MICHIGAN SAFE DRINKING WATER ACT
1976 PA 399, as Amended,
MCL §§325.1001 to 325.1023
and the
Administrative Rules,
Supplying Water to the Public
R 325.10101 to R 325.12820

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Rev. 09/21/2011

Michigan Safe Drinking Water Act
1976 Public Act 399,
MCL §§325.1001 to 325.1023

Public Act	Effective Date
2011 PA 147	September 21, 2011
2008 PA 187 and 188	July 9, 2008
2006 PA 37	February 28, 2006
1998 PA 56	April 8, 1998
1993 PA 165	September 16, 1993
1989 PA 34	May 31, 1989
1976 PA 399	**April 4, 1977**
1913 PA 98	Original PWS laws

Safe Drinking Water Act (federal act)
Enacted by Public Law 93-523,
December 16, 1974; 88 Stat. 1660,
42 U.S.C. 300f et seq.

PL 104-182	August 6, 1996
PL 104-66	December 21, 1995
PL 103-382	October 20, 1994
PL 100-572	October 31, 1988
PL 99-339	June 19, 1986
PL 98-620	November 11, 1984
PL 96-502	December 5, 1980
PL 96-63	September 6, 1979
PL 95-190	November 16, 1977
PL 94-484	October 12, 1976
PL 94-317	June 23, 1976
PL 93-523	**December 16, 1974**

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SAFE DRINKING WATER ACT

Act 399 of 1976

AN ACT to protect the public health; to provide for supervision and control over public water supplies; to prescribe the powers and duties of the department of environmental quality; to provide for the submission of plans and specifications for waterworks systems and the issuance of construction permits therefor; to provide for capacity assessments and source water assessments of public water supplies; to provide for the classification of public water supplies and the examination, certification and regulation of persons operating those systems; to provide for continuous, adequate operation of privately owned, public water supplies; to authorize the promulgation of rules to carry out the intent of the act; to create the water supply fund; to provide for the administration of the water supply fund; and to provide penalties.History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1993, Act 165, Imd. Eff. Sept. 16, 1993 ;-- Am. 1998, Act 56, Imd. Eff. Apr. 8, 1998

§325.1001 Short title.

Sec. 1.

This act shall be known and may be cited as the “safe drinking water act”.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

§325.1001a Legislative intent; water resources research institutes.

Sec. 1a.

It is the intent of the legislature to provide adequate water resources research institutes and other facilities within the state of Michigan so that the state may assure the long-term health of its public water supplies and other vital natural resources.

History: Add. 1998, Act 56, Imd. Eff. Apr. 8, 1998

§325.1002 Definitions.

Sec. 2.

As used in this act:

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

(b) “Capacity assessment” means an evaluation of the technical, financial, and managerial capability of a community supply or nontransient noncommunity water supply to comply and maintain compliance with all requirements of this act and the rules promulgated under this act.

(c) “Community supply” means a public water supply that provides year-round service to not fewer than 15 living units or which regularly provides year-round service to not fewer than 25 residents.

(d) “Contaminant” means a physical, chemical, biological, or radiological substance or matter in water.

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

(f) “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.

(g) “Department” means the department of environmental quality or its authorized agent or representative.

(h) “Director” means the director of the department of environmental quality or his or her authorized agent or representative.

(i) “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.

(j) “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.

(k) “Noncommunity supply” means a public water supply that is not a community supply, but that has not less than 15 service connections or that serves not fewer than 25 individuals on an average daily basis for not less than 60 days per year.

(l) “Nontransient noncommunity water supply” means a noncommunity public water supply that serves not fewer than 25 of the same individuals on an average daily basis over 6 months per year. This definition includes water supplies in places of employment, schools, and day-care centers.

(m) “Person” means an individual, partnership, copartnership, cooperative, firm, company, public or private association or corporation, political subdivision, agency of the state, agency of the federal government, trust, estate, joint structure company, or any other legal entity, or their legal representative, agent, or assigns.

(n) “Plans and specifications” means drawings, data, and a true description or representation of an entire waterworks system or parts of the system as it exists or is to be constructed, and a statement on how a waterworks system is to be operated.

(o) “Political subdivision” means a city, village, township, charter township, county, district, authority or portion or combination thereof.

(p) “Public water supply” means a waterworks system that provides water for drinking or household purposes to persons other than the supplier of the water, and does not include either of the following:

(i) A waterworks system that supplies water to only 1 living unit.

(ii) A waterworks system that consists solely of customer site piping.

(q) “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.

(r) “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.

(s) “Source water assessment” means a state program to delineate the boundaries of areas in the state from which 1 or more public water supplies receive supplies of drinking water, to identify contaminants regulated under this act for which monitoring is required because the state has determined they may present a threat to public health, and, to the extent practical, to determine the susceptibility of the public water supply in the delineated area to these contaminants.

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

(u) “Transient noncommunity water supply” means a noncommunity supply that does not meet the definition of nontransient noncommunity water supply.

(v) “Water hauler” means a person engaged in bulk vehicular transportation of water to other than the water hauler's own household which is intended for use or used for drinking or household purposes. Excluded from this definition are those persons providing water solely for employee use.

(w) “Water main” means a pipe owned or controlled by a supplier that may convey water to a customer service connection or to a fire hydrant.

(x) “Waterworks system” or “system” means a system of pipes and structures through which water is obtained and distributed, including but not limited to wells and well structures, intakes and cribs, pumping stations, treatment plants, storage tanks, pipelines and appurtenances, or a combination thereof, actually used or intended for use for the purpose of furnishing water for drinking or household purposes.

(y) “Year-round service” means the ability of a supplier of water to provide drinking water on a continuous basis to a living unit or facility.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1989, Act 34, Imd. Eff. May 31, 1989 ;-- Am. 1993, Act 165, Imd. Eff. Sept. 16, 1993 ;-- Am. 1998, Act 56, Imd. Eff. Apr. 8, 1998

§325.1003 Power and control over public water supplies and suppliers of water; inspection of waterworks system.

Sec. 3.

Subject to limitations contained in this act, the department shall have power and control over public water supplies and suppliers of water. The director may enter upon the waterworks system of a supplier of water at reasonable times for the purpose of inspecting the system and carrying out this act and rules promulgated under this act.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

§325.1003a Exemption of agricultural employer from well inspection fees; definitions.

Sec. 3a.

(1) An agricultural employer using a well to provide water for employee use is exempt from any well inspection fees that may be or are imposed under this act or rules promulgated under this act.

(2) As used in this section:

(a) “Agricultural employer” means a person, corporation, association, or other legal entity that employs 1 or more persons in hand labor operations for the production of food, fiber, or other agricultural products including seed, seedlings, plants, or parts of plants.

(b) “Hand labor operations” means agricultural activities performed by hand or with hand tools and includes the cultivating, weeding, planting, and harvesting of vegetables, nuts, fruits, seedlings, and other crops, including mushrooms; packing produce by hand into containers, whether done on the ground, on a moving machine, or in a temporary packing shed located in a field; and operations performed in conjunction with hand labor operations. Hand labor operations does not include logging operations, the care or feeding of livestock, or activities conducted in permanent structures, including canning facilities or packing houses.

History: Add. 1989, Act 34, Imd. Eff. May 31, 1989

Admin Rule: R 325.10101 et seq. of the Michigan Administrative Code.

§325.1003b Department of environmental quality; powers; conduct of capacity assessment or source water assessment; availability of records to department.

Sec. 3b.

(1) The department may do 1 or more of the following:

(a) Conduct a capacity assessment at a community supply, a nontransient noncommunity water supply, or a public water supply applying to the department for assistance under part 54 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.5401 to 324.5418.

(b) Conduct a source water assessment at a public water supply.

(c) Enter the facilities and business offices used in the operation of a public water supply.

(2) Public water supplies shall make available to the department records needed to conduct a capacity assessment or source water assessment. The department may request information in writing or during on-site visits to conduct capacity assessments or source water assessments.

History: Add. 1998, Act 56, Imd. Eff. Apr. 8, 1998

§325.1004 Waterworks system; filing plans and specifications; general plan; evaluation of proposed system; use of assessment tool; determination of zone C withdrawal; certification of measures taken; capacity assessment; return or rejection of plans and specifications; public notice; plans and specifications for improvements; permit for construction; violation; conditions for denial of permit; verbal approval of minor modifications; confirmation; report; definitions.

Sec. 4.

(1) A supplier of water shall file with the department the plans and specifications of the entire waterworks system owned or operated by the supplier, unless the department determines that its existing records are adequate. A general plan of the waterworks system for each public water supply shall be provided to the department by a supplier of water and shall be updated as determined necessary by the department.

(2) Upon receipt of the plans and specifications for a proposed waterworks system, the department shall evaluate the adequacy of the proposed system to protect the public health by supplying water meeting the state drinking water standards and, if applicable, shall evaluate the impact of the proposed system as provided in subsections (3) and (4). In addition, for a proposed waterworks system by a community supply that will provide capacity for a new or increased large quantity withdrawal, the department shall utilize the assessment tool to evaluate the proposed withdrawal associated with the proposed waterworks system and shall confirm the assessment tool's determination. Prior to the implementation of the assessment tool under section 32706a, the department shall evaluate the proposed withdrawal based upon reasonably available information. If the department determines that the proposed withdrawal for a community supply is a zone C withdrawal, the community supply shall certify that it is implementing applicable environmentally sound and economically feasible water conservation measures prepared under section 32708a that the community supply considers to be reasonable or shall certify that it is implementing environmentally sound and economically feasible water conservation measures

developed for the water use associated with that specific withdrawal that the community supply considers to be reasonable. The department shall also conduct a capacity assessment for a proposed community supply or nontransient noncommunity water supply and determine if the system has the technical, financial, and managerial capacity to meet all requirements of this act and the rules promulgated under this act, on the date of commencement of operations. If upon evaluation the department determines the plans and specifications to be inadequate or the capacity assessment shows the system to be inadequate, the department may return the plans and specifications to the applicant and require additions or modifications as may be appropriate. The department may reject plans and specifications for a waterworks system that will not satisfactorily provide for the protection of the public health or, if applicable, will not meet the standards provided in subsection (4). The department may deny a permit for construction of a proposed community supply or a nontransient noncommunity water supply if the capacity assessment shows that the proposed system does not have adequate technical, financial, or managerial capacity to meet the requirements of this act and the rules promulgated under this act.

(3) The department shall evaluate the impact of a proposed waterworks system for a community supply that will do any of the following:

(a) Provide new total designed withdrawal capacity of more than 2,000,000 gallons of water per day from the waters of the state.

(b) Provide an increased total designed withdrawal capacity of more than 2,000,000 gallons of water per day from the waters of the state beyond the system's total designed withdrawal capacity.

(c) Provide new or increased total designed withdrawal capacity for a new or increased large quantity withdrawal of more than 1,000,000 gallons of water per day from the waters of the state to supply a common distribution system that the department confirms is a zone C withdrawal.

(d) Provide new total designed withdrawal capacity or an increased total designed withdrawal capacity that will result in an intrabasin transfer of more than 100,000 gallons per day average over any 90-day period.

(4) The department shall provide public notice that it is conducting an evaluation under subsection (3) and shall provide a public comment period of not less than 45 days before making a determination on that evaluation. The department shall reject the plans and specifications for a proposed waterworks system evaluated under subsection (3) if it determines that the proposed system will not meet the applicable standard provided in section 32723 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.32723. However, the department may approve the plans and specifications for a proposed waterworks system evaluated under subsection (3) for a community supply owned by a political subdivision that the department determines will not meet the applicable standard provided in section 32723 if the plans and specifications do not result in an intrabasin transfer of more than 100,000 gallons per day average over any 90-day period and both of the following conditions are met:

(a) The department determines that there is no feasible and prudent alternative location for the withdrawal.

(b) The department includes in the approval conditions related to depth, pumping capacity, rate of flow, and ultimate use that ensure that the environmental impact of the withdrawal is balanced by the public benefit of the withdrawal related to public health, safety, and welfare. This subdivision does not confer upon the department any authority to require a person to connect or to remain connected to an existing drinking water supply system owned by a political subdivision.

(5) The department's approval of a proposed waterworks system under this section shall be considered to satisfy the requirements of section 4.11 of the compact.

(6) Before commencing the construction of a waterworks system or an alteration, addition, or improvement to a system, a supplier of water shall submit the plans and specifications for the improvements to the department and secure from the department a permit for construction as provided by rule. Plans and specifications submitted to the department shall be prepared by a professional engineer licensed under article 20 of the occupational code, 1980 PA 299, MCL 339.2001 to 339.2014. A contractor, builder, or supplier of water shall not engage in or begin the construction of a waterworks system or an alteration, addition, or improvement to a waterworks system until a valid permit for the construction has been secured from the department. A contractor, builder, or supplier of water who permits or allows construction to proceed without a valid permit, or in a manner not in accordance with the plans and specifications approved by the department, violates this act. A supplier of water shall not issue a voucher or check or in any other way expend money or provide consideration for construction of a waterworks system unless a valid permit issued by the department is in effect. The department may issue

a permit with conditions to correct minor design deficiencies. If eligible, a supplier may request an expedited review of an application for a permit under section 4a.

(7) The department may deny a permit for construction of a waterworks system or an alteration, addition, or improvement to a waterworks system if the most recent capacity assessment shows that the waterworks system does not have adequate technical, financial, or managerial capacity to meet the requirements of this act and the rules promulgated under this act, and the deficiencies identified in that capacity assessment remain uncorrected, unless the proposed construction will remedy the deficiencies.

(8) The department may verbally approve minor modifications of a construction permit issued by the department as a result of unforeseen site conditions that become apparent during construction. Minor modifications include, but are not limited to, extending a hydrant lead or routing a water main around a manhole. A supplier making a request for a modification shall provide to the department all relevant information required under this section and the application form provided by the department related to the modification. A supplier shall obtain written approval from the department for all modifications to a waterworks system except when the department provides verbal approval for a minor modification as provided for in this subsection. A supplier receiving a written or verbal approval from the department shall submit revised plans and specifications to the department within 10 days from the date of approval.

