DEPARTMENT OF ENVIRONMENTAL QUALITY

OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE

SUPPLYING WATER TO THE PUBLIC

Filed with the Secretary of State on
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(By authority conferred on the department of environmental quality by section 5 of 1976 PA 399, MCL 325.1005)

R 325.10102, R 325.10103, R 325.10105, R 325.10108, R 325.10112, R 325.10113, R 325.10116, R 325.10303, R 325.10304, R 325.10306, R 325.10313, R 325.10401a, R 325.10402 to R 325.10405, R 325.10413, R 325.10420, R 325.10602, R 325.10605, R 325.10610, R 325.10610b, R 325.10610d, R 325.10702, R 325.10704, R 325.10708, R 325.10710a, R 325.10719e, R 325.10719f, R 325.10719h, R 325.10719i, R 325.10720, R 325.10720d, R 325.10722, R 325.10739, R 325.11203, R 325.11401 to R 325.11405, R 325.11509, R 325.11606, R 325.11705, R 325.11906a, R 325.11910, R 325.11915, R 325.12102 and R 325.12302 of the Michigan Administrative Code are amended, and R 325.10704a to R 325.10704k and R 325.11510 are added to the Code, and R 325.10416 to R 325.10419, R 325.10719g, R 325.10719m and R 325.12604 of the Code are rescinded, as follows:

PART 1. GENERAL PROVISIONS

R 325.10102 Definitions; A, B.

Rule 102. As used in these rules:

(a) "Act" means 1976 PA 399, MCL 325.1001 to 325.1023 and known as the safe drinking water act.

(b) "Action level" means the concentration of lead or copper in water as specified in R 325.10604f(1)(c) that determines, in some cases, the treatment requirements that a water supply is required to complete.

(c) "Advisory board" means the advisory board of examiners appointed by the director under section 9(2) of the act.

(d) "Alteration" means the modification of, or addition to, an existing waterworks system, or portion of the system, that affects any of the following:

(i) Flow.

(ii) Capacity.

(iii) System service area.

(iv) Source.

(v) Treatment.

(vi) Reliability.

(e) "Approved analytical technique" means a calculation, determination, or other laboratory examination or procedure that has been approved by the United States

environmental protection agency under 40 C.F.R. part 141, which is adopted by reference in R 325.10605.

(f) "Approved basement" means a basement which has walls and a floor that are constructed of concrete or its equivalent, which is essentially watertight, which is effectively drained, and which is in daily use.

(g) "Aquifer" means an underground water-bearing formation which is saturated and which transmits water in sufficient quantities to serve as a water supply.

(h) "Artesian" means a condition of internal pressure which causes the water level in a well to rise above the aquifer used to supply water at the well location.

(i) "Asset management program" means a program that identifies the desired level of service at the lowest life cycle cost for rehabilitating, repairing, or replacing the assets associated with the waterworks system.

(j) "Back-up operator" means a certified operator designated by the public water supply to be in charge of the waterworks system or portion of the waterworks system when the operator in charge is not available.

(k) "Bag filters" means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to outside.

(l) "Bank filtration" means a water treatment process that uses a well to recover surface water that has naturally infiltrated into groundwater through a river bed or bank or banks. Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well or wells.

(m) "Bottled drinking water" means water that is ultimately sold, provided, or offered for human consumption in a closed container.

R 325.10103 Definitions; C.

Rule 103. As used in these rules:

(a) "C" in "CT calculation" means the residual disinfectant concentration measured in milligrams per liter in a representative sample of water.

(b) "Cartridge filters" means pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

(c) "Casing" means a durable pipe that is placed in a well to prevent the soil from caving in and to seal off surface drainage or undesirable water, gases, contaminants, or other fluids and prevent them from entering the well and the aquifer supplying the well.

(d) "Casing vent" means an outlet at the upper terminal of a well casing which provides atmospheric pressure in the well and which allows the escape of gases when present.

(e) "Certificate" means a document that is issued by the department to a person who meets the qualification requirements for operating a waterworks system or a portion of the waterworks system.

(f) "Certified operator" means an operator who holds a certificate.

(g) "Clean compliance history" means, for the purposes of the total coliform provisions of R 325.10704a to R 325.10704k, a record of no MCL violations under R 325.10602; no monitoring violations under R 325.10704 to R 325.10709; and no coliform treatment

technique trigger exceedances or treatment technique violations under R 325.10704a to R 325.10704k.

(h) "Combined distribution system" means the interconnected distribution system consisting of the distribution systems of wholesale supplies and of the consecutive supplies that receive finished water.

(i) "Community supply" or "community water supply" or "community water system" means a public water supply that provides year-round service to not fewer than 15 living units or that regularly provides year-round service to not fewer than 25 residents.

(j) "Complete treatment" means a series of processes, including disinfection and filtration, to treat surface water or ground water under the direct influence of surface water, or to treat ground water not under the direct influence of surface water that uses precipitative softening, to produce a finished water meeting state drinking water standards.

(k) "Compliance cycle" means the 9-year calendar year cycle during which public water supplies are required to monitor. Each compliance cycle consists of three 3-year compliance periods. The first calendar year cycle begins January 1, 1993, and ends December 31, 2001; the second begins January 1, 2002, and ends December 31, 2010; the third begins January 1, 2011, and ends December 31, 2019.

(l) "Compliance period" means a 3-year calendar year period within a compliance cycle. Each compliance cycle has three 3-year compliance periods. Within the first compliance cycle, the first compliance period runs from January 1, 1993, to December 31, 1995; the second from January 1, 1996, to December 31, 1998; the third from January 1, 1999, to December 31, 2001.

(m) "Comprehensive performance evaluation (CPE)" means a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation, and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. For purposes of compliance, the comprehensive performance evaluation shall consist of at least all of the following components:

(i) Assessment of plant performance.

(ii) Evaluation of major unit processes.

(iii) Identification and prioritization of performance limiting factors.

(iv) Assessment of the applicability of comprehensive technical assistance.

(v) Preparation of a CPE report.

(n) "Confluent growth" means a continuous bacterial growth that covers the entire filtration area of a membrane filter, or portion of a filtration area, in which bacterial colonies are not discrete.

(o) "Consecutive system" or "consecutive supply" means a public water supply that receives some or all of its finished water from 1 or more wholesale supplies. Delivery may be through a direct connection or through the distribution system of 1 or more consecutive supplies.

(p) "Construction" means the erection, installation, or alteration of a waterworks system, or any portion of a waterworks system, that affects any of the following:

(i) Flow.

(ii) Capacity.

(iii) System service area.
(iv) Source.
(v) Treatment.
(vi) Reliability.

(q) "Contested cases" means matters that are within the definition of a contested case as set forth by section 3(3) of 1969 PA 306, MCL 24.203(3), and matters of issue that involve any of the following which are issued by the director, the department, or the division under the act and these rules:

(i) Orders.
(ii) Exemptions.
(iii) Variances.
(iv) Stipulations.
(v) Consent agreements.
(vi) Permits.
(vii) Licenses.
(viii) Certificates.

(r) "Contested case hearing" means a hearing that is initiated by the department or a person under chapters 4, 5, and 6 of 1969 PA 306, MCL 24.271 to 24.306.

(s) "Contaminant" means a physical, chemical, biological, or radiological substance or matter in water.

(t) "Conventional filtration" means a series of processes, including coagulation, flocculation, sedimentation, and filtration, resulting in substantial particulate removal.

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

(v) "Cross connection" means a connection or arrangement of piping or appurtenances through which a backflow could occur.

(w) "CT calculation" means the product of residual disinfectant concentration (C) in milligrams per liter determined at or before the first customer and the corresponding disinfectant contact time (T) in minutes; C*T is calculated at rated capacity. The total CT shall be the sum of individual CTs of each disinfectant sequence.

(x) "Customer service connection" means the pipe between a water main and customer site piping or building plumbing system.

(y) "Customer site piping" means an underground piping system owned or controlled by the customer that conveys water from the customer service connection to building plumbing systems and other points of use on lands owned or controlled by the customer. Customer site piping does not include any system that incorporates treatment to protect public health.

R 325.10105 Definitions; F to L.

Rule 105. As used in these rules:

(a) "Federal act" means the safe drinking water act of 1974, 42 U.S.C.§300f et seq. and the state and local assistance set forth in 40 C.F.R. part 35, §35.600 to §35.630; national primary drinking water regulations set forth in 40 C.F.R. part 141; and national primary drinking water regulations implementation set forth in 40 C.F.R. part 142 promulgated by EPA (2014) under the federal act.

(b) "Filter profile" means a graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

(c) "Finished water" means water that is introduced into the distribution system of a public water supply and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system, for example, booster disinfection, addition of corrosion control chemicals.

(d) "Firm capacity," as applied to wells, pumping stations, or units of treatment systems, means the production capability of each respective part of the waterworks system with the largest well, pump, or treatment unit out of service.

(e) "First draw sample" means a 1-liter sample of tap water which has been standing in plumbing pipes for not less than 6 hours and which is collected without flushing the tap.

(f) "Flowing stream" means a course of running water flowing in a definite channel.

(g) "GAC10" means granular activated carbon filter beds with an empty-bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days, except that the reactivation frequency for GAC10 used as a best available technology for compliance with TTHM and HAA5 MCLs based on a locational running annual average under R 325.10610 shall be 120 days.

(h) "GAC20" means granular activated carbon filter beds with an empty-bed contact time of 20 minutes based on average daily flow and a carbon reactivation frequency of every 240 days.

(i) "Gravity storage tank" means an elevated or ground level finished water storage reservoir that, during normal use, operates under atmospheric pressure.

(j) "Ground water" or "groundwater" means the water in the zone of saturation in which all of the pore spaces of the subsurface material are filled with water.

(k) "Ground water under the direct influence of surface water (GWUDI)" means any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as Giardia lamblia or Cryptosporidium, or significant and relatively rapid shifts in water characteristics, such as turbidity, temperature, conductivity, or pH, that closely correlate to climatological or surface water conditions. The department will determine direct influence for individual sources in accordance with this definition and R 325.10611(1) and will notify the supply of its determination.

(l) "Grout" means neat cement, concrete, or other sealing material which is approved by the department and which is used to seal a well casing in a well.

(m) "Haloacetic acids (five) (HAA5)" mean the sum of the concentrations in milligrams per liter of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to 2 significant figures after addition.

(n) "Imminent hazard" means that, in the judgment of the director, there is a violation, or a condition that may cause a violation, of the state drinking water standards at a public water supply requiring immediate action to prevent endangering the health of people.

(o) "Initial compliance period" means January 1993 to December 1995. For a supply that has less than 150 service connections, the initial compliance period is January 1996

to December 1998 for contaminants listed in part 6 of these rules that have an effective date of January 17, 1994.

(p) "Lake/reservoir" means a natural or man-made basin or hollow on the Earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

(q) "Large water supply" or "large water system," for the purpose of lead and copper control, means a public water supply that serves more than 50,000 persons.

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

(s) "Level 1 assessment" means an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the supply triggered the assessment. Level 1 assessment shall be conducted by the supply operator or owner. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (for example, whether a ground water supply is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The supply shall conduct the assessment consistent with any department directives that tailor specific assessment elements with respect to the size and type of the supply and the size, type, and characteristics of the distribution system.

(t) "Level 2 assessment" means an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the supply triggered the assessment. A level 2 assessment provides a more detailed examination of the supply (including the supply's monitoring and operational practices) than does a level 1 assessment through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices. Level 2 assessment shall be conducted by the department. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (for example, whether a ground water supply is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The department shall conduct the assessment tailoring specific assessment elements with respect to the size and type of the supply and the size, type, and characteristics of the distribution system. The supply shall comply with any expedited actions or additional actions required by the department in the case of an E. coli MCL violation.

(u) "License" means the license that is issued by the department to a water hauler, or for a water hauling tank, under section 18 of the act.

(v) "Limited treatment system" means a treatment system, including, but not limited to, disinfection, fluoridation, iron removal, ion exchange treatment, phosphate application, or filtration other than complete treatment.

(w) "Living unit" means a house, apartment, or other domicile occupied or intended to be occupied on a day-to-day basis by an individual, family group, or equivalent.

(x) "Locational running annual average (LRAA)" means the average of sample analytical results for samples taken at a particular monitoring location during the previous 4 calendar quarters.

R 325.10108 Definitions; S.

Rule 108. As used in these rules:

(a) "Sanitary defect" means a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place.

(b) "Sanitary survey" means an evaluation, including an on-site review of a waterworks system or a portion of the waterworks system, including all of the following applicable components for existing or potential health hazards for the purpose of determining the ability of the public water supply to produce, treat, and distribute adequate quantities of water meeting state drinking water standards:

(i) Source.

(ii) Treatment.

(iii) Distribution system.

(iv) Finished water storage.

(v) Pumps, pump facilities, and controls.

(vi) Monitoring, reporting, and data verification.

(vii) System management and operation.

(viii) Operator compliance with state requirements.

(c) "Seasonal supply" means a noncommunity water supply that is not operated as a public water supply on a year-round basis and starts up and shuts down at the beginning and end of each operating season.

(d) "Service connection" means a direct connection from a distribution water main to a living unit or other site to provide water for drinking or household purposes.

(e) "Service line sample" means a 1 liter sample of water that has been standing for not less than 6 hours in a service line.

(f) "Shift operator" means a certified operator, other than the operator in charge, who is in charge of an operating shift of a waterworks system.

(g) "Single-family structure," for the purpose of lead and copper control, means a building which is constructed as a single-family residence and which is currently used as either a residence or a place of business.

(h) "Small water supply" or "small water system," for the purpose of lead and copper control, means a public water supply that serves fewer than 3,301 persons.

(i) "SOC" means synthetic organic chemical.

(j) "Source" means the point of origin of raw water or means treated water that is purchased or obtained by a public water supply, by a water hauler, or by a person who provides bottled water.

(k) "State drinking water standards" means quality standards setting limits for contaminant levels or establishing treatment techniques to meet standards necessary to protect the public health.

(l) "Static water level" means the distance measured from an established datum at or above ground level to the water surface in a well which is not being pumped, which is not under the influence of pumping, and which is not flowing under artesian pressure.

(m) "Subpart H system" or "subpart H supply" means a public water supply using surface water or ground water under the direct influence of surface water as a source.

(n) "Suction line" means a pipe or line that is connected to the inlet side of a pump or pumping equipment.

(o) "Supplier of water" or "supplier" means a person who owns or operates a public water supply, and includes a water hauler.

(p) "Surface water" means water that rests or flows on the surface of the ground.

(q) "SUVA" means specific ultraviolet absorption at 254 nanometers (nm), an indicator of the humic content of water. It is a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (uv254) (in m-1) by its concentration of dissolved organic carbon (DOC) (in mg/l). Therefore, SUVA units are l/mg-m.

(r) "System with a single service connection" means a public water supply that supplies drinking water to consumers through a single service line.

R 325.10112 Adoption by reference.

Rule 112. (1) The materials adopted by reference in this rule are available for inspection at the offices of the department or from the sources, or available on the Internet. The contact information for the department and each source for the materials are listed in R 325.10116 addresses. The purchase prices are at the time of adoption of these rules.

(2) Report 22, 1963, Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure is adopted by reference. The material is referenced in R 325.10603. The material is available for purchase for $20.00 from the National Council on Radiation Protection and Measurements.

(3) NSF international standards are available for purchase from NSF International or on the Internet at http://www.nsf.org. The department adopts by reference all of the following NSF standards:

Standard	Name	Date	Price	Rule Reference
44-2013	Residential Cation Exchange Water Softeners	06/11/2013	$165.00	R 325.10313
53-2013	Drinking Water Treatment Units - Health Effects	06/11/2013	$165.00	R 325.10313
58-2013	Reverse Osmosis Drinking Water Treatment Systems	12/01/2013	$165.00	R 325.10313
60-2012	Drinking Water Treatment Chemicals - Health Effects	08/22/2012	$325.00	R 325.12102
61-2012	Drinking Water System Components - Health Effects	07/08/2012	$325.00	R 325.12102
61-2012 addendum	Addendum: Drinking Water System Components - Health Effects	03/26/2013	$45.00	R 325.12102
62-2013	Drinking Water Distillation Systems	06/11/2013	$165.00	R 325.10313

(4) Title 40 of the Code of Federal Regulations is available on the Internet at http://www.ecfr.gov or contained in 40 CFR parts 136 to 149 available from the superintendent of documents for $67.00. The department adopts by reference both of the following 40 CFR materials:

(a) 40 CFR §141.42(d) Special Monitoring for Corrosivity Characteristics, December 5, 1994, referenced in R 325.10710a.

(b) CT99.9 values in Tables 1.1 to 1.6, 2.1 and 3.1 of 40 CFR §141.74(b)(3)(v) analytical and monitoring requirements, (2014), referenced in R 325.10722.

(5) CT99.99 values in the tables in appendix b of the LT1ESWTR Disinfection Profiling and Benchmarking Technical Guidance Manual, May 2003, are adopted by reference. The material is referenced in R 325. 10722. The guidance manual is accessible on the Internet at http://www.epa.gov/safewater/mdbp/lt1eswtr.html or available for purchase for $32.50 from Educational Realms (document C-900) at 1929 Kenny Road, Columbus, Ohio 43210-1080, Internet address www.stemworks.org, telephone number 800-276-0462.

R 325.10113 Compliance with rules; guideline information.

Rule 113. Public water supplies may use the information in the following publications as guideline documents to comply with these rules:

(a) Recommended standards for water works, prepared by the Great Lakes--upper Mississippi river board of state sanitary engineers, is available for inspection at the department offices in Lansing, and may be purchased at a cost of $12.00 from the Health Education Services, P.O. Box 7126, Albany, New York 12224 telephone 518-439-7286, Internet http://www.hes.org/.

(b) The American water works association manual M 19, emergency planning for water utilities, 2001, as referred to in part 23, is available for inspection at the department offices in Lansing, and may be purchased at a cost of $95.00 from the American Water Works Association, 6666 West Quincy Avenue, Denver, Colorado 80235, telephone 1-800-926-7337, Internet www.awwa.org.

(c) Suggested practices for waterworks design, construction, and operation for type I public water supplies, February 2008, prepared by the Michigan department of environmental quality, is available for inspection at the department offices in Lansing and on the Internet at http://www.michigan.gov/deq.

(d) Best practices manual for cross connection control, fourth edition, October 2008, prepared by the Michigan department of environmental quality, is available for inspection at the department offices in Lansing and on the Internet at http://www.michigan.gov/deq.

(e) Reference Guide for Asset Management Tools: Asset Management Plan Components and Implementation Tools for Small and Medium sized Drinking Water and Wastewater Systems, May 2014, prepared by the U.S. Environmental Protection Agency, document number EPA 816-B-14-001 is available for inspection at the department offices in Lansing.

R 325.10116 Addresses.

Rule 116. The following are addresses and contact information of the department and other organizations referred to in these rules:

(a) Department of Environmental Quality, Office of Drinking Water and Municipal Assistance, 525 West Allegan Street, Post Office Box 30241, Lansing, MI 48909-7741, Telephone 800-662-9278. Internet address: http://www.michigan.gov/deq.

(b) National Council On Radiation Protection and Measurements, 7910 Woodmont Avenue, Suite 400, Bethesda, Maryland 20814-3095, Telephone 301-657-2652. Internet address: http://www.ncrponline.org/.

(c) NSF International, P.O Box 130140, 789 North Dixboro Road, Ann Arbor, Michigan 48105, telephone 734-769-8010 or 800 673 6275, email info@nsf.org, Internet address http://www.nsf.org.

(d) Superintendent of Documents, United States Government Printing Office, Post Office Box 979050, St. Louis, MO 63197-9000, Telephone 202-512-1800. Internet address to download documents is http://www.gpoaccess.gov/index.html or to purchase documents online is http://bookstore.gpo.gov.

PART 3. VARIANCES, EXEMPTIONS, AND AVAILABLE TECHNOLOGIES

R 325.10303 Request for variance or exemption from state drinking water standards generally.

Rule 303. (1) A variance or exemption from a state drinking water standard shall not be granted with respect to either of the following:

(a) MCLs for E. coli and total coliform. Beginning April 1, 2016, the total coliform MCL is no longer effective.

(b) Treatment technique requirements of filtration and disinfection under R 325.10611 to R 325.10611c.

(2) A supplier of water who wishes to request a variance or exemption from a state drinking water standard shall make that request, in writing, to the department not less than 90 days before the date on which the supplier of water wishes the variance or exemption to be effective. The request shall be made in a manner prescribed by the department and shall contain all information required by this part and the federal act.

(3) Requests for variances or exemptions from state drinking water standards for more than 1 MCL or treatment technique shall be made separately.

R 325.10304 Variance from MCL or treatment technique; required finding.

Rule 304. Variances from an MCL or treatment technique other than those prohibited in R 325.10303 may be granted by the director only upon his or her specific finding that either of the following conditions exists:

(a) The supplier of water demonstrates that the characteristics of the raw water source or sources which are reasonably available to the public water supply do not permit the public water supply to meet the maximum contaminant level specified in a state drinking water standard despite application of the best available treatment technology, techniques, or other means which the department finds are generally available, taking costs into consideration, and that the granting of a variance will not result in an unreasonable risk to the health of persons served by the public water supply.

(b) The supplier of water demonstrates that a specific treatment technique is not necessary to protect the health of persons served by the public water supply, and that the granting of the variance will not result in an unreasonable risk to the health of persons served by the public water supply.

R 325.10306 Exemption from MCL or treatment technique; required finding.

Rule 306. Exemptions from an MCL or treatment technique other than those prohibited in R 325.10303 may be granted by the director only upon his or her specific finding that all of the following conditions exist:

(a) Due to compelling factors, including economic factors, a public water supply is not able to comply with an MCL or treatment technique.

(b) A public water supply for which an exemption is requested was in operation on the effective date of the state drinking water standard.

(c) The supplier of water demonstrates that the granting of an exemption will not result in an unreasonable risk to the health of persons using the public water supply.

R 325.10313 Criteria for water supplies using POE, or POU, or both.

Rule 313. (1) Community and noncommunity water supplies shall not use point-of-use devices (POU) or point-of-entry devices (POE) except as required by the department under R 325.10308b or under all of the following provisions with department approval:

(a) Community water supplies may use POE to comply with the maximum contaminant level or treatment technique for organic, inorganic, and radiological contaminants.

(b) Noncommunity water supplies may use POU, or POE, or both, to comply with maximum contaminant levels or treatment techniques for organic and inorganic contaminants.

(c) An alternative source of water that meets state drinking water standards is not available.

(2) Supplies that use POU or POE, or both, shall meet all of the following requirements:

(a) The supply shall operate and maintain the POU, or POE, or both.

(b) Before POU, or POE, or both, are installed, the supply shall obtain department approval of a monitoring plan that ensures that the devices provide health protection equivalent to that provided by central water treatment. If the POU, or POE, or both, are being used to comply with maximum contaminant levels or treatment techniques, then "equivalent" means that the water shall meet all state drinking water standards and shall be of acceptable quality similar to water distributed by a well-operated central treatment plant. At a minimum, the monitoring plan shall include all of the following:

(i) Contaminants and parameters to be analyzed.

(ii) Physical measurements and observations, such as total flow treated and mechanical condition of the treatment equipment.

(iii) Location of sampling sites.

(iv) Frequency of sampling. Approximately 10% of the treatment units shall be sampled at regular intervals so that all the POE or POU are monitored at least as frequently as required in part 7 for a particular contaminant. For example, for a contaminant that is required to be sampled every 3 years, 10% of the POE or POU shall be monitored quarterly so that in 3 years time all of the POE or POU have been monitored. The department may approve an alternate frequency that better represents the rate of degradation of the POE or POU.

(c) Before POU, or POE, or both, are installed, the supply shall obtain department approval of a technology plan that ensures that effective technology is applied and that the microbiological safety of the water is maintained at all times. At a minimum, the technology plan shall include all of the following:

(i) The POU, or POE, or both, shall be equipped with mechanical warnings to ensure that customers are automatically notified of operational problems.

(ii) If a specific type of POU or POE has been independently certified to comply with the maximum contaminant level or treatment technique in accordance with the American national standards institute/national sanitation foundation standards 44, 53, 58, or 62, as adopted by reference in R 325.10112, then individual units of that type shall be used to comply with the maximum contaminant level or treatment technique. A supply may use an alternate type of POU or POE if the supply demonstrates to the department, using pilot plant studies or other means, that the alternative POU or POE consistently complies with the maximum contaminant level or treatment technique and the department approves the use of the POU or POE.

(iii) The design and application of the POU, or POE, or both, shall consider the potential for increasing concentrations of heterotrophic bacteria in water treated with activated carbon. Frequent backwashing, post-contactor disinfection, and heterotrophic plate count monitoring may ensure that the microbiological safety of the water is not compromised.

(d) The supply shall demonstrate that buildings connected to the system have sufficient POU, or POE, or both, that are properly installed, maintained, and monitored such that all of consumers shall be protected.

(e) If the POU, or POE, or both, are used to meet an MCL or treatment technique, then the supply shall replace or repair the POU or POE when the contaminant for which the device is intended to control is above the maximum contaminant level in a confirmed sample.

(3) Compliance with the maximum contaminant level shall be determined based on the analytical results obtained at each POU or POE, also known as "sampling point". Compliance determination shall be made under R 325.10604b(2) for volatile organic contaminants, R 325.10604c(2) for inorganic contaminants, or R 325.10604d(2) for synthetic organic chemicals.

