

The Texas Commission on Environmental Quality (commission) adopts amendments to §§290.272 - 290.275. Sections 290.272, 290.273, and 290.275 are adopted *with changes* to the proposed text as published in the October 1, 2004, issue of the *Texas Register* (29 TexReg 9332). Section 290.274 is adopted *without change* to the proposed text and will not be republished.

#### BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULES

The primary purpose of the adopted amendments is to incorporate federal standards under 40 Code of Federal Regulations (CFR) Part 141, Subpart O, Consumer Confidence Reports, as promulgated by the United States Environmental Protection Agency (EPA) in the December 7, 2000, January 22, 2001, and March 25, 2003, issues of the *Federal Register* (65 FR 76708, 66 FR 6976, and 68 FR 14501). The adopted amendments include updates to the information each community water system must provide to its customers regarding uranium and arsenic in the drinking water and other updates to conform with the federal regulations under 40 CFR Part 141, Subpart O. Certain administrative changes are also adopted to make the rules consistent with Texas Register style and formatting requirements.

The federal Safe Drinking Water Act, §1413 establishes requirements that states must meet to maintain primary enforcement responsibility (i.e., primacy) for their public water systems, including adopting drinking water rules that are no less stringent than the corresponding federal regulations. This rulemaking is necessary in order to obtain federal approval to administer the arsenic and radionuclide drinking water standards and related notification and reporting requirements.

#### SECTION BY SECTION DISCUSSION

The commission adopts amendments to Subchapter H, Consumer Confidence Reports, §§290.272 - 290.275 to incorporate provisions of the previously mentioned federal rules. The commission also adopts administrative changes throughout these sections to be consistent with Texas Register requirements and other agency rules.

The commission amends §290.272(a)(3) to provide that the required brief summary in the report concerning a system's susceptibility to potential sources of contamination must contain language that is provided by the executive director, or alternatively, language that has been written by a water system official and approved by the executive director. The adopted change involves the addition of the phrase "and approved by the executive director."

The commission adds §290.272(b)(1)(C) to incorporate the provisions of 40 CFR §141.153(c)(3)(iii) by adding a definition for "Maximum residual disinfectant level goal (MRDLG)," which is defined as "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." The commission adds §290.272(b)(1)(D) to incorporate the provisions of 40 CFR §141.153(c)(3)(iv) by adding a definition for "Maximum residual disinfectant level (MRDL)," which is defined as "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."

The commission amends §290.272(c)(1)(A) to include a reference to reporting the MRDL, consistent with 40 CFR §141.153(d)(1)(i). The commission amends §290.272(c)(4)(I)(ii) to reference to MRDLs,

consistent with 40 CFR §141.153(d)(6). The commission also amends §290.272(c)(4)(D)(ii) - (iv) to change the first word in each clause from “If” to “When.” The commission amends §290.272(g)(3) to update the language by changing the phrase “non-English and non-Spanish speaking” to “limited English proficiency.”

In response to comment, the commission amends §290.272(c)(4)(D)(iv) to require that rounding of results take place after multiplication rather than before.

The commission amends §290.273(b) to include the transition level and language for reporting arsenic levels consistent with the requirements of 40 CFR §141.154(b)(1). The commission amends §290.273(f) to correct the reference to the language regarding compliance determination for trihalomethanes and to change the phrase “an annual average” to “a running annual average,” consistent with 40 CFR §141.133(b)(1)(i).

In response to comment, the commission amends §290.273(b) to add the requirement that community water systems with arsenic levels between 0.010 milligrams per liter (mg/L) and 0.05 mg/L use the health effects language of §290.275(3), Appendix C (10).

The commission amends §290.274(a) to remove redundant language that is contained more appropriately in §290.272(c)(3).

The commission amends §290.274(c) to adopt the correct date for submission of consumer confidence reports (CCRs) to the executive director, as identified by EPA in the most recent review of commission rules.

The commission adds §290.274(i) to incorporate the mailing waivers of 40 CFR §141.155(g). This provision gives the executive director the authority to allow community public water systems that serve 500 or fewer people to post, in an appropriate location, notice of the availability of the CCR upon request, which saves these systems significant mailing costs.

In response to comment, the commission amends the footnotes to the tables contained in §290.275(1) and (2) to correctly reference the effective date of the arsenic maximum contaminant level as January 23, 2006. In response to comment, the commission also amends §290.275(1) and (2) to change the units of all levels of uranium referenced in the rule to micrograms per liter ( $\mu\text{g}/\text{L}$ ).

The commission amends Subchapter H, Appendix A in §290.275(1) to insert the language of 40 CFR Subpart O, Appendix A related to converting maximum contaminant level (MCL) compliance values for CCRs for total organic carbon as numeral 3 on the table. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix A to insert the language of 40 CFR Subpart O, Appendix A related to converting MCL compliance values for CCRs for uranium as numeral 8 on the table. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix A to insert the language of 40 CFR Subpart O, Appendix A related to converting MCL compliance values for CCRs for bromate as numeral 14 on the table. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix A to insert the language of 40 CFR Subpart O, Appendix A related to converting MRDL compliance values for CCRs for chloramines as numeral 16 on the table. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix A to insert the language of 40 CFR Subpart O, Appendix A related to converting MRDL compliance values for CCRs for chlorine as numeral 17 on the table. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix A to insert the language of 40 CFR Subpart O, Appendix A related to converting MRDL compliance values for CCRs for chlorine dioxide as numeral 18 on the table. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix A to insert the language of 40 CFR Subpart O, Appendix A related to converting MCL compliance values for CCRs for chlorite as numeral 19 on the table. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix A to insert the language of 40 CFR Subpart O, Appendix A related to converting MCL compliance values for CCRs for haloacetic acids (group of five) as numeral 74 on the table. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends footnote 1 of Subchapter H, Appendix A to insert the language of 40 CFR Subpart O, Appendix A related to the effective date of the arsenic MCL.