(9) If a supplier seeks confirmation of the department's verbal approval of a minor modification under subsection (8), the supplier shall notify the department electronically, at an address specified by the department, with a detailed description of the request for the modification. The department shall make reasonable efforts to respond within 2 business days, confirming whether the request has been approved or not approved. If the department has not responded within 2 business days after the department receives the detailed description, the verbal approval shall be considered confirmed.

(10) As a condition of a permit issued under this section to a community supply, the department shall require the permit holder to annually submit to the department a report by April 1 of each year that contains the information described in section 32707 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.32707.

(11) As used in this section, "assessment tool", "compact", "intrabasin transfer", "new or increased large quantity withdrawal", "waters of the state", and "zone C withdrawal" mean those terms as they are defined in section 32701 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.32701.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1998, Act 56, Imd. Eff. Apr. 8, 1998 ;-- Am. 2006, Act 37, Imd. Eff. Feb. 28, 2006 ;-- Am. 2006, Act 601, Imd. Eff. Jan. 3, 2007 ;-- Am. 2008, Act 187, Imd. Eff. July 9, 2008

Compiler's Notes: In the second and third sentences of subsection (2), the citations to "section 32706a" and "section 32708a", evidently should read "section 32706a of the natural resources and environmental act, 1994 PA 451, MCL 324.32706a" and "section 32708a of the natural resources and environmental act, 1994, PA 451, MCL 324.32708a", respectively.

§325.1004a Expedited permit application review process.

Sec. 4a.

(1) Not later than October 1, 2007, the department shall establish an expedited permit application review process available for projects described in subsection (7). The expedited review process shall be available through September 30, 2010. To be eligible for expedited review, an applicant shall submit all of the items under subsection (2) not later than September 30, 2010.

(2) A supplier requesting an expedited review shall do all of the following:

(a) At least 10 business days prior to submitting an application under subdivision (b), notify the department electronically, in accordance with the instructions provided on the department's website, of his or her intent to request expedited review.

(b) Submit electronically a complete application for a permit, including a request for expedited review and including, via credit card, the appropriate fee under subsection (3).

(c) Provide a written copy of the construction plans and specifications for the project that has been prepared, signed, and sealed by a licensed professional engineer to the department postmarked not later than the date that the application is submitted electronically.

(3) Except as provided in subsection (5), the fee for an expedited review is as follows:

(a) Water main projects with total lengths less than 1,000 feet, $1,000.00.

(b) Water main projects with total lengths greater than or equal to 1,000 feet and less than 3,000 feet, $1,500.00.

(c) Water main projects of total length greater than 3,000 feet and less than or equal to 10,000 feet, $2,000.00.

(4) Except as otherwise provided in subsection (6), if an applicant does not comply with subsection (3), the department shall not conduct an expedited review and any submitted fee shall not be refunded. Within 10 business days of receipt of the application, the department shall notify the supplier of the reasons why the department's review of the application will not be expedited. Upon receipt of this notification, the supplier may correct the deficiencies and resubmit an application and request for an expedited review with the appropriate fee specified under subsection (5). The department shall not reject a resubmitted application solely because of deficiencies that the department failed to identify in the original application.

(5) For a second submission of an application that originally failed to meet the requirements specified in subsection (4), the applicant shall instead include a fee equal to 10% of the fee specified in subsection (3). However, if the deficiency included failure to pay the appropriate fee, the second submission shall include the balance of the appropriate fee plus 10% of the appropriate fee. If the applicant makes additional changes other than those items identified by the department as being deficient, the applicant shall instead include an additional fee equal to the fee specified in subsection (3). For the third and each subsequent submittal of an application that fails to meet the requirements specified in subsection (4), the applicant shall include an additional fee equal to the fee specified in subsection (3).

(6) If the applicant fails to sign the application, submits construction plans and specifications that have not been prepared, signed, and sealed by a licensed professional engineer, or submits an insufficient fee, the department shall notify the applicant within 5 business days of the deficiency. The application shall not be processed until the deficient items are addressed. If the applicant does not provide the deficient items within 5 business days after notification by the department, the application shall be handled as provided in subsection (4).

(7) A request for an expedited permit application review is limited to projects that consist solely of installation of new water mains of less than or equal to 10,000 feet located in a county with a population of between 750,000 and 1,000,000 and any contiguous county with a population of greater than 160,000. Expedited permit application reviews are not allowed for other projects requiring a permit under this act including, but not limited to, projects involving water treatment processes, ground or elevated storage tanks, chemical feed systems, wells, booster stations, pumps, new proposed waterworks systems subject to a capacity assessment, or projects funded under the state drinking water revolving fund established under section 16b of the shared credit rating act, 1985 PA 227, MCL 141.1066b.

(8) The department shall review and make a decision on a complete application submitted with a request for expedited review pursuant to the following schedule:

(a) Until September 30, 2008, the department shall make a permit decision within 20 business days of receipt by the department of the complete application, including plans and specifications.

(b) From October 1, 2008 through September 30, 2009, the department shall make a permit decision within 15 business days of receipt by the department of the complete application, including plans and specifications.

(c) From October 1, 2009 through September 30, 2010, the department shall make a permit decision within 10 business days of receipt by the department of the complete application, including plans and specifications.

(9) If the department fails to meet the deadlines specified in subsection (8), the department shall continue to expedite the application review process for an application submitted under this section. However, the fee for an expedited review required under this section shall be refunded if the department fails to meet the deadlines established in subsection (8).

(10) The department shall transmit fees collected under this section to the state treasurer for deposit into the infrastructure construction fund created in section 4113 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.4113.

(11) As used in this section:

(a) "Complete application" means that the application form provided by the department is completed, all requested information is provided, and the application can be processed without additional information.

(b) "Expedited review" means an expedited review of a permit application under this section.

(c) "Licensed professional engineer" means a professional engineer licensed under article 20 of the occupational code, 1980 PA 299, MCL 339.2001 to 339.2014.

(d) "Project" means a plan or proposal to install new water mains within a waterworks system located in 1 general area where all the components are interconnected but does not include a waterworks system proposed for construction in separate parcels of land or development areas.
History: Add. 2006, Act 601, Imd. Eff. Jan. 3, 2007

§325.1005 Rules.
Sec. 5.
(1) The department shall promulgate and enforce rules to carry out this act pursuant to the administrative procedures act of 1969, 1969 PA 306, MCL 24.201 to 24.328. The rules, at a minimum, shall include the following:
(a) Requirements for the submission of reports, plans, and specifications for the design and construction of a waterworks system or a part thereof, and a plan for operating and maintaining all or a part of the waterworks system, including the protection of water quality within the distribution system as necessary to protect the public health.
(b) State drinking water standards and associated monitoring requirements, the attainment and maintenance of which are necessary to protect the public health.
(c) The classification of waterworks systems or portions thereof, the examination for certification of the operators of those systems including shift operators of water treatment systems, and for the issuance, suspension, and revocation of certificates.
(d) Criteria for capacity assessments performed by the department at community supplies, nontransient noncommunity water supplies, or a public water supply applying to the department for assistance under part 54 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.5401 to 324.5418.
(e) Requirements for provision of facilities by public water supplies that will assure an adequate and reliable supply of drinking water on a continuous basis.
(2) Rules governing public water supplies promulgated under former 1913 PA 98, and which were in effect on January 4, 1977 are continued in accordance with section 31 of the administrative procedures act of 1969, 1969 PA 306, MCL 24.231, and may be amended or rescinded by the director under this act.
(3) No rule promulgated may require the addition of any substance for preventive health care purposes unrelated to contamination of drinking water.
History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1998, Act 56, Imd. Eff. Apr. 8, 1998
Admin Rule: R 325.10101; R 325.10102 et seq.; R 325.10308b; R 325.10401 et seq.; R 325.10604a et seq.; R 325.10702 et seq.; R 325.11002; R 325.11008; R 325.11502 et seq. of the Michigan Administrative Code.

§325.1005a Customer site piping; limitations.
Sec. 5a.
(1) A supplier of water for a community supply shall not use customer site piping as a means to convey water to other portions of the supplier's system.
(2) A supplier of water for a community supply shall not provide water service to customer site piping if an impact on the water quality of the public water supply has occurred or could reasonably be expected to occur as a result of the service. A supplier of water may discontinue water service to customer site piping as the supplier of water or the department considers necessary to protect the health of the public water supply customers.
History: Add. 1993, Act 165, Imd. Eff. Sept. 16, 1993

§325.1006 Maximum contaminant levels; incorporation by reference.
Sec. 6.
The maximum contaminant levels for inorganic and organic chemicals, microbiological contaminants and turbidity, which are part of the national interim primary drinking water regulations, and which have been promulgated by the United States environmental protection agency under authority of Public Law 93-523 (1974) before this act taking effect, are hereby incorporated by reference and shall have the same force and effect as a rule promulgated pursuant to this act. A standard which is incorporated by reference pursuant to this subsection shall remain effective until a rule is promulgated pursuant to this act which covers the same or similar subject or the standard is rescinded by rule promulgated pursuant to this act.
History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

Admin Rule: R 325.10101 et seq. of the Michigan Administrative Code.

§325.1007 Collecting and analyzing water samples; reporting results of analyses; failure of supplier to comply; appeal; disposition of administrative fines.

Sec. 7.

(1) The supplier of water shall collect water samples or have them collected on a schedule at least equal to that outlined in the rules, shall cause those samples to be analyzed in the state laboratory or a laboratory certified by the department or by the United States environmental protection agency for contaminants listed in the state drinking water standards, and shall report the results of the analyses to the department in a timely manner as specified in the rules.

(2) If a supplier of water who serves a population of 10,000 or fewer individuals fails to comply with subsection (1), the department may do any of the following:

(a) Impose against that supplier an administrative fine of $200.00 for each failure to collect and have analyzed a water sample required under this act.

(b) For each failure to collect and have analyzed a water sample required under this act within the 12-month period following a failure described in subdivision (a), impose against that supplier an administrative fine of $400.00.

(c) In addition to an administrative fine imposed under subdivision (a) or (b), obtain a sampling or analysis or both required under this act at the supplier's cost.

(d) Proceed pursuant to section 22.

(3) If a supplier of water serving a population of 10,000 or less fails to meet state drinking water standards, the department may do any of the following:

(a) Impose against that supplier an administrative fine of not less than $400.00 per day per violation and not more than $1,000.00 per day per violation. An administrative fine for a single violation shall not exceed a cumulative total of $2,000.00.

(b) Proceed pursuant to section 22.

(4) If a supplier of water serving a population of more than 10,000 fails to comply with state drinking water standards or any monitoring or reporting requirement, the department may do any of the following:

(a) Impose against that supplier an administrative fine of not less than $1,000.00 per day per violation and not more than $2,000.00 per day per violation. An administrative fine for a single violation may not exceed a cumulative total of $10,000.00.

(b) In addition to an administrative fine imposed under subdivision (a), obtain at the supplier's cost water samples and secure analyses of the water samples at a certified laboratory if monitoring has not met minimum requirements under this act.

(c) Proceed pursuant to section 22.

(5) A supplier may appeal an administrative fine imposed under this section pursuant to the administrative procedures act of 1969, 1969 PA 306, MCL 24.201 to 24.328.

(6) Administrative fines collected under this section shall be forwarded to the state treasurer for deposit into the state drinking water revolving fund established under section 16b of the shared credit rating act, 1985 PA 227, MCL 141.1066b.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1993, Act 165, Imd. Eff. Sept. 16, 1993 ;-- Am. 1998, Act 56, Imd. Eff. Apr. 8, 1998

Admin Rule: R 325.10101; R 325.10102 et seq.; R 325.10308b; R 325.10401 et seq.; R 325.10604a et seq.; R 325.10702 et seq.; R 325.11002; R 325.11008; R 325.11502 et seq. of the Michigan Administrative Code.

§325.1008 Design and operation standards of public water supplies; considerations; purpose.

Sec. 8.

The department shall give due consideration to the size, type, location, and other conditions at public water supplies for the purpose of specifying design and operation standards, and for the purpose of establishing criteria for capacity assessments.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1998, Act 56, Imd. Eff. Apr. 8, 1998

§325.1009 Classification of water treatment and distribution systems; advisory board of examiners; certificates of competency; supervision of public water supply; certificate renewal; training program for certified operator; fees.

Sec. 9.

(1) The department shall classify public water supplies, including water treatment and distribution systems at community supplies, with regard to size, type, location, and other physical conditions for the purpose of establishing the skill, knowledge, and experience that individuals need to maintain and operate the systems effectively.

(2) The director shall appoint an advisory board of examiners which shall assist the department in the examination of individuals as to their competency to operate water treatment systems and water distribution systems. The advisory board shall make recommendations to the department relative to the certification of those individuals.

(3) The membership of the advisory board shall consist of 2 certified water treatment operators, 2 certified water distribution operators, 1 superintendent or manager of a supplier of water, 1 representative of the administrative branch of a local governmental agency, 2 members of the public at large, and 1 professor of sanitary or environmental engineering at a university in the state. A representative of the department shall be the nonvoting secretary for the board.

(4) For individuals meeting the requirements, the department shall issue certificates acknowledging their competency to operate a specified class of waterworks system or portion of waterworks system. The department may suspend or revoke a certificate as specified by rule.

(5) A public water supply shall be under the supervision of a properly certified operator as specified in the rules.

(6) Operators certified under this act shall renew their certificates in accordance with rules promulgated under this act, including mandatory continuing education or competency demonstration.

(7) In accordance with section 3110 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.3110, the department may conduct a program for training persons seeking to be certified as operators under this section and shall administer operator certification programs for persons seeking to be certified as operators under this section. Until October 1, 2017, the department may charge fees for these programs in accordance with section 3110 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.3110. The department shall transmit fees collected under this section to the state treasurer for deposit into the operator training and certification fund created in section 3134 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.3134.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1993, Act 165, Imd. Eff. Sept. 16, 1993 ;-- Am. 1998, Act 56, Imd. Eff. Apr. 8, 1998 ;-- Am. 2011, Act 147, Imd. Eff. Sept. 21, 2011

Admin Rule: R 325.10101 et seq. of the Michigan Administrative Code.