(4) Supplies that violate the MCL shall notify the department under part 7 of these rules and shall notify the public under part 4 of these rules. The supply may limit the distribution of the public notice to only persons served by the POU or POE that is out of compliance.

PART 4. PUBLIC NOTIFICATION AND PUBLIC EDUCATION

R 325.10401a General public notification requirements.

Rule 401a. (1) Each community water supply, nontransient noncommunity water supply, or transient noncommunity water supply shall give notice for violations of the maximum contaminant level (MCL), maximum residual disinfection level (MRDL), treatment technique (TT), monitoring requirements, testing procedures in these rules, and for other situations, as listed in the following provisions:

(a) Violations and other situations requiring public notice, including all of the following:

(i) Failure to comply with an applicable maximum contaminant level (MCL) or maximum residual disinfectant level (MRDL).

(ii) Failure to comply with a prescribed treatment technique (TT).

(iii) Failure to perform water quality monitoring, as required by part 7 of these rules.

(iv) Failure to comply with testing procedures as prescribed by part 6 of these rules.

(b) Variance and exemptions under part 3 of these rules, including both of the following:

(i) Operation under a variance or an exemption.

(ii) Failure to comply with the requirements of a schedule that has been set under a variance or exemption.

(c) Special public notices, including all of the following:

(i) Occurrence of a waterborne disease outbreak or other waterborne emergency.

(ii) Exceedance of the nitrate MCL by noncommunity water supplies, where granted permission by the department.

(iii) Fluoride level above 2.0 mg/l as specified in R 325.10408a.

(iv) Availability of unregulated contaminant monitoring data.

(v) Other violations and situations which are determined by the department to require a public notice under this part and which are not already listed in table 1 of this rule. The tier assignment for each specific violation or situation requiring a public notice is identified in table 1 of this rule. Community and noncommunity water supplies are also considered "water supplies" or "supplies" in this rule, R 325.10402 to R 325.10407 and R 325.10408a to R 325.10409.

(2) Public notice requirements are divided into 3 tiers to take into account the seriousness of the violation or situation and of the potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in subrule (1) of this rule are determined by the tier to which the violation or situation is assigned. The definition of each tier is provided in the following provisions:

(a) Tier 1 public notice is required for violations and situations that have significant potential to have serious adverse effects on human health as a result of short term exposure.

(b) Tier 2 public notice is required for all other violations and situations that have potential to have serious adverse effects on human health.

(c) Tier 3 public notice is required for all other violations and situations not included in tier 1 and tier 2. The tier assignment for each specific violation or situation is identified in table 1 of this rule.

(3) Supplies shall provide public notice to the following:

(a) Each supply shall provide public notice to persons served by the supply as specified in this part. Supplies that sell or otherwise provide drinking water to other public water supplies, such as to consecutive supplies, shall give public notice to the consecutive supply. The consecutive supply shall provide public notice to the persons it serves.

(b) If a public water supply has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, then the department may grant permission, which shall be in writing, to the supply to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance. To be physically separated, the supply shall show that the affected portion of the distribution system is separated from other parts of the distribution system with no interconnections. To be considered hydraulically separated, the supply shall show that the design of the distribution system or the system operation, or both, created a situation where water in the affected portion is effectively isolated from the

water in all other parts of the distribution system because of projected water flow patterns and water pressure zones.

(4) The supply, within 10 days of completing the public notification requirements under this part for the initial public notice and applicable repeat notices, shall submit to the department a certification that it fully complied with the public notification regulations. The supply shall include with this certification a representative copy of each type of notice distributed, published, posted, and made available to the persons served by the supply and to the media.

Table 1 Violations and other situations requiring public notice

Contaminant	MCL/MRDL/TT violations [1]		Monitoring, testing, & reporting procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
I. Violations of MCL, MRDL, treatment technique, monitoring and reporting, and testing procedure requirements:				
A. Microbiological contaminants				
Total coliform until March 31, 2016	2	R 325.10602(a) and (b)	3	R 325.10704 to R 325.10707a R 325.10702(2) R 325.10707b(4)
Total coliform (TT violations resulting from failure to perform assessments or corrective actions, monitoring violations, and reporting violations) beginning April 1, 2016	2	R 325.10704j(2)(a)	3	R 325.10704j(3) R 325.10704j(4)(a)
Seasonal supply failure to follow department-approved start-up plan before serving water to the public or failure to provide certification to the department beginning April 1, 2016	2	R 325.10704j(2)(b)	3	R 325.10704j(4)(c)
Fecal coliform/E. coli until March 31, 2016	1	R 325.10602(c)	1, 3 [2]	R 325.10704(3) R 325.10707b(4)
E. coli (MCL, monitoring, and reporting violations) beginning April 1, 2016	1	R 325.10704j(1)	3	R 325.10704j(3)(b) R 325.10704j(4)(a) R 325.10704j(4)(b)
E. coli (TT violations resulting from failure to perform level 2 Assessments or corrective action) beginning April 1, 2016	2	R 325.10704j(2)(a)	n/a	n/a
Turbidity (for TT violations resulting from a single exceedance of maximum allowable turbidity level)	2, 1 [3]	R 325.10611b	3	R 325.10605 R 325.10720(2)(a) and (b)
Violations, other than violations resulting from single exceedance of max. allowable turbidity level (TT)	2	R 325.10611, R 325.10611a, and R 325.10611b	3	R 325.10605 R 325.10720(2)(c) and (d)
Violations of disinfection profiling and benchmarking	N/A	N/A	3	R 325.10722
Violations of filter backwash recycling provisions	2	R 325.10611c	3	R 325.1507

Contaminant	MCL/MRDL/TT violations [1]		Monitoring, testing, & reporting procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
Violations of enhanced treatment for cryptosporidium	2	R 325.10611e to R 325.10611m	2, 3	40 CFR §141.701 to §141.705, as adopted by reference in R 325.10720b, R 325.10720c and R 325.10720d. Failure to collect 3 or more samples for Cryptosporidium analysis is a Tier 2 violation requiring special notice as required in R 325.10408d. All other monitoring and testing procedure violations are Tier 3.
Violations of rules for ground water supplies subject to R 325.10612	2	R 325.10612b	3	R 325.10739(7) R 325.10739a(5)
B. Inorganic chemicals (IOC)				
Antimony	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
Arsenic	2	R 325.10604c(1)	3	R 325.10710(4) and (5) R 325.10605
Asbestos (fibers longer than 10 µm)	2	R 325.10604c(1)	3	R 325.10710(4), (6)
Barium	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
Beryllium	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
Cadmium	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
Chromium (total)	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
Cyanide (free)	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
Fluoride	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
Mercury (inorganic)	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
Nitrate (as nitrogen)	1	R 325.10604c(1)	1, 3 [4]	R 325.10710(3), (4), (7), and (9)(b)
Nitrite (as nitrogen)	1	R 325.10604c(1)	1, 3 [4]	R 325.10710(3), (4), (8), and (9)(b)
Total nitrate and nitrite (as nitrogen)	1	R 325.10604c(1)	3	R 325.10710(4)
Selenium	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
Thallium	2	R 325.10604c(1)	3	R 325.10710(4) and (5)
C. Lead and copper (action level for lead is 0.015 mg/l, for copper is 1.3 mg/l)				
Lead and copper rule (TT)	2	R 325.10604f(1) – (5) R 325.10410(2) and (3)	3	R 325.10710a to R 325.10710c and R 325.10605
D. Synthetic organic chemicals (SOC)				
2,4-D	2	R 325.10604d(1)	3	R 325.10717
2,4,5-TP (silvex)	2	R 325.10604d(1)	3	R 325.10717
Alachlor	2	R 325.10604d(1)	3	R 325.10717
Atrazine	2	R 325.10604d(1)	3	R 325.10717
Benzo(a)pyrene (PAHs)	2	R 325.10604d(1)	3	R 325.10717
Carbofuran	2	R 325.10604d(1)	3	R 325.10717

Contaminant	MCL/MRDL/TT violations [1]		Monitoring, testing, & reporting procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
Chlordane	2	R 325.10604d(1)	3	R 325.10717
Dalapon	2	R 325.10604d(1)	3	R 325.10717
Di (2-ethylhexyl) adipate	2	R 325.10604d(1)	3	R 325.10717
Di (2-ethylhexyl) phthalate	2	R 325.10604d(1)	3	R 325.10717
Dibromochloropropane	2	R 325.10604d(1)	3	R 325.10717
Dinoseb	2	R 325.10604d(1)	3	R 325.10717
Dioxin (2,3,7,8-TCDD)	2	R 325.10604d(1)	3	R 325.10717
Diquat	2	R 325.10604d(1)	3	R 325.10717
Endothall	2	R 325.10604d(1)	3	R 325.10717
Endrin	2	R 325.10604d(1)	3	R 325.10717
Ethylene dibromide	2	R 325.10604d(1)	3	R 325.10717
Glyphosate	2	R 325.10604d(1)	3	R 325.10717
Heptachlor	2	R 325.10604d(1)	3	R 325.10717
Heptachlor epoxide	2	R 325.10604d(1)	3	R 325.10717
Hexachlorobenzene	2	R 325.10604d(1)	3	R 325.10717
Hexachlorocyclo-pentadiene	2	R 325.10604d(1)	3	R 325.10717
Lindane	2	R 325.10604d(1)	3	R 325.10717
Methoxychlor	2	R 325.10604d(1)	3	R 325.10717
Oxamyl (vydate)	2	R 325.10604d(1)	3	R 325.10717
Pentachlorophenol	2	R 325.10604d(1)	3	R 325.10717
Picloram	2	R 325.10604d(1)	3	R 325.10717
Polychlorinated biphenyls [PCBs]	2	R 325.10604d(1)	3	R 325.10717
Simazine	2	R 325.10604d(1)	3	R 325.10717
Toxaphene	2	R 325.10604d(1)	3	R 325.10717
E. Volatile organic chemicals (VOC)				
Benzene	2	R 325.10604b(1)	3	R 325.10716
Carbon tetrachloride	2	R 325.10604b(1)	3	R 325.10716
Chlorobenzene (monochloro-benzene)	2	R 325.10604b(1)	3	R 325.10716
O-dichlorobenzene	2	R 325.10604b(1)	3	R 325.10716
P-dichlorobenzene	2	R 325.10604b(1)	3	R 325.10716
1,2-dichloroethane	2	R 325.10604b(1)	3	R 325.10716
1,1-dichloroethylene	2	R 325.10604b(1)	3	R 325.10716
Cis-1,2-dichloroethylene	2	R 325.10604b(1)	3	R 325.10716
Trans-1,2-dichloroethylene	2	R 325.10604b(1)	3	R 325.10716
Dichloromethane	2	R 325.10604b(1)	3	R 325.10716
1,2-dichloropropane	2	R 325.10604b(1)	3	R 325.10716
Ethylbenzene	2	R 325.10604b(1)	3	R 325.10716
Styrene	2	R 325.10604b(1)	3	R 325.10716
Tetrachloro-ethylene	2	R 325.10604b(1)	3	R 325.10716
Toluene	2	R 325.10604b(1)	3	R 325.10716
1,2,4-trichlorobenzene	2	R 325.10604b(1)	3	R 325.10716
1,1,1-trichloroethane	2	R 325.10604b(1)	3	R 325.10716
1,1,2-trichloroethane	2	R 325.10604b(1)	3	R 325.10716
Trichloroethylene	2	R 325.10604b(1)	3	R 325.10716
Vinyl chloride	2	R 325.10604b(1)	3	R 325.10716
Xylenes (total)	2	R 325.10604b(1)	3	R 325.10716
F. Radioactive contaminants				
Beta/photon emitters	2	R 325.10603(2)(c)	3	R 325.10605 R 325.10725 R 325.10730

Contaminant	MCL/MRDL/TT violations [1]		Monitoring, testing, & reporting procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
Alpha emitters (gross alpha)	2	R 325.10603(2)(b)	3	R 325.10605 R 325.10725 R 325.10726 R 325.10728 R 325.10729
Combined radium (226 & 228)	2	R 325.10603(2)(a)	3	R 325.10605 R 325.10725 R 325.10726 R 325.10728 R 325.10729
Uranium (pCi/L)	2	R 325.10603(2)(d)	3	R 325.10605 R 325.10725 R 325.10726 R 325.10728 R 325.10729
G. Disinfection byproducts (DBP), byproduct precursors, disinfectant residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBP). The department sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THM) and haloacetic acids (HAA). See R 325.10610 to R 325.10610d, and R 325.10719e to R 325.10719n for disinfection byproduct MCLs, disinfectant MRDLs, and related monitoring requirements.				
Total trihalomethanes (TTHM)	2	R 325.10610(2) R 325.10610b(2)(a)	3	R 325.10610d, R 325.10719e(1) and (2)(a), and R 325.10719h to R 325.10719n
Haloacetic acids (HAA)	2	R 325.10610(2) R 325.10610b(2)(a)	3	R 325.10610d, R 325.10719e(1) and (2)(a), and R 325.10719h to R 325.10719n
Bromate	2	R 325.10610 R 325.10610b(2)(b)	3	R 325.10719e(1) and (2)(c)
Chloramine (MRDL)	2	R 325.10610a R 325.10610b(3)(a)	3	R 325.10719e(1) and (3)
Chlorine (MRDL)	2	R 325.10610a R 325.10610b(3)(a)	3	R 325.10719e(1) and (3)
Chlorite	2	R 325.10610 R 325.10610b(2)(c)	3	R 325.10719e(1) and (2)(b)
Chlorine dioxide (MRDL), where any 2 consecutive daily samples at entrance to distribution system only are above MRDL	2	R 325.10610a R 325.10610b(3)(b)(ii)	2 *, 3	R 325.10719e(1), (3)(b)(i) and (iii)
	* Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system is a tier 2 violation.			
Chlorine dioxide (MRDL), where sample(s) in distribution system the next day are also above MRDL	1 *	R 325.10610a R 325.10610b(3)(b)(i)	1	R 325.10719e(1), (3)(b)(ii) and (iii)
	* If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and 1 or more samples taken in the distribution system the next day exceed the MRDL, tier 1 notification is required. Failure to take the required samples in the distribution system after the MRDL is exceeded at the entry point also triggers tier 1 notification.			
Control of DBP precursors—TOC (TT)	2	R 325.10610b(4) R 325.10610c	3	R 325.10719e(1) and (4)
Bench marking and disinfection profiling	N/A	N/A	3	R 325.10722
Development of monitoring plan	N/A	N/A	3	R 325.10719e(5)

Contaminant	MCL/MRDL/TT violations [1]		Monitoring, testing, & reporting procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
H. Other treatment techniques				
Acrylamide (TT)	2	R 325.10604e	N/A	N/A
Epichlorohydrin (TT)	2	R 325.10604e	N/A	N/A
II. Other monitoring:				
Unregulated contaminants	N/A	N/A	3	40 CFR §141.40 [5]
Nickel	N/A	N/A	3	R 325.10710(4), (5), and (9)
III. Public notification for variances and exemptions:				
Operation under a variance or exemption	3	R 325.10302	N/A	N/A
Violation of conditions of a variance or exemption	2	R 325.10312	N/A	N/A
IV. Other situations requiring public notification:				
Fluoride level above 2.0 mg/l	3	R 325.10408a(1)	N/A	N/A
Exceedance of nitrate MCL for noncommunity supplies, as allowed by the department	1	R 325.10604c(3)	N/A	N/A
Availability of unregulated contaminant monitoring data	3	R 325.10407	N/A	N/A
Waterborne disease outbreak	1	R 325.10734(4)	N/A	N/A
Source water sample positive for Fecal Indicator: E.coli, enterococci, or coliphage	1	R 325.10739(6)	N/A	N/A
Other waterborne emergencies and other situations as determined by the department	1 or 2 or 3 *	N/A	N/A	N/A
	* Waterborne emergencies require a tier 1 public notice. The department may place other situations in any tier it determines appropriate, based on threat to public health.			

[1]MCL - Maximum contaminant level, MRDL - maximum residual disinfectant level, TT - treatment technique.

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

[3]Supplies with treatment technique violations involving a single exceedance of a maximum turbidity limit under R 325.10611b(1) are required to initiate consultation with the department within 24 hours after learning of the violation. Based on this consultation, the department may subsequently decide to elevate the violation to tier 1. If a supply is unable to make contact with the department in the 24-hour period, the violation is automatically elevated to tier 1.

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

[5]Title 40 CFR part 141 Section 40, being 40 CFR §141.40, (2014), which pertains to Unregulated Contaminant Monitoring, is contained in Title 40 CFR parts 136 to 149 and is available for purchase for $67.00 from the superintendent of documents at the address in R 325.10116. The material is available for inspection from the offices of the

department at the address in R 325.10116(a) or available on the Internet at http://www.ecfr.gov/.

R 325.10402 Tier 1 public notice; form, manner, and frequency of notice.

Rule 402. (1) A tier 1 public notice is required for all of the following violation categories and other situations in a community or noncommunity water supply that is subject to R 325.10401a:

(a) Violation of the MCL for total coliforms when fecal coliform or E. coli are present in the water distribution system as specified in R 325.10602, or when the water supply fails to test for fecal coliforms or E. coli when a repeat sample tests positive for coliform as specified in R 325.10707. Violation of the MCL for E. coli, as specified in R 325.10602.

(b) Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in R 325.10604c, or when the water supply fails to take a confirmation sample within 24 hours of the water supply's receipt of the first sample result showing an exceedance of the nitrate or nitrite MCL, as specified in R 325.10710(9)(b).

(c) Exceedance of the nitrate MCL by noncommunity water supplies, where permitted to exceed the MCL by the department, as required under R 325.10408b.

(d) Violation of the MRDL for chlorine dioxide, as defined in R 325.10610a(1), when 1 or more samples taken in the distribution system the day following an exceedance of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water supply does not take the required samples in the distribution system, as specified in R 325.10610b(3)(b).

(e) Violation of the treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit under R 325.10611b(1) as identified in table 1 of R 325.10401a, where the department determines after consultation that a tier 1 notice is required or where consultation does not take place within 24 hours after the supply learns of the violation.

(f) Occurrence of a waterborne disease outbreak or other waterborne emergency, such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination.

(g) Detection of E. coli, enterococci, or coliphage in source water samples as specified in R 325.10739(1) and (2).

(h) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the department either in these rules or on a case-by-case basis. The tier assignment for each specific violation or situation is listed in table 1 of R 325.10401a.

(2) A tier 1 public notice shall be provided under all the following provisions:

(a) Water supplies shall provide the public notice as soon as practical but not later than 24 hours after the supply learns of the violation or situation.

(b) The water supply shall initiate consultation with the department as soon as practical, but not later than 24 hours after the supply learns of the violation or situation, to determine additional public notice requirements.

(c) The water supply shall comply with additional public notification requirements, including repeat notices or direction on the duration of the posted notices, established as a result of consultation with the department. These additional requirements may include the timing, form, manner, frequency, and content of applicable repeat notices, and other actions designed to reach all persons served.

(3) Water supplies shall provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the supply are to fit the specific situation, but shall be designed to reach residential, transient, and nontransient users of the supply. To reach all persons served, supplies shall use, at a minimum, 1 or more of the following forms of delivery:

(a) Appropriate broadcast media, such as radio and television.

(b) Posting of the notice in conspicuous locations throughout the area served by the supply.

(c) Hand delivery of the notice to persons served by the system.

(d) Another delivery method approved, in writing, by the department.

R 325.10403 Tier 2 public notice; form, manner, and frequency of notice.

Rule 403. (1) A tier 2 public notice is required for all of the following violations and situations in a community or noncommunity water supply that is subject to R 325.10401a:

(a) All violations of the MCL, MRDL, and treatment technique requirements, except where a tier 1 notice is required under R 325.10402(1) or where the department determines that a tier 1 notice is required.

(b) Violations of the monitoring and testing procedure requirements, where the department determines that a tier 2 rather than a tier 3 public notice is required, taking into account potential health impacts and persistence of the violation.

(c) Failure to comply with the terms and conditions of a variance or exemption in place. The tier assignment for each specific violation or situation is listed in table 1 of R 325.10401a.

(d) Failure to take corrective action or failure to maintain at least 4-log treatment of viruses, using inactivation, removal, or a department-approved combination of 4-log virus inactivation and removal, before or at the first customer under R 325.10612a(1).

(2) A tier 2 public notice shall be provided under all the following provisions:

(a) Supplies shall provide the public notice as soon as practical, but not later than 30 days after the supply learns of the violation or situation. If the public notice is posted, the notice shall remain in place for as long as the violation or situation exists, but not for less than 7 days, even if the violation or situation is resolved. The department may, on a case-by-case basis, allow additional time for the initial notice of up to 3 months from the date the supply learns of the violation or situation. Circumstances that may warrant an extension include coordination with billing cycles for mailing purposes and violations that were quickly resolved and no longer pose any risk to persons served. The department shall not grant an extension to the 30-day deadline for an unresolved violation. Extensions granted by the department shall be in writing.

(b) The supply shall repeat the notice every 3 months as long as the violation or situation exists, unless the department determines that appropriate circumstances warrant a different repeat notice frequency. The repeat notice shall not be given less frequently

than once per year. The department shall not allow less frequent repeat notice for an MCL or treatment technique violation of total coliform provisions under R 325.10602, R 325.10704, R 325.10704a to R 325.10704k, and R 325.10705 to R 325.10709 or a treatment technique violation of filtration or disinfection under R 325.10611, R 325.10611a, or R 325.10611b. The department may, on a case-by-case basis, reduce the repeat notice frequency for other ongoing violations requiring a tier 2 repeat notice. Circumstances that may warrant a reduction in frequency include coordination with billing cycles for mailing purposes and consolidating notices for violations and situations occurring within a given year into an annual notice to provide for more effective communication with the consumer. Department determinations allowing repeat notices to be given less frequently than once every 3 months shall be in writing.

(c) For the turbidity violations specified in this subdivision, supplies shall consult with the department as soon as practical but not later than 24 hours after the supply learns of the violation, to determine whether a tier 1 public notice under R 325.10402(1) is required to protect public health. When consultation does not take place within the 24-hour period, the supply shall distribute a tier 1 notice of the violation within the next 24 hours, which shall be not more than 48 hours after the supply learns of the violation, and shall follow the requirements under R 325.10402(2) and (3). Consultation with the department is required for violations of the treatment technique requirement under R 325.10611 resulting from a single exceedance of the maximum allowable turbidity limit under R 325.10611b.

(3) Supplies shall provide the initial tier 2 public notice and applicable repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of supply, but it shall, at a minimum, meet all of the following requirements:

(a) Unless directed otherwise by the department, in writing, community water supplies shall provide notice by using both of the following forms of delivery:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the supply.

(ii) Other methods reasonably calculated to reach other persons regularly served by the supply, if they would not normally be reached by the notice required in paragraph (i) of this subdivision. Other persons served may include those who do not pay water bills or do not have service connection addresses, such as house renters, apartment dwellers, university students, nursing home patients, and prison inmates. Other methods may include any of the following:

(A) Publication in a local newspaper.

(B) Delivery of multiple copies for distribution by customers that provide their drinking water to others, such as apartment building owners or large private employers.

(C) Posting in public places served by the system or on the internet.

(D) Delivery to community organizations.

(b) Unless directed otherwise by the department, in writing, noncommunity water supplies shall use both of the following forms of delivery:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or mailing or directly delivering to each customer and service connection, where known.

(ii) Other methods reasonably calculated to reach other persons served by the system if they would not normally be reached by the notice required in paragraph (i) of this subdivision. Other persons served may include those who may not see a posted notice because the notice is not in a location they routinely pass by. Other methods may include any of the following:

(A) Publication in a local newspaper or newsletter distributed to customers.

(B) Use of e-mail to notify employees or students.

(C) Delivery of multiple copies in central locations, such as community centers.

R 325.10404 Tier 3 public notice; form, manner, and frequency of notice.

Rule 404. (1) A tier 3 public notice is required for all of the following violation categories and other situations in a community or noncommunity water supply that is subject to R 325.10401a:

(a) Monitoring violations under part 7 of these rules, except where a tier 1 notice is required under R 325.10402(1) or where the department determines that a tier 2 notice is required.

(b) Failure to comply with a testing procedure established in part 6 of these rules, except where a tier 1 notice is required under R 325.10402(1) or where the department determines that a tier 2 notice is required.

(c) Operation under a variance or exemption granted under section 20 of the safe drinking water act, 1976 PA 399, MCL 325.1020 and part 3 of these rules.

(d) Availability of unregulated contaminant monitoring results, as required under R 325.10407.

(e) Fluoride level above 2.0 mg/l as specified in R 325.10408a.The tier assignment for each specific violation or situation is listed in table 1 of R 325.10401a.

(f) Reporting and recordkeeping violations under total coliform provisions of R 325.10704a to R 325.10704k.

(2) A tier 3 public notice shall be provided under all the following provisions:

(a) Supplies shall provide the public notice not later than 1 year after the supply learns of the violation or situation or begins operating under a variance or exemption. Following the initial notice, the supply shall repeat the notice annually for as long as the violation, variance, exemption, or other situation exists. If the public notice is posted, the notice shall remain in place for as long as the violation, variance, exemption, or other situation exists, but for not less than 7 days, even if the violation or situation is resolved.

(b) Instead of individual tier 3 public notices, a supply may use an annual report detailing all violations and situations that occurred during the previous 12 months, as long as the timing requirements of subdivision (a) of this subrule are met.