The commission amends Subchapter H, Appendix B in §290.275(2) to remove bracketed references to a page of the *Federal Register* in which the consumer confidence rules were originally published, because this page number has no regulatory meaning.

The commission amends Subchapter H, Appendix B to insert the language of 40 CFR Subpart O, Appendix B relating to the source of total organic carbon contamination of drinking water as numeral 3. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix B to insert the language of 40 CFR Subpart O, Appendix B relating to the source of uranium contamination of drinking water as numeral 8. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix B to insert the language of 40 CFR Subpart O, Appendix B relating to the source of bromate contamination of drinking water as numeral 14. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix B to insert the language of 40 CFR Subpart O, Appendix B relating to the source of chloramine in drinking water as numeral 16. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix B to insert the language of 40 CFR Subpart O, Appendix B relating to the source of chlorine in drinking water as numeral 17. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix B to insert the language of 40 CFR Subpart O, Appendix B relating to the source of chlorine dioxide in drinking water as numeral 18. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix B to insert the language of 40 CFR Subpart O, Appendix B relating to the source of chlorite contamination of drinking water as numeral 19. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends Subchapter H, Appendix B to insert the language of 40 CFR Subpart O, Appendix B relating to the source of haloacetic acid contamination of drinking water as numeral 74. Subsequent table elements are renumbered to maintain the table sequence.

The commission amends footnote 1 of Subchapter H, Appendix B to insert the language of 40 CFR Subpart O, Appendix B related to the effective date of the arsenic MCL.

The commission amends Subchapter H, Appendix C (3) in §290.275(3) to insert the health effects language of 40 CFR Subpart O, Appendix B relating to total organic carbon. Subsequent appendix elements are renumbered accordingly.

The commission amends Subchapter H, Appendix C (8) to insert the health effects language of 40 CFR Subpart O, Appendix B relating to uranium. Subsequent appendix elements are renumbered accordingly.

The commission amends Subchapter H, Appendix C (14) to insert the health effects language of 40 CFR Subpart O, Appendix B relating to bromate. Subsequent appendix elements are renumbered accordingly.

The commission amends Subchapter H, Appendix C (16) to insert the health effects language of 40 CFR Subpart O, Appendix B relating to chloramines. Subsequent appendix elements are renumbered accordingly.

The commission amends Subchapter H, Appendix C (17) to insert the health effects language of 40 CFR Subpart O, Appendix B relating to chlorine. Subsequent appendix elements are renumbered accordingly.

The commission amends Subchapter H, Appendix C (18) to insert the health effects language of 40 CFR Subpart O, Appendix B relating to chlorine dioxide. Subsequent appendix elements are renumbered accordingly.

The commission amends Subchapter H, Appendix C (19) to insert the health effects language of 40 CFR Subpart O, Appendix B relating to chlorite. Subsequent appendix elements are renumbered accordingly.

The commission amends Subchapter H, Appendix C (74) to insert the health effects language of 40 CFR Subpart O, Appendix B relating to haloacetic acids. Subsequent appendix elements are renumbered accordingly.

#### FINAL REGULATORY IMPACT ANALYSIS DETERMINATION

The commission reviewed the adopted rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the rulemaking does not meet the definition of a “major environmental rule” as defined in that statute. A “major environmental rule” means a rule, the specific intent of which, is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The adopted amendments to Chapter 290 provide requirements concerning notification and reporting of arsenic and certain radionuclide levels in drinking water supplied by community water systems, thus providing the opportunity for a reduction of risks to human health.

However, the adopted amendments to Chapter 290 do not adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state because they apply only to a limited number of water systems and the requirements relate to notification and reporting requirements, which are not burdensome.

Furthermore, the adopted rulemaking does not meet any of the four applicability requirements listed in Texas Government Code, §2001.0225(a). This section only applies to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law. This rulemaking does not meet any of these four applicability requirements because this rulemaking: 1) does not exceed any standard set by federal law for notification and reporting of levels of arsenic or naturally occurring radioactive material in public drinking water systems and is adopted to be consistent with federal rules; 2) does not exceed the requirements of state law under Texas Health and Safety Code, Chapter 341, Subchapter C; 3) does not exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement any state and federal program on arsenic or radionuclides in public drinking water systems, but rather is proposed to be consistent with federal rules in order to allow the state to maintain its authority to implement the federal Safe Drinking Water Act; and 4) is not adopted solely under the general powers of the agency,

but rather specifically under Texas Health and Safety Code, §341.031, which allows the commission to adopt and enforce rules to implement the federal Safe Drinking Water Act, as well as the other general powers of the agency.

#### TAKINGS IMPACT ASSESSMENT

The commission evaluated the adopted amendments and performed an assessment of whether the rulemaking constitutes a takings under Texas Government Code, Chapter 2007. The primary purpose of the adopted amendments is to provide requirements concerning notification and reporting of arsenic and certain radionuclide levels in drinking water supplied by community water systems, as promulgated by EPA in the December 7, 2000, January 22, 2001, and March 25, 2003, issues of the *Federal Register* (65 FR 76708, 66 FR 6976, and 68 FR 14501).

The adopted amendments substantially advance this stated purpose by providing notification requirements concerning the contents of reports providing information on the source of water delivered and additional health information. Promulgation and enforcement of the adopted amendments would not affect private real property, which is the subject of the rules primarily because they amend and expand existing drinking water standards to authorize regulation of arsenic and radionuclides. The adopted amendments are not anticipated to affect private real property because they do not restrict or limit an owner's right to the property that would otherwise exist in the absence of this adopted rulemaking. The rulemaking simply requires community water systems to comply with notification and reporting requirements. Furthermore, the adopted rulemaking makes state standards for arsenic and

radionuclides notification and reporting consistent with existing federal standards. Therefore, the adopted amendments do not constitute a takings under Texas Government Code, Chapter 2007.