§325.1010 Approval of privately owned public water supply; escrow account to correct deficiencies in public water supply; compliance with subsections (1) and (2) by private purchaser.

Sec. 10.

(1) The department shall not approve a privately owned public water supply that serves a group of living units, unless by resolution of its governing body the city, village, or township in which the water supply is to be located refuses to accept ownership and operational responsibility of the public water supply.

(2) If a local governmental agency does not accept ownership and operational responsibility of a public water supply that serves a group of living units, the department may issue a construction permit or other approval for an acceptable project requiring as a condition of the permit an appropriate amount, but not more than $50,000.00, based on the size, type, and complexity of the waterworks system, to be placed in escrow by the developer or private owner. The department may remove funds from this escrow account to cause deficiencies to be corrected if the public water supply is not operated, maintained, and expanded as necessary to protect the public health. If it is necessary for the department to withdraw funds from an escrow account, the funds shall be replaced within 90 days by the developer, private owner, or organization then responsible for the public water supply.

(3) The department may reduce or eliminate any escrow account established under this section after 5 years of operation and maintenance considered satisfactory by the department.

(4) Before the transfer of ownership of a privately owned public water supply, a private purchaser shall comply with subsections (1) and (2) of this section.
History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1993, Act 165, Imd. Eff. Sept. 16, 1993

§325.1011 Review and certification of laboratories testing water.
Sec. 11.
The department shall review and certify laboratories used or intended for use in the testing of water from public water supplies.
History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

§325.1011a Community supply provider; annual fees; schedule; adjustment; payment; failure to submit timely payment; penalty; collection.
Sec. 11a.
(1) The department shall impose an annual fee on each community supply provider in accordance with the following fee schedule:

Number of Residents Served	Annual Fee
More than 500,000	$ 83,800.00
100,001 - 500,000	$ 17,400.00
50,001 - 100,000	$ 11,000.00
25,001 - 50,000	$ 6,500.00
10,001 - 25,000	$ 3,500.00
5,001 - 10,000	$ 1,900.00
1,001 - 5,000	$ 800.00
401 - 1,000	$ 500.00
101 - 400	$ 400.00
25 - 100	$ 250.00

(2) The annual fee in this section shall be adjusted on October 1 each year following the effective date of this section by applying a percentage adjustment using the Detroit consumer price index. The fee may also be adjusted as the result of increased federal funding or a reduction in actual costs, as determined by the department.
(3) Each community supply provider shall pay the annual fee by November 30 each year. Failure to submit timely payment will result in assessment of a penalty of 9% per annum until the fee and assessment are paid in full. The department of treasury shall collect each penalty.
History: Add. 1993, Act 165, Imd. Eff. Sept. 16, 1993

§325.1011b Noncommunity supply provider; annual fees; schedule; adjustment; fee on 5 or more noncommunity supplies under same ownership on contiguous properties; payment; penalty on delinquent fees; exemption from annual fee in subsection (1); services provided by department not required.
Sec. 11b.
(1) The department shall impose an annual fee on each noncommunity supply provider in accordance with the following fee schedule:

Type of Noncommunity Supply	Annual Fee
Nontransient noncommunity supply	$ 360.00
Transient noncommunity supply	$ 85.00

(2) The annual fee in this section shall be adjusted on October 1 each year following the effective date of this section by applying the percentage adjustment using the Detroit consumer price index.
(3) For 5 or more noncommunity supplies under the same ownership on contiguous properties, the annual fee per noncommunity supply is 75% of the fee identified in subsection (1).

(4) A noncommunity supply provider shall pay the annual fee by November 30 each year. After November 30 of each year that a fee is not paid, the department of treasury shall collect from the nonpaying noncommunity supply provider a penalty of $25.00 for each month or portion of a month.

(5) A noncommunity supply provider that has completed construction of a new well or replacement well in compliance with a construction permit issued by a local health department is exempt from paying the first annual fee described in subsection (1) after final approval of the well is received.

(6) The department is not required to perform sanitary surveys or other services to maintain compliance with this act on behalf of a noncommunity supply provider who has not paid the current annual fee or appropriate penalties.

History: Add. 1993, Act 165, Imd. Eff. Sept. 16, 1993

§325.1011c Laboratory review and certification; service fees; adjustment; duration of certification.

Sec. 11c.

(1) The department shall review and certify laboratories used or intended for use in the testing of water from public water supplies where analyses are used to determine compliance with state drinking water standards. The department shall impose a fee for this service in accordance with the following fee schedule:

Type of Laboratory Certification Service	Fee Per Laboratory
Bacteriology, including chlorine residual and turbidity	$1,625.00
Inorganic chemistry	$2,435.00
Organic chemistry	$2,435.00
Inorganic and organic chemistry (both),or either combined with bacteriology	$3,045.00
Bacteriology, inorganic chemistry, and organic chemistry (all 3)	$4,285.00
Nitrate, nitrite, sulfate, cyanide,and fluoride only	$ 520.00
Lead and copper	$1,220.00
Laboratory water suitability test (required annually)	$ 260.00

(2) The fees in this section shall be adjusted on October 1 each year following the effective date of this section by applying a percentage adjustment using the Detroit consumer price index.

(3) Unless otherwise noted, a certification under this section is valid for 3 years from the date of certification and the fee per laboratory is for the entire 3-year period.

History: Add. 1993, Act 165, Imd. Eff. Sept. 16, 1993

§325.1011d Water supply fund; creation; administration; capitalization; retention and expenditure of funds.

Sec. 11d.

(1) The water supply fund is created in the state treasury and shall be administered by the department. The fund is capitalized by revenues collected pursuant to sections 11a, 11b, and 11c. The fund shall additionally receive money as otherwise provided by law, and shall receive any gift or contribution to the fund.

(2) The state treasurer shall retain money in the fund at the close of the fiscal year, and shall not return that money to the general fund.

(3) The department shall expend 75% of money in the fund at the close of the fiscal year to offset, on a pro rata basis, each fee described in sections 11a, 11b, and 11c for the following year.

(4) The department shall expend money in the water supply fund only to implement this act and the administrative rules promulgated under this act.

History: Add. 1993, Act 165, Imd. Eff. Sept. 16, 1993

§325.1012 Laboratory capability to test for contaminants.

Sec. 12.

The department shall maintain a laboratory capability to test for those contaminants in water which are included in the state drinking water standards and any other contaminant which may be of concern to the director.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

§325.1013 "Product" defined; rules; product standards; certification as prima facie evidence of meeting standards; list; supplying information for review; failure to comply; hearing; prohibition.

Sec. 13.

(1) As used in this section, "product" means any chemical or substance added to a public water supply, any materials used in the manufacture of public water supply components or appurtenances, or any pipe, storage tank, valve, fixture, or other materials which come in contact with water intended for use in a public water supply.

(2) The department may promulgate rules setting standards of quality, composition, safety, or design of products. Until the department promulgates rules setting standards for products, all products that may come in contact with water intended for use in a public water supply shall meet American national standards institute/national sanitation foundation standards, specifically ANSI/NSF standard 60-1988 and ANSI/NSF standard 61-1988 which are hereby incorporated by reference. Adoption of a product standard by rule supersedes the standard incorporated by reference in this section.

(3) Only products that meet the standards provided for in subsection (2) shall be used by a supplier of water in a public water supply. Certification that a product meets the standards provided for in subsection (2) by a laboratory accredited by American national standards institute to test and certify products shall be prima facie evidence that a product meets the standards. The department shall make a list of products meeting the standards available at no charge.

(4) A supplier of water shall compile and maintain on file for inspection by the department a list of all products used by the supplier of water. Prior to using a product not previously listed, a supplier of water shall either determine that the product has been certified in accordance with subsections (2) and (3) or shall notify the department of the type, name, and manufacturer of a product.

(5) Upon request of the department, a supplier of water shall, prior to making use of a product, supply to the department all documents and materials, including samples of a product, needed to review the type, quality, and nature of a product that will come in contact with the public water supply. The supplier of water shall provide sufficient information to enable the department to determine whether a product meets the standard provided for in subsection (2).

(6) If a product is reviewed by the department and found not to comply with the standards provided for in subsection (2), the department shall notify the supplier of water and shall be given an opportunity to request a hearing on whether the product meets the standards. At a hearing, the supplier of water must demonstrate that the product meets the standards before the product can be used by the supplier of water.

(7) A person shall not willfully introduce or permit or allow the introduction of a product into a public water supply that has not first been determined by the department to meet standards provided for in subsection (2).

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1993, Act 165, Imd. Eff. Sept. 16, 1993

§325.1014 Reports; records; rules relating to consumer confidence reports; contents of report; applicability of subsection (3); availability of report on internet.

Sec. 14.

(1) A supplier of water shall file with the department such reports and shall maintain such records as the department may by rule require. The department may by rule require a supplier of water to provide additional reports and notices to its customers. The rules shall include the required content of the reports and notices and the frequency and the manner of delivery of the reports and notices.

(2) A supplier of water shall provide to its customers consumer confidence reports as required by title XIV of the public health service act, chapter 373, 88 Stat. 1660, popularly known as the safe drinking water act. The department shall promulgate rules relating to consumer confidence reports including, but not limited to, the following:

(a) The content of the reports.

(b) The manner of delivery of the reports.

(c) Standardized formats that may be used by suppliers of water for providing information in the reports.

(d) If a source water assessment has been completed, a requirement that the reports contain a notification of the availability of the source water assessment and the means to obtain a copy.

(3) If regulated contaminants are detected in a public water supply, and certain subpopulations are particularly vulnerable to the adverse effects because of age, gender, pregnancy, or preexisting medical conditions, the consumer confidence report or other reports and notices, or both, shall contain information related to all of the following:

(a) The contaminant that was detected.

(b) The level of the contaminant that was detected.

(c) The vulnerable population that may be susceptible to the level of contaminant detected.

(d) The potential adverse health effects associated with exposure of the vulnerable population to the level of contaminant detected in the water supply.

(4) The requirement in subsection (3) shall only apply if the department provides suppliers of water with statements derived from the United States environmental protection agency or other sources determined by the department to be reliable concerning the adverse effects of regulated contaminants on vulnerable subpopulations. The statements shall be in a form that can be easily inserted into the consumer confidence reports or other reports and notices provided for in this section.

(5) If feasible from a cost perspective, the department may make consumer confidence reports provided for under this section available at a single website on the internet.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1998, Act 56, Imd. Eff. Apr. 8, 1998

Admin Rule: R 325.10101; R 325.10102 et seq.; R 325.10308b; R 325.10401 et seq.; R 325.10604a et seq.; R 325.10702 et seq.; R 325.11002; R 325.11008; R 325.11502 et seq. of the Michigan Administrative Code.

§325.1015 Protection of public health; notice to supplier of water; inspection of waterworks system; order; public hearing; emergency order; action limiting water system expansion or water use.

Sec. 15.

(1) When considered necessary for protection of the public health, the department shall notify a supplier of water of the need to make changes in operations, to provide treatment, to make structural changes in existing systems, or to add additional capacity as necessary to produce and distribute an adequate quantity of water meeting the state drinking water standards.

(2) The department shall inspect a waterworks system or a part of a waterworks system, and the manner of operation of the system or part. If upon inspection the department determines the waterworks system to be inadequate or so operated as to not adequately protect the public health, the department may order the supplier of water to make alterations in the waterworks system or its method of operation as may be required or considered advisable by the department to assure the public water supply is adequate, healthful, and in conformance with state drinking water standards. If the supplier does not request a public hearing within 30 days after receipt of the order, the order shall be final and binding on the supplier of water. If the department receives a request for a public hearing within the specified 30 days, the public hearing shall be immediately arranged. A supplier of water shall comply with a final order of the department.

(3) If a public water supply poses an imminent hazard to the public health, the department may issue an emergency order immediately, without notice or hearing, requiring such action as the department determines is necessary to protect the public health. Normal administrative procedures as required by the administrative procedures act of 1969, Act No. 306 of the Public Acts of 1969, as amended, being sections 24.201 to 24.328 of the Michigan Compiled Laws, shall proceed concurrently with an emergency order upon written request of the supplier of water received within 15 days. An emergency order shall be effective immediately and binding until modified or rescinded by the department or a court of competent jurisdiction.

(4) The department may take appropriate action to limit water system expansion or limit water use from a public water supply until such time as satisfactory improvements are made in the system or operation to provide for a continuous, adequate supply of water meeting the state drinking water standards.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1993, Act 165, Imd. Eff. Sept. 16, 1993

§325.1016 Agreements, contracts, or cooperative arrangements for purpose of administering act; grants of money or other aid; use and receipt of funds.

Sec. 16.

(1) The department may enter into agreements, contracts, or cooperative arrangements under terms and conditions appropriate with other state agencies, federal agencies, interstate agencies, political subdivisions, educational institutions, local health departments, or other organizations or individuals for the purpose of administering this act. The department may solicit and receive grants of money or other aid from federal and other public or private agencies or individuals for the administration of this act, or a portion thereof, to conduct research and training activities or cause them to be conducted, to cause waterworks systems or portions thereof to be constructed, or for other program purposes.

(2) The department may use funds appropriated to implement this act to provide loan or grant assistance to public water supplies for an activity which furthers the objectives of this act. The department may require matching funds from a public water supply when the department is providing loan or grant assistance.

(3) The department may receive funds from another agency and pass through funds to persons eligible for funding assistance where applicable and consistent with this act and title XIV of the public health service act, chapter 373, 88 Stat. 1660.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1998, Act 56, Imd. Eff. Apr. 8, 1998

Admin Rule: R 325.12801 et seq. of the Michigan Administrative Code.

§325.1017 Bottled drinking water.

Sec. 17.

(1) A person engaged in producing bottled drinking water shall utilize a water source meeting the requirements of this section and the requirements otherwise provided in this act. Bottling or packaging facilities and their operation shall remain under the supervision of the department of agriculture as provided for in the food law of 2000, 2000 PA 92, MCL 289.1101 to 289.8111.