(3) Supplies shall provide the initial tier 3 public notice and applicable repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of supply, but it shall, at a minimum, meet all of the following requirements:

(a) Unless directed otherwise by the department, in writing, community water supplies shall provide notice by using both of the following forms of delivery:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the community supply.

(ii) Other methods reasonably calculated to reach other persons regularly served by the community supply, if they would not normally be reached by the notice required in paragraph (i) of this subdivision. Other persons served may include those who do not pay water bills or do not have service connection addresses, such as house renters, apartment dwellers, university students, nursing home patients, and prison inmates. Other methods may include any of the following:

(A) Publication in a local newspaper.

(B) Delivery of multiple copies for distribution by customers that provide their drinking water to others, such as apartment building owners or large private employers.

(C) Posting in public places served by the community supply or on the internet.

(D) Delivery to community organizations.

(b) Unless directed otherwise by the department, in writing, noncommunity water supplies shall provide notice by using both of the following forms of delivery:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the noncommunity supply or mailing or directly delivering to each customer and service connection, where known.

(ii) Other methods reasonably calculated to reach other persons served by the noncommunity supply if they would not normally be reached by the notice required in paragraph (i) of this subdivision. Other persons served may include those who may not see a posted notice because the notice is not in a location they routinely pass by. Other methods may include any of the following:

(A) Publication in a local newspaper or newsletter distributed to customers.

(B) Use of e-mail to notify employees or students.

(C) Delivery of multiple copies in central locations, such as community centers.

(4) For community water supplies, the consumer confidence report (CCR) required under R 325.10411 to R 325.10415 may be used as a vehicle for the initial tier 3 public notice and all required repeat notices, if all of the following requirements are satisfied:

(a) The CCR is provided to persons served not later than 12 months after the community water supply learns of the violation or situation as required under subrule (2) of this rule.

(b) The tier 3 notice contained in the CCR follows the content requirements under R 325.10405.

(c) The CCR is distributed following the delivery requirements under subrule (3) of this rule.

R 325.10405 Content of public notice.

Rule 405. (1) If a community or noncommunity water supply that is subject to R 325.10401a has a violation or situation requiring public notification, then each public notice shall include all of the following elements:

(a) A description of the violation or situation, including the contaminant or contaminants of concern, and, as applicable, the contaminant level or levels.

(b) When the violation or situation occurred.

(c) The potential adverse health effects from the violation or situation, including the standard language under subrule (4)(a) or (4)(b) of this rule, whichever is applicable.

(d) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water.

(e) If alternative water supplies should be used.

(f) What actions consumers should take, including when they should seek medical help, if known.

(g) What the supply is doing to correct the violation or situation.

(h) When the supply expects to return to compliance or resolve the situation.

(i) The name, business address, and phone number of the supply or designee of the supply as a source of additional information concerning the notice.

(j) A statement to encourage the notice recipient to distribute the public notice to other persons served, using the standard language under subrule (4)(c) of this rule, where applicable.

(2) All of the following elements shall be included in the public notice for public water supplies operating under a variance or exemption:

(a) If a public water supply has been granted a variance or an exemption, then the public notice shall contain all of the following elements:

(i) An explanation of the reasons for the variance or exemption.

(ii) The date on which the variance or exemption was issued.

(iii) A brief status report on the steps the supply is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption.

(iv) A notice of opportunities for public input in the review of the variance or exemption.

(b) If a public water supply violates the conditions of a variance or exemption, then the public notice shall contain the 10 elements listed in subrule (1) of this rule.

(3) The public notice shall be presented in the following manner:

(a) Each public notice required by this part shall meet all of the following criteria:

(i) Shall be displayed in a conspicuous way when printed or posted.

(ii) Shall not contain overly technical language or very small print.

(iii) Shall not be formatted in a way that defeats the purpose of the notice.

(iv) Shall not contain language which nullifies the purpose of the notice.

(b) In communities where more than 10% of the consumers are non English speaking consumers, the public notice shall contain information in the appropriate language or languages regarding the importance of the notice or contain a telephone number or address where persons served may contact the supply to obtain a translated copy of the notice or to request assistance in the appropriate language.

(4) The supply shall include the following standard language in the public notice:

(a) The supply shall include in each public notice the health effects language specified in table 1 of this rule corresponding to each MCL, MRDL, and treatment technique violation listed in table 1 of R 325.10401a, and for each violation of a condition of a variance or exemption.

(b) The supply shall include the following language in the notice, including the language necessary to fill in the blanks, for all monitoring and testing procedure violations listed in table 1 of R 325.10401a: "We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we 'did not monitor or test' or 'did not complete all monitoring or

testing' for [contaminant or contaminants], and therefore cannot be sure of the quality of your drinking water during that time."

(c) The supply shall include in the notice the following language, where applicable, to encourage the distribution of the public notice to all persons served: "Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses).You can do this by posting this notice in a public place or distributing copies by hand or mail."

Table 1 Regulated contaminants

Key

AL=Action level
MCL=Maximum contaminant level
MCLG=Maximum contaminant level goal
mfl=Million fibers per liter
MRDL=Maximum residual disinfectant level
MRDLG=Maximum residual disinfectant level goal
mrem/year=Millirems per year (a measure of radiation absorbed by the body)
N/A=Not applicable
NTU=Nephelometric turbidity units (a measure of water clarity)
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 in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Microbiological contaminants						
Total coliform bacteria until March 31, 2016	MCL: For water supplies analyzing 40 or more samples per month, not more than 5.0% of the monthly samples may be positive for total coliform. For supplies analyzing fewer than 40 samples per month, not more than 1 sample per month may be positive for total coliform.			zero	Naturally present in the environment	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.
Total coliform bacteria beginning April 1, 2016. This row applies to Consumer Confidence Reporting.	TT	No conversion necessary	TT	N/A	Naturally present in the environment	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.
Fecal coliform and E. coli until March 31, 2016	zero	No conversion necessary	zero	zero	Human and animal fecal waste	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
E. coli beginning April 1, 2016	MCL: Routine and repeat samples are total coliform-positive and either is E. coli-positive or supply fails to take all required repeat samples following E. coli-positive routine sample or supply fails to analyze total coliform-positive repeat sample for E. coli			zero	Human and animal fecal waste	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.

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Coliform Assessment and/or Corrective Action Violations beginning April 1, 2016. This row applies to public notification. For Consumer Confidence Reporting, see R 325.10413(12)(g)(i).	N/A	No conversion necessary	TT	N/A	N/A	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 assessments to identify problems and to correct any problems that are found. [THE SUPPLY MUST USE ONE OF THE FOLLOWING APPLICABLE SENTENCES:] We failed to conduct the required assessment. We failed to correct all identified sanitary defects that were found during the assessment(s).
E. coli Assessment and/or Corrective Action Violations beginning April 1, 2106. This row applies to public notification. For Consumer Confidence Reporting, see R 325.10413(12)(g)(ii).	N/A	No conversion necessary	TT	N/A	N/A	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 violated the standard for E. coli, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found. [THE SUPPLY MUST USE ONE OF THE FOLLOWING APPLICABLE SENTENCES:] We failed to conduct the required assessment. We failed to correct all identified sanitary defects that were found during the assessment that we conducted.
Seasonal Supply Treatment Technique Violations of the Total Coliform Rule beginning April 1, 2016.	N/A	No conversion necessary	TT	N/A	N/A	When this violation includes the failure to monitor for total coliforms or E. coli prior to serving water to the public, the mandatory language found at R 325.10405(4)(b) shall be used. When this violation includes failure to complete other actions, the appropriate public notice elements found in R 325.10405(1) shall be used.

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Fecal indicator under groundwater requirements in R 325.10612 et. al: - E.coli - enterococci or - coliphage)	TT	No conversion necessary	TT	E.coli: zero Others: N/A	Human and animal fecal waste	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.
Violations of rules for ground water supplies subject to R 325.10612	TT	No conversion necessary	TT	N/A	N/A	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.
Turbidity (ntu)	TT	No conversion necessary	TT	N/A	Soil runoff	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.
Other microbiological contaminants						
Giardia lamblia, viruses, heterotrophic plate count (HPC) bacteria, legionella, cryptosporidium	TT*	No conversion necessary	TT*	zero	Naturally present in the environment	Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
	* The treatment technique violations that involve turbidity exceedances may use health effects language for turbidity instead.					
Inorganic contaminants						
Antimony (ppb)	0.006	1000	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder	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.
Arsenic (ppb)	0.010	1000	10	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes	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.
Asbestos [fibers longer than 10 µm] (mfl)	7 mfl	No conversion necessary	7	7	Decay of asbestos cement water mains; erosion of natural deposits	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.

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Barium (ppm)	2	No conversion necessary	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Beryllium (ppb)	0.004	1000	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
Cadmium (ppb)	0.005	1000	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
Chromium [total] (ppb)	0.1	1000	100	100	Discharge from steel and pulp mills; erosion of natural deposits	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
Cyanide [free] (ppb)	0.2	1000	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories	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.
Fluoride (ppm)	4.0	No conversion necessary	4.0	4.0	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories	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 9 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.
Mercury [inorganic] (ppb)	0.002	1000	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
Nitrate [as nitrogen] (ppm)	10	No conversion necessary	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Infants below the age of 6 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.

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Nitrite [as nitrogen] (ppm)	1	No conversion necessary	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Infants below the age of 6 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.
Total nitrate and nitrite [as nitrogen] (ppm)	10	No conversion necessary	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Infants below the age of 6 months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Selenium (ppb)	0.05	1000	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines	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.
Thallium (ppb)	0.002	1000	2	0.5	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories	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.
Lead and copper						
Lead (ppb)	AL=0.015	1000	AL=15 (TT)	zero	Corrosion of household plumbing systems; erosion of natural deposits	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.
Copper (ppm)	AL=1.3	No conversion necessary	AL=1.3 (TT)	1.3	Corrosion of household plumbing systems; erosion of natural deposits	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.
Synthetic organic contaminants including pesticides and herbicides						
2,4-D (ppb)	0.07	1000	70	70	Runoff from herbicide used on row crops	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.
2,4,5-TP [silvex] (ppb)	0.05	1000	50	50	Residue of banned herbicide	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Alachlor (ppb)	0.002	1000	2	zero	Runoff from herbicide used on row crops	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.
Atrazine (ppb)	0.003	1000	3	3	Runoff from herbicide used on row crops	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.
Benzo(a)pyrene [PAHs] (ppt)	0.0002	1,000,000	200	zero	Leaching from linings of water storage tanks and distribution lines	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.
Carbofuran (ppb)	0.04	1000	40	40	Leaching of soil fumigant used on rice and alfalfa	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.
Chlordane (ppb)	0.002	1000	2	zero	Residue of banned termiticide	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.
Dalapon (ppb)	0.2	1000	200	200	Runoff from herbicide used on rights of way	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
Di(2-ethylhexyl) adipate (ppb)	0.4	1000	400	400	Discharge from chemical factories	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.
Di(2-ethylhexyl) phthalate (ppb)	0.006	1000	6	zero	Discharge from rubber and chemical factories	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.
Dibromochloropropane [DBCP] (ppt)	0.0002	1,000,000	200	zero	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards	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.
Dinoseb (ppb)	0.007	1000	7	7	Runoff from herbicide used on soybeans and vegetables	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Dioxin [2,3,7,8-TCDD] (ppq)	0.00000003	1,000,000,000	30	zero	Emissions from waste incineration and other combustion; discharge from chemical factories	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.
Diquat (ppb)	0.02	1000	20	20	Runoff from herbicide use	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
Endothall (ppb)	0.1	1000	100	100	Runoff from herbicide use	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
Endrin (ppb)	0.002	1000	2	2	Residue of banned insecticide	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
Ethylene dibromide (ppt)	0.00005	1,000,000	50	zero	Discharge from petroleum refineries	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.
Glyphosate (ppb)	0.7	1000	700	700	Runoff from herbicide use	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
Heptachlor (ppt)	0.0004	1,000,000	400	zero	Residue of banned pesticide	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.
Heptachlor epoxide (ppt)	0.0002	1,000,000	200	zero	Breakdown of heptachlor	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.
Hexachlorobenzene (ppb)	0.001	1000	1	zero	Discharge from metal refineries and agricultural chemical factories	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.
Hexachlorocyclopentadiene (ppb)	0.05	1000	50	50	Discharge from chemical factories	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
lindane (ppt)	0.0002	1,000,000	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
Methoxychlor (ppb)	0.04	1000	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Oxamyl [vydate] (ppb)	0.2	1000	200	200	Runoff/leaching from insecticide used on apples, potatoes, and tomatoes	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
Pentachlorophenol (ppb)	0.001	1000	1	zero	Discharge from wood preserving factories	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.
Picloram (ppb)	0.5	1000	500	500	Herbicide runoff	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
Polychlorinated biphenyls [PCBs] (ppt)	0.0005	1,000,000	500	zero	Runoff from landfills; discharge of waste chemicals	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.
Simazine (ppb)	0.004	1000	4	4	Herbicide runoff	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
Toxaphene (ppb)	0.003	1000	3	zero	Runoff/leaching from insecticide used on cotton and cattle	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						
Benzene (ppb)	0.005	1000	5	zero	Discharge from factories; leaching from gas storage tanks and landfills	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.
Carbon tetrachloride (ppb)	0.005	1000	5	zero	Discharge from chemical plants and other industrial activities	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.
Chlorobenzene (ppb)	0.1	1000	100	100	Discharge from chemical and agricultural chemical factories	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
O-dichlorobenzene (ppb)	0.6	1000	600	600	Discharge from industrial chemical factories	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
P-dichlorobenzene (ppb)	0.075	1000	75	75	Discharge from industrial chemical factories	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.
1,2-dichloroethane (ppb)	0.005	1000	5	zero	Discharge from industrial chemical factories	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.
1,1-dichloroethylene (ppb)	0.007	1000	7	7	Discharge from industrial chemical factories	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
Cis-1,2-dichloroethylene (ppb)	0.07	1000	70	70	Discharge from industrial chemical factories	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
Trans-1,2-dichloroethylene (ppb)	0.1	1000	100	100	Discharge from industrial chemical factories	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.
Dichloromethane (ppb)	0.005	1000	5	zero	Discharge from pharmaceutical and chemical factories	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.
1,2-dichloropropane (ppb)	0.005	1000	5	zero	Discharge from industrial chemical factories	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.
Ethylbenzene (ppb)	0.7	1000	700	700	Discharge from petroleum refineries	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
Styrene (ppb)	0.1	1000	100	100	Discharge from rubber and plastic factories; leaching from landfills	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.
Tetrachloro-ethylene (ppb)	0.005	1000	5	Zero	Discharge from factories and dry cleaners	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.
Toluene (ppm)	1	No conversion necessary	1	1	Discharge from petroleum factories	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.
1,2,4-trichlorobenzene (ppb)	0.07	1000	70	70	Discharge from textile-finishing factories	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.

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
1,1,1-trichloroethane (ppb)	0.2	1000	200	200	Discharge from metal degreasing sites and other factories	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.
1,1,2-trichloroethane (ppb)	0.005	1000	5	3	Discharge from industrial chemical factories	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.
Trichloroethylene (ppb)	0.005	1000	5	zero	Discharge from metal degreasing sites and other factories	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.
Vinyl chloride (ppb)	0.002	1000	2	zero	Leaching from PVC piping; discharge from plastics factories	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
Xylenes [total] (ppm)	10	No conversion necessary	10	10	Discharge from petroleum factories; discharge from chemical factories	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.
Radioactive contaminants						
Beta/photon emitters (mrem/yr)	4 mrem/yr	No conversion necessary	4	zero	Decay of natural and man-made deposits	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta particle and photon radioactivity in excess of the MCL over many years may have an increased risk of getting cancer.
Alpha emitters [gross alpha] (pci/l)	15 pCi/L	No conversion necessary	15	zero	Erosion of natural deposits	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.
Combined radium [226 & 228] (pci/l)	5 pCi/L	No conversion necessary	5	zero	Erosion of natural deposits	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.
Uranium (pCi/L)	30 ug/L	No conversion necessary	30	Zero	Erosion of natural deposits	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.
Disinfection byproducts (DBP), byproduct precursors, and disinfectant residuals: where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBP). The department sets standards for controlling the levels of disinfectants and DBP in drinking water, including trihalomethanes (THM) and haloacetic acids (HAA). See R 325.10610 to R 325.10610d and R 325.10719e to R 325.10719n for disinfection byproduct MCLs, disinfectant MRDLs, and related monitoring requirements.						
Total trihalomethanes [TTHM] (ppb)	0.080*	1000	80*	N/A	By-product of drinking water disinfection	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
	* The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.					with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
Haloacetic acids (HAAs) (ppb)	0.060*	1000	60*	N/A	By-product of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
	* The MCL for haloacetic acids is the sum of the concentrations of the individual haloacetic acids.					
Bromate (ppb)	0.010	1000	10	zero	By-product of drinking water disinfection	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
Chloramines (ppm)	MRDL = 4	No conversion necessary	MRDL = 4	MRDLG = 4	Water additive used to control microbes	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.
Chlorine (ppm)	MRDL = 4	No conversion necessary	MRDL = 4	MRDLG = 4	Water additive used to control microbes	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.
Chlorite (ppm)	1	No conversion necessary	1	0.8	By-product of drinking water disinfection	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.
Chlorine dioxide (ppb)	MRDL = 0.8	1000	MRDL = 800	MRDLG = 800	Water additive used to control microbes	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.
	Add the following only to public notification where any 2 consecutive daily samples taken at the entrance to the distribution system are above the MRDL: "The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system which delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers." Add the following only to public notification where 1 or more distribution system samples are above the MRDL: "The chlorine dioxide violations reported today include exceedances of the drinking water standard within the distribution system which delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure."					

Contaminant in CCR units	Traditional MCL in mg/l, except where noted	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Total organic carbon [TOC - control of DBP precursors] (ppm)	TT	No conversion necessary	TT	None	Naturally present in the environment	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THM) and haloacetic acids (HAA). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
Other treatment techniques						
Acrylamide	TT	No conversion necessary	TT	zero	Added to water during sewage/ wastewater treatment	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.
Epichlorohydrin	TT	No conversion necessary	TT	zero	Discharge from industrial chemical factories; an impurity of some water treatment chemicals	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.

R 325.10413 Annual consumer confidence reporting; content of reports.

Rule 413. (1) Each community water supply shall provide to its customers an annual report that contains the information specified in this rule and the information specified in R 325.10414.

(2) Each report shall identify the source or sources of the water delivered by the community water supply by providing information on both of the following:

(a) The type of the water; for example, surface water or ground water.

(b) The commonly used name, if any, and location of the body or bodies of water.

(3) If a source water assessment has been completed, then the report shall notify consumers of the availability of the information and the means to obtain it. In addition, a community supply is encouraged to highlight in the report significant sources of contamination in the source water area if the supply has readily available information. If a supply has received a source water assessment from the department, then the report shall include a brief summary of the supply's susceptibility to potential sources of contamination, using language provided by the department or written by the operator.

(4) Each report shall include both of the following definitions:

(a) "Maximum Contaminant Level Goal" or "MCLG" means 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" or "MCL" means 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.

(5) A report for a community water supply operating under a variance or an exemption issued under section 20 of the act shall include the definition for variances and exemptions. "Variances and exemptions" means state or EPA permission not to meet an MCL or a treatment technique under certain conditions.

(6) A report that contains data on regulated contaminants using any of the following terms shall include the applicable definitions:

(a) "Treatment technique" or "TT" means a required process intended to reduce the level of a contaminant in drinking water.

(b) "Action level" or "AL" means the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water supply shall follow.

(c) "Maximum residual disinfectant level goal" or "MRDLG" means 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" or "MRDL" means 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.

(7) A report that contains information regarding a level 1 or level 2 assessment required under total coliform provisions of R 325.10704a to R 325.10704k shall include the following applicable definitions:

(a) Level 1 assessment: A level 1 assessment is a study of the water supply 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.

(8) The report shall include all of the following information on detected contaminants subject to mandatory monitoring, except Cryptosporidium:

(a) This subrule applies to all of the following contaminants:

(i) Contaminants subject to an MCL, action level, maximum residual disinfectant level, or treatment technique known as regulated contaminants.

(ii) Contaminants for which monitoring is required by 40 CFR §141.40, as referenced in R 325.10401a, known as unregulated contaminants.

(iii) Disinfection byproducts or microbial contaminants for which monitoring is required by 40 C.F.R. §§141.142 and 141.143, except as provided under subrule (9)(a) of this rule, and which are detected in the finished water.

(b) The data relating to the contaminants specified in this subrule shall be displayed in 1 table or in several adjacent tables. Any additional monitoring results that a community supply chooses to include in its report shall be displayed separately.

(c) The data shall be derived from data collected to comply with EPA and state monitoring and analytical requirements during the previous calendar year with the following exceptions:

(i) If a supply is allowed to monitor for regulated contaminants less often than once a year, then the table or tables shall include the date and results of the most recent sampling and the report shall include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. Data older than 5 years need not be included.

(ii) Results of monitoring in compliance with 40 C.F.R. §§141.142 and 141.143 need only be included for 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.

(d) For detected regulated contaminants in table 1 of R 325.10405, the table or tables shall contain all of the following information:

(i) The MCL for that contaminant expressed as a number equal to or greater than 1.0, as provided in table 1 of R 325.10405.

(ii) The MCLG for that contaminant expressed in the same units as the MCL.

(iii) If there is not an MCL for a detected contaminant, then the table shall indicate that there is a treatment technique, or specify the action level, applicable to that contaminant. The report shall also include the definitions for treatment technique or action level, or both, as appropriate, and specified in subrule (6) of this rule.

(iv) For contaminants subject to an MCL, except turbidity, total coliform, fecal coliform, and E. coli, the table shall indicate the highest contaminant level used to determine compliance with a drinking water standard and the range of detected levels as follows:

(A) If compliance with the MCL is determined annually or less frequently, then the table shall indicate the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.

(B) If compliance with the MCL is determined by calculating a running annual average of all samples taken at a sampling point, then the table shall indicate the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL. For the MCLs for TTHM and HAA5 in R 325.10610(2) that are based on a locational running annual average, supplies shall 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 1 location exceeds the TTHM or HAA5 MCL, the supply shall include the locational running annual averages for all locations that exceed the MCL.

(C) If compliance with the MCL is determined on a supply-wide basis by calculating a running annual average of all samples at all sampling points, then the table shall indicate the average and range of detection expressed in the same units as the MCL. Note to subdivision (d) (iv) of this subrule: When rounding of results to determine compliance with the MCL is allowed, rounding may be done before multiplying the results by the factor listed in table 1 of R 325.10405.

(v) For turbidity reported under R 325.10720 and R 325.10611b, the table shall indicate the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits for the filtration technology being used. The report shall include an explanation of the reasons for measuring turbidity.

(vi) For lead and copper, the table shall indicate the ninetieth percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level.

(vii) For total coliform analytical results until March 31, 2016, the table shall indicate either of the following:

(A) The highest monthly number of positive samples for supplies collecting fewer than 40 samples per month.

(B) The highest monthly percentage of positive samples for supplies collecting not less than 40 samples per month.

(viii) For fecal coliform and E. coli until March 31, 2016, the table shall indicate the total number of positive samples.

(ix) The table shall indicate the likely source or sources of detected contaminants to the best of the supply's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments and the supply shall use the information when it is available. If the supply lacks specific information on the likely source, then the report shall include 1 or more of the typical sources for that contaminant listed in table 1 of R 325.10405 that are most applicable to the community water supply.

(x) For E. coli analytical results under the total coliform provisions of R 325.10704a to R 325.10704k, the table shall indicate the total number of positive samples.

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

(f) The table or tables shall clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques and the report shall 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 supply to address the violation. The supply shall use the relevant language in table 1 of R 325.10405 to describe the potential health effects.

(g) For detected unregulated contaminants for which monitoring is required, except Cryptosporidium, the table or tables shall contain the average and range at which the contaminant was detected. The report may include a brief explanation of the reasons for monitoring for unregulated contaminants.

(9) All of the following information shall be included on Cryptosporidium, radon, and other contaminants:

(a) If the supply has performed any monitoring for Cryptosporidium, including monitoring performed to satisfy the requirements of 40 C.F.R. §141.143, which indicates that Cryptosporidium may be present in the source water or the finished water, the report shall include both of the following:

(i) A summary of the results of the monitoring.

(ii) An explanation of the significance of the results.

(b) If the supply has performed any monitoring for radon which indicates that radon may be present in the finished water, then the report shall include both of the following:

(i) The results of the monitoring.

(ii) An explanation of the significance of the results.

(c) If the supply has performed additional monitoring which indicates the presence of other contaminants in the finished water, then the supply is encouraged to report any results that may indicate a health concern. To determine if results may indicate a health concern, the supply may determine if EPA has proposed a national primary drinking water regulation or issued a health advisory for that contaminant by calling the safe drinking water hotline (800-426-4791). EPA considers detections above a proposed MCL or health advisory level to indicate possible health concerns. For such contaminants, the report may include both of the following:

(i) The results of the monitoring.

(ii) An explanation of the significance of the results noting the existence of a health advisory or a proposed regulation.

(d) Levels of sodium monitored under R 325.10717b during the year covered by the report.

