(53)** Hexachlorobenzene. “Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.”

*[53]***(54)** Hexachlorocyclopentadiene. “Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.”

*[54]***(55)** Lindane. “Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.”

*[55]***(56)** Methoxychlor. “Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.”

*[56]***(57)** Oxamyl (Vydate). “Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.”

*[57]***(58)** PCBs (Polychlorinated biphenyls). “Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.”

*[58]***(59)** Pentachlorophenol. “Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.”

*[59]***(60)** Picloram. “Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.”

*[60]***(61)** Simazine. “Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.”

*[61]***(62)** Toxaphene. “Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.”

Volatile Organic Contaminants

*[62]***(63)** Benzene. “Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.”

*[63]***(64)** Carbon Tetrachloride. “Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.”

*[64]***(65)** Chlorobenzene. “Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.”

*[65]***(66)** o-Dichlorobenzene. “Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.”

*[66]***(67)** p-Dichlorobenzene. “Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.”

*[67]***(68)** 1,2-Dichloroethane. “Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.”

*[68]***(69)** 1,1-Dichloroethylene. “Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.”

*[69]***(70)** cis-1,2-Dichloroethylene. “Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.”

*[70]***(71)** trans-1,2-Dicholoroethylene. “Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.”

*[71]***(72)** Dichloromethane. “Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.”

*[72]***(73)** 1,2-Dichloropropane. "Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer."

*[73]***(74)** Ethylbenzene. "Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys."

*[74]***(75)** Haloacetic Acids (HAA). "Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer."

*[75]***(76)** Styrene. "Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system."

*[76]***(77)** Tetrachloroethylene. "Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer."

*[77]***(78)** 1,2,4-Trichlorobenzene. "Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands."

*[78]***(79)** 1,1,1-Trichloroethane. "Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system."

*[79]***(80)** 1,1,2-Trichloroethane. "Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems."

*[80]***(81)** Trichloroethylene. "Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer."

*[81]***(82)** TTHMs (Total Trihalomethanes). "Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer."

*[82]***(83)** Toluene. "Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver."

*[83]***(84)** Vinyl Chloride. "Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer."

*[84]***(85)** Xylenes. "Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system."

AUTHORITY: section 640.100, RSMoSupp. 2011, and section 640.125.1, RSMo 2000. Original rule filed July 1, 1999, effective March 30, 2000. Amended: Filed March 17, 2003, effective Nov. 30, 2003. Amended: Filed Feb. 27, 2009, effective Oct. 30, 2009. Amended: Filed April 14, 2010, effective Dec. 30, 2010. Amended: Filed Oct. 17, 2011, effective May 30, 2012. Amended: Filed Aug. 17, 2015.*

**Original authority: 640.100, RSMo 1939, amended 1978, 1981, 1982, 1988, 1989, 1992, 1993, 1995, 1996, 1998, 1999, 2002, 2006 and 640.125, RSMo 1978, amended 1998.*

PUBLIC ENTITY COSTS: This amendment is anticipated to cost state agencies and political subdivisions less than $500 in the aggregate.

PRIVATE ENTTY COSTS: This amendment is anticipated to cost private entities less than $500 in the aggregate.

NOTICE OF PUBLIC HEARING AND NOTICE TO SUBMIT COMMENTS: The Department of Natural Resources Public Drinking Water Branch will hold a public hearing on this proposed rule at 10:00 a.m. on October16, 2015 at the Lewis and Clark State Office Building, 1101 Riverside Drive, Jefferson City, Missouri. Any interested person may comment during the public hearing in support of or in opposition to the proposed rule. Written comments postmarked or received by October 19, 2015 will also be accepted. Written comments must be mailed to: Scott Weckenborg, MDNR Public Drinking Water Branch, P.O. Box 176, Jefferson City, MO 65102, or hand-delivered to the Lewis and Clark State Office Building, 1101 Riverside Drive, Jefferson City, Missouri.