(2) A person producing bottled drinking water from an out-of-state source shall submit proof to the director that the source and bottling facilities were approved by the agency having jurisdiction. The director may withhold approval of the bottled water if the other agency's inspection, surveillance, and approval procedures and techniques are determined to be inadequate.

(3) A person who proposes to engage in producing bottled drinking water from a new or increased large quantity withdrawal of more than 200,000 gallons of water per day from the waters of the state or that will result in an intrabasin transfer of more than 100,000 gallons per day average over any 90-day period shall submit an application to the department in a form required by the department containing an evaluation of environmental, hydrological, and hydrogeological conditions that exist and the predicted effects of the intended withdrawal that provides a reasonable basis for the determination under this section to be made.

(4) The department shall only approve an application under subsection (3) if the department determines both of the following:

(a) The proposed use will meet the applicable standard provided in section 32723 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.32723.

(b) The person will undertake activities, if needed, to address hydrologic impacts commensurate with the nature and extent of the withdrawal. These activities may include those related to the stream flow regime, water quality, and aquifer protection.

(5) Before proposing activities under subsection (4)(b), the person proposing to engage in producing bottled drinking water shall consult with local government officials and interested community members.

(6) Before making the determination under subsection (4), the department shall provide public notice and an opportunity for public comment of not less than 45 days.

(7) If the person proposing to engage in producing bottled drinking water under subsection (3) does not have a permit under section 4, the person shall request a determination under subsection (4) when that person applies for a permit under section 4. If the person proposing to engage in producing bottled drinking water has previously received a permit under section 4, the person shall obtain approval under subsection (4) prior to beginning the operations. A proposed use for which the department makes a determination that the conditions of subsection (4) will be met shall be considered to satisfy the requirements of section 4.11 of the compact.

(8) A person seeking a departmental determination under subsection (4) shall submit an application fee of $5,000.00 to the department. The department shall transmit application fees received under this section to the state treasurer to be credited to the water use protection fund created in section 32714.

(9) This section shall not be construed as affecting, intending to affect, or in any way altering or interfering with common law water rights or the applicability of other laws providing for the protection of natural resources or the environment.

(10) A person who proposes to engage in producing bottled drinking water and who submitted an application for a permit under section 4 prior to the effective date of the amendatory act that added this subsection is subject to the provisions of this section that existed on February 28, 2006.

(11) As used in this section, "compact", "intrabasin transfer", "new or increased large quantity withdrawal", and "waters of the state" mean those terms as they are defined in section 32701 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.32701.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 1993, Act 165, Imd. Eff. Sept. 16, 1993 ;-- Am. 2006, Act 37, Imd. Eff. Feb. 28, 2006 ;-- Am. 2008, Act 188, Imd. Eff. July 9, 2008

§325.1018 Water haulers; license; source of water; water quality.

Sec. 18.

Water haulers shall obtain an annual license from the department for their containers, equipment, and operation. The source of water shall be acceptable to the department and the water quality shall meet the state drinking water standards.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

§325.1019 Noncompliance with state drinking water standards; notification of users; litigation.

Sec. 19.

(1) If water delivered by or the operation of a public water supply is found not to be in compliance with the state drinking water standards, the department shall require the supplier of water to notify its users of the extent and nature of the noncompliance. Notification of users shall be in a form and manner prescribed or otherwise approved by the department.

(2) Notification received pursuant to this section or information obtained from the notification may not be used against a person in a litigation, except a prosecution for perjury or for giving a false statement.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

Admin Rule: R 325.10101; R 325.10102 et seq.; R 325.10308b; R 325.10401 et seq.; R 325.10604a et seq.; R 325.10702 et seq.; R 325.11002; R 325.11008; R 325.11502 et seq. of the Michigan Administrative Code.

§325.1020 Variances or exemptions.

Sec. 20.

The department may authorize variances or exemptions from the state drinking water standards in accordance with Public Law 93-523 (1974) and the federal rules and regulations.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

§325.1021 Violation as misdemeanor; penalty; issuance of appearance ticket; "minor offense" defined.

Sec. 21.

(1) A person who violates this act or the rules promulgated under this act or an order issued pursuant to this act is guilty of a misdemeanor punishable by a fine of not more than $5,000.00 for each day of violation, or by imprisonment for not more than 1 year, or both.

(2) A law enforcement officer may issue and serve an appearance ticket upon a person for a minor offense pursuant to sections 9c to 9g of chapter IV of the code of criminal procedure, 1927 PA 175, MCL 764.9c to 764.9g.

(3) As used in this section, "minor offense" means a violation of a permit issued under this act that does not functionally impair the operation or capacity of a waterworks system or the level of public health protection it provides.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977 ;-- Am. 2006, Act 601, Imd. Eff. Jan. 3, 2007

§325.1022 Enforcement of act, rules, or orders; penalty.

Sec. 22.

At the request of the department, the attorney general may bring an injunctive action or other appropriate action in the name of the people of the state to enforce this act, rules promulgated under this act, or an order issued pursuant to this act or the rules. In addition to other relief granted under this section, the court may impose a civil penalty of not more than $5,000.00 for each day of violation.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

§325.1023 Conditional effective date.

Sec. 23.

This act shall not take effect unless House Bill No. 6251 of the 1976 regular session of the legislature is enacted into law.

History: 1976, Act 399, Imd. Eff. Jan. 4, 1977

Compiler's Notes: House Bill No. 6251, referred to in this section, became P.A. 1976, No. 369, Eff. Mar. 31, 1977.

DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER BUREAU

SUPPLYING WATER TO THE PUBLIC

(By authority conferred on the department of environmental quality by section 5 of 1976 PA 399, MCL 325.1005, and Executive Reorganization Order 1996-1, MCL 330.3101)

PART 1. GENERAL PROVISIONS

R 325.10101 Purpose.

Rule 101. These rules are promulgated by the department for the purpose of protecting the public health and implementing the act, and to specify certain standards and criteria for public water supplies, which are consistent and compatible with the provisions of the act and the federal act.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; (1994).

R 325.10102 Definitions; A, B.

Rule 102. As used in these rules:

(a) "Act" means 1976 PA 399, MCL 325.1001 et seq. 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) "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.

(j) "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.

(k) "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.

(l) "Bottled drinking water" means water that is ultimately sold, provided, or offered for human consumption in a closed container.
History: 1979 AC; 1991 AACS; 1994 AACS; 2000 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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) "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.

(h) "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.

(i) "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.

(j) "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.

(k) "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.

(l) "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.

(m) "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.

(n) "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.

(o) "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.

(p) "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.

(q) "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.

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

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

(t) "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.

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

(v) "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.

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

(x) "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.

History: 1979 AC; 1991 AACS; 1993 AACS; 1994 AACS; 2000 AACS; 2002 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10104 Definitions; D, E.

Rule 104. As used in these rules:

(a) "Department" means the department of environmental quality or its authorized agent or representative.

(b) "Deviation" means an exception to a department rule establishing minimum standards or requirements issued in writing or as a condition to a permit to a public water supply.

(c) "Direct filtration" means a series of processes, including coagulation and filtration, but excluding sedimentation, resulting in substantial particulate removal.

(d) "Director" means the director of environmental quality or his or her authorized agent or representative.

(e) "Disinfectant contact time" (T in CT calculations) means the time in minutes that it takes for water to move from the point of disinfectant application or the previous point of disinfectant residual measurement to a point at or before the point where residual disinfectant concentration is measured.

Disinfectant contact time in pipelines shall be calculated based on plug flow by dividing the internal volume of the pipe by the maximum hourly flow rate through that pipe. Disinfectant contact time within mixing basins and storage reservoirs shall be determined by tracer studies or an equivalent demonstration.

(f) "Disinfection profile" means a summary of Giardia lamblia inactivation, and in certain cases virus inactivation, through the treatment plant.

(g) "Distribution system" means a system that consists of the following components through which water is distributed and used or intended for use for drinking or household purposes:

(i) Piping.

(ii) Transmission or distribution mains.

(iii) Pumps.

(iv) Pumping stations.

(v) Storage tanks.

(vi) Controls.

(vii) Associated appurtenances.

(h) "Division" means the drinking water and radiological protection division of the department.

(i) "Domestic or other non-distribution system plumbing problem" means a coliform contamination problem in a public water supply which has more than 1 service connection that is limited to the specific service connection from which the coliform positive sample was taken.

(j) "Drawdown" means the difference between the static water level and the pumping water level in a well or, for a flowing artesian well, the difference between an established datum above ground and the pumping water level.

(k) "Dual sample set" means a set of 2 samples collected at the same time and same location, with 1 sample analyzed for TTHM and the other sample analyzed for HAA5. Dual sample sets are collected for the purpose of conducting an IDSE under R 325.10719g and determining compliance with the TTHM and HAA5 MCLs under R 325.10610d and R 325.10719h to R 325.10719n.

(l) "Effective corrosion inhibitor residual," for the purpose of lead and copper control, means a concentration that is sufficient to form a passivating film on the interior walls of a pipe.

(m) "Emergency" means a situation in a public water supply that results in contamination, loss of pressure, lack of adequate supply of water, or other condition that poses an imminent hazard or danger to the public health.

(n) "Enhanced coagulation" means the addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment.

(o) "Enhanced softening" means the improved removal of disinfection byproduct precursors by precipitative softening.

(p) "EPA" means the United States environmental protection agency.

(q) "Equivalent certificate" means a certificate which is issued to certain individuals. Individuals eligible for an equivalent certificate do not hold a current certificate but were issued certification before the effective date of the current rules.

(r) "Established ground surface" means the intended or actual finished grade or elevation of the surface of the ground at the site of a water supply facility.

(s) "Exemption" means an order, with appropriate conditions, time schedules, and compliance requirements, that is issued by the director to a public water supply permitting a public water supply to be in temporary noncompliance with a state drinking water standard, including a specified treatment technique.

History: 1979 AC; 1991 AACS; 1994 AACS; 1998 AACS; 2000 AACS; 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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 (2008) 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) "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.

(t) "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.

(u) "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.

(v) Locational running annual average (LRAA) is the average of sample analytical results for samples taken at a particular monitoring location during the previous 4 calendar quarters.
History: 1979 AC; 1994 AACS; 2000 AACS; 2002 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10106 Definitions; M to O.

Rule 106. As used in these rules:

(a) "Maximum residual disinfectant level (MRDL)" means a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.

(b) "Maximum TTHM potential" means the maximum concentration of total trihalomethanes produced in a given water containing a disinfectant residual after 7 days at a temperature of 25 degrees Centigrade or above.

(c) "MCL" means the maximum permissible level of a contaminant in water that is delivered to any user of a public water supply.

(d) "MDL" means method detection limit for analytical work done to determine compliance with the act.

(e) "Medium-size water system" or "medium-size water supply," for the purpose of lead and copper control, means a public water supply that serves more than 3,300 persons and fewer than or equal to 50,000 persons.

(f) "Membrane filtration" means a pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

(g) "Monitoring requirement" means a schedule, frequency, and location for the sampling and analysis of water that is required by the provisions of part 7 of these rules to determine whether a public water supply is in compliance with the state drinking water standards.

(h) "Near the first service connection" means at 1 of the 20% of all service connections in the entire system that are nearest the water supply treatment facility, as measured by water transport time within the distribution system.

(i) "Noncommunity supply" or "noncommunity water supply" or "noncommunity water system" means a public water supply that is not a community supply, but that has not fewer than 15 service connections or that serves not fewer than 25 individuals on an average daily basis for not less than 60 days per year.

(j) "Nontransient noncommunity water supply" or "nontransient noncommunity water system" or "NTNC" means a noncommunity public water supply that serves not fewer than 25 of the same individuals on an average daily basis over 6 months per year. This definition includes water supplies in places of employment, schools, and day-care centers.

(k) "NTU" means nephelometric turbidity unit.

(l) "One hundred-year drought elevation" means the minimum projected water surface elevation that would occur at a location once in a period of 100 years.

(m) "One hundred-year flood elevation" means the maximum projected water surface elevation that would occur at a location once in a period of 100 years.

(n) "Operating shift" means that period of time during which operator decisions that affect public health are necessary for proper operation of the waterworks system.

(o) "Operator" means an individual who operates a waterworks system or a portion of a waterworks system.

(p) "Operator in charge" means a certified operator who is designated by the owner of a public water supply as the responsible individual in overall charge of a waterworks system, or portion of a waterworks system, who makes decisions regarding the daily operational activities of the system that will directly impact the quality or quantity of drinking water.

(q) "Optimal corrosion control treatment," for the purpose of lead and copper control, means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while ensuring that the treatment does not cause the public water supply to be in violation of any national primary drinking water regulations.

History: 1979 AC; 1984 AACS; 1989 AACS; 1991 AACS; 1994 AACS; 2000 AACS; 2002 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10107 Definitions; P, R.

Rule 107. As used in these rules:

(a) "Permit" means a public water supply construction permit that is issued to a supplier of water by the department under section 4 of the act.

(b) "Person" means an individual, partnership, copartnership, cooperative, firm, company, public or private association or corporation, political subdivision, agency of the state, agency of the federal government, trust, estate, joint structure company, or any other legal entity, or their legal representative, agent, or assignee.

(c) "Pitless adapter" means a device or assembly of parts which permits water to pass through the wall of a well casing or extension of a well casing and which provides access to the well and to the parts of the system within the well in a manner that prevents the entrance of contaminants into the well and the water produced.

(d) "Plans and specifications" means drawings, data, and a true description or representation of an entire waterworks system or parts of the system as it exists or is to be constructed, and a statement of how a waterworks system shall be operated.

(e) "Plant intake" means the works or structures at the head of a conduit through which water is diverted from a source, for example, river or lake, into the treatment plant.

(f) "Point-of-entry treatment device (POE)" means a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.

(g) "Point-of-use treatment devise (POU)" means a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that 1 tap.

(h) "Political subdivision" means a city, village, township, charter township, county, district, authority, or portion or combination of any of the entities specified in this subdivision.