(10) For compliance with state drinking water standards, in addition to the requirements of subrule (7) (f) of this rule, the report shall note any violation that occurred during the year covered by the report for all of the following requirements and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the supply has taken to correct the violation:

(a) Monitoring and reporting of compliance data.

(b) For filtration and disinfection prescribed by R 325.10611, R 325.10611a, and R 325.10611b, supplies which have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes which constitutes a violation shall include the following language as part of the explanation of potential adverse health effects in the report: "Inadequately treated water may contain disease causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches."

(c) For lead and copper control requirements prescribed by R 325.10604f, supplies that fail to take 1 or more actions prescribed by R 325.10604f(1) (d), R 325.10604f(2), R 325.10604f(3), R 325.10604f(4), or R 325.10604f(5) shall include the applicable language of table 1 of R 325.10405 for lead, copper, or both, in the report.

(d) For treatment techniques for acrylamide and epichlorohydrin prescribed by R 325.10604e, supplies that violate the requirements of R 325.10604e shall include the relevant language from table 1 of R 325.10405 in the report.

(e) Recordkeeping of compliance data.

(f) Special monitoring requirements prescribed by R 325.10717b.

(g) Violation of the terms of a variance, an exemption, or an administrative or judicial order.

(11) For variances and exemptions, if a supply is operating under the terms of a variance or an exemption issued under section 20 of the act, then the report shall contain all of the following information:

(a) An explanation of the reasons for the variance or exemption.

(b) The date on which the variance or exemption was issued.

(c) A brief status report on the steps the supply is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption.

(d) A notice of any opportunity for public input in the review, or renewal, of the variance or exemption.

(12) The report shall include all of the following additional information:

(a) A brief explanation regarding contaminants which may reasonably be expected to be found in drinking water including bottled water. The explanation may include the language of paragraphs (i) to (iii) of this subdivision or supplies may use their own comparable language. The report also shall include the language of paragraph (iv) of this subdivision.

(i) The sources of drinking water, both tap water and bottled water, including 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.

(ii) Contaminants that may be present in source water including all of the following:

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

(B) Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

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

(D) 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.

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

(iii) To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water supplies. FDA regulations establish limits for contaminants in bottled water that shall provide the same protection for public health.

(iv) 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 United States environmental protection agency's safe drinking water hotline (800-426-4791).

(b) The report shall include the telephone number of the owner, operator, or designee of the community water supply as a source of additional information concerning the report.

(c) In communities that have more than 10% non-English speaking residents, the report shall contain information in the appropriate language or languages regarding the importance of the report or the report shall contain a telephone number or address where residents may contact the supply to obtain a translated copy of the report or assistance in the appropriate language.

(d) The report shall include information about opportunities for public participation in decisions by the supplies that may affect the quality of the water; for example, time and place of regularly scheduled board meetings.

(e) The supply may include such additional information as it determines necessary for public education consistent with, and not detracting from, the purpose of the report.

(f) Groundwater supplies required to comply with groundwater provisions of R 325.10612 shall comply with all of the following:

(i) A groundwater supply that receives notice from the department of a significant deficiency or notice from a laboratory of a fecal indicator-positive groundwater source sample that is not invalidated by the department under R 325.10739(3) shall inform its customers of any significant deficiency that is uncorrected at the time of the next report or of any fecal indicator-positive groundwater source sample in the next report. The groundwater supply shall continue to inform the public annually until the department determines that particular significant deficiency is corrected or the fecal contamination in the groundwater source is addressed under R 325.10612a(1). Each report shall include all of the following elements:

(A) 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 groundwater source samples.

(B) If the fecal contamination in the groundwater source has been addressed under R 325.10612a(1) and the date of the action.

(C) For each significant deficiency or fecal contamination in the groundwater source that has not been addressed under R 325.10612a(1), the department-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed.

(D) If the groundwater supply receives notice of a fecal indicator-positive groundwater source sample that is not invalidated by the department under R 325.10739(3), the potential health effects using the health effects language of Table 1 of R 325.10405.

(ii) If directed by the department, a groundwater supply with significant deficiencies that have been corrected before the next report is issued shall inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction under paragraph (i) of this subdivision.

(g) Supplies required to comply with total coliform provisions of R 325.10704a to R 325.10704k shall comply with all of the following:

(i) A supply 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 shall comply with all of the following:

(A) Include in the report the text, "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 the problems that were found during these assessments."

(B) Include in the report as appropriate, filling in the blanks accordingly the text, "During the past year we were required to conduct [INSERT NUMBER OF LEVEL 1 ASSESSMENTS] 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."

(C) Include in the report as appropriate, filling in the blanks accordingly the text, "During the past year [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] level 2 assessments were required to be completed for our water supply. [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."

(D) A supply that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement and shall also include 1 or both of the following statements, as appropriate:

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

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

(ii) A supply required to undergo a level 2 assessment due to an E. coli MCL violation shall comply with all of the following:

(A) Include in the report the text, "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 the problems that were found during these assessments."

(B) Include in the report as appropriate, filling in the blanks accordingly the text, "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."

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

(1) We failed to conduct the required assessment.

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

(iii) If a supply detects E. coli and has violated the E. coli MCL, in addition to completing the table as required in subrule (8)(d) of this rule, the supply shall include 1 or more of the following statements to describe the noncompliance, as applicable:

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

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

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

(D) We failed to test for E. coli when a repeat sample tests positive for total coliform.

(iv) If a supply detects E. coli and has not violated the E. coli MCL, in addition to completing the table as required in subrule (8)(d) of this rule, the supply may include a statement that explains that although they have detected E. coli, they are not in violation of the E. coli MCL.

R 325.10416 Rescinded.

R 325.10417 Rescinded.

R 325.10418 Rescinded.

R 325.10419 Rescinded.

R 325.10420 Annual consumer confidence reporting; contaminants for vulnerable subpopulation.

Rule 420. Pursuant to section 14 of the act, if any contaminants listed in table 1 of this rule are detected above a level of concern as indicated in table 1 of this rule, then the consumer confidence report shall include a description of the potential adverse health effects and the vulnerable subpopulation that may be susceptible to the level of contaminant detected. The community water supply may use the relevant language provided in table 1 of R 325.10405.

Table 1 Contaminants for vulnerable subpopulation reporting

Contaminant	Susceptible vulnerable	Level of concern

	subpopulation	
Fecal coliform/ E. coli	Infants, young children, the elderly, and people with severely compromised immune systems.	Confirmed presence (any confirmed detect)
Copper	People with Wilson's disease.	1.3 mg/l (ppm)
Fluoride	Children.	4.0 mg/l (ppm)
Lead	Infants and children.	15.0 µg/l (ppb)
Nitrate	Infants below the age of 6 months.	10.0 mg/l (ppm)
Nitrite	Infants below the age of 6 months.	1.0 mg/l (ppm)

PART 6. STATE DRINKING WATER STANDARDS AND ANALYTICAL METHODS

R 325.10602 Maximum contaminant levels (MCLs) for microbiological contaminants.

Rule 602. (1) Beginning April 1, 2016, a community or noncommunity water supply is in compliance with the MCL for E. coli for samples taken under R 325.10704a to R 325.10704k unless 1 or more of the following conditions occur:

(a) The supply has an E. coli-positive repeat sample following a total coliform-positive routine sample.

(b) The supply has a total coliform-positive repeat sample following an E. coli-positive routine sample.

(c) The supply fails to take all required repeat samples following an E. coli-positive routine sample.

(d) The supply fails to test for E. coli when a repeat sample tests positive for total coliform.

Note to this subrule: For purposes of the public notification requirements in R 325.10401a to R 325.10409, violation of the MCL may pose an acute risk to health.

(2) Beginning April 1, 2016, a supply shall determine compliance with the MCL for E. coli in subrule (1) of this rule for each month in which it is required to monitor for total coliforms.

(3) The best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms in subrule (5) of this rule until March 31, 2016 and for achieving compliance with the maximum contaminant level for E. coli in subrule (1) of this rule beginning April 1, 2016 are all of the following:

(a) Protection of wells from fecal contamination by appropriate placement and construction.

(b) Maintenance of a disinfectant residual throughout the distribution system.

(c) Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, cross connection control, and continual maintenance of positive water pressure in all parts of the distribution system.

(d) Filtration and disinfection of surface water, as described in the surface water treatment provisions of R 325.10611 to R 325.10611n, R 325.10720 to R 325.720e, and R 325.10722, or disinfection of groundwater, as described in the groundwater provisions of R 325.10612 to R 325.10612b and R 325.10739 to R 325.10739b, using strong oxidants such as chlorine, chlorine dioxide, or ozone.

(e) For supplies using ground water, compliance with the requirements of an EPA-approved state Wellhead Protection Program developed and implemented under section 1428 of the federal act.

(4) The technology, treatment techniques, or other means available identified in subrule (3) of this rule are considered affordable technology, treatment techniques, or other means available to supplies serving 10,000 or fewer people for achieving compliance with the maximum contaminant level for total coliforms in subrule (5) of this rule until March 31, 2016 and for achieving compliance with the maximum contaminant level for E. coli in subrule (1) of this rule beginning April 1, 2016.

(5) Until March 31, 2016 all of the following apply:

(a) The total coliform MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density. Either of the following applies to the total coliform MCL:

(i) For a supply that collects at least 40 samples per month, if no more than 5.0 percent of the samples collected during a month are total coliform-positive, the supply is in compliance with the MCL for total coliforms.

(ii) For a supply that collects fewer than 40 samples per month, if no more than one sample collected during a month is total coliform-positive, the supply is in compliance with the MCL for total coliforms.

(b) A fecal coliform-positive repeat sample or E. coli-positive repeat sample, or a total coliform-positive repeat sample following a fecal coliform-positive or E. coli-positive routine sample, constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in R 325.10401a to R 325.10409, this is a violation that may pose an acute risk to health.

(c) A supply shall determine compliance with the MCL for total coliforms in this subrule for each month in which it is required to monitor for total coliforms.

R 325.10605 Analytical methods and sample collection procedures; incorporation by reference.

Rule 605. The analytical methods and sample collection procedures used in the determination of compliance with the state drinking water standards for microbiological contaminants, fecal indicators, inorganic chemical contaminants, organic chemical contaminants, including maximum TTHM potential, turbidity, disinfectant residuals, disinfection byproducts, disinfection byproduct precursors, temperature, pH, conductivity, alkalinity, bromide, specific ultraviolet absorbance, total organic carbon, and radioactivity which are contained in 40 CFR parts 141 and 143, 2014, and which have been promulgated by the United States EPA under authority of the safe drinking water act of 1974 (public law 93-523), the safe drinking water act amendments of 1986 (public law 99-339), and the safe drinking water act amendments of 1996 (public law 104-182), 42 USC 300f et seq. are adopted by reference in these rules. The adopted material is contained in Title 40 CFR parts 136 to 149 and is available from the

superintendent of documents at the address in R 325.10116(b) for a cost of $67.00 at the time of adoption of these rules. The adopted material is available for inspection from the offices of the department at the address in R 325.10116(a) or available on the Internet at http://www.ecfr.gov/.

R 325.10610 MCLs for disinfection byproducts.

Rule 610. (1) Both of the following apply to bromate and chlorite:

(a) The maximum contaminant levels (MCLs) for bromate and chlorite are as follows:

Disinfection byproduct	MCL (mg/l)
Bromate	0.010
Chlorite	1.0

(b) The best available technologies, treatment techniques, or other means available for achieving compliance with the MCLs are as follows:

Disinfection byproduct	Best available technology.
Bromate	Control of ozone treatment process to reduce production of bromate.
Chlorite	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

(2) All of the following apply to total trihalomethanes and haloacetic acids:

(a) The MCLs for TTHM and HAA5 are as follows:

Disinfection byproduct	MCL (mg/L)
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060

(b) For all supplies that disinfect their source water, the best available technologies, treatment techniques, or other means available for achieving compliance with the MCLs under subdivision (a) of this subrule are as follows:

Disinfection byproduct	Best available technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5).	Enhanced coagulation or enhanced softening, plus GAC10; or nanofiltration with a molecular weight cutoff less than or equal to 1000 Daltons; or GAC20

(c) The best technology, treatment techniques, or other means available for achieving compliance with the MCLs for TTHM and HAA5 under subdivision (a) of this subrule for consecutive supplies are as follows and applies only to the disinfected water that consecutive supplies buy or otherwise receive.

Disinfection byproduct	Best available technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5).	Supplies serving 10,000 or more people: Improved distribution system and storage tank management to reduce residence time, plus the use of chloramines for disinfectant residual maintenance. Supplies serving fewer than 10,000 people: Improved distribution system and storage tank management to reduce residence time

R 325.10610b Disinfectant residuals, disinfection byproducts, and disinfection byproduct precursors; compliance requirements.

Rule 610b. (1) This rule, R 325.10610c, R 325.10719e, and R 325.10719f apply to community water supplies and nontransient noncommunity water supplies that add a chemical disinfectant to the water in any part of the drinking water treatment process and to transient noncommunity water supplies adding chlorine dioxide. These public water supplies are considered "water supplies" or "supplies" in this rule. Transient noncommunity water supplies are only required to comply with the chlorine dioxide requirements. Compliance with this rule is based on all of the following:

(a) All samples taken under this rule, R 325.10610c, R 325.10719e, and R 325.10719f and analyzed under R 325.10605, shall be included in determining compliance with the maximum contaminant levels and maximum residual disinfectant levels of R 325.10610 and R 325.10610a.

(b) If, during the first year of monitoring under R 325.10719e, any individual quarter's average will cause the running annual average of that water supply to exceed the MCL for total trihalomethanes, haloacetic acids (five), or bromate; or the MRDL for chlorine or chloramine, the supply is out of compliance at the end of that quarter.

(c) A supply is in violation of the state drinking water standard if compliance is based on 4 consecutive quarters of monitoring and the average of samples, or quarterly averages, or running annual averages, whichever is applicable, exceeds the state drinking water standard, unless otherwise noted in this rule.

(d) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the supply fails to complete 4 consecutive quarters or 12 consecutive months of monitoring, whichever is applicable, compliance with the MCL for the last 4 quarter compliance period is based on an average of the available data unless otherwise stated in this rule.

(2) Compliance with disinfection byproducts requirements is based on all of the following:

(a) Compliance with TTHM and HAA5 requirements are based on R 325.10610d(4) and (5).

(b) Compliance with the bromate requirements is based on a running annual average, computed quarterly, of monthly samples, or, for months in which the supply takes more than 1 sample, the average of all samples taken during the month, collected under R 325.10719e(2)(c).

(c) Compliance with the chlorite requirements is based on an average of each 3 sample set taken in the distribution system under R 325.10719e(2)(b)(i)(B) and R 325.10719e(2)(b)(ii). If the average of any 3 sample set exceeds the MCL, the supply is in violation of the MCL.

(3) Compliance with disinfectant residuals requirements is based on both of the following:

(a) Compliance with the chlorine and chloramines requirements is based on a running annual average, computed quarterly, of monthly averages of all samples collected by the supply under R 325.10719e(3)(a). In cases where supplies switch between the use of chlorine and chloramines for residual disinfection during the year, compliance is determined by including together all monitoring results of both chlorine and chloramines

in calculating compliance. Supplies shall clearly indicate which residual disinfectant was analyzed for each sample when submitting reports to the department under R 325.11502a.

(b) Compliance with the chlorine dioxide requirements is based on consecutive daily samples collected by the supply under R 325.10719e(3)(b).

(i) An acute violation occurs when a daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day 1, or more, of the 3 samples taken in the distribution system exceed the MRDL. The supply shall take immediate corrective action to lower the level of chlorine dioxide below the MRDL. Failure to monitor in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the supply shall notify the public of the violation under R 325.10402, Tier 1 public notice, and report to the department under R 325.10719f.

(ii) A nonacute violation occurs when 2 consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL. The supply shall take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling. Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the supply shall notify the public of the violation under R 325.10403, Tier 2 public notice, and report to the department under R 325.10719f.

(c) Notwithstanding the MRDLs in R 325.10610b, supplies may increase residual disinfectant levels in the distribution system of chlorine or chloramines, but shall not increase the levels of chlorine dioxide, to a level and for a time necessary to protect public health to address specific microbiological contamination problems caused by circumstances such as distribution line breaks, storm run-off events, source water contamination events, or cross-connection events.

(4) Compliance with the treatment technique for disinfection byproduct precursors (DBPP) is determined as specified by R 325.10610c(3). Supplies may begin monitoring to determine whether step 1 TOC removals can be met 12 months before the compliance date for the supply. This monitoring is not required and failure to monitor during this period is not a violation. However, a supply that does not monitor during this period, and then determines, in the first 12 months after the compliance date, that the supply is not able to meet the step 1 requirements in R 325.10610c(2)(b) and shall therefore apply for alternate minimum TOC removal (step 2) requirements, is not eligible for retroactive approval of alternate minimum TOC removal (step 2) requirements as allowed under R 325.10610c(2)(c) and is in violation. Supplies may apply for alternate minimum TOC removal (step 2) requirements any time after the compliance date. For supplies required to meet step 1 TOC removals, if the value calculated under R 325.10610c(3)(a)(iv) is less than 1.00 calculated as a running annual average of monthly samples, computed quarterly, the supply is in violation of the treatment technique requirements and shall notify the public.

R 325.10610d Disinfection byproducts; requirements.

Rule 610d. (1) This rule and R 325.10719h to R 325.10719n establish monitoring and other requirements for achieving compliance with maximum contaminant levels based on locational running annual averages (LRAA) for total trihalomethanes (TTHM) and

haloacetic acids (five) (HAA5), and for achieving compliance with maximum residual disinfectant residuals for chlorine and chloramine for certain consecutive supplies.

(2) Subject to these requirements are community and nontransient noncommunity water supplies that use a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light. These public water supplies are considered "water supplies" or "supplies" in this rule and R 325.10719h to R 325.10719n.

(3) The supply shall comply with all of the following provisions:

(a) The supply shall comply with the requirements in this rule and R 325.10719h to R325.10719n when the supply becomes subject to this rule as indicated in subrule (2) of this rule.

(b) The monitoring frequency is specified in R 325.10719h(1)(a) and both of the following:

(i) If the supply is required to conduct quarterly monitoring, the supply shall begin monitoring in the first full calendar quarter that the supply becomes subject to this rule, as indicated in subrule (2) of this rule.

(ii) If the supply is required to conduct monitoring at a frequency that is less than quarterly, the supply shall begin monitoring in the calendar month identified in the monitoring plan developed under R 325.10719i not later than 12 months after the supply becomes subject to this rule, as indicated in subrule (2) of this rule.

(c) If the supply is required to conduct quarterly monitoring, the supply shall make compliance calculations at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter (or earlier if the LRAA calculated based on fewer than 4 quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters). If the supply is required to conduct monitoring at a frequency that is less than quarterly, the supply shall make compliance calculations beginning with the first compliance sample taken after the compliance date.

(d) For the purpose of the schedule in this subrule, the department may determine that the combined distribution system does not include certain consecutive supplies based on factors such as receiving water from a wholesale supply only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale supply. The department may also determine that the combined distribution system does not include certain wholesale supplies based on factors such as delivering water to a consecutive supply only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive supply.

(4) Compliance with the MCLs shall be based on both of the following:

(a) This subdivision applies to supplies required to monitor quarterly. To comply with MCLs in R 325.10610(2), the supply shall calculate LRAAs for TTHM and HAA5 using monitoring results collected under this rule and R 325.10719h to R 325.10719n and determine that each LRAA does not exceed the MCL. If the supply fails to complete 4 consecutive quarters of monitoring, the supply shall calculate compliance with the MCL based on the average of the available data from the most recent 4 quarters. If the supply takes more than 1 sample per quarter at a monitoring location, the supply shall average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation.

(b) This subdivision applies to supplies required to monitor annually or less frequently. To determine compliance with MCLs in R 325.10610(2), the supply shall determine that each sample taken is less than the MCL. If a sample exceeds the MCL, the supply shall comply with the requirements of R 325.10719k. If no sample exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.

(5) The supply is in violation of the MCL when the LRAA exceeds the MCLs in R 325.10610(2), calculated based on 4 consecutive quarters of monitoring, or the LRAA calculated based on fewer than 4 quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters. The supply is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if the supply fails to monitor.

(6) A consecutive supply that does not add a disinfectant but delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light, shall comply with monitoring requirements for chlorine and chloramines in R 325.10719e(3)(a) and the compliance requirements in R 325.10610b(1)(c) and (3)(a) and shall report monitoring results under R 325.10719f(3)(a).

PART 7. SURVEILLANCE, INSPECTION, AND MONITORING

R 325.10702 Evaluation of adequacy and condition of public water supplies; sanitary surveys.

Rule 702. (1) Under section 3 of the act, the department shall make sanitary surveys, onsite inspections, surveillance observations, or special purpose investigations for the purpose of evaluating the adequacy and condition of public water supplies at a frequency which may be determined by the department.

(2) Based on the results of each sanitary survey, the department shall determine whether the existing monitoring frequency is adequate and what additional measures, if any, the supply shall take to improve drinking water quality.

(3) Subpart H supplies shall undergo sanitary surveys at least once every 3 years for community water supplies and at least once every 5 years for noncommunity water supplies. The department may reduce the frequency to at least once every 5 years for community water supplies that have demonstrated outstanding performance.

(4) Groundwater supplies subject to R 325.10612 shall undergo sanitary surveys at either of the following frequencies:

(a) Community water supplies shall undergo a sanitary survey at least once every 3 years, except the department may reduce the frequency to once every 5 years if either of the following conditions exists:

(i) The supply provides at least 4-log treatment of viruses (using inactivation, removal, or a department approved combination of 4-log inactivation and removal) before or at the first customer for all its groundwater sources.

(ii) The supply has an outstanding performance record.

(b) Noncommunity water supplies shall undergo a sanitary survey at least once every 5 years.

R 325.10704 Coliform sampling.

Rule 704. (1) Until March 31, 2016, community and noncommunity water systems shall collect samples and cause analyses to be made for coliform bacteria to determine compliance with the state drinking water standards. Beginning April 1, 2016, the total coliform provisions of R 325.10704a to R 325.10704k are applicable, with supplies required to begin regular monitoring at the same frequency as the supply-specific frequency required on March 31, 2016.

(2) Until March 31, 2016, the department may require samples to be collected and analyzed for coliform bacteria for type III public water systems at a frequency as may be considered necessary by the department. Beginning April 1, 2016, supplies shall comply with R 325.10704a(2).

(3) If any routine or repeat sample is total coliform-positive, the supplier shall analyze that total coliform-positive culture medium to determine if fecal coliforms are present. Analysis for E. coli may be performed instead of fecal coliforms.

(4) All of the following provisions apply until March 31, 2016:

(a) R 325.10705 collection and analysis of samples for coliform bacteria; community water systems.

(b) R 325.10706 collection and analysis of samples for coliform bacteria; noncommunity water system.

(c) R 325.10709 special purpose and invalidated samples.

(5) All of the following provisions apply until all required repeat monitoring under R 325.10707 and fecal coliform or E. coli testing under subrule (3) of this rule that was initiated by a total coliform-positive sample taken before April 1, 2016 is completed, as well as analytical method, reporting, recordkeeping, public notification, and consumer confidence report requirements associated with that monitoring and testing:

(a) R 325.10707 repeat monitoring for total coliform.

(b) R 325.10707a invalidation of total coliform samples.

(c) Subrule (3) of this rule, analyze culture for fecal coliforms.

(d) R 325.10707b general notification requirements for total coliform and fecal coliform/escherichia coli (E. coli).

R 325.10704a Total coliform; general.

Rule 704a. (1) All of the following rules, also known in these rules as the total coliform rules, include both maximum contaminant level and treatment technique requirements:

(a) R 325.10704a total coliform; general.

(b) R 325.10704b total coliform; analytical methods.

(c) R 325.10704c total coliform; general monitoring.

(d) R 325.10704d total coliform; routine monitoring; noncommunity; serving 1,000 or fewer people; groundwater.

(e) R 325.10704e total coliform; routine monitoring; community; serving 1,000 or fewer people; groundwater.

(f) R 325.10704f total coliform; routine monitoring; subpart H; serving 1,000 or fewer people.

(g) R 325.10704g total coliform; routine monitoring; community and noncommunity; serving more than 1,000 people.

(h) R 325.10704h total coliform; repeat monitoring; E. coli.

(i) R 325.10704i total coliform; treatment technique triggers; assessments.
(j) R 325.10704j total coliform; violations.
(k) R 325.10704k total coliform; reporting and recordkeeping.
(2) The total coliform rules apply to all community and noncommunity water supplies. The department may require samples to be collected and analyzed for coliform bacteria for type III public water systems at a frequency as may be considered necessary by the department.
(3) Supplies falling under direct oversight of the EPA, where the EPA acts as the department, shall comply with decisions made by the EPA for implementation of these total coliform rules. The EPA has authority to establish the procedures and criteria as are necessary to implement these total coliform rules.
(4) Failure to comply with these total coliform rules is a violation of these rules.
(5) Supplies shall comply with these total coliform rules beginning April 1, 2016, unless otherwise required in these total coliform rules.