#### CONSISTENCY WITH THE COASTAL MANAGEMENT PROGRAM

The commission reviewed this rulemaking and found that it is not a rulemaking subject to the Texas Coastal Management Program (CMP) because the rulemaking is neither identified in the Coastal Coordination Act Implementation rules, 31 TAC §505.11, nor will it affect any action or authorization identified in §505.11. Therefore, the rulemaking is not subject to the CMP. The purpose of the adopted amendments is to bring community water systems into compliance with certain requirements concerning radionuclide and arsenic notification and reporting. The rulemaking does not govern air pollutant emissions, on-site sewage disposal systems, or underground storage tanks, which would make it subject to the CMP under §505.11(b)(2). The rulemaking also does not govern or authorize actions listed in §505.11(a)(6).

#### PUBLIC COMMENT

The public comment period closed on November 1, 2004. The agency received written comments from EPA. The commenter had suggestions for changes to portions of the proposed rules.

#### RESPONSE TO COMMENTS

EPA commented that the proposal did not implement 40 CFR §141.154(f) relating to the requirement that community water systems with arsenic levels between 0.010 mg/L and 0.05 mg/L use the EPA-required health effects language.

**The commission agrees with this comment and amends §290.273(b) to include that requirement.**

EPA commented that the effective date for the revised arsenic MCL was referenced incorrectly in the proposal.

**The commission agrees with this comment and amends the footnotes to the tables contained in §290.275(1) and (2) to correctly reference the effective date of the arsenic MCL as January 23, 2006.**

EPA commented that §290.272(c)(4)(D)(iv) should be revised to require that rounding of results take place after multiplication rather than before.

**The commission agrees with this comment and has revised the language accordingly.**

EPA commented that all levels of uranium referenced in the rules should have units of  $\mu\text{g/L}$ , rather than picocuries per liter.

**The commission agrees and has revised §290.275(1) and (2) to reflect these units.**

## **SUBCHAPTER H: CONSUMER CONFIDENCE REPORTS**

### **§§290.272 - 290.275**

#### **STATUTORY AUTHORITY**

The amendments are adopted under Texas Water Code, §5.102, which establishes the commission's general authority necessary to carry out its jurisdiction; §5.103, which establishes the commission's general authority to adopt rules; §5.105, which establishes the commission's authority to set policy by rule; and Texas Health and Safety Code, §341.031, which allows the commission to adopt rules to implement the federal Safe Drinking Water Act, 42 United States Code, §§300f - 300j-26.

#### **§290.272. Content of the Report.**

(a) Information on the source of the water delivered must be included in the report.

(1) Each report must identify the source(s) of the water delivered by the community water system by providing information on the type of the water (such as surface water or groundwater) and any commonly used name and location of the body(ies) of water.

(2) If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In the reports, systems should highlight significant sources of contamination in the source water area if they have readily available information.

(3) If a system has received a source water assessment from the executive director, the report must include a brief summary of the system's susceptibility to potential sources of contamination using language provided by the executive director or written by a water system official and approved by the executive director.

(b) The following explanations must be included in the annual report.

(1) Each report must contain the following definitions.

(A) **Maximum contaminant level goal (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.

(B) **Maximum contaminant level (MCL)** - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to maximum contaminant level goals as feasible using the best available treatment technology.

(C) **Maximum residual disinfectant level goal (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.

(D) **Maximum residual disinfectant level (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.

(2) The following terms and their descriptions must be included when they appear in the report:

(A) **MFL** - million fibers per liter (a measure of asbestos);

(B) **mrem/year** - millirems per year (a measure of radiation absorbed by the body);

(C) **NTU** - nephelometric turbidity units (a measure of turbidity);

(D) **pCi/L** - picocuries per liter (a measure of radioactivity);

(E) **ppb** - parts per billion, or micrograms per liter ( $\mu\text{g/L}$ );

(F) **ppm** - parts per million, or milligrams per liter ( $\text{mg/L}$ );

(G) **ppt** - parts per trillion, or nanograms per liter ( $\text{ng/L}$ ); and

(H) **ppq** - parts per quadrillion, or picograms per liter (pg/L).

(3) A report for a community water system operating under a variance or an exemption of the Safe Drinking Water Act must include a description of the variance or the exemption granted under §290.102(b)(4) of this title (relating to General Applicability).

(4) A report that contains data on a contaminant for which the United States Environmental Protection Agency (EPA) has set a treatment technique or an action level must include, depending on the contents of the report, the following definitions.

(A) **Treatment technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.

(B) **Action level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

(c) Information on detected contaminants.

(1) This subsection specifies the requirements for information to be included in each report for detected contaminants subject to mandatory monitoring, excluding *Cryptosporidium*.

Mandatory monitoring is required for:

(A) regulated contaminants subject to an MCL, MRDL, action level, or treatment technique;

(B) unregulated contaminants for which monitoring is required by 40 Code of Federal Regulations (CFR) §141.40, relating to Unregulated Contaminants and found in §290.275(4) of this title (relating to Appendices A - D); and

(C) disinfection by-products or microbial contaminants for which monitoring is required by 40 CFR §141.142, relating to Information Collection Requirements (ICR) for Public Water System - Disinfection by-product and related monitoring, and 40 CFR §141.143, relating to Microbial Monitoring Requirements.

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

(3) The data must be derived from data collected to comply with EPA and the commission monitoring and analytical requirements during the previous calendar year, except when a system is allowed to monitor for regulated contaminants less often than once per year. In that case, 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 is from the most recent testing done in accordance with the regulations. The report does not need to include data that is older than five years.