(i) "PQL" means the practical quantitation levels. The PQL is the lowest concentration that can be reliably achieved by well-operated laboratories within specified limits of precision and accuracy during routine laboratory operating conditions.

(j) "Presedimentation" means a preliminary treatment process used to remove gravel, sand, and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

(k) "Production well" means a well that has been approved for use for a public water supply in accordance with the provisions of part 8 of these rules.

(l) "Public hearing" means a hearing which is conducted by the director of the department on matters relating to the functions and responsibilities of the division and which seeks public input relevant to such functions and responsibilities.

(m) "Public water supply" or "public water system" means a waterworks system that provides water for drinking or household purposes to persons other than the supplier of the water, and does not include either of the following:

(i) A waterworks system that supplies water to only 1 living unit.

(ii) A waterworks system that consists solely of customer site piping.

(n) "Pumping water level" means the distance measured from an established datum at or above ground level to the water surface in a well being pumped at a known rate for a known period of time.

(o) "Rated treatment capacity" means 1 or any combination of the following capacities when water treatment is practiced:

(i) Rated capacity from an approved surface water supply, ground water supply under the direct influence of surface water, or complete treatment system as contained in R 325.11006.

(ii) Firm capacity from an approved ground water supply where firm capacity means the production capability of each respective component of the waterworks system with the largest well, pump, or treatment unit out of service.

(iii) Available capacity obtained under contract and capable of delivery from another approved public water supply.

(p) "Raw water" means water that is obtained from a source by a public water supply before the public water supply provides any treatment or distributes the water to its customers.

(q) "Regional administrator" means the EPA region V administrator.

(r) "Regulated VOCs" means a group of volatile organic chemicals for which state drinking water standards have been promulgated, but does not include total trihalomethanes.

(s) "Removed from service" means physically disconnected from the waterworks system in a manner that would prevent the inadvertent use of the well and would require specific authorization from the public water supply to reconnect.

(t) "Repeat sample" means a sample that is collected and analyzed in response to a previous coliform-positive sample.

(u) "Resident" means an individual who owns or occupies a living unit.

(v) "Routine sample" means a water sample that is collected and analyzed to meet the monitoring requirements for total coliform, as outlined in the written sampling plan.

History: 1979 AC; 1989 AACS; 1991 AACS; 1994 AACS; 2000 AACS; 2002 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10108 Definitions; S.

Rule 108. As used in these rules:

(a) "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.

(b) "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.

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

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

(e) "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.

(f) "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.

(g) "SOC" means synthetic organic chemical.

(h) "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.

(i) "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.

(j) "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.

(k) "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.

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

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

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

(o) "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.

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

History: 1979 AC; 1991 AACS; 1993 AACS; 1994 AACS; 2000 AAS; 2002 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10109 Definitions; T to Y.

Rule 109. As used in these rules:

(a) "Test well" means a well that is drilled on a site that has not been approved for use as a production well in accordance with the provisions of part 8 of these rules.

(b) "Too numerous to count" means that the total number of bacterial colonies is more than 200 on a 47-millimeter diameter membrane filter.

(c) "Total organic carbon" or "TOC" means total organic carbon in mg/l measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to 2 significant figures.

(d) "Total trihalomethanes" or "TTHM" means the sum of the concentration, in milligrams per liter, rounded to 2 significant figures, of all of the following:

(i) The trihalomethane compounds.

(ii) Trichloromethane (chloroform).

(iii) Dibromochloromethane.

(iv) Bromodichloromethane.

(v) Tribromomethane (bromoform).

(e) "Transient noncommunity water supply" or "transient noncommunity water system" means a noncommunity supply that does not meet the definition of nontransient noncommunity water supply in R 325.10106(h).

(f) "Treatment system" means a facility or structure and associated appurtenances installed for the purpose of treating drinking water before delivery to a distribution system.

(g) "Treatment technique" means a minimum treatment requirement or a necessary methodology or technology that is employed by a public water supply for the control of the chemical, physical, biological, or radiological characteristics of the public water supply.

(h) "Trihalomethane" or "THM" means 1 of the family of organic compounds named as derivatives of methane, wherein 3 of the 4 hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure.

(i) "Two-stage lime softening" means a process in which chemical addition and hardness precipitation occur in each of 2 distinct unit clarification processes in series prior to filtration.

(j) "Unregulated contaminants" means a group of contaminants for which state drinking water standards have not been promulgated, but for which monitoring requirements apply.

(k) "Variance" means an order, with appropriate conditions and compliance schedules and requirements, which is issued by the director to a public water supply and which permits a public water supply to be in noncompliance with a state drinking water standard, including a specified treatment technique.

(l) "VOC" means volatile organic chemical.

(m) "Water hauler" means a person engaged in bulk vehicular transportation of water to other than the water hauler's own household which is intended for use or used for drinking or household purposes. Excluded from this definition are those persons providing water solely for employee use.

(n) "Water transportation tank" means a tank that is associated with an over-the-road vehicle that is used for the bulk transport of drinking water.

(o) "Waterworks system" or "system" means a system of pipes and structures through which water is obtained and distributed, including, but not limited to all of the following which are actually used or intended for use for the purpose of furnishing water for drinking or household purposes:

(i) Wells and well structures, intakes, and cribs.

(ii) Pumping stations.

(iii) Treatment plants.

(iv) Storage tanks.

(v) Pipelines and appurtenances.

(vi) A combination of the items specified in this subdivision.

(p) "Wholesale system" or "wholesale supply" means a public water supply that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water supply. Delivery may be through a direct connection or through the distribution system of 1 or more consecutive supplies.

(q) "Year-round service" means the ability of a supplier of water to provide drinking water on a continuous basis to a living unit or facility.

History: 1979 AC; 1984 AACS; 1989 AACS; 1991 AACS; 1993 AACS; 1994 AACS; 1998 AACS; 2000 AACS; 2002 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10110 Definitions; parts 6 and 7.

Rule 110. As used in part 6 and part 7 of these rules:

(a) "Dose equivalent" means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the ICRU.

(b) "Gross alpha particle activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

(c) "Gross beta particle activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

(d) "ICRU" means the international commission on radiological units and measurements.

(e) "Man-made beta particle and photon emitters" means all radionuclides emitting beta particles or photons, or both, listed in "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air or in Water for Occupational Exposure," NCRP Report 22, 1963, as adopted by reference in R 325.10112, except the daughter product of thorium 232, uranium 235, and uranium 238.

(f) "Picocurie" or "pCi" means that quantity of radioactive material producing 2.22 nuclear transformations per minute.

(g) "Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A millirem is 1/1000 of a rem.

History: 1954 ACS, Eff. Jan. 12, 1978; 1979 AC; 2000 MR 19, Eff. Dec. 8, 2000.

R 325.10111 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 2000 MR 19, Eff. Dec. 8, 2000.

R 325.10112 Adoption by reference.

Rule 112. The department adopts by reference the publication entitled "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," NCRP Report 22, 1963, as referred to in parts 1 and 6 of these rules. The adopted material is available from the National Council on Radiation Protection and Measurements at the address in R 325.10116(c) for a cost of $20.00 at the time of adoption of these rules. The adopted material is available for inspection, or copies are available at no cost from the offices of the department at the address in R 325.10116(a).

History: 1979 AC; 1998 AACS; 2000 AACS; 2002 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10113 Compliance with rules; guidance information.

Rule 113. Public water supplies may use the information in the following publications as guidance 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, water bureau, is available for inspection at the department offices in Lansing and on the Internet at http://www.michigan.gov/deq.

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

History: 1979 AC; 2000 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10114 Recissions.

Rule 114. The following rules of the department are rescinded:

(a) Rules entitled "Municipal Water Supplies," being R 325.480 to R 325.491 of the Michigan Administrative Code, and appearing on pages 2263 to 2264 of the 1954 volume of the Code.

(b) Rules entitled "Regulations Providing Minimum Standards for the Location and Construction of Certain Water Supplies in the State of Michigan," being R 325.1451 to R 325.1461 of the Michigan Administrative Code, and appearing on pages 3205 to 3210 of the 1964-65 Annual Supplements to the Code.

(c) Rules entitled "Operation of Plants Furnishing Water Supply," being R 325.371 to R 325.374 of the Michigan Administrative Code, and appearing on pages 2253 of the 1954 volume of the Code.

(d) Rules entitled "Certification of Water Treatment Plant Personnel," being R 325.551 to R 325.572 of the Michigan Administrative Code, and appearing on pages 2278 to 2282 of the 1954 volume of the Code.

(e) Rules entitled "Water Supply Cross-Connections," being R 325.431 to R 325.440 of the Michigan Administrative Code, appearing on pages 6129 to 6131 of the 1972 Annual Supplement to the Code.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10115 Remedies and penalties.

Rule 115. A person who violates any of the provisions of these rules shall be subject to the remedies and penalties as prescribed by sections 21 and 22 of the act.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

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, Water Bureau, 525 West Allegan Street, Post Office Box 30273, Lansing, MI 48909-7773, Telephone 517-241-1300. Internet address: http://www.michigan.gov/deq.

(b) 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.

(c) 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/.

History: 2002 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

PART 2. HEARINGS AND CONTESTED CASES

R 325.10201 Public hearings; applicable law.

Rule 201. Public hearings conducted by the division pursuant to the act and these rules shall be in accordance with, and subject to, Act No. 306 of the Public Acts of 1969, as amended, being §§24.201 to 24.315 of the Michigan Compiled Laws.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10202 Requests for public hearings.

Rule 202. (1) If a person requests the division to schedule a public hearing, the request shall be made in writing and shall include all of the following information:

(a) The name, address, and telephone number of the person requesting the public hearing.

(b) A brief statement of the reason for the request and the relationship of the person to the subject for which the public hearing is requested.

(c) A brief statement of the information that the person requesting the public hearing intends to submit at the public hearing.

(2) After receipt of the request for public hearing, the chief of the bureau of environmental and occupational health shall make a determination as to the need for a hearing. If the chief of the bureau grants the public hearing, it shall be scheduled and conducted in accordance with, and subject to, Act No. 306 of the Public Acts of 1969, as amended.

(3) If the chief of the bureau denies the public hearing, he shall notify the person requesting the public hearing in writing of his decision and shall state his reasons for denial of the hearing.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10203 Contested cases; applicable law; appearances; service of notices and orders.

Rule 203. (1) Division administrative procedures in contested cases and judicial review thereof shall be in accordance with, and subject to, chapters 4, 5, and 6 of Act No. 306 of the Public Acts of 1969, as amended, being §§24.271 to 24.306 of the Michigan Compiled Laws.

(2) Appearances at a contested case hearing shall be either in person or by duly authorized agent. Legal counsel may represent a person in a contested case.

(3) Service of notices, orders, and final orders shall be by personal service or by certified mail, or both, upon the parties named in the proceedings.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10204 Initiation of contested case hearing.

Rule 204. (1) Contested case hearings may be initiated by the chief of the bureau of environmental and occupational health. Except in the case of suspension or revocation of a license, permit, order, variance, or exemption, the chief of the bureau shall initiate a contested case hearing by notice mailed by certified mail not less than 21 days prior to the hearing.

(2) A person requesting a contested case hearing shall file a petition with the division in Lansing, Michigan. The petition shall state the legal authority under which the hearing is requested, a brief statement of the matters asserted, a statement of the relationship of the petitioner to the issue, and a statement of relief sought.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10205 Notice of contested case hearing.

Rule 205. When a contested case hearing is initiated, the division shall provide notice to those known persons who may be materially affected by the proceedings. The notice shall be by mail or by publication, or both, as may be necessary.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10206 Hearing officer; record of proceedings; proposal for decision.

Rule 206. That portion of a contested case hearing in which testimony and evidence is to be taken may be referred to a hearing officer who shall be designated and authorized by the director to preside at the hearing. The hearing officer shall hear the evidence and prepare a record of the proceedings and a proposal for decision, including findings of fact and conclusions of law. The record of the proceedings and proposal for decision shall be filed at the office of the director as soon as possible after completion of the hearing. A copy of the proposal for decision shall be served by certified mail on all other parties to the proceedings.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10207 Division files and records; availability; evidence.

Rule 207. The files and records of the division specified in notices of determination and hearing, except those materials exempted by section 13 of Act No. 442 of the Public Acts of 1976, being

S15.243 of the Michigan Compiled Laws, shall be available before or at contested case hearings held by the director or by the hearing officer, and the whole, or a part thereof, may be offered at a hearing as evidence on behalf of the division.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10208 Stipulations and consent orders; final orders.
Rule 208. (1) A person cited to appear at a hearing noticed by the division, and who desires to dispose of the contested case by stipulation or consent order, may mail to the director not later than 10 days before the date set for hearing his written consent to the terms and conditions of the proposed order or other form of action as set forth in the notice of determination and hearing. Agreement between the parties on the terms and conditions of a stipulation or consent order shall constitute sufficient cause for the director to dispose of the contested case without further hearing.
(2) After the hearing officer has submitted his proposal for decision, the director shall issue a final order on the matter. A certified copy of the final order shall be prepared and served by certified mail on the contesting parties or their attorneys together with the director's finding containing a resume of the facts and grounds for decision.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

PART 3. VARIANCES AND EXEMPTIONS

R 325.10301 Purpose.
Rule 301. The purpose of this part is to prescribe procedures by which the department may grant or deny a variance or exemption from a state drinking water standard pursuant to the provisions of section 20 of the act and in accordance with the federal act.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10302 Form.
Rule 302. If a variance or exemption is granted by the department to a supplier of water, it shall be in the form of an enforceable administrative order, approved as to form by the department of the attorney general. The order shall contain applicable conditions, specific compliance requirements, and time schedules for compliance.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

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 any of the following:
(a) Total coliform MCL violations.
(b) Filtration requirements.
(c) Disinfection requirements.
(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.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991.

R 325.10304 Variance from MCL or treatment technique; required finding.
Rule 304. Variances from an MCL other than total coliform or from a treatment technique other than filtration and disinfection 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.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991.

R 325.10305 Request for variance; included information.