R 325.10704b Total coliform; analytical methods.
Rule 704b. (1) All of the following provisions apply to analytical methodology for compliance with the total coliform rules in R 325.10704a.
(a) The standard sample volume required for analysis, regardless of analytical method used, is 100 milliliters.
(b) Supplies need only determine the presence or absence of total coliforms and E. coli; a determination of density is not required.
(c) The time from sample collection to initiation of test medium incubation shall not exceed 30 hours. Supplies are encouraged but not required to hold samples below 10 degrees Celsius (50 degrees Fahrenheit) during transit.
(d) If water having residual chlorine (measured as free, combined, or total chlorine) is to be analyzed, sufficient sodium thiosulfate ($Na_2S_2O_3$) shall be added to the sample bottle before sterilization to neutralize the residual chlorine in the water sample. Dechlorination procedures are addressed in Section 9060A.2 of Standard Methods for the Examination of Water and Wastewater (20th and 21st editions), which is adopted by reference in R 325.10605.
(e) Supplies shall conduct total coliform and E. coli analyses in accordance with the appropriate analytical methods adopted by reference in R 325.10605.
(2) Supplies shall have all compliance samples required under the total coliform rules R 325.10704a to R 325.10704k analyzed by a laboratory certified by the EPA or the department to analyze drinking water samples, as required under R 325.10601a and R 325.10731. The laboratory used by the supply shall be certified for each method (and associated contaminant(s)) used for compliance monitoring analyses under total coliform rules, R 325.10704a to R 325.10704k.
(3) The standards required in these rules are incorporated by reference in R 325.10605.

R 325.10704c Total coliform; general monitoring.
Rule 704c. (1) Sample siting plan requirements for compliance with the total coliform rules in R 325.10704a are all of the following:
(a) Supplies shall develop a written sample siting plan that identifies sampling sites and a sample collection schedule that are representative of water throughout the distribution

system not later than March 31, 2016. These plans are subject to department review and revision. Supplies shall collect total coliform samples according to the written sample siting plan. Monitoring required by R 325.10704d to R 325.10704h may take place at a customer's premise, dedicated sampling station, or other designated compliance sampling location. Routine and repeat sample sites and the sampling points necessary to meet the requirements of the groundwater rules of R 325.10739 to R 325.10739b shall be reflected in the sampling plan.

(b) Supplies shall collect samples at regular time intervals throughout the month, except that supplies that use only ground water and serve 4,900 or fewer people may collect all required samples on a single day if they are taken from different sites.

(c) Supplies shall take at least the minimum number of required samples even if the supply has had an E. coli MCL violation or has exceeded the coliform treatment technique triggers in R 325.10704i(1).

(d) A supply may conduct more compliance monitoring than is required by these total coliform rules R 325.10704a to R 325.10704k to investigate potential problems in the distribution system and use monitoring as a tool to assist in uncovering problems. A supply may take more than the minimum number of required routine samples and shall include the results in calculating whether the coliform treatment technique trigger in R 325.10704i(1)(a)(i) and (ii) has been exceeded only if the samples are taken in accordance with the existing sample siting plan and are representative of water throughout the distribution system.

(e) Supplies shall identify repeat monitoring locations in the sample siting plan. All of the following apply to repeat monitoring locations:

(i) Unless the provisions of paragraph (iii) of this subdivision are met, the supply shall collect at least 1 repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least 1 repeat sample at a tap within 5 service connections upstream and at least 1 repeat sample at a tap within 5 service connections downstream of the original sampling site. If a total coliform-positive sample is at the end of the distribution system, or 1 service connection away from the end of the distribution system, the supply shall still take all required repeat samples. However, the department may allow an alternative sampling location instead of the requirement to collect at least 1 repeat sample upstream or downstream of the original sampling site.

(ii) Supplies required to conduct triggered source water monitoring under R 325.10739(1)(a) shall take ground water source sample or samples in addition to repeat samples required under these total coliform rules R 325.10704a to R 325.10704k.

(iii) Supplies may propose repeat monitoring locations to the department that the supply believes to be representative of a pathway for contamination of the distribution system. A supply may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan. The supply shall design its SOP to focus the repeat samples at locations that best verify and determine the extent of potential contamination of the distribution system area based on specific situations. The department may modify the SOP or require alternative monitoring locations as needed.

(f) The department may review, revise, and approve, as appropriate, repeat sampling proposed by supplies under subdivision (e)(iii) of this subrule. The supply shall demonstrate that the sample siting plan remains representative of the water quality in the

distribution system. The department may determine that monitoring at the entry point to the distribution system (especially for undisinfected ground water supplies) is effective to differentiate between potential source water and distribution system problems.

(2) Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, shall not be used to determine whether the coliform treatment technique trigger has been exceeded. Repeat samples taken under R 325.10704h are not considered special purpose samples, and shall be used to determine whether the coliform treatment technique trigger has been exceeded.

(3) A total coliform-positive sample invalidated under this subrule does not count toward meeting the minimum monitoring requirements of these total coliform rules R 325.10704a to R 325.10704k. A sample is invalidated under either of the following:

(a) The department may invalidate a total coliform-positive sample only if 1 or more of the following conditions are met:

(i) The laboratory establishes that improper sample analysis caused the total coliform-positive result.

(ii) The department, on the basis of the results of repeat samples collected as required under R 325.10704h(1), determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. For example, the department determines that the total coliform-positive sample result, which is from a sample tap that is approved in the sample siting plan, is isolated to that specific sample location. The department shall not invalidate a sample on the basis of repeat sample results unless both of the following occur:

(A) All repeat sample or samples collected at the same tap as the original total coliform-positive sample are also total coliform-positive.

(B) All repeat samples collected at a location other than the original tap are total coliform-negative.

Note to subdivision (ii) of this subrule: For example, the department shall not invalidate a total coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative, or if the supply has only 1 service connection.

(iii) The department has substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition that does not reflect water quality in the distribution system, such as use of an unapproved sample location or documented gross deviation from accepted sample collection procedures that clearly could be expected to contaminate the sample itself. In this case, the supply shall still collect all repeat samples required under R 325.10704h(1), and use them to determine whether a coliform treatment technique trigger in R 325.10704i has been exceeded. To invalidate a total coliform-positive sample under this subdivision, the decision and supporting rationale shall be documented in writing, and approved and signed by the supervisor of the department official who recommended the decision. The department shall make this document available to the EPA and the public. The written documentation shall state the specific cause of the total coliform-positive sample, and what action the supply has taken, or will take, to correct this problem. The department shall not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative.

(b) Both of the following apply to laboratory invalidation of a sample:

(i) A laboratory shall invalidate a total coliform sample, unless total coliforms are detected, if 1 or more of the following occur:

(A) The sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined, for example, the multiple-tube fermentation technique.

(B) The sample produces a turbid culture in the absence of an acid reaction in the presence-absence (p-a) coliform test.

(C) The sample exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter, for example, membrane filter technique.

(ii) If a laboratory invalidates a sample because of the interference, the supply shall collect another sample from the same location as the original sample within 24 hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The supply shall continue to resample within 24 hours and have the samples analyzed until it obtains a valid result. The department may waive the 24-hour time limit on a case-by-case basis.

R 325.10704d Total coliform; routine monitoring; noncommunity; serving 1,000 or fewer people; groundwater.

Rule 704d. (1) General total coliform rules routine monitoring requirements are all of the following:

(a) This rule applies to noncommunity water supplies using only ground water, except ground water under the direct influence of surface water, as defined in R 325.10105 and serving 1,000 or fewer people.

(b) Following a total coliform-positive sample taken under this rule, supplies shall comply with the repeat monitoring requirements and E. coli analytical requirements in R 325.10704h.

(c) Once all monitoring required by this rule and R 325.10704h for a calendar month has been completed, supplies shall determine whether 1 or more coliform treatment technique triggers in R 325.10704i have been exceeded. If 1 or more trigger has been exceeded, supplies shall complete assessments under R 325.10704i.

(d) For the purpose of determining eligibility for remaining on or qualifying for quarterly monitoring under subrules (6)(a)(iv) and (7)(d) of this rule, respectively, for transient noncommunity water supplies, the department may elect not to count monitoring violations under R 325.10704j(3)(a) if the missed sample is collected no later than the end of the monitoring period following the monitoring period in which the sample was missed. The supply shall collect the make-up sample in a different week than the routine sample for that monitoring period and should collect the sample as soon as possible during the monitoring period. The department shall not use this provision to reduce monitoring for a supply on increased monitoring in subrule (7) of this rule. This authority does not affect monitoring violations in R 325.10704j(3)(a) and reporting requirements in R 325.10704k(1)(d).

(2) Supplies shall monitor each calendar quarter that the supply provides water to the public, except for seasonal supplies or as provided under subrules (3) to (8) and (10) of this rule. Seasonal supplies shall meet the monitoring requirements of subrule (9) of this rule.

(3)Transition to total coliform rules R 325.10704a to R 325.10704k are both of the following requirements:

(a) Supplies, including seasonal supplies, shall continue to monitor according to the total coliform monitoring schedules under R 325.10702, R 325.10704, R 325.10705, R 325.10706, R 325.10707, R 325.10707a, R 325.10707b, and R 325.10709 that were in effect on March 31, 2016, unless 1 or more of the conditions for increased monitoring in subrule (6) of this rule are triggered on or after April 1, 2016, or unless otherwise directed by the department.

(b) Beginning April 1, 2016, the department shall perform a special monitoring evaluation during each sanitary survey to review the status of the supply, including the distribution system, to determine whether the supply is on an appropriate monitoring schedule. After the department has performed the special monitoring evaluation during each sanitary survey, the department may modify the supply's monitoring schedule, as necessary, or it may allow the supply to stay on its existing monitoring schedule, consistent with this rule. The department shall not allow supplies to begin less frequent monitoring under the special monitoring evaluation unless the supply has already met the applicable criteria for less frequent monitoring in this rule. For seasonal supplies on quarterly monitoring, this evaluation shall include review of the approved sample siting plan, which shall designate the time period or periods for monitoring based on site-specific considerations, for example, during periods of highest demand or highest vulnerability to contamination. The seasonal supply shall collect compliance samples during these time periods.

(4) Beginning no later than calendar year 2017, supplies on annual monitoring shall have an initial and recurring annual site visit by the department that is equivalent to a level 2 assessment or an annual voluntary level 2 assessment that meets the criteria in R 325.10704i(2) to remain on annual monitoring. The periodic required sanitary survey may be used to meet the requirement for an annual site visit for the year in which the sanitary survey was completed.

(5) Criteria for annual monitoring are both of the following:

(a) Beginning April 1, 2016, the department may reduce the monitoring frequency for a well-operated ground water supply from quarterly routine monitoring to at least annual monitoring, if the supply demonstrates that it meets all of the following criteria for reduced monitoring, except for a supply that has been on increased monitoring under subrule (6) of this rule:

(i) The supply has a clean compliance history for a minimum of 12 months.

(ii) The most recent sanitary survey shows that the supply is free of sanitary defects or has corrected all identified sanitary defects, has a protected water source, and meets approved construction standards.

(iii) The department has conducted an annual site visit within the last 12 months and the supply has corrected all identified sanitary defects. The supply may substitute a level 2 assessment that meets the criteria in R 325.10704i(2) for the department annual site visit.

(b) A supply on increased monitoring under subrule (6) of this rule shall meet the provisions of subrule (7) of this rule to go to quarterly monitoring and shall meet the provisions of subrule (8) of this rule to go to annual monitoring.

(6) Increased monitoring requirements for supplies on quarterly or annual monitoring are both of the following:

(a) A supply on quarterly or annual monitoring shall begin monthly monitoring the month following 1 or more of the following events, except as required in paragraph (v) of this subdivision:

(i) The supply triggers 1 level 2 assessment under R 325.10704i or 2 level 1 assessments under R 325.10704i in a rolling 12-month period.

(ii) The supply has an E. coli MCL violation.

(iii) The supply has a coliform treatment technique violation.

(iv) The supply on quarterly monitoring experiences either of the following events in a rolling 12-month period:

(A) Two total coliform monitoring violations.

(B) One total coliform monitoring violation and 1 level 1 assessment under R 325.10704i.

(v) The supply on annual monitoring has 1 total coliform rule monitoring violation. The supply shall begin quarterly monitoring the quarter following the event.

(b) The supply shall continue monthly or quarterly monitoring until the requirements in subrule (7) of this rule for quarterly monitoring or subrule (8) of this rule for annual monitoring are met. A supply on monthly monitoring for reasons other than those identified in subdivision (a)(i) to (iv) of this subrule is not considered to be on increased monitoring for the purposes of subrules (7) and (8) of this rule.

(7) The department may reduce the monitoring frequency for a supply on monthly monitoring triggered under subrule (6) of this rule to quarterly monitoring if the supply meets all of the following criteria:

(a) Within the last 12 months, the supply shall have a completed sanitary survey or a site visit by the department or a voluntary level 2 assessment by the department.

(b) The supply is free of sanitary defects.

(c) The supply has a protected water source.

(d) The supply has a clean compliance history for a minimum of 12 months.

(8) The department may reduce the monitoring frequency to annual monitoring for a supply on increased monitoring under subrule (6) of this rule if the supply meets the criteria in subrule (7) of this rule to reduce to quarterly monitoring plus both of the following criteria:

(a) An annual site visit by the department and correction of all identified sanitary defects. The supply may substitute a voluntary level 2 assessment by the department for the department annual site visit in a given year.

(b) The supply shall have in place or adopt 1 or more of the following additional enhancements to the water supply barriers to contamination:

(i) Cross connection control, as approved by the department.

(ii) An operator certified by the department or regular visits by a circuit rider certified by the department.

(iii) Continuous disinfection entering the distribution system and a residual in the distribution system under criteria specified by the department.

(iv) Demonstration of maintenance of at least a 4-log removal or inactivation of viruses as provided for under R 325.10739a(3).

(v) Other equivalent enhancements to water supply barriers as approved by the department.

(9) Seasonal supplies shall comply with all of the following:

(a) Beginning April 1, 2016, all seasonal supplies shall complete the department-approved start-up procedure, which may include a requirement for startup sampling, and submit a certification to the department, before serving water to the public, that it has completed the department-approved start-up procedures.

(b) A seasonal supply shall monitor every month that it is in operation unless it is eligible for quarterly monitoring beginning April 1, 2016, except as provided in subrule (3) of this rule. Seasonal supplies shall not reduce to annual monitoring. To be eligible for quarterly monitoring, a seasonal system shall meet both of the following criteria:

(i) Have an approved sample siting plan that designates the time period for monitoring based on site-specific considerations, for example, during periods of highest demand or highest vulnerability to contamination. Seasonal supplies shall collect compliance samples during this time period.

(ii) Meet the criteria in subrule (7) of this rule.

(c) The department may exempt a seasonal supply from some or all of the requirements for seasonal supplies if the entire distribution system remains pressurized during the entire period that the supply is not operating, except that supplies that monitor less frequently than monthly shall monitor during the vulnerable period designated by the department.

(10) Supplies collecting samples on a quarterly or annual frequency shall conduct additional routine monitoring the month following 1 or more total coliform-positive samples, with or without a level 1 treatment technique trigger. Supplies shall collect at least 3 routine samples during the next month. Supplies may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Supplies shall use the results of additional routine samples in coliform treatment technique trigger calculations under R 325.10704i(1). The department may waive the requirement to collect 3 routine samples the next month in which the supply provides water to the public if 1 or more of the following conditions are met:

(a) The department, or an agent approved by the department, performs a site visit before the end of the next month in which the supply provides water to the public. Although a sanitary survey need not be performed, the site visit shall be sufficiently detailed to allow the department to determine whether additional monitoring or corrective action, or both, is needed. The department shall not approve an employee of the supply to perform this site visit, even if the employee is an agent approved by the department to perform sanitary surveys.

(b) The department has determined why the sample was total coliform-positive and has established that the supply has corrected the problem or will correct the problem before the end of the next month in which the supply serves water to the public. In this case, the department shall document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the department official who recommends the decision, and make this document available to the EPA and public. The written documentation shall describe the specific cause of the total coliform-positive sample and what action the supply has taken and/or will take to correct this problem.

(c) The department determines that the supply has corrected the contamination problem before the supply takes the set of repeat samples required in R 325.10704h, and all repeat

samples were total coliform-negative. The department shall not waive the requirement to collect 3 additional routine samples the next month in which the supply provides water to the public solely on the grounds that all repeat samples are total coliform-negative.

R 325.10704e Total coliform; routine monitoring; community; serving 1,000 or fewer people; groundwater.

Rule 704e. (1) General total coliform rules routine monitoring requirements are all of the following:

(a) This rule applies to community water supplies using only ground water, except ground water under the direct influence of surface water, as defined in R 325.10105 and serving 1,000 or fewer people.

(b) Following a total coliform-positive sample taken under this rule, supplies shall comply with the repeat monitoring requirements and E. coli analytical requirements in R 325.10704h.

(c) Once all monitoring required by this rule and R 325.10704h for a calendar month has been completed, supplies shall determine whether 1 or more coliform treatment technique triggers in R 325.10704i have been exceeded. If a trigger has been exceeded, supplies shall complete assessments under R 325.10704i.

(2) The monitoring frequency for total coliforms is 1 sample per month. Supplies shall not reduce monitoring frequency.

R 325.10704f Total coliform; routine monitoring; subpart H; serving 1,000 or fewer people.

Rule 704f. (1) General total coliform rules routine monitoring requirements are all of the following:

(a) This rule applies to subpart H community and noncommunity water supplies serving 1,000 or fewer people.

(b) Following a total coliform-positive sample taken under this rule, supplies shall comply with the repeat monitoring requirements and E. coli analytical requirements in R 325.10704h.

(c) Once all monitoring under this rule and R 325.10704h for a calendar month has been completed, supplies shall determine whether 1 or more coliform treatment technique triggers in R 325.10704i have been exceeded. If a trigger has been exceeded, supplies shall complete assessments under R 325.10704i.

(d) Seasonal supplies shall comply with both of the following:

(i) Beginning April 1, 2016, all seasonal supplies shall complete the department-approved start-up procedure, which may include a requirement for startup sampling, and submit a certification to the department, before serving water to the public, that it has completed the department-approved start-up procedures.

(ii) The department may exempt a seasonal supply from some or all of the requirements for seasonal supplies if the entire distribution system remains pressurized during the entire period that the supply is not operating.

(2) Routine monitoring frequency for total coliforms. Subpart H supplies, including consecutive supplies shall monitor monthly. Supplies shall not reduce monitoring.

R 325.10704g Total coliform; routine monitoring; community and noncommunity; serving more than 1,000 people.

Rule 704g. (1) General total coliform rules routine monitoring requirements are all of the following:

(a) This rule applies to community and noncommunity water supplies serving more than 1,000 persons.

(b) Following a total coliform-positive sample taken under this rule, supplies shall comply with the repeat monitoring requirements and E. coli analytical requirements in R 325.10704h.

(c) Once all monitoring required by this rule and R 325.10704h for a calendar month has been completed, supplies shall determine whether 1 or more coliform treatment technique triggers in R 325.10704i have been exceeded. If a trigger has been exceeded, supplies shall complete assessments under R 325.10704i.

(d) Seasonal supplies shall comply with both of the following:

(i) Beginning April 1, 2016, all seasonal supplies shall complete the department-approved start-up procedure, which may include a requirement for startup sampling, and submit a certification to the department, before serving water to the public, that it has completed the department-approved start-up procedures.

(ii) The department may exempt a seasonal supply from some or all of the requirements for seasonal supplies if the entire distribution system remains pressurized during the entire period that the supply is not operating.

(2) The monitoring frequency for total coliforms is based on the population served by the supply, as follows:

Total Coliform Monitoring Frequency for Community and Noncommunity Water Supplies Serving More Than 1,000 People

Population served	Minimum number of samples per month
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90

96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

(3) Supplies shall not reduce monitoring, except for noncommunity water supplies using only ground water, and not ground water under the direct influence of surface water, serving 1,000 or fewer people in some months and more than 1,000 persons in other months. In months when more than 1,000 persons are served, the supplies shall monitor at the frequency in subrule (2) of this rule. In months when 1,000 or fewer people are served, the department may reduce the monitoring frequency, in writing, to a frequency allowed under R 325.10704d for a similarly situated supply that always serves 1,000 or fewer people, considering the requirements of R 325.10704d(5) to (7).

R 325.10704h Total coliform; repeat monitoring; E. coli.

Rule 704h. (1) Total coliform rules repeat monitoring requirements are all of the following:

(a) If a sample taken under R 325.10704d to R325.10704g is total coliform-positive, the supply shall collect a set of repeat samples within 24 hours of being notified of the positive result. The supply shall collect not fewer than 3 repeat samples for each total coliform-positive sample found. The department may extend the 24-hour limit on a case-by-case basis if the supply has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. In the case of an extension, the department shall specify how much time the system has to collect the repeat sample. The department shall not waive the requirement for a supply to collect repeat samples in this subdivision and subdivisions (b) to (c) of this subrule.

(b) The supply shall collect all repeat samples on the same day, except that the department may allow a supply with a single service connection to collect the required set of repeat samples over a 3-day period or to collect a larger volume repeat sample or samples in 1 or more sample containers of any size, as long as the total volume collected is at least 300 ml.

(c) The supply shall collect an additional set of repeat samples in the manner specified in subdivisions (a) and (b) and this subdivision of this subrule if 1 or more repeat samples in the current set of repeat samples is total coliform-positive. The supply shall collect the additional set of repeat samples within 24 hours of being notified of the positive result, unless the department extends the limit under subdivision (a) of this subrule. The supply shall continue to collect additional sets of repeat samples until either total coliforms are

not detected in 1 complete set of repeat samples or the supply determines that a coliform treatment technique trigger specified in R 325.10704i(1) has been exceeded as a result of a repeat sample being total coliform-positive and notifies the department. If a trigger identified in R 325.10704i is exceeded as a result of a routine sample being total coliform-positive, the supply shall conduct 1 round of repeat monitoring, but is not required to conduct more than 1 round of repeat monitoring for each total coliform-positive routine sample.

(d) After a supply collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample or samples from within 5 adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the supply may count the subsequent sample or samples as a repeat sample instead of as a routine sample.

(e) Results of all routine and repeat samples taken under R 325.10704d to R 325.10704h not invalidated by the department shall be used to determine whether a coliform treatment technique trigger in R 325.10704i has been exceeded.

(2) Escherichia coli (E. coli) testing requirements are both of the following:

(a) If a routine or repeat sample is total coliform-positive, the supply shall analyze that total coliform-positive culture medium to determine if E. coli are present. If E. coli are present, the supply shall notify the department by the end of the day when the supply is notified of the test result, unless the supply is notified of the result after the department office is closed and the department does not have either an after-hours phone line or an alternative notification procedure, in which case the supply shall notify the department before the end of the next business day.

(b) The department may allow a supply, on a case-by-case basis, to forgo E. coli testing on a total coliform-positive sample if the supply assumes that the total coliform-positive sample is E. coli-positive. Accordingly, the supply shall notify the department under subdivision (a) of this subrule and the E. coli maximum contaminant level provisions of R 325.10602(1) apply.

R 325.10704i Total coliform; treatment technique triggers; assessments.

Rule 704i. (1) Supplies shall conduct assessments under subrule (2) of this rule after exceeding treatment technique triggers in this subrule.

(a) Level 1 treatment technique triggers are all of the following:

(i) For supplies taking 40 or more samples per month, the supply exceeds 5.0% total coliform-positive samples for the month.

(ii) For supplies taking fewer than 40 samples per month, the supply has 2 or more total coliform-positive samples in the same month.

(iii) The supply fails to take every required repeat sample after a single total coliform-positive sample.

(b) Level 2 treatment technique triggers are all of the following:

(i) An E. coli MCL violation in R 325.10704j(1).

(ii) A second level 1 trigger as defined in subdivision (a) of this subrule, within a rolling 12-month period, unless the department has determined a likely reason that the samples that caused the first level 1 treatment technique trigger were total coliform-positive and has established that the supply has corrected the problem.

(iii) For supplies with approved annual monitoring, a level 1 trigger in 2 consecutive years.

(2) Assessment requirements are all of the following:

(a) Supplies shall ensure that level 1 and 2 assessments are conducted to identify the possible presence of sanitary defects and defects in distribution system coliform monitoring practices. Level 2 assessments shall be conducted by the department.

(b) When conducting assessments, supplies shall ensure that the assessor evaluates all of the following minimum elements:

(i) Review and identification of inadequacies in sample sites.

(ii) Sampling protocol.

(iii) Sample processing.

(iv) Atypical events that could affect distributed water quality or indicate that distributed water quality was impaired.

(v) Changes in distribution system maintenance and operation that could affect distributed water quality, including water storage.

(vi) Source and treatment considerations that bear on distributed water quality, where appropriate, for example, small ground water supplies.

(vii) Existing water quality monitoring data.

Note to subdivision (b) of this subrule: The supply shall conduct the assessment consistent with department directives that tailor specific assessment elements with respect to the size and type of the supply and the size, type, and characteristics of the distribution system.

(c) A supply shall conduct a level 1 assessment consistent with department requirements if the supply exceeds 1 of the level 1 treatment technique triggers in subrule (1)(a) of this rule. All of the following apply to level 1 assessments:

(i) The supply shall complete a level 1 assessment as soon as practical after a trigger in subrule (1)(a) of this rule. In the completed assessment form, the supply shall describe sanitary defects detected, corrective actions completed, and a proposed timetable for each corrective action not already completed. The assessment form may also note that no sanitary defects were identified. The supply shall submit the completed level 1 assessment form to the department within 30 days after the supply learns that it has exceeded a trigger.