Furthermore, results of monitoring in compliance with 40 CFR §141.142 and §141.143 need only be included for five years from the date of the 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 under §290.275 of this title, the table(s) must contain:

(A) the MCLs for those contaminants expressed as a number equal to or greater than 1.0 (as provided under §290.275 of this title);

(B) the MCLGs for those contaminants expressed in the same units as the MCLs (as provided for under §290.275 of this title);

(C) if there is no MCL for a detected contaminant, the treatment technique or specific action level applicable to that contaminant; and

(D) for contaminants subject to an MCL, except turbidity and total coliforms, the highest contaminant level used to determine compliance with National Primary Drinking Water Regulations and the range of detected levels.

(i) For contaminants subject to MCLs, except turbidity and total coliforms, when sampling takes place once per year or less often, the table(s) must contain the highest

detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.

(ii) When sampling takes place more than once per year at each sampling point, the table(s) must contain the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL.

(iii) When compliance with any MCL is determined on a system-wide basis by calculating a running annual average of all samples at all sampling points, the table(s) must include the average and range of detections expressed in the same units as the MCL.

(iv) When the executive director allows the rounding of results to determine compliance with the MCL, rounding should be done after multiplying the results by the factor listed under §290.275 of this title.

(E) When turbidity is reported under §290.111 of this title (relating to Turbidity), the table(s) must contain the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in that section for the filtration technology being used. The report should include an explanation of the reasons for measuring turbidity.

(F) When lead and copper are reported, the table(s) must contain the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level.

(G) When total coliform is reported, the table(s) must contain either the highest monthly number of positive samples for systems collecting fewer than 40 samples per month or the highest monthly percentage of positive samples for systems collecting at least 40 samples per month.

(H) When fecal coliform is reported, the table(s) must contain the total number of positive samples.

(I) The table(s) must contain information on the likely source(s) of detected contaminants based on the operator's knowledge. Specific information regarding contaminants may be available in sanitary surveys or source water assessments and should be used when available. If the operator lacks specific information on the likely source, the report must include one or more typical sources most applicable to the system for any particular contaminant listed under §290.275 of this title.

(i) 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(s) must contain a separate column for each service area, and the report must identify each separate distribution system. Systems may produce separate reports tailored to include data for each service area.

(ii) The table(s) must clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques. The report must contain a clear and readily understandable explanation of the violation. The explanation must include the length of the violation, the potential adverse health effects, and the actions taken by the system to address the violation. To describe the potential health effects, the system must use the relevant language contained under §290.275 of this title.

(5) For detected unregulated contaminants found under §290.275 of this title, for which monitoring is required (except *Cryptosporidium*), the table(s) must contain the average and range of concentrations at which the contaminant was detected. The report must include the following explanation: “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.”

(d) Information on *Cryptosporidium*, radon, and other contaminants.

(1) If the system has performed any monitoring for *Cryptosporidium*, the report must include a summary of the results of any detections and an explanation of the significance of the results.

(2) If the system has performed any monitoring for radon, which indicates that radon may be present in the finished water, the report must include the results of the monitoring and an explanation of the significance of the results.

(3) If the system has performed additional monitoring, which indicates the presence of other contaminants in the finished water, the executive director strongly encourages systems to report any results which may indicate a health concern. To determine if the results may indicate a health concern, the executive director recommends that systems find out if the EPA has proposed a standard in the *National Primary Drinking Water Regulations* (NPDWR) or issued a health advisory for any particular contaminant. This information may be obtained by calling the Safe Drinking Water Hotline at (800) 426-4791. The executive director considers detections that are above a proposed MCL or health advisory level to indicate possible health concerns. For such contaminants, the executive director recommends that the report include the results of the monitoring and an explanation of the significance of the results. The explanation should note the existence of a health advisory or a proposed regulation.

(e) Compliance with NPDWR. In addition to the requirements in subsection (c)(4)(I)(ii) of this section, the report must note any violation that occurred during the year covered by the report of a requirement listed in paragraphs (1) - (7) of this subsection.

(1) The report must include a clear and readily understandable explanation of each violation of monitoring and reporting of compliance data and explain any adverse health effects and steps the system has taken to correct the violation.

(2) The report must include a clear and readily understandable explanation of each violation of filtration and disinfection prescribed by Subchapter F of this chapter (relating to Drinking

Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water Systems) and explain any adverse health effects and steps the system has taken to correct the violation. This applies both to systems that have failed to install adequate filtration, disinfection equipment, or processes, and to systems that have had a failure of such equipment or processes, each of which constitutes a violation. In either case, the report must include the following language as part of the explanation of potential adverse health effects: “Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.”

(3) The report must include a clear and readily understandable explanation of each violation of the lead and copper control requirements prescribed by §290.117 of this title (relating to Regulation of Lead and Copper). For systems that fail to take one or more actions prescribed by §290.117(g), (h), and (i) of this title, the report must include the applicable health effects language of §290.275(3) of this title for lead, copper, or both and the steps the system has taken to correct the violation.

(4) The report must include a clear and readily understandable explanation of each violation of treatment techniques for Acrylamide and Epichlorohydrin prescribed by §290.107 of this title (relating to Organic Contaminants). If a system violates these requirements, the report must include the relevant health effects language from §290.275 of this title and the steps the system has taken to correct the violation.

(5) The report must include a clear and readily understandable explanation of each violation of recordkeeping of compliance data and explain any adverse health effects and steps the system has taken to correct the violation.

(6) The report must include a clear and readily understandable explanation of each violation of special monitoring requirements for unregulated contaminants and special monitoring for sodium as prescribed by 40 CFR §141.40 and §141.41 and explain any adverse health effects and steps the system has taken to correct the violation.

(7) The report must include a clear and readily understandable explanation of each violation of the terms of a variance, exemption, administrative order, or judicial order and explain any adverse health effects and steps the system has taken to correct the violation.