Rule 305. A supplier of water who requests a variance from the department shall include on the request for variance the following information, where applicable:

(a) The nature and duration of the variance requested.

(b) Relevant water quality data of the public water supply, including the results of tests conducted pursuant to part 7 of these rules and the act.

(c) An explanation and evidence of the best available treatment technology and techniques, where applicable.

(d) Economic and legal factors relevant to the ability to comply with an MCL or treatment technique.

(e) Raw water quality data relevant to the variance requested.

(f) A proposed compliance schedule including the date by which each step toward compliance shall be achieved. A compliance schedule shall include, but not necessarily be limited to, all of the following:

(i) The date by which an arrangement for an alternative raw water source or improvement of the existing raw water source shall be completed.

(ii) The anticipated date of initiation of the connection to the alternative raw water source or the improved existing raw water source.

(g) A plan for interim control measures during the duration of the variance requested, including the provision of safe drinking water in the case of a rise in the contaminant level.

(h) A statement that the supplier of water shall perform monitoring and other reasonable requirements as may be prescribed by the director as a condition to a variance.

(i) Other information believed to be pertinent to the request for variance by the director or the supplier of water.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

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

Rule 306. Exemptions from an MCL other than total coliform or from a treatment technique other than filtration or disinfection 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.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991.

R 325.10307 Request for exemption; included information.

Rule 307. A supplier of water who requests an exemption from the department shall include on the request for an exemption all of the following information:

(a) The nature and duration of the exemption requested.

(b) Relevant water quality data of the public water supply, including the results of tests conducted pursuant to part 7 of these rules and the act.

(c) The date the public water supply was put into operation.

(d) A complete explanation of the compelling factors, including, but not limited to, time and economic factors which prevent the public water supply from achieving compliance.

(e) A proposed compliance schedule, including a date by which each step toward compliance shall be achieved.

(f) The date by which final compliance is to be achieved.

(g) Other information believed by the director or the supplier of water to be pertinent to the request for exemption.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10308 Review of request for variance or exemption.

Rule 308. In his review of a request for a variance or an exemption the director shall take at least the following into consideration:

(a) The availability and effectiveness of all methods which may be employed by the supplier of water to comply with the MCL or treatment technique for which the variance or exemption is requested.

(b) Cost and other economic considerations, such as implementing treatment, improving the quality of the raw water source, using an alternative raw water source, or otherwise bringing the public water supply into compliance.

(c) The quality of the raw water source, including water quality data and pertinent sources of contamination.

(d) Source protection measures employed by the public water supply.

(e) Construction or modification of treatment equipment or systems.

(f) The time required to put into operation a new treatment system to replace an existing treatment system which is not in compliance, or other facilities or other means to bring the public water supply into compliance.

(g) Risk to the health of persons served by the public water supply.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10308a Variances from MCL for total trihalomethanes.

Rule 308a. (1) The department identifies all of the following as the best technology, treatment technique, or other means generally available for achieving compliance with the maximum contaminant level for total trihalomethanes as established in R 325.10604a:

(a) Use of chloramines as an alternate or supplemental disinfectant or oxidant.

(b) Use of chlorine dioxide as an alternate or supplemental disinfectant or oxidant.

(c) Improved existing clarification for THM precursor reduction.

(d) Moving the point of chlorination to reduce TTHM formation and, where necessary, substituting chloramines, chlorine dioxide, or potassium permanganate for the use of chlorine as a pre-oxidant.

(e) Use of powdered, activated carbon for THM precursor or TTHM reduction seasonally or intermittently at dosages not to exceed 10 milligrams per liter on an annual average basis.

(2) The department shall require a community supply to install or use, or both, any treatment method identified in subrule (1) of this rule as a condition for granting a variance, unless the department determines that the treatment method identified in subrule (1) of this rule is not available and effective for TTHM control for the system. A treatment method shall not be considered to be available and effective for a community supply if the treatment method would not be technically appropriate and technically feasible for that supply or would only result in a marginal reduction in TTHM for the community supply. Upon application by a supplier of water for a variance, if the department determines that none of the treatment methods identified in subrule (1) of this rule is available and effective for the community supply, the supplier of water shall be entitled to a variance pursuant to section 20 of the act. The department's determination as to the availability and effectiveness of the treatment methods shall be based upon studies by the supplier of water and other relevant information. If a supplier of water submits information to demonstrate that a treatment method is not available and effective for TTHM control for that community supply, the department shall determine whether the information supports a finding that the treatment method is not available and effective for that supply before requiring installation or use, or both, of the treatment method.

(3) Pursuant to R 325.10305, the department shall require a schedule of compliance to be established that may require the community supply being granted the variance to examine any or all of the following treatment methods to determine the probability that any of the methods will significantly reduce the level of TTHM for that community supply:

(a) Introduction of off-line water storage for THM precursor reduction.
(b) Aeration for TTHM reduction, where geographically and environmentally appropriate.
(c) Introduction of clarification where not currently practiced.
(d) Consideration of alternative sources of raw water.
(e) Use of ozone as an alternate or supplemental disinfectant or oxidant. If the probability exists, the supplier of water shall determine whether any of the treatment methods is technically feasible and economically reasonable, and that the TTHM reductions obtained will be commensurate with the costs incurred with the installation and use of the treatment methods for that community supply.

(4) If the department determines that a treatment method identified in subrule (3) of this rule is technically feasible, economically reasonable, and will achieve TTHM reductions commensurate with the costs incurred with the installation or use, or both, of such treatment method for the community supply, the supplier of water shall be requested to install or use, or both, that treatment method in connection with a compliance schedule pursuant to R 325.10310. The department's determination shall be based upon studies by the supplier of water and other relevant information. The supplier of water shall not install or use a treatment method not described in subrule (1) or (3) of this rule to obtain or maintain a variance from the requirements of R 325.10604a or in connection with any variance compliance schedule.

History: 1984 MR 6, Eff. July 6, 1984.

Compiler's note to R 325.10308a: The citations in subrules (1) and (4) to "R 325.10604a" evidently should read "R 325.10610."

R 325.10308b Best available technology.

Rule 308b. (1) The department identifies the following as the best technology, treatment technique, or other means generally available for achieving compliance with the MCL:

(a) For organic contaminants in R 325.10604b and R 325.10604d, the best available technologies, treatment techniques, or other means available for achieving compliance with the MCLs are granular activated carbon (GAC), packed tower aeration (PTA), or oxidation (OX), as listed in table 1 of this rule.

Table 1 Best available technologies for organic contaminants

Contaminant	GAC	PTA	OX
Alachlor	x		
Aldicarb	x		
Aldicarb sulfone	x		
Aldicarb sulfoxide	x		
Atrazine	x		
Benzene	x	x	
Benzo(a)pyrene	x		
Carbofuran	x		
Carbon tetrachloride	x	x	
Chlordane	x		
Dalapon	x		
2,4 D	x		
Di (2 ethylhexyl)adipate	x	x	
Di (2 ethylhexyl)phthalate	x		
Dibromochloropropane (DBCP)	x	x	
o Dichlorobenzene	x	x	
para Dichlorobenzene	x	x	
1,2 Dichloroethane	x	x	
1,1 Dichloroethylene	x	x	

Contaminant	GAC	PTA	OX
cis 1,2 Dichloroethylene	x	x	
trans 1,2 Dichloroethylene	x	x	
Dichloromethane		x	
1,2 Dichloropropane	x	x	
Dinoseb	x		
Diquat	x		
Endothall	x		
Endrin	x		
Ethylbenzene	x	x	
Ethylene Dibromide (EDB)	x	x	
Glyphosate			x
Heptachlor	x		
Heptachlor epoxide	x		
Hexachlorobenzene	x		
Hexachlorocyclopentadiene	x	x	
Lindane	x		
Methoxychlor	x		
Monochlorobenzene	x	x	
Oxamyl (Vydate)	x		
Pentachlorophenol	x		
Picloram	x		
Polychlorinated biphenyls(PCB)	x		
Simazine	x		
Styrene	x	x	
2,3,7,8 TCDD (Dioxin)	x		
Tetrachloroethylene	x	x	
Toluene	x	x	
Toxaphene	x		
2,4,5 TP (Silvex)	x		
1,2,4 Trichlorobenzene	x	x	
1,1,1 Trichloroethane	x	x	
1,1,2 Trichloroethane	x	x	
Trichloroethylene	x	x	
Vinyl chloride		x	
Xylene	x	x	

(b) For inorganic contaminants in R 325.10604c, the best available technologies, treatment techniques, or other means available for achieving compliance with the MCLs are listed in table 2 of this rule. The affordable technology, treatment technique, or other means available to supplies serving 10,000 or fewer people for achieving compliance with the maximum contaminant level for arsenic are listed in table 3 of this rule.

Table 2 Best available technologies for inorganic contaminants

Chemical name	Best available technologies
Antimony	2,7
Arsenic[4]	1,2, 5,6,7,9,11[5]
Asbestos	2,3,8
Barium	5,6,7,9
Beryllium	1,2,5,6,7
Cadmium	2,5,6,7
Chromium	2,5,6[2],7
Cyanide	5,7,10
Mercury	2[1],4,6[1],7[1]
Nickel	5,6,7
Nitrate	5,7,9
Nitrite	5,7
Selenium	1,2[3],6,7,9
Thallium	1,5

[1] Best available technology only if influent Hg concentrations are 10 µg/l or less.
[2] Best available technology for chromium III only.
[3] Best available technology for selenium IV only.
[4] BATs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.
[5] To obtain high removals, iron to arsenic ratio shall be at least 20:1.

Key to best available technologies in table:
1 = activated alumina
2 = coagulation/filtration (not BAT for supplies with fewer than 500 service connections)
3 = direct and diatomite filtration
4 = granular activated carbon
5 = ion exchange
6 = lime softening (not BAT for supplies with fewer than 500 service connections)
7 = reverse osmosis
8 = corrosion control
9 = electrodialysis
10 = alkaline chlorination (pH greater than or equal to 8.5)
11 = oxidation/filtration

Table 3 Small supplies compliance technologies (SSCTs) for arsenic[1]

Small supply compliance technology	Affordable for listed small supply categories.[2]
Activated alumina (centralized)	All size categories.
Activated alumina (point-of-use)[3]	All size categories.
Coagulation/filtration	501-3,300, 3,301-10,000.
Coagulation-assisted microfiltration	501-3,300, 3,301-10,000.
Electrodialysis reversal	501-3,300, 3,301-10,000.
Enhanced coagulation/filtration	All size categories.
Enhanced lime softening (pH more than 10.5)	All size categories.
Ion exchange	All size categories.
Lime softening	501-3,300, 3,301-10,000.
Oxidation/filtration[4]	All size categories.
Reverse osmosis (centralized)	501-3,300, 3,301-10,000.
Reverse osmosis (point-of-use)[3]	All size categories.

[1] SSCTs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.
[2] Three categories of small supplies are: (i) those serving 25 or more, but fewer than 501, (ii) those serving more than 500, but fewer than 3,301, and (iii) those serving more than 3,300, but fewer than 10,001.
[3] POU shall not be used to obtain a variance.
[4] To obtain high removals, iron to arsenic ratio shall be at least 20:1.

(c) For radionuclide contaminants in R 325.10603, the best available technologies, treatment techniques, or other means available for achieving compliance with the MCLs are listed in table 4 for all size supplies. The affordable technology, treatment technique, or other means available for achieving compliance with the maximum contaminant level are listed in table 5 for supplies serving 10,000 or fewer people as categorized in table 6.

Table 4 Best available technologies for radionuclide contaminants

Contaminant	Best available technologies.
Combined radium 226 and radium 228	Ion exchange, reverse osmosis, lime softening.
Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration.
Gross alpha particle activity (excluding radon and uranium)	Reverse osmosis.
Beta particle and proton radioactivity	Ion exchange, reverse osmosis.

Table 5 List of small supplies compliance technologies for radionuclides and limitations to use

Unit Technologies	Limitations (see footnotes)	Operator skill level required *	Raw water quality range and considerations.
1. Ion exchange	(a)	Intermediate	All ground waters.
2. Reverse osmosis (RO)	(b)	Advanced	Surface waters usually require pre-filtration.
3. Lime softening	(c)	Advanced	All waters.
4. Green sand filtration	(d)	Basic	
5. Co-precipitation and Barium sulfate	(e)	Intermediate to Advanced	Ground waters with suitable water quality.
6. Electrodialysis/ electrodialysis reversal	Not applicable	Basic to intermediate	All ground waters.
7. Pre-formed hydrous Manganese oxide filtration.	(f)	Intermediate	All ground waters.
8. Activated alumina	(a), (g)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency.
9. Enhanced coagulation/ filtration	(h)	Advanced	Can treat a wide range of water qualities.

* An operator with a basic skill level has minimal experience in the water treatment field and can perform the necessary system operation and monitoring if provided with proper instruction. The operator is capable of reading and following explicit directions. An operator with an intermediate skill level understands the principles of water treatment and has a knowledge of the regulatory framework. The operator is capable of making system changes in response to source water fluctuations. An operator with an advanced skill level possesses a thorough understanding of the principles of system operation. The operator is knowledgeable in water treatment and regulatory requirements. The operator may, however, have advanced knowledge of only the particular treatment technology. The operator seeks information, remains informed, and reliably interprets and responds to water fluctuations and system intricacies.

Limitations Footnotes: Technologies for Radionuclides:

a The regeneration solution contains high concentrations of the contaminant ions. Disposal options shall be carefully considered before choosing this technology.

b Reject water disposal options shall be carefully considered before choosing this technology.

c The combination of variable source water quality and the complexity of the water chemistry involved may make this technology too complex for small surface water systems.

d Removal efficiencies may vary depending on water quality.

e This technology may be very limited in application to small systems. Since the process requires static mixing, detention basins, and filtration, it is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.

f This technology is most applicable to small systems that already have filtration in place.

g Handling of chemicals required during regeneration and pH adjustment may be too difficult for small systems without an adequately trained operator.

h Assumes modification to a coagulation/filtration process already in place.