(ii) If the department reviews the completed level 1 assessment and determines that the assessment is not sufficient, including the proposed timetable for each corrective action not already completed, the department shall consult with the supply. If the department requires revisions after consultation, the supply shall submit a revised assessment form to the department on an agreed-upon schedule not to exceed 30 days from the date of the consultation.

(iii) Upon completion and submission of the assessment form by the supply, the department shall determine if the supply has identified a likely cause for the level 1 trigger and, if so, establish that the supply has corrected the problem, or has included a schedule acceptable to the department for correcting the problem.

(d) A supply shall undergo a level 2 assessment if the supply exceeds 1 of the treatment technique triggers in subrule (1)(b) of this rule. The supply shall comply with any expedited actions or additional actions required by the department in the case of an E. coli MCL violation. The supply shall undergo a level 2 assessment by the department as

soon as practical after a trigger in subrule (1)(b) of this rule. The assessment form shall describe sanitary defects detected, corrective actions completed, and a timetable for each corrective action not already completed. The assessment form may also note that no sanitary defects were identified. The department shall determine whether the likely cause for the Level 2 trigger has been identified and whether the supply has corrected the problem.

(3) Supplies shall correct sanitary defects found through either level 1 or 2 assessments conducted under subrule (2) of this rule. For corrections not completed by the time of submission of the assessment form, the supply shall complete the corrective action or actions in compliance with a timetable approved by the department in consultation with the supply. The supply shall notify the department when each scheduled corrective action is completed.

(4) At any time during the assessment or corrective action phase, either the water supply or the department may request a consultation with the other person to determine the appropriate actions to be taken. The supply may consult with the department on all relevant information that may impact on its ability to comply with a requirement of these total coliform rules R 325.10704a to R 325.10704k, including the method of accomplishment, an appropriate time frame, and other relevant information.

R 325.10704j Total coliform; violations.

Rule 704j. (1) A supply is in violation of the MCL for E. coli when 1 or more of the following conditions occur:

(a) The supply has an E. coli-positive repeat sample following a total coliform-positive routine sample.

(b) The supply has a total coliform-positive repeat sample following an E. coli-positive routine sample.

(c) The supply fails to take all required repeat samples following an E. coli-positive routine sample.

(d) The supply fails to test for E. coli when a repeat sample tests positive for total coliform.

(2) Treatment technique violations are both of the following:

(a) A supply exceeds a treatment technique trigger in R 325.10704i(1) and then fails to conduct the required assessment or corrective actions within the time frame in R 325.10704i(2) and (3).

(b) A seasonal supply fails to complete a department-approved start-up procedure before serving water to the public.

(3) Monitoring violations are both of the following:

(a) Failure to take every required routine or additional routine sample in a compliance period.

(b) Failure to analyze for E. coli following a total coliform-positive routine sample.

(4) Reporting violations are all of the following:

(a) Failure to submit a monitoring report or completed assessment form after a supply properly conducts monitoring or assessment in a timely manner.

(b) Failure to notify the department following an E. coli-positive sample under R 325.10704h(2)(a) in a timely manner.

(c) Failure to submit certification of completion of department-approved start-up procedure by a seasonal supply.

R 325.10704k Total coliform; reporting and recordkeeping.

Rule 704k. (1) Reporting requirements for supplies subject to the total coliform rules in R 325.10704a are all of the following:

(a) E. coli reporting requirements are both of the following:

(i) A supply shall notify the department by the end of the day when the supply learns of an E. coli MCL violation, unless the supply learns of the violation after the department office is closed and the department does not have either an after-hours phone line or an alternative notification procedure, in which case the supply shall notify the department before the end of the next business day, and notify the public under R 325.10401a to R 325.10409.

(ii) A supply shall notify the department by the end of the day when the supply is notified of an E. coli-positive routine sample, unless the supply is notified of the result after the department office is closed and the department does not have either an after-hours phone line or an alternative notification procedure, in which case the supply shall notify the department before the end of the next business day.

(b) A supply that has violated the treatment technique for coliforms in R 325.10704i shall report the violation to the department no later than the end of the next business day after it learns of the violation, and notify the public under R 325.10401a to R 325.10409.

(c) A supply required to conduct an assessment under R 325.10704i shall submit the assessment report within 30 days. The supply shall notify the department under R 325.10704i(3) when each scheduled corrective action is completed for corrections not completed by the time of submission of the assessment form.

(d) A supply that has failed to comply with a coliform monitoring requirement shall report the monitoring violation to the department within 10 days after the supply discovers the violation, and notify the public under R 325.10401a to R 325.10409.

(e) A seasonal supply shall submit a certification to the department, before serving water to the public, that it has completed the department-approved start-up procedures.

(2) A supply shall maintain records under R 325.11510.

R 325.10708 Collection of additional samples.

Rule 708. (1) A single sample shall not be attributed to more than 1 monitoring period.

(2) If a sample that is needed to meet monitoring requirements is invalidated under these rules, and the public water supply does not learn of the invalidation until after the monitoring period has ended, and the supply collects a valid sample when they learn of the invalidation, then the valid sample may be used to determine compliance with these rules for the monitoring period that has ended.

(3) If the department collects a sample for the purpose of enforcement when a public water supply is delinquent in meeting a monitoring requirement, then the sample collected after the monitoring period has ended may be used to determine compliance with these rules for the monitoring period that has ended.

R 325.10710a Lead and copper in tap water; monitoring requirements.

Rule 710a. (1) Sample site location provisions for lead and copper monitoring in tap water of community and nontransient noncommunity water supplies are as follows:

(a) By the applicable date for the commencement of monitoring under subrule (4)(a) of this rule, each water supply shall complete a materials evaluation of its distribution system to identify a pool of targeted sampling sites that is in compliance with the requirements of this rule and that is large enough to ensure that the water supply can collect the number of lead and copper tap samples required under subrule (3) of this rule. All sites from which first draw samples are collected shall be selected from the pool of targeted sampling sites. Sampling sites may not include faucets that have point of use or point of entry treatment devices designed to remove inorganic contaminants.

(b) A water supply shall use the information on lead, copper, and galvanized steel that it is required to collect under 40 C.F.R. §141.42(d), (Special Monitoring for Corrosivity Characteristics) when conducting a materials evaluation. When an evaluation of the information collected under 40 C.F.R. §141.42(d), is insufficient to locate the requisite number of lead and copper sampling sites that are in compliance with the targeting criteria in this subrule, the water supply shall review the sources of information listed in paragraphs (i) to (iii) of this subdivision to identify a sufficient number of sampling sites. The provisions of 40 C.F.R. §141.42(d) are adopted by reference in R 325.10112. In addition, the supply shall collect all of the following information, where possible, in the course of its normal operations, for example, checking service line materials when reading water meters or performing maintenance activities:

(i) All plumbing codes, permits, and records in the files of the building department or departments that indicate the plumbing materials installed within publicly and privately owned structures connected to the distribution system.

(ii) All inspections and records of the distribution system that indicate the material composition of the service connections connecting a structure to the distribution system.

(iii) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, that indicates locations which may be particularly susceptible to high lead or copper concentrations.

(c) The sampling sites selected for a community water supply's sampling pool (tier 1 sampling sites) shall consist of single family structures to which either or both of the following provisions apply:

(i) The structures contain copper pipes soldered with lead and installed after 1982 or that contain lead pipes.

(ii) The structures are served by a lead service line. When multiple family residences comprise not less than 20% of the structures served by a water supply, the supply may include these types of structures in its sampling pool.

(d) A community water supply that has insufficient tier 1 sampling sites shall complete its sampling pool with tier 2 sampling sites, that consist of buildings, including multiple family residences to which either or both of the following provisions apply:

(i) The structures contain copper pipes soldered with lead and installed after 1982 or that contain lead pipes.

(ii) The structures are served by a lead service line.

(e) A community water supply that has insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with tier 3 sampling sites, that consist of single family

structures containing copper pipes soldered with lead and installed before 1983. A community water supply with insufficient tier 1, tier 2, and tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. For purposes of this subrule, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the system.

(f) The sampling sites selected for a nontransient, noncommunity water supply (tier 1 sampling sites) shall consist of buildings to which either or both of the following provisions apply:

(i) The structures contain copper pipes soldered with lead and installed after 1982 or that contain lead pipes.

(ii) The structures are served by a lead service line.

(g) A nontransient, noncommunity water supply that has insufficient tier 1 sites shall complete its sampling pool with sampling sites containing copper pipes soldered with lead and installed before 1983. If additional sites are needed to complete the sampling pool, the nontransient noncommunity water supply shall use representative sites throughout the distribution system. For purposes of this subrule, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the system.

(h) A water supply whose distribution system contains lead service lines shall draw 50% of the samples it collects during each monitoring period from sites that contain lead pipes or copper pipes with lead solder and 50% of the samples from sites served by a lead service line. A water supply that cannot identify a sufficient number of sampling sites that are served by a lead service line shall collect first draw tap samples from all of the sites identified as being served by lead service lines and shall complete its sampling pool in compliance with subdivisions (c) to (g) of this subrule.

(2) Sample collection methods provisions for lead and copper monitoring in tap water are as follows:

(a) All tap samples for lead and copper collected in compliance with this subrule, with the exception of lead service line samples collected under R 325.10604f(5)(c), and samples collected under subdivision (e) of this subrule, shall be first draw samples.

(b) Each first draw tap sample for lead and copper shall be 1 liter in volume and have stood motionless in the plumbing system of each sampling site for not less than 6 hours. First draw samples from residential housing shall be collected from the cold water kitchen tap or bathroom sink tap. First draw samples from a nonresidential building shall be 1 liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. Non-first draw samples collected instead of first draw samples under subdivision (e) of this subrule shall be 1 liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. First draw samples may be collected by the supply or the supply may allow residents to collect first draw samples after instructing the residents about the sampling procedures specified in this subdivision. To avoid problems of residents handling nitric acid, acidification of first draw samples may be done up to 14 days after the sample is collected. After acidification to resolubilize the metals, the sample shall stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a supply allows residents to perform sampling, the supply shall not challenge the accuracy of the sampling results based on alleged errors in sample collection.

(c) Each service line sample shall be 1 liter in volume and have stood motionless in the lead service line for not less than 6 hours. Lead service line samples shall be collected in 1 of the following ways:

(i) At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line.

(ii) Tapping directly into the lead service line.

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

(d) A water supply shall collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the water supply cannot gain entry to a sampling site to collect a follow-up tap sample, the supply may collect the follow-up tap sample from another sampling site in its sampling pool.

(e) A nontransient noncommunity water supply, or a community water supply that meets the criteria of R 325.10410(3)(g), that does not have enough taps that can supply first draw samples, as defined in R 325.10105, may apply to the department, in writing, to substitute non-first draw samples. The supply shall collect as many first draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The department has the discretion to waive the requirement for prior department approval of non-first draw sample sites selected by the supply, either through department regulation or written notification to the supply.

(3) Water supplies shall collect at least 1 sample during each monitoring period specified in subrule (4) of this rule from the number of sites listed in the standard monitoring column under this subrule. A supply that conducts reduced monitoring under subrule (4)(d) of this rule shall collect at least 1 sample from the number of sites specified in the reduced monitoring column under this subrule during each monitoring period specified in subrule (4)(d) of this rule. The reduced monitoring sites shall be representative of the sites required for standard monitoring. A public water supply that has fewer than 5 drinking water taps, that can be used for human consumption meeting the sample site criteria of subrule (1) of this rule to reach the required number of sample sites listed in this subrule, shall collect at least 1 sample from each tap and then shall collect additional samples from those taps on different days during the monitoring period to meet the required number of sites. Alternatively the department may allow these public water supplies to collect a number of samples less than the number of sites specified in this rule, provided that 100% of all taps that can be used for human consumption are sampled. The department shall approve this reduction of the minimum number of samples in writing based on a request from the supply or onsite verification by the department. The department may specify sampling locations when a water supply is conducting reduced monitoring.

Supply Size (Number of People Served)	Number of Sites (Standard Monitoring)	Number of Sites (Reduced Monitoring)
More than 100,000	100	50
10,001 to 100,000	60	30

3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
Fewer than 101	5	5

(4) Provisions for the timing of monitoring for lead and copper in tap water are as follows:

(a) The first 6-month monitoring period for small, medium size, and large water supplies shall begin on the following dates:

Supply Size (Number of People Served)	First 6-Month Monitoring Period Begins On
More than 50,000	January 1, 1992
3,301 to 50,000	July 1, 1992
Fewer than 3,301	July 1, 1993

All large water supplies shall be monitored during 2 consecutive 6-month periods. All small and medium size water supplies shall be monitored during each 6-month monitoring period until either of the following occurs:

(i) The supply exceeds the lead or copper action level and is therefore required to implement the corrosion control treatment under R 325.10604f(2), in which case the supply shall continue monitoring under subdivision (b) of this subrule.

(ii) The supply is in compliance with the lead and copper action levels during 2 consecutive 6-month monitoring periods, in which case the supply may reduce monitoring under subdivision (d) of this subrule.

(b) Monitoring provisions after the installation of corrosion control and source water treatment are as follows:

(i) A large water supply that installs optimal corrosion control treatment under R 325.10604f(2)(d)(iii) shall monitor during 2 consecutive 6-month monitoring periods by the date specified in R 325.10604f(2)(d)(iv).

(ii) A small or medium size water supply that installs optimal corrosion control treatment under R 325.10604f(2)(e)(iv) shall monitor during 2 consecutive 6-month monitoring periods by the date specified in R 325.10604f(2)(e)(v).

(iii) A supply that installs source water treatment under R 325.10604f(4)(a)(ii) shall monitor during 2 consecutive 6-month monitoring periods by the date specified in R 325.10604f(4)(a)(iii).

(c) After the department specifies the values for water quality control parameters, the supply shall monitor during each subsequent 6-month monitoring period, with the first monitoring period to begin on the date the department specifies the optimal values.

(d) Reduced monitoring provisions are as follows:

(i) A small or medium size water supply that is in compliance with the lead and copper action levels during each of 2 consecutive 6-month monitoring periods may reduce the number of samples under subrule (3) of this rule and may reduce the frequency of sampling to once each year. A small or medium size water supply collecting fewer than 5 samples as specified in subrule (3) of this rule, that meets the lead and copper action levels during each of 2 consecutive 6-month monitoring periods may reduce the

frequency of sampling to once per year. In no case can the supply reduce the number of samples required below the minimum of 1 sample per available tap. This sampling shall begin during the calendar year immediately following the end of the second consecutive 6-month monitoring period.

(ii) A water supply that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the department under R 325.10604f(3)(f) during each of 2 consecutive 6-month monitoring periods may reduce the frequency of monitoring to once each year and reduce the number of lead and copper samples under subrule (3) of this rule if it receives written approval from the department. This sampling shall begin during the calendar year immediately following the end of the second consecutive 6-month monitoring period. The department shall review monitoring, treatment, and other relevant information submitted by the water supply under R 325.10710d, and shall notify the supply in writing when it determines the supply is eligible to commence reduced monitoring under this subrule. The department shall review, and where appropriate, revise its determination when the supply submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iii) A small or medium size water supply that is in compliance with the lead and copper action levels during 3 consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every 3 years. A small or medium size water supply collecting fewer than 5 samples as specified in subrule (3) of this rule, that meets the lead and copper action levels during 3 consecutive years of monitoring may reduce the frequency of sampling to once every 3 years. A water supply that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the department under R 325.10604f(3)(f) during 3 consecutive years of monitoring may reduce the frequency of monitoring for lead and copper at the tap from annually to once every 3 years if it receives written approval from the department. Samples collected once every 3 years shall be collected not later than every third calendar year. The department shall review monitoring, treatment, and other relevant information submitted by the supply under R 325.10710d, and shall notify the supply in writing when it determines the supply is eligible to reduce the frequency of monitoring to once every 3 years. The department shall review, and where appropriate, revise its determination when the supply submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iv) A water supply that reduces the number and frequency of sampling shall collect these samples from representative sites included in the pool of targeted sampling sites identified in subrule (1) of this rule. A water supply that samples annually or less frequently shall conduct the lead and copper tap sampling during the month of June, July, August, or September unless the department has approved a different sampling period under subparagraph (A) of this paragraph, as follows:

(A) The department, at its discretion, may approve a different period for conducting the lead and copper tap sampling for supplies collecting a reduced number of samples. The period shall be not longer than 4 consecutive months and shall represent a time of normal operation where the highest levels of lead are most likely to occur. For a nontransient noncommunity water supply that does not operate during the months of June through

September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the department shall designate a period that represents a time of normal operation for the water supply. This sampling shall begin during the period approved or designated by the department in the calendar year immediately following the end of the second consecutive 6-month monitoring period for supplies initiating annual monitoring and during the 3-year period following the end of the third consecutive calendar year of annual monitoring for supplies initiating triennial monitoring.

(B) Supplies monitoring annually that have been collecting samples during the months of June through September and that received department approval to alter their sample collection period under subparagraph (A) of this paragraph, shall collect their next round of samples during a time period that ends not later than 21 months after the previous round of sampling. Supplies monitoring triennially that have been collecting samples during the months of June through September, and receive department approval to alter the sampling collection period under subparagraph (A) of this paragraph, shall collect their next round of samples during a time period that ends not later than 45 months after the previous round of sampling. Subsequent rounds of sampling shall be collected annually or triennially, as required by this subrule. Small water supplies with waivers, granted under subrule (7) of this rule, that have been collecting samples during the months of June through September and that received department approval to alter their sample collection period under subparagraph (A) of this paragraph shall collect their next round of samples before the end of the 9-year cycle.

(v) A water supply that demonstrates for 2 consecutive 6-month monitoring periods that the tap water lead level computed under R 325.10604f(1)(c) is less than or equal to 0.005 mg/l and the tap water copper level computed under R 325.10604f(1)(c) is less than or equal to 0.65 mg/l may reduce the number of samples under subrule (3) of this rule and reduce the frequency of sampling to once every 3 calendar years.

(vi) The following provisions apply to supplies subject to reduced monitoring:

(A) A small or medium size water supply subject to reduced monitoring that exceeds the lead or copper action level shall resume sampling under subdivision (c) of this subrule and shall collect the number of samples specified for the standard monitoring under subrule (3) of this rule. The supply shall also conduct water quality parameter monitoring under R 325.10710b(4), (5), or (6), as appropriate, during the monitoring period in which it exceeded the action level. The supply may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subrule (3) of this rule after it has completed 2 subsequent consecutive 6-month rounds of monitoring that meet the criteria of paragraph (i) of this subdivision or may resume triennial monitoring for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (iii) or (v) of this subdivision.

(B) A water supply subject to the reduced monitoring frequency that fails to meet the lead action level during a 4-month monitoring period or that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the department under R 325.10604f(3)(f) for more than 9 days in a 6-month period specified in R 325.10710b(6)shall conduct tap water sampling for lead and copper at the frequency specified in subdivision (c) of this subrule, collect the number of

samples specified for standard monitoring under subrule (3) of this rule, and shall resume monitoring for water quality parameters within the distribution system under R 325.10710b(6). This standard tap water sampling shall begin not later than the 6-month period beginning January 1 of the calendar year following the lead action level exceedance or water quality parameter excursion. The supply may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:

(1) The supply may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in subrule (3) of this rule after it has completed 2 subsequent 6-month rounds of monitoring that meet the criteria of paragraph (ii) of this subdivison and the supply has received written approval from the department to resume reduced monitoring on an annual frequency. This sampling shall begin during the calendar year immediately following the end of the second consecutive 6-month monitoring period.

(2) The supply may resume triennial monitoring for lead and copper at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (iii) or (v) of this subdivision and the supply has received written approval from the department to resume triennial monitoring.

(3) The supply may reduce the number of water quality parameter tap water samples required under R 325.10710b(7)(a) and the frequency with which it collects the samples under R 325.10710b(7)(b). The supply may not resume triennial monitoring for water quality parameters at the tap until it demonstrates, under the requirements of R 325.10710b(7)(b), that it has requalified for triennial monitoring.

(vii) A water supply subject to a reduced monitoring frequency under subdivision (d) of this subrule shall notify the department in writing under R 325.10710d(a)(iii) of any upcoming long-term change in treatment or addition of a new source as described in that rule. The department shall review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water supply. The department may require the supply to resume sampling under subdivision (c) of this subrule and collect the number of samples specified for standard monitoring under subrule (3) of this rule or take other appropriate steps such as increased water quality parameter monitoring or reevaluation of its corrosion control treatment given the potentially different water quality considerations.

(5) The results of monitoring conducted in addition to the minimum requirements of this rule shall be considered in calculating the ninetieth percentile lead or copper level.

(6) A sample invalidated under this subrule does not count toward determining lead or copper ninetieth percentile levels under R 325.10604f(1)(c) or toward meeting the minimum monitoring requirements of subrule (3) of this rule. All of the following provisions apply to invalidating samples:

(a) The department may invalidate a lead or copper tap water sample if at least 1 of the following conditions is met:

(i) The laboratory establishes that improper sample analysis caused erroneous results.

(ii) The department determines that the sample was taken from a site that did not meet the site selection criteria of this rule.

(iii) The sample container was damaged in transit.

(iv) There is substantial reason to believe that the sample was subject to tampering.

(b) The supply shall report the results of all samples to the department and all supporting documentation for samples the supply believes should be invalidated.

(c) To invalidate a sample under subdivision (a) of this subrule, the decision and the rationale for the decision shall be documented in writing. The department may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

(d) The water supply shall collect replacement samples for the samples invalidated under this rule if, after the invalidation of 1 or more samples, the supply has too few samples to meet the minimum requirements of subrule (3) of this rule. The replacement samples shall be taken as soon as possible, but not later than 20 days after the date the department invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

(7) A small water supply that meets the criteria of this subrule may apply to the department to reduce the frequency of monitoring for lead and copper under this rule to once every 9 years, that is, a "full waiver", if it meets all of the materials criteria specified in subdivision (a) of this subrule and all of the monitoring criteria specified in subdivision (b) of this subrule. If a small water supply meets the criteria in subdivisions (a) and (b) of this subrule only for lead, or only for copper, the supply may apply to the department for a waiver to reduce the frequency of tap water monitoring to once every 9 years for that contaminant only, that is, a "partial waiver". All of the following apply:

(a) The supply shall demonstrate that its distribution system and service lines and all drinking water system plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead containing materials or copper containing materials, or both, as those terms are defined in this subdivision, as follows:

(i) To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead, that is, a "lead waiver", the water supply shall provide certification and supporting documentation to the department that the supply is free of all lead containing materials and that the supply complies with both of the provisions in this paragraph. Both of the following apply:

(A) It does not contain plastic pipes that contain lead plasticizers or plastic service lines that contain lead plasticizers.

(B) It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless the fittings and fixtures meet the specifications of standards established under "Prohibition on Use of Lead Pipes, Solder, and Flux: Plumbing Fittings and Fixtures" 42 U.S.C. 300G-6(e), (2006), which is available on the Internet at http://www.law.cornell.edu/uscode/text/42/300g-6.

(ii) To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper, that is, a "copper waiver", the water supply shall provide certification and supporting documentation to the department that the supply does not contain copper pipes or copper service lines.

(b) The supply shall have completed at least one 6-month round of standard tap water monitoring for lead and copper at sites approved by the department and from the number of sites required by subrule (3) of this rule and demonstrate that the ninetieth percentile levels for all rounds of monitoring conducted since the supply became free of all lead containing or copper containing materials, or both, as appropriate, meet the following criteria:

(i) To qualify for a full waiver or a lead waiver, the supply shall demonstrate that the ninetieth percentile lead level does not exceed 0.005 mg/l.

(ii) To qualify for a full waiver or a copper waiver, the supply shall demonstrate that the ninetieth percentile copper level does not exceed 0.65 mg/l.

(c) The department shall notify the supply of its waiver determination, in writing setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the department may require the supply to perform specific activities, for example, limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver, to avoid the risk of lead or copper concentration of concern in tap water. The small supply shall continue monitoring for lead and copper at the tap as required by subdivisions (a) to (d) of this subrule, as appropriate, until it receives written notification from the department that the waiver has been approved.

(d) Monitoring frequencies for supplies with waivers are as follows:

(i) A supply with a full waiver shall conduct tap water monitoring for lead and copper under subrule (4)(d)(iv) of this rule at the reduced number of sampling sites identified in subrule (3) of this rule at least once every 9 years and provide the materials certification specified in subdivision (a) of this subrule for both lead and copper to the department along with the monitoring results. Samples collected every 9 years shall be collected not later than every ninth calendar year.

(ii) A supply with a partial waiver shall conduct tap water monitoring for the waived contaminant under subrule (4)(d)(iv) of this rule at the reduced number of sampling sites specified in subrule (3) of this rule at least once every 9 years and provide the materials certification specified in subdivision (a) of this subrule pertaining to the waived contaminant along with the monitoring results. Samples collected every 9 years for the waived contaminant shall be collected not later than every ninth calendar year. The supply also shall continue to monitor for the non-waived contaminant under requirements of subrule (4)(a) to (d) of this rule, as appropriate.

(iii) A water supply with a full or partial waiver shall notify the department, in writing, under R 325.10710d(a)(iii) of an upcoming long-term change in treatment or addition of a new source, as described in that rule. The department shall review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water supply. The department has the authority to require the water supply to add or modify waiver conditions, for example, require recertification that the system is free of lead containing or copper containing materials, or both, require additional round or rounds of monitoring, if it considers the modifications are necessary to address treatment or source water changes at the water supply.