(f) Variances and exemptions. If a system is operating under the terms of a variance or exemption issued under §290.102(b) of this title, the report must contain:

(1) an explanation of the variance or exemption;

(2) the date on which the variance or exemption was issued and on which it expires;

(3) a brief status report on the steps the system is taking, such as installing treatment processes or finding alternative sources of water, to comply with the terms and schedules of the variance or exemption; and

(4) a notice of any opportunity for public input as the review or renewal of the variance or exemption.

(g) Additional information.

(1) The report must contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water (including bottled water). This explanation may include the language contained within subparagraphs (A) - (C) of this paragraph, or systems may include their own comparable language. The report must include the language of subparagraphs (D) and (E) of this paragraph.

(A) 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.

(B) 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 might have 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 storm water runoff, and septic systems; and

(v) radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

(C) In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

(D) Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact the system's business office.

(E) 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 EPA's Safe Drinking Water Hotline at (800) 426-4791.

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

(3) Each English language report must include the following statement in a prominent place on the first page: "Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (XXX) XXX-XXXX." In addition to this statement in Spanish, for communities with a large proportion of limited English proficiency residents, as determined by the executive director, the report must contain information in the appropriate language(s) regarding the importance of the report or 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 about opportunities for public participation in decisions that may affect the quality of the water (e.g., time and place of regularly scheduled board meetings). Investor-owned utilities are encouraged to conduct public meetings, but must include a phone number for public input.

(5) The systems may include such additional information for public education consistent with, and not detracting from, the purposes of the report.

(6) Systems that use an interconnect or emergency source to augment the drinking water supply during the calendar year of the report must provide the source of the water, the length of time used, an explanation of why it was used, and whom to call for the water quality information.

**§290.273. Required Additional Health Information.**

(a) All reports must prominently display the following language on the first page of the consumer confidence report or in bold print on the second page of the report: “You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immunocompromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician

or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at (800) 426-4791.”

(b) A system that detects arsenic levels above 5 micrograms per liter but below the maximum contaminant level (MCL) shall include in its report a short informational statement about arsenic using the following language: “While your drinking water meets EPA’s standard for arsenic, it does contain low levels of arsenic. EPA’s standard balances the current understanding of arsenic’s possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.” Beginning in the report that is due by July 1, 2002, and ending January 22, 2006, a system that detects arsenic above 0.010 milligrams per liter (mg/L) and up to and including 0.05 mg/L must include the arsenic health effects language of §290.275(3) of this title (relating to Appendices A - D), Appendix C, paragraph (10).

(c) A system that detects nitrate at levels above 5 mg/L, but below the MCL shall include a short informational statement about the impacts of nitrate on children using the following language: “Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider.”

(d) Systems collecting 20 or more samples that detect lead above the action level in greater than 5.0% of homes sampled shall include a short informational statement about the special impact of lead on children using the following language: “Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at the homes in the community as a result of materials used in your home’s plumbing. If you are concerned about elevated lead levels in your home’s water, you may wish to have your water tested and flush your tap for 30 seconds to two minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at (800) 426-4791.”

(e) Any water system subject to any or all of subsections (b) - (d) of this section may seek approval from the executive director to write its own alternative educational informational statement.

(f) Public water systems that detect total trihalomethanes above 0.080 mg/L as a running annual average shall include health effects language provided in §290.275(3) of this title (relating to Appendices A - D), Appendix C, paragraph (81).

**§290.274. Report Delivery and Recordkeeping.**

(a) Except as provided in subsection (i) of this section, each community water system shall mail or otherwise directly deliver one copy of the report to each bill paying customer by July 1 of each year. Each new community water system shall deliver its first report by July 1 of the year after its first

full calendar year in operation and annually thereafter. In addition, each community water system shall provide a copy of the report to each new customer upon request.

(b) In addition to delivering a report to each customer, the system shall make a good-faith effort to reach consumers who do not get water bills, using means recommended by the executive director. An adequate good-faith effort should be tailored to the consumers who are served by the system but are not bill-paying customers, such as renters or workers. A good-faith effort to reach such consumers should include a mix of methods appropriate to the particular system such as: posting the reports on the Internet; mailing to postal patrons in metropolitan areas; advertising the availability of the report in the news media; publication in a local newspaper; posting in public places such as cafeterias or lunchrooms of public buildings; delivery of multiple copies for distribution for single-billed customers such as apartment buildings or large private employers; and delivery to community organizations.

(c) Each community water system shall certify to the executive director that the report has been distributed and that the information in the report is correct and consistent with the compliance monitoring data previously submitted to the executive director. This certification and a copy of the report must be mailed to the executive director by July 1 of each year.

(d) Each community water system shall deliver the report to any other agency or clearinghouse identified by the executive director no later than the date the system is required to distribute the report to its customers.

(e) Each community water system shall make its report available to the public upon request.

(f) Each community water system serving 100,000 or more people shall post its current year's report to a publicly accessible site on the Internet.

(g) Any system providing water to a community water system shall deliver the applicable information required by §290.272 of this title (relating to the Content of the Report) to the receiving systems by April 1 and shall certify to the executive director that the required information has been delivered. This certification must be delivered to the executive director by May 1 of each year.

(h) Any system subject to this subchapter shall retain copies of its consumer confidence reports for no less than five years.

(i) The executive director may waive the mailing requirement of subsection (a) of this section for a community water system serving 500 or fewer persons provided that the system provides notice at least once per year by July 1 to its customers by mail, door-to-door delivery, or by posting in an appropriate location that the report is available upon request.

**§290.275. Appendices A - D.**

The following appendices are integral components of the subchapter.

(1) Appendix A - Converting MCL Compliance Values for Consumer Confidence Reports.