Table 6 Compliance technologies by supply size category for radionuclide requirements

Contaminant	Compliance technologies* for supply size categories (population served)		
	25-500	501-3,300	3,301 – 10,000
1. Combined radium 226 and radium 228	1, 2, 3, 4, 5, 6, 7	1, 2, 3, 4, 5, 6, 7	1, 2, 3, 4, 5, 6, 7
2. Gross alpha particle activity	2	2	2
3. Beta particle activity and photon activity	1, 2	1, 2	1, 2
4. Uranium	1, 8, 9	1, 2, 3, 8, 9	1, 2, 3, 8, 9

* Numbers correspond to those technologies listed in Table 5 of this rule.

(2) The department shall require community water supplies and nontransient, noncommunity water supplies to employ a treatment method identified in subrule (1) of this rule as a condition for granting a variance, except as provided in subrule (3) of this rule. If, after the treatment method is installed in the system, the supply cannot meet the MCL, then the supply shall be eligible for a variance under this part and section 20 of the act.

(3) If a supply demonstrates through comprehensive engineering assessments, which may include pilot plant studies, that the treatment methods identified in subrule (1) of this rule may only achieve a de minimis reduction in contaminants, then the department may issue a schedule of compliance that requires the supply being granted the variance to examine other treatment methods as a condition of obtaining the variance.

(4) If the department determines that a treatment method identified in subrule (3) of this rule is technically feasible, then the department may require the supply to use that treatment method in connection with a compliance schedule issued under section 20 of the act. The department's determination shall be based on studies by the supply and other relevant information.

(5) The department may require a community or noncommunity supply to use point-of-use devices, point-of-entry devices, or other means as a condition of granting a variance or an exemption from the requirements of R 325.10603, R 325.10604b, R 325.10604c, or R 325.10604d, to avoid an unreasonable risk to health. The department may require a public water supply to use point-of-use devices or other means, but not point-of-entry devices, as a condition for granting an exemption from corrosion control treatment requirements for lead and copper in R 325.10604f(2) and (3) to avoid an unreasonable risk to health. The department may require a public water supply to use point-of-entry devices as a condition for granting an exemption from the source water and lead service line replacement requirements for lead and copper under R 325.10604f(4) and (5) to avoid an unreasonable risk to health, provided the supply demonstrates that the device will not cause an increased corrosion of lead and copper bearing materials located between the device and the tap that may increase contaminant levels at the tap.

(6) Community or noncommunity water supplies that use point-of-use or point-of-entry devices under this rule shall meet the conditions in R 325.10313.

History: 1989 AACS; 1993 AACS; 1994 AACS; 1998 AACS; 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10309 Disposition of requests for variances or exemptions; public notices and opportunity for public hearings.

Rule 309. (1) Prior to issuing an order granting a variance from an MCL, the director shall provide public notice of his intent and shall provide an opportunity for any person to request a public hearing on the proposed order and the proposed compliance schedule.

(2) Prior to finalizing a compliance schedule which is to be a part of an exemption from an MCL or treatment technique or a variance from a specified treatment technique, the director shall provide public notice thereof and shall provide an opportunity for any person to request a public hearing on the compliance schedule.

(3) Public notices issued by the director pursuant to subrules (1) and (2) shall be circulated in a manner designed to inform interested persons of the proposed order or compliance schedule, or both.

(4) The public notice issued by the director pursuant to subrules (1) and (2) shall contain a summary of proposed conditions, compliance programs, compliance schedules, restrictions, and other information relating to the request for a variance or exemption.

(5) Notices issued and public hearings conducted pursuant to this rule may include more than 1 order or compliance schedule, or both.

(6) Public hearings conducted by the director pursuant to this rule shall be in accordance with, and subject to, R 325.10201 and R 325.10202.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10310 Order granting a variance or exemption or prescribing compliance schedule; denial of request.

Rule 310. After receipt of a request for a variance or exemption from a supplier of water, or following a public hearing conducted by the director pursuant to R 325.10309, the director shall issue an administrative order to the supplier of water granting a variance or exemption or prescribing a compliance schedule, or both, or shall deny the request.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10311 Term of exemption; reissuance.

Rule 311. An exemption granted by the director to a supplier of water shall have a fixed term not to exceed 5 years. A supplier of water who wishes to extend an exemption beyond the date specified in the administrative order shall submit a request for reissuance of an exemption pursuant to R 325.10307. Exemptions issued or reissued by the director pursuant to this part shall not be inconsistent in any manner with the provisions of the federal act.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10312 Remedies and penalties.

Rule 312. A supplier of water who submits false information in connection with a request for a variance or exemption, or who violates any of the provisions of an order issued by the director granting a variance or exemption, shall be subject to immediate revocation of the order and to the remedies and penalties specified by the act.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

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 this paragraph, 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. The department adopts by reference ANSI/NSF standards 44-2007 (October 15, 2007), 53-2007a (July 10, 2007), as amended by 53-2007a Addendum 1.0 (October 22, 2007), 58-2007 (October 22, 2007), and 62-2007 (October 15, 2007). The adopted material is available from NSF at 789 North Dixboro Road, Ann Arbor, MI 48105, telephone 734-769-8010, Internet address http//www.nsf.org for a cost at the time of adoption of these rules of $160.00 for 44-2007, $160.00 for 53-2007a, $45.00 for 53-2007a Addendum 1.0, $160.00 for 58-2007, and $160 for 62-2007. The adopted material is available for inspection at the offices of the department at 525 W Allegan Street, Lansing, Michigan.

(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.

History: 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

PART 4. PUBLIC NOTIFICATION AND PUBLIC EDUCATION

R 325.10401 Purpose.

Rule 401. The purpose of this part is to prescribe requirements of public water supplies to provide public notification to persons served by a public water supply when the public water supply is not in compliance with a state drinking water standard, a monitoring requirement, or the requirements of a compliance schedule prescribed by a variance or exemption or while a variance or exemption is in effect. This part also prescribes requirements for public education when a community or nontransient noncommunity water supply exceeds the lead action level based on tap water samples collected under R 325.10710a. This part also prescribes requirements for consumer confidence reports (CCR) and annual water quality reports. For the purpose of this part applicable public water supplies are also considered "water supplies" or "supplies."

History: 1979 AC; 1989 AACS; 1994 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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 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	2	R 325.10602(a) and (b)	3	R 325.10704 to R 325.10707a R 325.10702(2) R 325.10707b(4)
Fecal coliform/E. coli	1	R 325.10602(c)	1, 3 [2]	R 325.10704(3) R 325.10707b(4)
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 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, and 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

Contaminant	MCL/MRDL/TT violations [1]		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
Carbofuran	2	R 325.10604d(1)	3	R 325.10717
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 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 325.10719g 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 325.10719g 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

Contaminant	MCL/MRDL/TT violations [1]		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
Development of monitoring plan	N/A	N/A	3	R 325.10719e(5)
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 and R 325.10312	N/A	N/A
Violation of conditions of a variance or exemption	2	R 325.10302 and 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, (2008), which pertains to Unregulated Contaminant Monitoring, is contained in Title 40 CFR parts 136 to 149 and is available for purchase for $64.00 from the superintendent of documents at the address in R 325.10116(b). The material is

available for inspection, or a copy is available at no cost from the offices of the department at the address in R 325.10116(a).
History: 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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 violations and 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.

(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) to (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.

History: 1979 AC; 1989 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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 violation of total coliform under R 325.10602 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.

History: 1979 AC; 1989 AACS; 1991 AACS; 1993 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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 violations and situations listed in this subrule 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.

(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.

History: 1979 AC; 1989 AACS; 1991 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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	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.
Fecal coliform and E. coli	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.
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.

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
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.
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.

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
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.
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.

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 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.

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
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.
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.

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
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.
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.

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
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.
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.

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
1,2-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.
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.

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
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 with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
	* The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.					
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.

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
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."					
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.

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
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.

History: 1979 AC; 1989 AACS; 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10406 Notice to new billing units or new customers.

Rule 406. (1) Community water supplies shall give a copy of the most recent public notice for continuing violations, the existence of a variance or exemption, or other ongoing situations requiring a public notice to all new billing units or new customers before or at the time service begins.

(2) Noncommunity water supplies shall continuously post the public notice in conspicuous locations in order to inform new consumers of continuing violations, variance or exemption, or other situation requiring a public notice for as long as the violation, variance, exemption, or other situation exists.

History: 1979 AC; 1989 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10407 Special notice of the availability of unregulated contaminant monitoring results.

Rule 407. (1) A community or nontransient, noncommunity water supply required to monitor under 40 CFR 141.40, as referenced in R 325.10401a, shall notify persons served by the water supply of the availability of the results of such sampling not later than 12 months after the monitoring results are known.

(2) The form and manner of the public notice shall follow the requirements for a tier 3 public notice under R 325.10404(3), (4)(a) and (c). The notice shall also identify a person and provide the telephone number to contact for information on the monitoring results.

History: 1979 AC; 1989 AACS; 1994 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10408 Periodic progress reports; correction of violations and notification of customers.

Rule 408. The department may require a public water supply to submit periodic reports on progress being made to correct a violation of an MCL, order, or a variance or exemption, and to notify the persons served by the public water supply of that progress.

History: 1979 AC; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10408a Special notice when fluoride level is above 2.0 mg/l.

Rule 408a. (1) Community water supplies that measure fluoride above 2.0 mg/l as determined by the last single sample taken under R 325.10710, but do not exceed the maximum contaminant level (MCL) of 4.0 mg/l for fluoride under R 325.10604c, shall provide the public notice in subrule (3) of this rule to persons served. Public notice shall be provided as soon as practical but not later than that of a tier 3 public notice under R 325.10404(2)(a). A copy of the notice shall also be sent to all new billing units and new customers under R 325.10406(1) and to the local health department. The department may, on a case-by-case basis, in the best interest of health, safety, welfare, and the environment, require an initial notice sooner than 12 months or applicable repeat notices more frequently than annually, or both.

(2) The form and manner of the public notice, including repeat notices, shall follow the requirements for a tier 3 public notice in R 325.10404(3), (4)(a), and (4)(c).

(3) The notice shall contain the following language, including the language necessary to fill in the blanks:

"This is an alert about your drinking water and a cosmetic dental problem that might affect children under 9 years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2.0 milligrams per liter (mg/l) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system [name] has a fluoride concentration of [insert value] mg/l.

Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under 9 should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4.0 mg/l of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4.0 mg/l of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2.0 mg/l because of this cosmetic dental problem.

For more information, please call [name of water system contact] of [name of community water system] at [phone number]. Some home water treatment units are also available to remove fluoride from

drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8 NSF HELP."
History: 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10408b Special notice for nitrate exceedances above MCL by noncommunity water supplies (NCWS); permission granted by department.

Rule 408b. (1) A noncommunity water supply granted permission by the department under R 325.10604c(3) to exceed the nitrate MCL shall provide notice to persons served according to the requirements for a tier 1 notice under R 325.10402(1) and (2).

(2) A noncommunity water supply granted permission by the department to exceed the nitrate MCL under R 325.10604c(3) shall provide continuous posting of the fact that nitrate levels exceed 10 mg/l and the potential health effects of exposure, according to the requirements for tier 1 notice delivery under R 325.10402(3) and the content requirements under R 325.10405.
History: 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10408c Special notice to public of significant deficiencies or source water fecal contamination.

Rule 408c. (1) A community groundwater supply that receives notice from the department under R 325.10612a of a significant deficiency or notification of a fecal indicator-positive groundwater source sample that is not invalidated by the department under R 325.10739(3) shall inform the public served by the water supply under R 325.10413(11)(f) of the fecal indicator-positive source sample or of any significant deficiency that has not been corrected. The community groundwater supply shall continue to inform the public annually until the significant deficiency is corrected or the fecal contamination in the groundwater source is determined by the department to be corrected under R 325.10612a(1)(e).

(2) A noncommunity groundwater supply that receives notice from the department under R 325.10612a of a significant deficiency shall inform the public served by the water supply in a manner approved by the department of any significant deficiency that has not been corrected within 12 months of being notified by the department, or earlier if directed by the department. The noncommunity groundwater supply shall continue to inform the public annually until the significant deficiency is corrected. The information shall include all of the following:

(a) The nature of the significant deficiency and the date the significant deficiency was identified by the department.

(b) The department-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed.

(c) For noncommunity groundwater supplies serving a population with more than 10% non-English speaking consumers, information in the appropriate language or languages regarding the importance of the notice or a telephone number or address where consumers may contact the supply to obtain a translated copy of the notice or assistance in the appropriate language.

(3) If directed by the department, a noncommunity water supply with significant deficiencies that have been corrected shall inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction under subrule (2) of this rule.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10408d Repeated failure to conduct monitoring of source water for Cryptosporidium and failure to determine bin classification or mean Cryptosporidium level; special notice.

Rule 408d. (1) A community or noncommunity water supply that is required to monitor source water under 40 CFR 141.701, as adopted by reference in R 325.10720b, shall notify persons served by the water supply that monitoring has not been completed as specified not later than 30 days after the supply has failed to collect any 3 months of monitoring as specified in 40 CFR 141.701(c). The notice shall be repeated as specified in R 325.10403(2).

(2) A community or noncommunity water supply that is required to determine a bin classification under R 325.10611e shall notify persons served by the water supply that the determination has not been made as required not later than 30 days after the supply has failed to report the determination as specified in R 325.10611e(5). The notice shall be repeated as specified in R 325.10403(2). The notice is not required if the supply is complying with a department-approved schedule to address the violation.

(3) The form and manner of the public notice shall follow the requirements for a Tier 2 public notice prescribed in R 325.10403(3). The public notice shall be presented as required in R 325.10405(3).

(4) The notice shall contain the following language, including the language necessary to fill in the blanks:

(a) The special notice for repeated failure to conduct monitoring shall contain the following language: "We are required to monitor the source of your drinking water for Cryptosporidium. Results of the monitoring are to be used to determine whether water treatment at the [treatment plant name] is sufficient to adequately remove Cryptosporidium from your drinking water. We are required to complete this monitoring and make this determination by [required bin determination date]. We 'did not monitor or test' or 'did not complete all monitoring or testing' on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, shall be made to ensure adequate Cryptosporidium removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the deadline required, [date]. For more information, please call [name of water supply contact] of [name of water supply] at [phone number]."