(iv) If a water supply with a full or partial waiver becomes aware that it is no longer free of lead containing or copper containing materials, as appropriate, for example, as a result of new construction or repairs, the supply shall notify the department, in writing, not later than 60 days after becoming aware of the change.

(e) If the supply continues to satisfy the requirements of subdivision (d) of this subrule, the waiver will be renewed automatically, unless a condition listed in paragraphs (i) to (iii) of this subdivision occurs. A supply whose waiver has been revoked may reapply for a waiver if it again meets the appropriate materials and monitoring criteria of subdivisions (a) and (b) of this subrule. The waiver is revoked if any of the following conditions exist:

(i) A supply with a full waiver or a lead waiver no longer satisfies the materials criteria of subdivision (a)(i) of this subrule or has a ninetieth percentile lead level of more than 0.005 mg/l.

(ii) A supply with a full waiver or a copper waiver no longer satisfies the materials criteria of subdivision (a)(ii) of this subrule or has a ninetieth percentile copper level of more than 0.65 mg/l.

(iii) The department notifies the supply, in writing setting forth the basis of its decision, that the waiver has been revoked.

(f) A supply whose full or partial waiver has been revoked by the department is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

(i) If the supply exceeds the lead or copper action level, or both, the supply shall implement corrosion control treatment under the deadlines specified in R 325.10604f(2)(e) and other applicable requirements of this part.

(ii) If the supply meets both the lead and the copper action level, the supply shall monitor for lead and copper at the tap not less frequently than once every 3 years using the reduced number of sample sites specified in subrule (3) of this rule.

(g) Small water supply waivers approved by the department, in writing, before April 11, 2000, shall remain in effect if the supply has demonstrated that it is both free of lead containing and copper containing materials, as required by subdivision (a) of this subrule, and that its ninetieth percentile lead levels and ninetieth percentile copper levels meet the criteria of subdivision (b) of this subrule, and that the supply continues to meet the waiver eligibility criteria of subdivision (e) of this subrule. The first round of tap water monitoring conducted under subdivision (d) of this subrule shall be completed not later than 9 years after the last time the supply has monitored for lead and copper at the tap.

R 325.10719e Disinfectant residuals, disinfection byproducts, and disinfection byproduct precursors; monitoring requirements.

Rule 719e. (1) This rule applies as set forth in R 325.10610b. All of the following provisions are general monitoring requirements:

(a) Supplies shall take all samples during normal operating conditions.

(b) Supplies may consider multiple wells drawing water from a single aquifer as 1 treatment plant for determining the minimum number of TTHM and HAA5 samples required, with department approval. This approval will be granted in writing if the supply can demonstrate that the finished water quality characteristic of all entry points to the distribution system drawing from the identified aquifer, whether served by multiple wells or a single well, are similar and are expected to react alike in terms of the formation of disinfection byproducts. To demonstrate this, the supply shall arrange for a study to be prepared by an individual or firm considered qualified to perform this work, such as a hydrogeologist, geologist, or engineer. All of the following provisions apply to the study:

(i) The study shall consider well construction and geology, including all of the following:

(A) Well locations marked on a topographical map.

(B) Well depths.

(C) Well logs showing geological strata, identifying water production zones, screened or slotted areas, and grouting of the annular space.

(D) Static water levels.

(E) Aquifer studies and maps.

(F) Treatment applied.

(ii) The study shall consider water characteristics and chemistry of each well including all of the following:

(A) Field pH.

(B) Field temperatures.

(C) Specific conductivity.

(D) Total organic carbon.

(E) Analyses of common ions with a calculated cation/ion balance, such as calcium, magnesium, iron, manganese, sodium sulfate, alkalinity, and chloride.

(iii) The department may require disinfection byproducts monitoring at various entry points to the distribution system to determine if the study conclusions are correct.

(iv) Results of disinfection byproducts monitoring may be used instead of the study if all entry points to the distribution system drawing from the identified aquifer show that the levels are below the MCLs.

(c) Failure to monitor in accordance with the monitoring plan required under subrule (5) of this rule is a monitoring violation.

(d) Failure to monitor will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages and the supply's failure to monitor makes it impossible to determine compliance with MCLs or MRDLs.

(e) Supplies shall use only data collected under this rule to qualify for reduced monitoring.

(2) All of the following provisions are monitoring requirements for disinfection byproducts:

(a) All of the following provisions are TTHM and HAA5 monitoring requirements:

(i) Supplies shall conduct routine monitoring at the frequency indicated in R 325.10719h.

(ii) Supplies may reduce monitoring, except as otherwise provided, under R 325.10719j.

(iii) To qualify for reduced monitoring for TTHM and HAA5 under R 325.10719j, subpart H supplies not subject to disinfection byproduct precursor monitoring under subrule (4) of this rule shall take monthly TOC samples every 30 days at a location before treatment. In addition to meeting other criteria for reduced monitoring in R 325.10719j, the source water TOC running annual average shall be less than or equal to 4.0 mg/L, based on the most recent 4 quarters of monitoring, on a continuing basis at each treatment plant to reduce or remain on reduced monitoring for TTHM and HAA5. Once qualified for reduced monitoring for TTHM and HAA5 under R 325.10719j, a supply may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location before treatment.

(b) Community and nontransient noncommunity water supplies adding chlorine dioxide shall conduct monitoring for chlorite under all of the following provisions:

(i) All of the following provisions are routine monitoring requirements:

(A) Each day, supplies shall take samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the supply shall take additional samples in the distribution system the following day at the locations required by paragraph (ii) of this subdivision, in addition to the sample required at the entrance to the distribution system.

(B) Each month, supplies shall take a 3-sample set in the distribution system. The supply shall take 1 sample at each of the following locations:

(1) Near the first customer.

(2) At a location representative of average residence time.

(3) At a location reflecting maximum residence in the distribution system.

Any additional routine sampling shall be conducted in the same manner, as 3-sample sets, at the specified locations. The supply may use the results of additional monitoring conducted under paragraph (ii) of this subdivision to meet the requirement for monitoring in this paragraph.

(ii) On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the supply shall take 3 chlorite distribution system samples at each of the following locations:

(A) As close to the first customer as possible.

(B) In a location representative of average residence time.

(C) As close to the end of the distribution system as possible, reflecting maximum residence time in the distribution system.

(iii) Chlorite monitoring at the entrance to the distribution system required by paragraph (i)(A) of this subdivision may not be reduced. Chlorite monitoring in the distribution system required by paragraph (i)(B) of this subdivision may be reduced to 1 3-sample set per quarter after 1 year of monitoring where no individual chlorite sample taken in the distribution system under paragraph (i)(B) of this subdivision has exceeded the chlorite MCL and the supply has not been required to conduct monitoring under paragraph (ii) of this subdivision. The supply may remain on the reduced monitoring schedule until either any of the 3 individual chlorite samples taken quarterly in the distribution system under paragraph (i)(B) of this subdivision exceeds the chlorite MCL or the supply is required to conduct monitoring under paragraph (ii) of this subdivision, at which time the supply shall revert to routine monitoring.

(c) Supplies using ozone shall monitor for bromate as follows:

(i) Supplies using ozone shall monitor for bromate by taking 1 sample per month at the entrance to the distribution system for each treatment plant in the supply using ozone.

(ii) A supply required to monitor for bromate may reduce monitoring from monthly to quarterly, if the supply's running annual average bromate concentration is less than or equal to 0.0025 mg/L based on monthly bromate measurements under paragraph (i) of this subdivision for the most recent 4 quarters. The supply may remain on reduced monitoring as long as the running annual average of quarterly bromate sample are less than or equal to 0.0025 mg/L. If the running annual average bromate concentration is greater than 0.0025 mg/L, the supply shall resume routine monitoring required by paragraph (i) of this subdivision.

(3) Both of the following provisions are monitoring requirements for disinfectant residuals:

(a) Community and nontransient noncommunity water supplies adding chlorine or chloramines shall measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in R 325.10704 to R 325.10709 until March 31, 2016 and as specified in R 325.10704d to R 325.10704h beginning April 1, 2016. Subpart H supplies may use the results of residual disinfectant concentration sampling conducted under filtration sampling requirements of R 325.10720(4) instead of taking separate samples. Monitoring shall not be reduced.

(b) All of the following provisions are chlorine dioxide monitoring requirements:

(i) Community, nontransient noncommunity, and transient noncommunity water supplies that use chlorine dioxide shall monitor for chlorine dioxide by taking daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the supply shall take samples in the distribution system the following day at the locations required by paragraph (ii) of this subdivision, in addition to the sample required at the entrance to the distribution system.

(ii) On each day following a routine sample monitoring result that exceeds the MRDL, the supply shall take 3 chlorine dioxide distribution system samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system, that is, no booster chlorination, the supply shall take 3 samples as close to the first customer as possible, at intervals of at least 6 hours. If chlorine is used to maintain a disinfectant residual in the distribution system and there are 1 or more disinfection addition points after the entrance to the distribution system, that is, booster chlorination, the supply shall take 1 sample at each of the following locations:

(A) As close to the first customer as possible.

(B) In a location representative of average residence time.

(C) As close to the end of the distribution system as possible, reflecting maximum residence time in the distribution system.

(iii) Chlorine dioxide monitoring may not be reduced.

(4) Monitoring requirements for disinfection byproduct precursors (DBPP) are as follows:

(a) Subpart H supplies using conventional filtration shall monitor each treatment plant for TOC not later than the point of combined filter effluent turbidity monitoring and representative of the treated water. Supplies shall also monitor for TOC in the source water before any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as "paired samples." At the same time as the source water sample is taken, supplies shall monitor for alkalinity in the source water before any treatment. Supplies shall take 1 paired sample and 1 source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

(b) Subpart H supplies with an average treated water TOC of less than 2.0 mg/l for 2 consecutive years, or less than 1.0 mg/l for 1 year, may reduce monitoring for both TOC and alkalinity to 1 paired sample and 1 source water alkalinity sample per plant per

quarter. The supply shall revert to routine monitoring in the month following the quarter when the annual average treated water TOC is greater than or equal to 2.0 mg/l.

(5) Supplies subject to this rule shall develop and implement a monitoring plan. The supply shall maintain the plan and make it available for inspection by the department and the general public not more than 30 days after the supply becomes subject to this rule, as indicated in R 325.10610b. Subpart H supplies serving more than 3,300 people shall submit a copy of the monitoring plan to the department not later than the date of the first report required under R 325.10719f. At a minimum, the plan shall include all of the following elements:

(a) Specific locations and schedules for collecting samples for parameters included in R 325.10610b, R 325.10610c, or this rule.

(b) The method the supply will use to calculate compliance with MCLs, MRDLs, and treatment techniques.

(c) If approved for monitoring as a consecutive supply, or if providing water to a consecutive supply, under of R 325.10733, the sampling plan shall reflect the entire distribution system.

R 325.10719f Disinfectant residuals, disinfection byproducts, and disinfection byproduct precursors; reporting and recordkeeping.

Rule 719f. (1) Supplies required to monitor under R 325.10719e shall report to the department under this rule and R 325.10719n. Supplies required to sample quarterly or more frequently shall report to the department within 10 days after the end of each quarter in which samples were collected, notwithstanding the provisions of R 325.10734. Supplies required to sample less frequently than quarterly shall report to the department within 10 days after the end of each monitoring period in which samples were collected.

(2) Supplies shall report disinfection byproducts information specified in the following table:

If supply monitors under R 325.10719e(2) for...	Supply shall report...
(a) Chlorite	(i) The number of entry point samples taken each month for the last 3 months. (ii) The location, date, and result of each sample (both entry point and distribution system) taken during the last quarter. (iii) For each month in the reporting period, the average of all samples taken in each 3-samples set taken in the distribution system. (iv) Whether, based on R 325.10610b(2)(c), the MCL was violated, in which month, and how many times it was violated each month.

(b) Bromate	(i) The number of samples taken during the last quarter. (ii) The location, date, and result of each sample taken during the last quarter. (iii) The average of the monthly averages of all samples taken in the last year. (iv) Whether, based on R 325.10610b(2)(b), the MCL was violated.

(3) Supplies shall report disinfectant information specified in the following table:

If supply monitors under R 325.10719e(3) for...	supply shall report...
(a) Chlorine or chloramines	(i) The number of samples taken during each month of the last quarter. (ii) The monthly average of all samples taken in each month for the last 12 months. (iii) The average of all monthly averages for the last 12 months. (iv) Whether, based on R 325.10610b(3)(a), the MRDL was violated.
(b) Chlorine dioxide	(i) The dates, results, and locations of samples taken during the last quarter. (ii) Whether, based on R 325.10610(3)(b), the MRDL was violated. (iii) Whether the MRDL was exceeded in any 2 consecutive daily samples and whether the resulting violation was a tier 1 or tier 2 violation.

(4) Supplies shall report disinfection byproduct precursors and enhanced coagulation or enhanced softening information specified in the following table:

If supply monitors monthly or quarterly for TOC under R 325.10719e(4)...	Supply shall report...

(a) And is required to meet the enhanced coagulation or enhanced softening requirements in R 325.10610c(2)(b) or (c)	(i) The number of paired samples taken during the last quarter. (ii) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. (iii) For each month in the reporting period that paired samples were taken, the average of the percent reduction of TOC for each paired sample and the required TOC percent removal. (iv) Calculations for determining compliance with the TOC percent removal requirements, as provided in R 325.10610c(3)(a). (v) Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in R 325.10610c(2) for the last 4 quarters.

(b) And meets 1 or more of the alternative compliance criteria in R 325.10610c(1)(b) or (c)	(i) The number of paired samples taken during the last quarter. (ii) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. (iii) The alternative compliance criterion that the system is using. (iv) The running annual average based on monthly averages, or quarterly samples, of source water TOC for systems meeting a criterion in R 325.10610c(1)(b)(i) or (iii) or of treated water TOC for systems meeting the criterion in R 325.10610c(1)(b)(ii). (v) The running annual average based on monthly averages, or quarterly samples, of source water SUVA for systems meeting the criterion in R 325.10610c(1)(b)(v) or of treated water SUVA for systems meeting the criterion in R 325.10610c(1)(b)(vi). (vi) the running annual average of source water alkalinity for systems meeting the criterion in R 325.10610c(1)(b)(iii) and of treated water alkalinity for systems meeting the criterion in R 325.10610c(1)(c)(i). (vii) The running annual average for both TTHM and HAA5 for systems meeting the criterion in R 325.10610c(1)(b)(iii). (viii) The running annual average of the amount of magnesium hardness removal, as calcium carbonate, in mg/l, for systems meeting the criterion in R 325.10610c(1)(c)(ii). (ix) Whether the system is in compliance with the particular alternative compliance criterion in R 325.10610c(1)(b) or (c).

R 325.10719g Rescinded.

R 325.10719h Disinfection byproducts; routine monitoring.

Rule 719h. (1) A community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d shall monitor at the location or locations and dates identified in the monitoring plan in R 325.10719e(5), updated as required by R 325.10719i. These community and noncommunity water supplies are also considered "water supplies" or "supplies" in this rule and R 325.10719i to R 325.10719n.

(2) The supply shall monitor at least the number of locations identified in the following table:

Source Water Type	Population size category	Monitoring Frequency [1]	Distribution system monitoring locations total per monitoring period [2]
Subpart H	less than 500	per year	2
Subpart H	500 to 3,300	per quarter	2
Subpart H	3,301 to 9,999	per quarter	2
Subpart H	10,000 to 49,999	per quarter	4
Subpart H	50,000 to 249,999	per quarter	8
Subpart H	250,000 to 999,999	per quarter	12
Subpart H	1,000,000 to 4,999,999	per quarter	16
Subpart H	greater than or equal to 5,000,000	per quarter	20
Groundwater	less than 500	per year	2
Groundwater	500 to 9,999	per year	2
Groundwater	10,000 to 99,999	per quarter	4
Groundwater	100,000 to 499,999	per quarter	6
Groundwater	greater than or equal to 500,000	per quarter	8

[1] All supplies shall monitor during month of highest DBP concentrations.

[2] Supplies on quarterly monitoring shall take dual sample sets every 90 days at each monitoring location, except for subpart H supplies serving 500 to 3,300. Groundwater supplies serving 500-9,999 on annual monitoring shall take dual sample sets at each monitoring location. All other supplies on annual monitoring and subpart H supplies serving 500 to 3,300 shall take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. For supplies serving fewer than 500 people, only 1 location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location and month.

(3) An undisinfected supply that begins using a disinfectant other than UV light shall consult with the department to identify compliance monitoring locations for TTHM and HAA5 under R 325.10610d and R 325.10719h to R 325.10719n. The supply shall then develop a monitoring plan under R 325.10719i that includes those monitoring locations.

R 325.10719i Disinfection byproducts; monitoring plan.

Rule 719i. (1) Both of the following provisions apply to developing the monitoring plan for community or nontransient noncommunity water supplies that are subject to disinfection byproducts requirements of R 325.10610d:

(a) The supply shall develop and implement a monitoring plan to be kept on file for department and public review. The monitoring plan shall contain all of the following elements and be complete not later than the date the supply conducts the initial monitoring under TTHM and HAA5 provisions of R 325.10610d and R 325.10719h to R 325.10719n:

(i) Monitoring locations.

(ii) Monitoring dates.

(iii) Compliance calculation procedures.

(iv) Monitoring plans for the other supplies in the combined distribution system if the department has reduced monitoring requirements under R 325.10733.

(b) A supply shall identify monitoring locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of monitoring locations have been identified for compliance with R 325.10719h to R 325.10719j. The supply shall also provide the rationale for identifying the locations as having high levels of TTHM or HAA5.

(2) A subpart H supply serving greater than 3,300 people shall submit a copy of the monitoring plan to the department before the date the supply conducts the initial monitoring under TTHM and HAA5 provisions of R 325.10610d and R 325.10719h to R 325.10719n.

(3) The supply may revise the monitoring plan to reflect changes in treatment, distribution system operations and layout, including new service areas, or other factors that may affect TTHM or HAA5 formation, or for department approved reasons, after consultation with the department regarding the need for changes and the appropriateness of changes. If the supply changes monitoring locations, the supply shall replace existing compliance monitoring locations with the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels. The department may also require modifications in the monitoring plan. A subpart H supply serving greater than 3,300 people shall submit a copy of the modified monitoring plan to the department before the date the supply is required to comply with the revised monitoring plan.

R 325.10719m Rescinded.

R 325.10720 Filtration and disinfection; filtration sampling requirements.

Rule 720. (1) Subpart H supplies shall monitor under this rule to determine compliance with R 325.10611a and R 325.10611b.

(2) All of the following provisions are turbidity monitoring requirements:

(a) Supplies shall collect samples and perform measurements for turbidity at locations representative of filtered water at regular intervals at least once every 4 hours while the treatment plant is in operation.

(b) A public water supply may substitute continuous turbidity monitoring for grab sample monitoring if the continuous measurement is validated for accuracy on a regular

basis using a protocol approved by the department. Readings taken from a continuous recording turbidimeter at regular intervals at least once every 4 hours may be used to determine compliance with the treatment technique under R 325.10611b. The turbidimeter shall be calibrated using the procedure specified by the manufacturer.

(c) Supplies using conventional or direct filtration shall conduct continuous monitoring of turbidity for each individual filter and shall calibrate turbidimeters using the procedure specified by the manufacturer. Supplies shall record the results of individual filter monitoring every 15 minutes.

(d) If there is a failure in the continuous turbidity monitoring equipment described in subdivision (c) of this subrule, then the supply shall conduct grab sampling every 4 hours instead of continuous monitoring, but for not more than 5 working days after the failure of the equipment for supplies serving 10,000 or more people or 14 days for supplies serving fewer than 10,000 people before a violation is incurred.

(e) If the supply serves fewer than 10,000 people and consists of only 2 or fewer filters, then the supply may conduct continuous monitoring of combined filter effluent turbidity instead of individual filter effluent turbidity monitoring. Continuous monitoring shall meet the same requirements in subdivisions (c) and (d) of this subrule.

(3) All of the following provisions are disinfectant residual monitoring requirements at the entry points to the distribution system:

(a) Supplies serving more than 3,300 people shall monitor for residual disinfectant concentration at an entry point to the distribution system on a continuous basis and record the lowest value each day. If there is a failure in the continuous monitoring equipment, the supply may take grab samples every 4 hours instead of continuous monitoring, but for no more than 5 working days following the failure of the equipment.

(b) Supplies serving fewer than 3,301 people shall monitor for residual disinfectant concentration at an entry point to the distribution system at a frequency set forth in table 1 of this rule, and, if more than 1 sample is required per day, supplies shall collect samples at times evenly spaced throughout the operational day.

Table 1 Residual disinfectant concentration sampling frequencies

Supply size by population	Samples per day
500 or fewer people	1
501 to 1,000 people	2
1,001 to 2,500 people	3
2,501 to 3,300 people	4

(c) Under R 325.10611a, supplies shall maintain a residual disinfectant concentration entering the distribution system of not less than 0.2 milligrams per liter. If the residual disinfectant concentration drops below this level at any time, then the supply shall notify the department as soon as possible, but not later than the end of the next business day. In addition, the supply shall notify the department by the end of the next business day whether or not the residual disinfectant concentration was restored to not less than 0.2 milligrams per liter within 4 hours.

(4) The residual disinfectant concentration shall be measured, at least, at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in R 325.10704 to R 325.10709 until March 31, 2016 and as specified in

R 325.10704d to R 325.10704h beginning April 1, 2016. The department may allow a public water supply which uses both a surface water source or a ground water source under direct influence of surface water, and a ground water source, to take disinfectant residual samples at points other than the total coliform sampling points if the department determines that those points are more representative of treated (disinfected) water quality within the distribution system. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) as adopted by reference in R 325.10605, may be measured instead of residual disinfectant concentration.

R 325.10720d Enhanced treatment for Cryptosporidium; developing disinfection profile and benchmark.

Rule 720d. (1) Subpart H supplies required to develop disinfection profiles under R 325.10720c shall follow the requirements of this rule. These Subpart H supplies are also considered "supplies" in this rule. Supplies shall monitor under subrule (2) of this rule to determine the total log inactivation for Giardia lamblia and viruses. Supplies shall determine log inactivation for Giardia lamblia through the entire plant, based on the protocol in R 325.10722(3)(b). Supplies shall determine log inactivation for viruses through the entire treatment plant, based on the protocol in R 325.10722(3)(c).

(2) Subpart H supplies with a single point of disinfectant application before the entrance to the distribution system shall conduct the monitoring in R 325.10722(3)(a). Supplies with more than 1 point of disinfectant application shall conduct the monitoring in R 325.10722(3)(a) for each disinfection segment. Subpart H supplies shall monitor the parameters necessary to determine the total inactivation ratio.

(3) Instead of conducting new monitoring under subrule (2) of this rule, Subpart H supplies may elect to meet the requirements of either of the following:

(a) Supplies that have at least 1 year of existing data that are substantially equivalent to data collected under R 325.10722(3)(a) to meet the requirements of subule (2) of this rule may use these data to develop disinfection profiles as specified in this rule if the supply has neither made a significant change to its treatment practice nor changed sources since the data were collected. Supplies may develop disinfection profiles using up to 3 years of existing data.

(b) Supplies may use a disinfection profile or profiles developed under R 325.10722 instead of developing a new profile if the supply has neither made a significant change to its treatment practice nor changed sources since the profile was developed. Supplies that have not developed a virus profile under R 325.10722 shall develop a virus profile using the same monitoring data on which the Giardia lamblia profile is based.

(4) Subpart H supplies shall calculate the total inactivation ratio for Giardia lamblia using the protocol in R 325.10722(3)(b). Supplies shall calculate the log of inactivation for viruses using the protocol in R 325.10722(3)(c).

(5) Subpart H supplies shall use the procedures in R 325.10722(4)(c) to calculate a disinfection benchmark.

R 325.10722 Filtration and disinfection; disinfection profiling and benchmarking.

Rule 722. (1) A subpart H supply making a significant change to its disinfection practice, as described in subrule (4)(a)(i) to (iv) of this rule shall consult with the

department before making the change. An approved significant change in disinfection practices shall not jeopardize current levels of disinfection.

(2) A subpart H community or nontransient noncommunity supply that develops a disinfection profile under R 325.10720c of weekly log inactivations over 52 weeks shall report to the department under R 325.10720a(5).

(3) All of the following provisions apply to disinfection profiling:

(a) To determine the total log inactivation for Giardia lamblia and viruses, supplies shall monitor at least weekly for a period of 12 consecutive months. If supplies monitor more frequently, the monitoring frequency shall be evenly spaced. Supplies that operate for fewer than 12 months per year shall monitor weekly during the period of operation. Supplies shall monitor all of the following parameters:

(i) If a disinfectant other than UV is used, the temperature of the disinfected water shall be measured at each residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the department.

(ii) If chlorine is used, the pH of the disinfected water shall be measured at each chlorine residual disinfect disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the department.

(iii) Disinfectant contact time or times ("T") shall be determined during peak hourly flow.

(iv) Residual disinfectant concentration or concentrations ("C") of the water before or at the first customer and before each additional point of disinfectant application shall be measured during peak hourly flow.

(b) A supply shall determine log inactivation for Giardia lamblia through the entire plant, based on CT99.9 values in Tables 1.1 to 1.6, 2.1 and 3.1 of 40 CFR §141.74(b)(3)(v), as applicable, as adopted by reference in R 325.10112. A supply shall calculate the total logs of inactivation for Giardia lamblia as follows:

(i) A supply using only 1 point of disinfectant application shall determine the total inactivation ratio for the disinfection segment based on either of the following methods:

(A) Determine 1 inactivation ratio (CTcalc/CT99.9) before or at the first customer during peak hourly flow.