Figure: 30 TAC §290.275(1)

**Appendix A - Converting Maximum Contaminant Level 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 ( $\mu\text{g/L}$ )
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
<b>Microbiological Contaminants</b>				
1. Total Coliform Bacteria			For systems that collect 40 or more samples per month - Presence of coliform bacteria in more than 5% of monthly samples.	0
			For systems that collect fewer than 40 samples per month - Presence of coliform bacteria in more than 1 sample per month.	
2. Fecal coliform and E. coli			A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.	0
3. Total organic carbon			TT (ppm)	n/a
4. Turbidity			TT (NTU)	n/a
<b>Radioactive Contaminants</b>				
5. Beta/photon emitters	4 mrem/yr		4 mrem/yr	0
6. Alpha emitters	15 pCi/L		15 pCi/L	0
7. Combined radium	5 pCi/L		5 pCi/L	0
8. Uranium	30 µg/L		30 µg/L	0

Contaminant	MCL in compliance units (mg/L)	multiply by . . .	MCL in CCR units	MCLG in CCR units
<b>Inorganic Contaminants</b>				
9. Antimony	.006	1000	6 ppb	6
10. Arsenic	.05/.010 <sup>1</sup>	1000	50/10 <sup>1</sup> ppb	n/a
11. Asbestos	7 MFL		7 MFL	7
12. Barium	2		2 ppm	2
13. Beryllium	.004	1000	4 ppb	4
14. Bromate	.010	1000	10 ppb	0
15. Cadmium	.005	1000	5 ppb	5
16. Chloramines	MRDL=4		MRDL=4 ppm	4
17. Chlorine	MRDL=4		MRDL=4 ppm	4
18. Chlorine Dioxide	MRDL=.8	1000	MRDL=800 ppb	800
19. Chlorite	1.0		1 ppm	0.8
20. Chromium	.1	1000	100 ppb	100
21. Copper	AL=1.3		AL=1.3 ppm.	1.3
22. Cyanide	.2	1000	200 ppb	200
23. Fluoride	4		4 ppm	4
24. Lead	AL=.015	1000	AL=15 ppb	0
25. Mercury (inorganic)	.002	1000	2 ppb	2

Contaminant	MCL in compliance units (mg/L)	multiply by . . .	MCL in CCR units	MCLG in CCR units
26. Nitrate (as Nitrogen)	10		10 ppm	10
27. Nitrite (as Nitrogen)	1		1 ppm	1
28. Selenium	.05	1000	50 ppb	50
29. Thallium	.002	1000	2 ppb	0.5
<b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>				
30. 2,4-D	.07	1000	70 ppb	70
31. 2,4,5-TP (Silvex)	.05	1000	50 ppb	50
32. Acrylamide			TT	0
33. Alachlor	.002	1000	2 ppb	0
34. Atrazine	.003	1000	3 ppb	3
35. Benzo(a)pyrene (PAH)	.0002	1,000,000	200 ppt	0
36. Carbofuran	.04	1000	40 ppb	40
37. Chlordane	.002	1000	2 ppb	0
38. Dalapon	.2	1000	200 ppb	200
39. Di(2-ethylhexyl)adipate	.4	1000	400 ppb	400
40. Di(2-ethylhexyl) phthalate	.006	1000	6 ppb	0
41. Dibromochloropropane	.0002	1,000,000	200 ppt	0

<b>Contaminant</b>	<b>MCL in compliance units (mg/L)</b>	<b>multiply by . . .</b>	<b>MCL in CCR units</b>	<b>MCLG in CCR units</b>
42. Dinoseb	.007	1000	7 ppb	7
43. Diquat	.02	1000	20 ppb	20
44. Dioxin (2,3,7,8-TCDD)	.00000003	1,000,000,000	30 ppq	0
45. Endothall	.1	1000	100 ppb	100
46. Endrin	.002	1000	2 ppb	2
47. Epichlorohydrin			TT	0
48. Ethylene dibromide	.00005	1,000,000	50 ppt	0
49. Glyphosate	.7	1000	700 ppb	700
50. Heptachlor	.0004	1,000,000	400 ppt	0
51. Heptachlor epoxide	.0002	1,000,000	200 ppt	0
52. Hexachlorobenzene	.001	1000	1 ppb	0
53. Hexachloro-cyclopentadiene	.05	1000	50 ppb	50
54. Lindane	.0002	1,000,000	200 ppt	200
55. Methoxychlor	.04	1000	40 ppb	40
56. Oxamyl (Vydate)	.2	1000	200 ppb	200
57. PCBs (Polychlorinated biphenyls)	.0005	1,000,000	500 ppt	0
58. Pentachlorophenol	.001	1000	1 ppb	0
59. Picloram	.5	1000	500 ppb	500

Contaminant	MCL in compliance units (mg/L)	multiply by . . .	MCL in CCR units	MCLG in CCR units
60. Simazine	.004	1000	4 ppb	4
61. Toxaphene	.003	1000	3 ppb	0
<b>Volatile Organic Contaminants</b>				
62. Benzene	.005	1000	5 ppb	0
63. Carbon tetrachloride	.005	1000	5 ppb	0
64. Chlorobenzene	.1	1000	100 ppb	100
65. o-Dichlorobenzene	.6	1000	600 ppb	600
66. p-Dichlorobenzene	.075	1000	75 ppb	75
67. 1,2-Dichloroethane	.005	1000	5 ppb	0
68. 1,1-Dichloroethylene	.007	1000	7 ppb	7
69. cis-1,2-Dichloroethylene	.07	1000	70 ppb	70
70. trans-1,2-Dichloroethylene	.1	1000	100 ppb	100
71. Dichloromethane	.005	1000	5 ppb	0
72. 1,2-Dichloropropane	.005	1000	5 ppb	0
73. Ethylbenzene	.7	1000	700 ppb	700
74. Haloacetic acids	0.060	1000	60 ppb	n/a
75. Styrene	.1	1000	100 ppb	100
76. Tetrachloroethylene	.005	1000	5 ppb	0

<b>Contaminant</b>	<b>MCL in compliance units (mg/L)</b>	<b>multiply by . . .</b>	<b>MCL in CCR units</b>	<b>MCLG in CCR units</b>
77. 1,2,4-Trichlorobenzene	.07	1000	70 ppb	70
78. 1,1,1-Trichloroethane	.2	1000	200 ppb	200
79. 1,1,2-Trichloroethane	.005	1000	5 ppb	3
80. Trichloroethylene	.005	1000	5 ppb	0
81. TTHMs (Total trihalomethanes)	.10	1000	100 ppb	n/a
82. Toluene	1		1 ppm	1
83. Vinyl Chloride	.002	1000	2 ppb	0
84. Xylenes	10		10 ppm	10

<sup>1</sup> The .010 mg/L and 10 ppb arsenic levels are effective January 23, 2006. Until then, the MCL is 0.05 mg/L and there is no MCLG.

(2) Appendix B - Sources of Regulated Contaminants.

Figure: 30 TAC §290.275(2)

**Appendix B - Sources of 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 ( $\mu\text{g/L}$ )
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
<b>Microbiological Contaminants</b>			
1. Total Coliform Bacteria	0	For systems that collect 40 or more samples per month - Presence of coliform bacteria in more than 5% of monthly samples.  For systems that collect fewer than 40 samples per month - Presence of coliform bacteria in more than 1 sample per month.	Naturally present in the environment.
2. Fecal coliform and E. coli	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.	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.
<b>Radioactive Contaminants</b>			
5. Beta/photon emitters (mrem/yr)	0	4	Decay of natural and man-made deposits.
6. Alpha emitters (pCi/L)	0	15	Erosion of natural deposits.
7. Combined radium (µg/L)	0	5	Erosion of natural deposits.
<b>Inorganic Contaminants</b>			

Contaminant (units)	MCLG	MCL	Major sources in drinking water
8. Uranium (µg/L)	0	30	Erosion of natural deposits.
9. Antimony (ppb)	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
10. Arsenic (ppb)	n/a	50/10 <sup>1</sup>	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
11. Asbestos (MFL)	7	7	Decay of asbestos cement water mains; Erosion of natural deposits.
12. Barium (ppm)	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
13. Beryllium (ppb)	4	4	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries.
14. Bromate (ppb)	0	10	By-product of drinking water disinfection.
15. Cadmium (ppb)	5	5	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints.
16. Chloramines (ppm)	MRDLG=4	MRDL=4	Water additive used to control microbes.
17. Chlorine (ppm)	MRDLG=4	MRDL=4	Water additive used to control microbes.
18. Chlorine Dioxide (ppb)	800	800	Water additive used to control microbes.
19. Chlorite (ppm)	1.0	1.0	By-product of drinking water disinfection.
20. Chromium (ppb)	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.
21. Copper (ppm)	1.3	AL=1.3	Corrosion of household plumbing systems; Erosion of natural deposits.

Contaminant (units)	MCLG	MCL	Major sources in drinking water
22. Cyanide (ppb)	200	200	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
23. Fluoride (ppm)	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
24. Lead (ppb)	0	AL=15	Corrosion of household plumbing systems; Erosion of natural deposits.
25. Mercury (inorganic) (ppb)	2	2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland.
26. Nitrate (as Nitrogen) (ppm)	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
27. Nitrite (as Nitrogen) (ppm)	1	1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
28. Selenium (ppb)	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
29. Thallium (ppb)	0.5	2	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories.
<b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>			
30. 2,4-D (ppb)	70	70	Runoff from herbicide used on row crops.
31. 2,4,5-TP (Silvex) (ppb)	50	50	Residue of banned herbicide.
32. Acrylamide	0	TT	Added to water during sewage/wastewater treatment.
33. Alachlor (ppb)	0	2	Runoff from herbicide used on row crops.
34. Atrazine (ppb)	3	3	Runoff from herbicide used on row crops.

Contaminant (units)	MCLG	MCL	Major sources in drinking water
35. Benzo(a)pyrene (PAH) (nanograms/L)	0	200	Leaching from linings of water storage tanks and distribution lines.
36. Carbofuran (ppb)	40	40	Leaching of soil fumigant used on rice and alfalfa.
37. Chlordane (ppb)	0	2	Residue of banned termiticide.
38. Dalapon (ppb)	200	200	Runoff from herbicide used on rights of way.
39. Di(2-ethylhexyl) adipate (ppb)	400	400	Discharge from chemical factories.
40. Di(2-ethylhexyl) phthalate (ppb)	0	6	Discharge from rubber and chemical factories.
41. Dibromochloropropane (ppt)	0	200	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
42. Dinoseb (ppb)	7	7	Runoff from herbicide used on soybeans and vegetables.
43. Diquat (ppb)	20	20	Runoff from herbicide use.
44. Dioxin (2,3,7,8-TCDD) (ppq)	0	30	Emissions from waste incineration and other combustion; Discharge from chemical factories.
45. Endothall (ppb)	100	100	Runoff from herbicide use.
46. Endrin (ppb)	2	2	Residue of banned insecticide.
47. Epichlorohydrin	0	TT	Discharge from industrial chemical factories; An impurity of some water treatment chemicals.
48. Ethylene dibromide (ppt)	0	50	Discharge from petroleum refineries.
49. Glyphosate (ppb)	700	700	Runoff from herbicide use.
50. Heptachlor (ppt)	0	400	Residue of banned termiticide.
51. Heptachlor epoxide (ppt)	0	200	Breakdown of heptachlor.