(B) Determine successive CTcalc/CT99.9 values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. The supply shall calculate the total inactivation ratio by determining (CTcalc/CT99.9) for each sequence and then adding the (CTcalc/CT99.9) values together to determine $\sum$ (CTcalc/CT99.9).

(ii) A supply using more than 1 point of disinfectant application before the first customer shall determine the (CTcalc/CT99.9) value of each disinfection segment immediately before the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The (CTcalc/CT99.9) value of each segment and $\sum$ (CTcalc/CT99.9) shall be calculated using the method specified in paragraph (i)(B) of this subdivision.

(iii) The supply shall determine the total logs of inactivation by multiplying the value calculated in paragraph (i) or (ii) of this subdivision by 3.0.

(c) A supply that uses chloramines, ozone, or chlorine dioxide for primary disinfection, and a supply subject to R 325.10720d, shall calculate the logs of inactivation for viruses through the entire treatment plant based on CT99.99 values in the tables in Appendix B

of the LT1ESWTR Disinfection Profiling and Benchmarking Technical Guidance Manual, as adopted by reference in R 325.10112, as applicable, and develop a disinfection profile for viruses. A supply shall calculate the total log of inactivation for viruses as follows:

(i) A supply using only 1 point of disinfection application shall determine the total inactivation ratio for the disinfection segment based on either of the following methods:

(A) Determine 1 inactivation ratio (CTcalc/CT99.99) before or at the first customer during peak hourly flow.

(B) Determine successive CTcalc/CT99.99 values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. The supply shall calculate the total inactivation ratio by determining (CTcalc/CT99.99) for each sequence and then adding the (CTcalc/CT99.99) values together to determine $\sum$ (CTcalc/CT99.99).

(ii) A supply using more than 1 point of disinfectant application before the first customer shall determine the (CTcalc/CT99.99) value of each disinfection segment immediately before the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The (CTcalc/CT99.99) value of each segment and $\sum$ (CTcalc/CT99.99) shall be calculated using the method specified in paragraph (i)(B) of this subdivision.

(iii) The supply shall determine the total logs of inactivation by multiplying the value calculated in paragraph (i) or (ii) of this subdivision by 4.0.

(d) The disinfection profile of the 52 measurements of log inactivations shall be represented in a graphic form, such as a spreadsheet and shall be retained and be available for review by the department as part of a sanitary survey. The data shall be used to create the disinfection benchmark under subrule (4) of this rule.

(4) All of the following provisions apply to disinfection benchmarking:

(a) Significant changes to disinfection practice include all of the following:

(i) Changes to the point of disinfection.

(ii) Changes to the disinfectant or disinfectants used in the treatment plant.

(iii) Changes to the disinfection process.

(iv) Any other modification identified by the department as a significant change to disinfection practices.

(b) Prior to changing the disinfection practice, the supply shall notify the department and shall include in this notice the following information:

(i) A description of the proposed change in disinfection practice.

(ii) A completed disinfection profile and disinfection benchmark for Giardia lamblia and viruses as described in R 325.10720d.

(iii) An analysis of how the proposed change will affect the current level of disinfection.

(iv) Any additional information requested by the department to demonstrate the results or benefits, or both, of the change to the disinfection practice.

(c) Supplies shall use the following procedures to calculate a disinfection benchmark:

(i) For each year of profiling data collected and calculated under subrule (3)(a) to (c) of this rule and R 325.10720d(3), supplies shall determine the lowest mean monthly level of both Giardia lamblia and virus inactivation. Supplies shall determine the mean Giardia lamblia and virus inactivation for each calendar month for each year of profiling data by

dividing the sum of daily or weekly Giardia lamblia and virus log inactivation by the number of values calculated for that month.

(ii) The disinfection benchmark is the lowest monthly mean value, for supplies with 1 year of profiling data, or the mean of the lowest monthly mean values, for supplies with more than 1 year of profiling data, of Giardia lamblia and virus log inactivation in each year of profiling data.

R 325.10739 Groundwater supply rules; groundwater source microbial monitoring and analytical methods.

Rule 739. (1) All of the following provisions apply to triggered source water monitoring in a groundwater supply that is subject to R 325.10612:

(a) A groundwater supply shall conduct triggered source water monitoring if both of the following conditions exist:

(i) The groundwater supply does not provide at least 4-log treatment of viruses (using inactivation, removal, or a department approved combination of 4-log virus inactivation and removal) before or at the first customer for each groundwater source.

(ii) The groundwater supply is notified that either of the following conditions exists:

(A) A sample collected under R 325.10705 to R 325.10706 is total coliform positive and the sample is not invalidated under R 325.10707a until March 31, 2016.

(B) A sample collected under R 325.10704d to R 325.10704g is total coliform-positive and the sample is not invalidated under R 325.10704c(3) beginning April 1, 2016.

(b) A groundwater supply shall collect, within 24 hours of notification of the total coliform positive sample, at least 1 groundwater source sample from each groundwater source in use at the time the total coliform positive sample was collected under R 325.10705 to R 325.10706 until March 31, 2016, or collected under R 325.10704d to R 325.10704g beginning April 1, 2016, except as provided in paragraph (ii) of this subdivision. The sample shall be analyzed for the presence of E. coli, or if approved by the department, for the presence of enterococci or coliphage. All of the following apply to groundwater source sample requirements:

(i) The department may extend the 24-hour time limit on a case-by-case basis if the groundwater supply cannot collect the groundwater source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the department shall specify how much time the groundwater supply has to collect the sample.

(ii) If approved by the department, groundwater supplies with more than 1 groundwater source may meet the requirements of this subdivision by sampling a representative groundwater source or sources. If directed by the department, groundwater supplies shall submit for department approval a triggered source water monitoring plan that identifies 1 or more groundwater sources that are representative of each monitoring site in the groundwater supply's sample siting plan under R 325.10705 to R 325.10706, until March 31, 2016, or under R 325.10704c beginning April 1, 2016, and that the groundwater supply intends to use for representative sampling under this paragraph.

(iii) Until March 31, 2016, a groundwater supply serving 1,000 or fewer people may use a repeat sample collected from a groundwater source to meet both the requirements of R 325.10707 and to satisfy the monitoring requirements of this subdivision for that groundwater source. If the repeat sample collected from the groundwater source is E. coli positive, the groundwater supply shall comply with subdivision (c) of this subrule.

(c) If the department does not require corrective action under R 325.10612a(1)(b) for a fecal indicator positive source water sample collected under subdivision (b) of this subrule that is not invalidated under R 325.10739(3), the groundwater supply shall collect 5 additional source water samples from the same source within 24 hours of being notified of the fecal indicator positive sample and have it analyzed for the presence of E. coli, or with department approval, for the presence of enterococci or coliphage.

(d) Both of the following provisions apply to consecutive supplies and wholesale supplies:

(i) In addition to the other requirements of this subrule, a consecutive groundwater supply that has a total coliform positive sample collected under R 325.10705 to R 325.10706 until March 31, 2016, or under R 325.10704d to R 325.10704g beginning April 1, 2016, shall notify the wholesale supply or supplies within 24 hours of being notified of the total coliform positive sample.

(ii) In addition to the other requirements of this subrule, a wholesale groundwater supply shall comply with both of the following:

(A) A wholesale groundwater supply that receives notice from a consecutive supply it serves that a sample collected under R 325.10705 to R 325.10706 until March 31, 2016, or under R 325.10704d to R 325.10704g beginning April 1, 2016, is total coliform positive shall, within 24 hours of being notified, collect a sample from its groundwater source or sources under subdivision (b) of this subrule and have it analyzed for the presence of E. coli, or with department approval, for the presence of enterococci or coliphage.

(B) If the sample collected under subparagraph (A) of this paragraph is fecal indicator positive, the wholesale groundwater supply shall notify all consecutive supplies served by that groundwater source of the fecal indicator source water positive within 24 hours of being notified of the groundwater source sample monitoring result and shall meet the requirements of subdivision (c) of this subrule.

(e) Exceptions to the triggered source water monitoring requirements are either of the following. A groundwater supply is not required to comply with the source water monitoring requirements of subrule (1) of this rule if either of the following conditions exists:

(i) The department determines, and documents in writing, that the total coliform positive sample collected under R 325.10705 to R 325.10706 until March 31, 2016, or under R 325.10704d to R 325.10704g beginning April 1, 2016, is caused by a distribution system deficiency.

(ii) The total coliform positive sample collected under R 325.10705 to R 325.10706 until March 31, 2016, or under R 325.10704d to R 325.10704g beginning April 1, 2016, is collected at a location that meets department criteria for distribution system conditions that will cause total coliform positive samples.

(2) All of the following provisions apply to assessment source water monitoring. If directed by the department, groundwater supplies shall conduct assessment source water monitoring that meets department determined requirements for that monitoring. A groundwater supply conducting assessment source water monitoring may use a triggered source water sample collected under subrule (1)(b) of this rule to meet the requirements of this subrule. Department determined assessment source water monitoring requirements may include any of the following:

(a) Collection of a total of 12 groundwater source samples that represent each month the groundwater supply provides groundwater to the public.

(b) Collection of samples from each well unless the groundwater supply obtains written department approval to conduct monitoring at 1 or more wells within the groundwater supply that are representative of multiple wells used by that groundwater supply and that draw water from the same hydrogeologic setting.

(c) Collection of a standard sample volume of not less than 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used.

(d) Analysis of all groundwater source samples using analytical methods adopted by reference in R 325.10605 for the presence of E. coli, or if approved by the department, for the presence of enterococci, or coliphage.

(e) Collection of groundwater source samples at a location before any treatment of the groundwater source unless the department approves a sampling location after treatment.

(f) Collection of groundwater source samples at the well itself unless the groundwater supply's configuration does not allow for sampling at the well itself and the department approves an alternate sampling location that is representative of the water quality of that well.

(3) All of the following provisions apply to invalidation of a fecal indicator positive groundwater source sample.

(a) A groundwater supply may obtain department invalidation of a fecal indicator positive groundwater source sample collected under triggered source water monitoring of subrule (1) of this rule only under either of the following conditions:

(i) The groundwater supply provides the department with written notice from the laboratory that improper sample analysis occurred.

(ii) The department determines and documents in writing that there is substantial evidence that a fecal indicator positive groundwater source sample is not related to source water quality.

(b) If the department invalidates a fecal indicator positive groundwater source sample, the groundwater supply shall collect another source water sample under subrule (1) of this rule within 24 hours of being notified by the department of its invalidation decision and have it analyzed for the same fecal indicator using analytical methods adopted by reference in R 325.10605. The department may extend the 24-hour time limit on a case-by-case basis if the groundwater supply cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the department will specify how much time the groundwater supply has to collect the sample.

(4) Both of the following provisions apply to sampling location:

(a) A groundwater source sample required under subrule (1) of this rule shall be collected at a location before treatment of the groundwater source unless the department approves a sampling location after treatment.

(b) If the groundwater supply's configuration does not allow for sampling at the well itself, the groundwater supply may collect a sample at a department approved location to meet the requirements of subrule (1) of this rule if the sample is representative of the water quality of that well.

(5) If directed by the department, a groundwater supply that places a new groundwater source into service after November 30, 2009, shall conduct assessment source water monitoring under subrule (2) of this rule. If directed by the department, the groundwater

supply shall begin monitoring before the groundwater source is used to provide water to the public.

(6) A groundwater supply with a groundwater source sample collected under subrule (1) or (2) of this rule that is fecal indicator positive and that is not invalidated under subrule (3) of this rule, including consecutive supplies served by the groundwater source, shall conduct public notification under R 325.10402.

(7) Failure to meet the requirements of subrules (1) to (5) of this rule is a monitoring violation and requires the groundwater supply to provide public notification under R 325.10404.

PART 12. RELIABILITY

R 325.11203 Study of water supply requirements for type I public water supply; proposal for compliance.

Rule 1203. (1) A type I public water supply shall conduct a study to determine the quantity of water supply needed for the waterworks system and shall propose a method of compliance in accordance with R 325.11204.

(2) The study required by subrule (1) of this rule shall be based on 5-year and 20-year projections of water use by the public water supply. The study shall be updated every 5 years unless the owner demonstrates that water use projections are stable and this requirement is waived by the department.

(3) At a minimum, the information presented in this study shall include all of the following:

(a) Basic planning data, including current population, number of service connections, and equivalent residential units.

(b) Sufficient water production and consumption data to identify trends for both 5-year and 20-year planning periods, including the following elements:

(i) The present and projected average daily demand.

(ii) The present and projected maximum daily demand.

(iii) The present and projected maximum hourly demand.

(iv) The present and projected peak instantaneous demand for systems using hydropneumatic storage.

(v) The present and projected fire flow demand.

(vi) The basis of demand projections.

(vii) Monthly and annual production totals for each source, including water purchased from another public water supply.

(viii) Annual usage totals for water supplied to other public water supplies.

(ix) Annual usage totals for each customer class as determined by the public water supply.

(c) A water shortage response plan for emergencies.

(4) Permits shall not be issued by the department to a public water supply unless an approved study of water supply quantity requirements is available.

PART 14. CROSS CONNECTIONS

R 325.11401 Definitions.

Rule 1401. As used in this part:

(a) "Backflow" means water of questionable quality, wastes, or other contaminants entering a potable water supply system due to a reversal of flow.

(b) “Unprotected cross connection” means a cross connection between a potable and non-potable system where inadequate methods are provided to prevent backflow.

R 325.11402 Compliance with regulations and local codes.

Rule 1402. A connection with a public water supply system shall comply with existing laws, ordinances, codes, and rules including:

(a) All sections of the Michigan plumbing code or the Michigan residential code pertaining to backflow and cross connection control. The codes allow for existing plumbing systems to stay as currently installed, providing they were installed properly according to the code in effect at the time of installation and they do not currently present a safety hazard.

(b) Local ordinances or rules providing acceptable protection against cross connections.

R 325.11403 Cross-connections prohibited.

Rule 1403. (1) A temporary or permanent unprotected cross connection between a public water supply system and any source, piping, or system that may contain nonpotable water or other substances is prohibited.

(2) Subrule (1) of this rule applies to all customer types, such as, industrial, commercial, institutional, governmental, and single and multi-unit residential.

(3) Piping configurations creating the potential for water from a public distribution system to flow through a private water main or customer site piping and back into the public system are prohibited. Areas of private water main served by two or more service connections, where flow through the private system can re-enter the public system shall have cross connection control protection installed at each connection point to the public system.

R 325.11404 Local cross connection control programs.

Rule 1404. (1) A type 1 public water supply shall develop a comprehensive control program for the elimination and prevention of all cross connections. The plan for the program shall be submitted to the department for review and approval. Supplies may use the best practices manual for cross connection control prepared by the department, office of drinking water and municipal assistance, listed in R 325.10113 when developing a cross connection control program. When the plan is approved, the water supply shall implement the program for removal of all existing cross connections and prevention of all future cross connections.

(2) At a minimum, the program shall include all of the following:

(a) A complete description of the method of administering the program, including the designation of inspection and enforcement agency or agencies. The local authority for implementation of the program shall be indicated, preferably by ordinance.

(b) A time schedule for inspection and reinspection of all water supply customers' premises for possible cross connections. The periodic reinspection shall be to ascertain if safe air gaps or required backflow preventers are in place.

(c) A description of the methods and backflow preventers, as approved by the department, used to protect the public water supply.

(d) A time schedule for the testing of all testable backflow preventers. The schedule contained in the program shall require testing at least once every 3 years. Backflow preventers installed on lawn irrigation systems with no chemical treatment may be tested once every 5 years if specified within the approved local cross connection control program.

(e) A description of the time allowed for a customer to complete necessary corrections.

(f) A description of the record keeping methods.

(3) Upon receiving written notice from the department, a public water supply shall provide an updated program within 6 months.

(4) A water supply shall report annually to the department on the status of the cross connection control program on a form provided by the department.

R 325.11405 Backflow preventers; tester qualifications and corrections.

Rule 1405. (1) Backflow preventers shall meet the applicable ASSE or CSA standards.

(2) Beginning January 1, 2018, test results of backflow preventers are valid only if testing was performed by individuals holding an active ASSE 5110 certification.

(3) The total time allowed for completion of the necessary corrections shall be contingent upon the degree of hazard involved and include the time required to obtain and install equipment. If the cross connection has not been removed or properly protected, after a reasonable period of time, the water supply shall shut off the water supply to the premises or physically separate the public water supply system from the onsite piping system in a manner that the 2 systems cannot again be connected by any unauthorized person.

PART 15. OPERATION REPORTS AND RECORDKEEPING

R 325.11509 Retention of records; groundwater supply rules.

Rule 1509. In addition to the requirements of R 325.11506, a groundwater supply subject to R 325.10612 shall maintain all of the following information in its records:

(a) Documentation of corrective actions shall be kept for a period of not less than 10 years.

(b) Documentation of notice to the public as required under R 325.10408c shall be kept for a period of not less than 3 years.

(c) Records of decisions under R 325.10739(1)(e)(ii) and records of invalidation of fecal indicator-positive groundwater source samples under R 325.10739(3) shall be kept for a period of not less than 5 years.

(d) For consecutive supplies, documentation of notification to the wholesale supply or supplies of total-coliform positive samples that are not invalidated under R 325.10707a, until March 31, 2016, or under R 325.10704c beginning April 1, 2016 shall be kept for a period of not less than 5 years.

(e) For groundwater supplies, including wholesale supplies, that are required to perform compliance monitoring under R 325.10739a all of the following shall be kept:

(i) Records of the department-specified minimum disinfectant residual shall be kept for a period of not less than 10 years.

(ii) Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the department-prescribed minimum residual disinfectant concentration for a period of more than 4 hours shall be kept for a period of not less than 5 years.

(iii) Records of department-specified compliance requirements for membrane filtration and of parameters specified by the department for department-approved alternative treatment and records of the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than 4 hours shall be kept for a period of not less than 5 years.

R 325.11510 Retention of records; total coliform.

Rule 1510. In addition to the requirements of R 325.11506, a community or noncommunity water supply subject to the total coliform rules in R 325.10704a shall maintain in its records the assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of those assessments, or other available summary documentation of the sanitary defects and corrective actions taken under R 325.10704i for department review. This record shall be maintained by the supply for a period not less than 5 years after completion of the assessment or corrective action.

PART 16. GENERAL PLANS

R 325.11606 Community water supplies; additional general plan requirements; asset management program; capital improvements plan.

Rule 1606. (1) A community water supply that serves more than 1,000 people shall implement an asset management program as defined in R 325.10102 beginning January 1, 2018, unless otherwise required in this subrule. Supplies may use the reference guide for asset management tools, May 2014, prepared by the U.S. Environmental Protection Agency and listed in R 325.10113 when developing an asset management program. Supplies shall include in the general plan each of the following:

(a) A summary detailing the system used to maintain an inventory of assets. Priority shall be given to an inventory of source, treatment, pumping, and distribution system assets.

(b) A summary describing the method used to assess the criticality of assets considering the likelihood and consequence of failure.

(c) A statement of level of service goals.

(d) A capital improvements plan that identifies waterworks system needs for 5-year and 20-year planning periods. A publicly owned or operated supply shall comply beginning January 1, 2016. A privately owned supply shall comply beginning January 1, 2018.

(e) A summary detailing the funding structure and rate methodology that provides sufficient resources to implement the asset management program.

(2) A community water supply that serves 1,000 or fewer people and that is publicly owned or operated shall include in the general plan a capital improvements plan that identifies waterworks system needs for 5-year and 20-year planning periods. A supply shall comply beginning January 1, 2016.

(3) A community water supply may include additional information with the general plan, including the current reliability study, annual pumpage report, sample siting plan, source water protection plan, water conservation/efficiency program, waterworks operation and maintenance programs, regional planning documents, and relevant zoning and land use plans for the service area.

PART 17. OWNERSHIP OF PUBLIC WATER SUPPLIES

R 325.11705 Private ownership of type I public water supply permitted; proof of refusal to accept ownership or operational responsibility by governmental entity.

Rule 1705. (1) If the department determines that ownership and operation of a type I public water supply by a local governmental agency is not practical for a particular public water supply, private ownership shall be allowed with adequate provisions to assure a continuous operation of the public water supply which meets the requirements of the act and these rules.

(2) The department shall not accept plans and specifications from, nor shall a permit be issued to, an owner of a proposed type I public water supply which is to be privately owned unless proof of refusal to accept ownership or operational responsibility of that public water supply is submitted in a formal resolution of the governing body of a city, county, village, township, or other governmental entity under whose jurisdiction the public water supply is included, or where proof of refusal is established to the satisfaction of the department.

PART 19. EXAMINATION AND CERTIFICATION OF OPERATORS

R 325.11906a Restricted certificates.

Rule 1906a. With the concurrence of the advisory board, the department may issue site specific, restricted certification to an operator on a case-by-case basis. An operator issued restricted certification under this rule is only authorized to operate the waterworks system or portion of the system that is designated on the restricted certificate issued to him or her, except such operator may operate any other waterworks system or portion of a system for which he or she holds an unrestricted certification. An operator with a restricted certification is subject to the same requirements for performance as other certification classes and the certificate may be suspended or revoked or the operator placed on probation under R 325.11917.

R 325.11910 Application for examination; notice to accepted applicants of examination.

Rule 1910. (1) To be certified for the operation of a public water supply, an individual shall submit to the department, not less than 60 days before the announced examination date, an application for examination on a form provided by the department. This deadline is extended to not less than 30 days before the examination for the F-5, D-5, or S-5 classification examinations if proof of credit card or debit card fee payment under MCL 324.3110 is submitted with the application. The information contained on the application shall be evaluated by the department, shall be subject to review by the advisory board, and shall constitute a part of the examination. The department may require verification of the education and experience of an applicant for an examination.

(2) Not less than 15 days before the examination the department shall notify all applicants of its findings and shall notify those applicants accepted for examination of the date, time, and place of the examination.

(3) For the purposes of certifying individuals attending specific department approved training programs specified under R 325.11906a, the department may waive the requirement for an examination application.

R 325.11915 Renewal requirements.

Rule 1915. (1) The department shall renew a certificate on a 3-year cycle. To renew a certificate, a certificate holder shall submit, to the department, an application for renewal on a form provided by the department.

2) To have a certificate renewed, a holder of a drinking water certificate shall satisfy the minimum criteria for continuing education requirements as required in the following table:

Table 1. Minimum requirements for continuing education

Highest certification level held	Minimum number of continuing education training hours required to renew	Minimum number of continuing education training hours categorized as "technical", "managerial," or both
1 or 2	24	18
3	24	12
4	12	6
5	9	no minimum

(3) Types of education or training programs that may be approved include any of the following:

(a) Association programs that are sponsored by any of the following entities:

(i) American water works association.

(ii) Township, municipal, and county organizations.

(iii) Professional and trade organizations.

(iv) National rural water association.

(b) Distance learning, such as videotapes, DVDs, correspondence courses, and online courses.

(c) Private contractor technical courses.

(d) University, college, and community college courses.

(e) Department and environmental protection agency sponsored training programs.

(f) Training sponsored by nationally recognized organizations.

(g) Water utility in-service training.

(4) A holder of a certificate shall be responsible for renewal of a certificate regardless of notification.

(5) A certificate holder shall keep his or her own record of approved training, education, and work experience and be prepared to present proof of that training, education, and experience if required by the department.

(6) The failure of an applicant for renewal to meet the requirements of this subrule and subrules (1) to (5) of this rule shall constitute grounds for refusing to renew a certificate.

(7) For a holder of multiple certificates within a category, the department shall only renew the certificate representing the higher class within a waterworks system category.

(8) A holder of a certificate who is not eligible for renewal or who has been refused renewal pursuant to subrules (1) to (7) of this rule may apply for examination pursuant to R 325.11910.

(9) A holder of a certificate who has not met the continuing education requirements of subrule (2) of this rule for his or her certification may be issued a certificate for the classification within the same category for which the continuing education requirements have been met. A certificate that is not renewed shall expire.

PART 21. APPROVAL OF CHEMICALS AND OTHER MATERIALS

R 325.12102 Approval of chemicals and other materials.

Rule 2102. (1) Approval by the department is required for all chemicals, coatings or paints, proprietary products, and similar materials of any description, that are used or are proposed for use in, or in contact with, drinking water at any point in the waterworks system from the source to the ultimate point of distribution of the water.

(2) The public water supply shall determine that approval for a chemical or material has been granted by the department and determine the special conditions or limitations under which that approval was granted.

(3) All chemicals or components that may come in contact with water intended for use in a public water supply shall meet ANSI/NSF standards 60 and 61, as adopted by reference in R 325.10112.

PART 23. EMERGENCY RESPONSE PLANS

R 325.12302 Preparation; timetable; exceptions.

Rule 2302. (1) Unless specifically waived by the department, a type I public water supply, including a type I public water supply that purchases water from another public water supply, shall prepare, or cause to be prepared, an emergency response plan.

(2) The department may require certain type II public water supplies to prepare emergency response plans in accordance with the requirements of this part.

(3) If a public water supply has an existing emergency response plan, it shall be updated on the schedule contained in the plan to include any requirements specified by this part.

PART 26. BOTTLED WATER

R 325.12604 Rescinded.