Contaminant (units)	MCLG	MCL	Major sources in drinking water
52. Hexachlorobenzene (ppb)	0	1	Discharge from metal refineries and agricultural chemical factories.
53. Hexachlorocyclopentadiene (ppb)	50	50	Discharge from chemical factories.
54. Lindane (ppt)	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens.
55. Methoxychlor (ppb)	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock.
56. Oxamyl (Vydate) (ppb)	200	200	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes.
57. PCBs (Polychlorinated biphenyls) (ppt)	0	500	Runoff from landfills; Discharge of waste chemicals.
58. Pentachlorophenol (ppb)	0	1	Discharge from wood preserving factories.
59. Picloram (ppb)	500	500	Herbicide runoff.
60. Simazine (ppb)	4	4	Herbicide runoff.
61. Toxaphene (ppb)	0	3	Runoff/leaching from insecticide used on cotton and cattle.
<b>Volatile Organic Compounds</b>			
62. Benzene (ppb)	0	5	Discharge from factories; Leaching from gas storage tanks and landfills.
63. Carbon tetrachloride (ppb)	0	5	Discharge from chemical plants and other industrial activities.
64. Chlorobenzene (ppb)	100	100	Discharge from chemical and agricultural chemical factories.
65. o-Dichlorobenzene (ppb)	600	600	Discharge from industrial chemical factories.
66. p-Dichlorobenzene (ppb)	75	75	Discharge from industrial chemical factories.
67. 1,2-Dichloroethane (ppb)	0	5	Discharge from industrial chemical factories.

Contaminant (units)	MCLG	MCL	Major sources in drinking water
68. 1,1-Dichloroethylene (ppb)	7	7	Discharge from industrial chemical factories.
69. cis-1,2-Dichloroethylene (ppb)	70	70	Discharge from industrial chemical factories.
70. trans-1,2-Dichloroethylene (ppb)	100	100	Discharge from industrial chemical factories.
71. Dichloromethane (ppb)	0	5	Discharge from pharmaceutical and chemical factories.
72. 1,2-Dichloropropane (ppb)	0	5	Discharge from industrial chemical factories.
73. Ethylbenzene (ppb)	700	700	Discharge from petroleum refineries.
74. Haloacetic acids (HAA) (ppb)	n/a	60	By-product of drinking water disinfection.
75. Styrene (ppb)	100	100	Discharge from rubber and plastic factories; Leaching from landfills.
76. Tetrachloroethylene (ppb)	0	5	Leaching from PVC pipes; Discharge from factories and dry cleaners.
77. 1,2,4-Trichlorobenzene (ppb)	70	70	Discharge from textile-finishing factories.
78. 1,1,1-Trichloroethane (ppb)	200	200	Discharge from metal degreasing sites and other factories.
79. 1,1,2-Trichloroethane (ppb)	3	5	Discharge from industrial chemical factories.
80. Trichloroethylene (ppb)	0	5	Discharge from metal degreasing sites and other factories.
81. TTHMs (Total trihalomethanes) (ppb)	n/a	80	By-product of drinking water disinfection.
82. Toluene (ppm)	1	1	Discharge from petroleum factories.
83. Vinyl Chloride (ppb)	0	2	Leaching from PVC piping; Discharge from plastics factories.
84. Xylenes (ppm)	10	10	Discharge from petroleum factories; Discharge from chemical factories.

1 The 10 ppb arsenic level is effective January 23, 2006. Until then, the MCL is 0.05 mg/L and there is no MCLG.

(3) Appendix C - Health Effects Language.

Figure: 30 TAC §290.275(3)

**Appendix C - Health Effects Language**

**Microbiological Contaminants**

- (1) Total Coliform. 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.
- (2) Fecal coliform/E.Coli. 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.
- (3) Total organic carbon. Total organic carbon (TOC) has no health affects. However, TOC provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these by-products in excess of the maximum contaminant level (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.

**Radioactive Contaminants**

- (5) 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) 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) 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) 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) 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) 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) 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) 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) Beryllium. Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

(14) Bromate. Some people who drink water containing bromate in excess of the MCL over many years could experience an increased risk of getting cancer.

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

(16) 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 maximum residual disinfectant level (MRDL) could experience stomach discomfort or anemia.

(17) 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) 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) 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) Chromium. Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

(21) 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) 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) 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. Children may get mottled teeth.

(24) 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) Mercury (inorganic). Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

(26) 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) 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) 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) 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) 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) 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) 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) 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) 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) 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) 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) 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) Dalapon. Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
- (39) 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 general toxic effects such as weight loss, liver enlargement, or possible reproductive difficulties.
- (40) Di (2-ethylhexyl) phthalate. Some people who drink water containing di (2-ethylhexyl) phthalate 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) 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) Dinoseb. Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
- (43) 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) Diquat. Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
- (45) 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) Endrin. Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
- (47) 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) 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) 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) 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) 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) 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) 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) 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) Methoxychlor. Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
- (56) Oxamyl. Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
- (57) PCBs. 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) 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) Picloram. Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
- (60) Simazine. Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
- (61) 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) 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) 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) 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) 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) 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) 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) 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) 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) trans-1,2-Dichloroethylene. 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) 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) 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) 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) Haloacetic acids (HAAs). Some people who drink water containing HAAs in excess of the MCL over many years may have an increased risk of getting cancer.
- (75) 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) 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) 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) 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) 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) 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) 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) 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) 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) Xylenes. Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

(4) Appendix D - Unregulated Contaminants.

Figure: 30 TAC §290.275(4) (No change.)

**Appendix D - Unregulated Contaminants**

- (1) Chloroform
- (2) Bromodichloromethane
- (3) Chlorodibromomethane
- (4) Bromoform
- (5) Dibromomethane
- (6) m-Dichlorobenzene
- (7) [Reserved]
- (8) 1,1-Dichloropropene
- (9) 1,1-Dichloroethane
- (10) 1,1,2,2-Tetrachloroethane
- (11) 1,3-Dichloropropane
- (12) Chloromethane
- (13) Bromomethane
- (14) 1,2,3-Trichloropropane
- (15) 1,1,1,2-Tetrachloroethane
- (16) Chloroethane
- (17) 2,2-Dichloropropane
- (18) o-Chlorotoluene
- (19) p-Chlorotoluene
- (20) Bromobenzene
- (21) 1,3-Dichloropropene