(b) The special notice for failure to determine bin classification or mean Cryptosporidium level shall contain the following language: "We are required to monitor the source of your drinking water for Cryptosporidium in order to determine by [date] whether water treatment at the [treatment plant name] is sufficient to adequately remove Cryptosporidium from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of [date]. For more information, please call [name of water supply contact] of [name of water supply] at [phone number]."

(c) Each special notice shall also include a description of what the water supply is doing to correct the violation and when the supply expects to return to compliance or resolve the situation.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10409 Notice by department on behalf of the public water system.

Rule 409. (1) The department may give the notice required by this part on behalf of the public water supply if the department complies with the requirements of this part and may charge costs incurred by the department to the public water supply.

(2) The public water supply shall ensure that the requirements of this part are met.

History: 1979 AC; 1989 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10410 Public education regarding lead.

Rule 410. (1) Each community and noncommunity water supply that monitors for lead under R 325.10710a shall deliver a consumer notice of lead tap water monitoring results to persons served by the water supply at sites that are tested, as specified in subrule (5) of this rule. A community or noncommunity water supply is also considered "water supply" or "supply" in this rule. A water supply that exceeds the lead action level based on tap water samples that are collected under R 325.10710a shall deliver the public education materials contained in subrule (2) of this rule under the requirements in subrule (3) of this rule. A water supply that exceeds the lead action level shall offer to arrange for sampling the tap water of a customer who requests sampling under subrule (4) of this rule. The water supply is not required to pay for collecting or analyzing the sample and is not required to collect and analyze the sample.

(2) Both of the following apply to the content of written public education materials:

(a) Water supplies shall include the following elements in printed materials, for example, brochures and pamphlets, in the same order as listed below. In addition, language in paragraphs (i) to (ii) and (vi) of this subdivision shall be included in the materials, exactly as written, except for the text in brackets in these paragraphs for which the water supply shall include supply-specific information. Any additional information presented by a water supply shall be consistent with the information below and be in plain language that can be understood by the general public. Water supplies shall submit all written public education materials to the department prior to delivery. The department may require the supply to obtain approval of the content of written public materials prior to delivery.

(i) IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF WATER SUPPLY] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

(ii) Health effects of lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

(iii) Sources of Lead.

(A) Explain what lead is.

(B) Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home/building plumbing materials and service lines that may contain lead.

(C) Discuss other important sources of lead exposure in addition to drinking water, for example, paint.

(iv) Discuss the steps the consumer can take to reduce their exposure to lead in drinking water.

(A) Encourage running the water to flush out the lead.

(B) Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.

(C) Explain that boiling water does not reduce lead levels.

(D) Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water.

(E) Suggest that parents have their child's blood tested for lead.

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

(vi) For more information, call us at [INSERT YOUR NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT YOUR WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Web site at http://www.epa.gov/lead or contact your health care provider.

(b) In addition to including the elements specified in subdivision (a) of this subrule, community water supplies shall:

(i) Tell consumers how to get their water tested.

(ii) Discuss lead in plumbing components and the difference between low lead and lead free.

(3) All of the following provisions apply to delivery of public education materials:

(a) For public water supplies serving communities that have more than 10% non-English speaking consumers, the public education materials 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 water supply to obtain a translated copy of the public education materials or to request assistance in the appropriate language.

(b) A community water supply that exceeds the lead action level on the basis of tap water samples collected under R 325.10710a, and that is not already conducting public education tasks under this rule, shall conduct the public education tasks under this rule within 60 days after the end of the monitoring period in which the exceedance occurred. The following apply:

(i) Deliver printed materials meeting the content requirements of subrule (2) of this rule to all bill paying customers.

(ii) All of the following provisions apply to contacting at risk customers:

(A) Contact customers who are most at risk by delivering education materials that meet the content requirements of subrule (2) of this rule to local public health agencies even if they are not located within the water supply's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water supply's users. The water supply shall contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community based organizations serving target populations, which may include organizations outside the service area of the water supply. If lists are provided, supplies shall deliver education materials that meet the content requirements of subrule (2) of this rule to all organizations on the provided lists.

(B) Contact customers who are most at risk by delivering materials that meet the content requirements of subrule (2) of this rule to all of the following organizations that are located within the water supply's

service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water supply's users:

(1) Public and private schools or school boards.

(2) Women, Infants and Children (WIC) and Head Start programs.

(3) Public and private hospitals and medical clinics.

(4) Pediatricians.

(5) Family planning clinics.

(6) Local welfare agencies.

(C) Make a good faith effort to locate all of the following organizations within the service area and deliver materials that meet the content requirements of subrule (2) of this rule to them, along with an informational notice that encourages distribution to all potentially affected customers or users. The good faith effort to contact at-risk customers may include requesting a specific contact list of these organizations from the local public health agencies, even if the agencies are not located within the water supply's service area:

(1) Licensed childcare centers.

(2) Public and private preschools.

(3) Obstetricians-gynecologists and midwives.

(iii) Not less often than quarterly, provide information on or in each water bill as long as the supply exceeds the action level for lead. The message on the water bill shall include the following statement exactly as written except for the text in brackets for which the water supply shall include supply-specific information: [INSERT NAME OF WATER SUPPLY] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF WATER SUPPLY] [or visit (INSERT YOUR WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the department; specifically, the department may allow a separate mailing of public education materials to customers if the water supply cannot place the information on water bills.

(iv) Post material meeting the content requirements of subrule (2) of this rule on the water supply's Web site if the supply serves a population greater than 100,000.

(v) Submit a press release to newspaper, television, and radio stations.

(vi) In addition to subdivision (i) to (v) of this subrule, supplies shall implement not fewer than 3 activities from 1 or more categories listed below. The educational content and selection of these activities shall be determined in consultation with the department.

(A) Public service announcements.

(B) Paid advertisements.

(C) Public area information displays.

(D) E-mails to customers.

(E) Public meetings.

(F) Household deliveries.

(G) Targeted individual customer contact.

(H) Direct material distribution to all multifamily homes and institutions.

(I) Other methods approved by the department.

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

(c) As long as a community water supply exceeds the action level, it shall repeat the activities under subdivision (b) of this subrule as described in all of the following, as applicable:

(i) A community water supply shall repeat the education materials delivery tasks contained in subdivision (b)(i) to (ii) of this subrule and repeat the additional activities tasks contained in subdivision (b)(vi) of this subrule every 12 months.

(ii) A community water supply shall repeat the water bill information tasks contained in subdivision (b)(iii) of this subrule with each billing cycle.

(iii) A community water supply serving a population greater than 100,000 shall post and retain material on a publicly accessible Web site under subdivision (b)(iv) of this subrule.

(iv) The community water supply shall repeat the press release task in subdivision (b)(v) of this subrule twice every 12 months on a schedule agreed upon with the department. The department may allow activities in subdivision (b) of this subrule to extend beyond the 60-day requirement if needed for

implementation purposes on a case-by-case basis; however, this extension shall be approved in writing by the department before the 60-day deadline.

(d) Within 60 days after the end of the monitoring period in which the exceedance occurred, unless it already is repeating public education tasks under subdivision (e) of this subrule, a nontransient noncommunity water supply shall deliver the public education materials specified by subrule (2) of this rule under all of the following provisions:

(i) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the supply.

(ii) Distribute informational pamphlets, or brochures, or both, on lead in drinking water to each person served by the nontransient noncommunity water supply. The department may allow the supply to utilize electronic transmission instead of or combined with printed materials as long as it achieves at least the same coverage.

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

(e) A nontransient noncommunity water supply shall repeat the posting and distributing tasks contained in subdivision (d) of this subrule at least once during each calendar year in which the supply exceeds the lead action level. The department can allow activities in subdivision (d) of this subrule to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-case basis; however, this extension shall be approved in writing by the department in advance of the 60-day deadline.

(f) A water supply may discontinue delivery of public education materials if the supply has met the lead action level during the most recent 6-month monitoring period conducted under R 325.10710a. The supply shall recommence public education under this rule if it subsequently exceeds the lead action level during a monitoring period.

(g) A community water supply may apply to the department, in writing, unless the department has waived the requirement for prior department approval, to use only the text specified in subrule (2)(a) of this rule instead of the text in subrule (2)(a) to (b) of this rule and to perform the tasks listed in subdivisions (d) and (e) of this subrule instead of the tasks in subdivisions (b) and (c) of this subrule if both of the following conditions exist:

(i) The supply is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices.

(ii) The supply provides water as part of the cost of services provided and does not separately charge for water consumption.

(h) A community water supply serving 3,300 or fewer people may limit certain aspects of their public education programs as follows:

(i) With respect to the requirements of subdivision (b)(vi) of this subrule, a supply serving 3,300 or fewer shall implement at least 1 of the activities listed in that paragraph.

(ii) With respect to the requirements of subdivision (b)(ii) of this subrule, a supply serving 3,300 or fewer people may limit the distribution of the public education materials required under that subdivision to facilities and organizations served by the supply that are most likely to be visited regularly by pregnant women and children.

(iii) With respect to the requirements of subdivision (b)(v) of this subrule, the department may waive this requirement for supplies serving 3,300 or fewer persons as long as supply distributes notices to every household served by the supply.

(4) A water supply that fails to meet the lead action level based on tap samples collected under R 325.10710a shall offer to arrange for sampling the tap water of a customer who requests sampling. The supply is not required to pay for collecting or analyzing the sample and is not required to collect and analyze the sample.

(5) All of the following provisions apply to notification of results:

(a) Each supply shall provide a notice of the individual tap results from lead tap water monitoring carried out under R 325.10710a to the persons served by the supply at the specific sampling site from which the sample was taken, for example, the occupants of the residence where the tap was tested.

(b) A supply shall provide the consumer notice as soon as practical, but not later than 30 days after the supply learns of the tap monitoring results.

(c) The consumer notice shall include the results of lead tap water monitoring for the tap that was tested, an explanation of the health effects of lead, list steps consumers can take to reduce exposure to

lead in drinking water and contact information for the water utility. The notice shall also provide the maximum contaminant level goal and the action level for lead and the definitions for these 2 terms from R 325.10413(4) and (6).

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

History: 1994 AACS; 1998 AACS; 2002 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10411 Annual consumer confidence reporting; purpose; applicability.

Rule 411. (1) R 325.10411 to R 325.10415 establish the minimum requirements for the content, recordkeeping, and delivery of annual consumer confidence reports that community water supplies shall prepare and deliver to their customers. These reports shall contain information on the quality of the water delivered by the supplies and characterize the risks, if any, from exposure to contaminants detected in the drinking water in an accurate and understandable manner.

(2) R 325.10411 to R 325.10415 apply only to community water supplies. Community water supplies are also considered "water supplies" or "supplies" in R 325.10411 to R 325.10415.

(3) For the purpose of R 325.10411 to R 325.10415, "report" means annual consumer confidence report.

(4) For the purpose of R 325.10411 to R 325.10415, "customers" are defined as billing units or service connections to which water is delivered by the community water supply.

(5) For the purpose of R 325.10411 to R 325.10420, "detected" means at or above the levels prescribed by R 325.10605.

History: 2001 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10412 Annual consumer confidence reporting; effective dates.

Rule 412. (1) Each existing community water system shall deliver its report by July 1 annually. Each report shall contain data collected during, or before, the previous calendar year.

(2) The supplier of a new community water system shall deliver its first report by July 1 of the year after its first full calendar year in operation and then by July 1 annually.

(3) A community water supply that sells water to another community water supply shall deliver the applicable information required in R 325.10413 to the buyer water supply by either of the following dates:

(a) April 1 annually.

(b) A date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

History: 2001 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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) 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 by products or microbial contaminants for which monitoring is required by 40 C.F.R. §§141.142 and 141.143, except as provided under subrule (8)(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 and total coliforms, 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. The supply shall include individual sample results for the IDSE conducted under R 325.10719g when determining the range of TTHM and HAA5 results to be reported in the annual consumer confidence report for the calendar year that the IDSE samples were taken.

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, 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, 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.

(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.

(8) 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.

(9) 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.

(10) 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.

(11) 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.

History: 2001 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10414 Annual consumer confidence reporting; required additional health information.

Rule 414. (1) All reports shall prominently display the following language: "Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people may seek advice about drinking water from their health care providers.

EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791)."

(2) A community water supply that detects arsenic at levels above 0.005 mg/l and up to and including 0.010 mg/l shall do either of the following:

(a) Include in its report a short informational statement about arsenic, using language, such as, "While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems."

(b) Write its own educational statement, but only in consultation with the department.

(3) A community water supply that detects nitrate at levels above 5 mg/l, but below the MCL shall do either of the following:

(a) Include a short informational statement about the impacts of nitrate on children using language, such as, "Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you are encouraged to ask advice from your health care provider."

(b) Write its own educational statement, but only in consultation with the department.

(4) Both of the following provisions concerning lead specific information apply to every report:

(a) A community water supply shall include a short informational statement about lead in drinking water and its effects on children. The statement shall include the following information: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [NAME OF UTILITY] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

(b) A community water supply may write its own educational statement, but only in consultation with the department.

History: 2001 AACS; 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10415 Annual consumer confidence reporting; report delivery; recordkeeping.

Rule 415. (1) Except as provided in subrule (7) of this rule, each community water supply shall mail or otherwise directly deliver 1 copy of the report to each customer.

(2) The supply shall make a good faith effort to reach consumers who do not get water bills, using means recommended by the department. For the good faith effort to be adequate, the supply shall tailor the effort to reach the consumers who are served by the supply but are not bill paying customers such as renters or workers. A good faith effort to reach consumers may include a mix of any of the following methods appropriate to the particular supply:

(a) Posting the report on the Internet.

(b) Mailing to postal patrons in metropolitan areas.

(c) Advertising the availability of the report in the news media.

(d) Publication in a local newspaper.

(e) Posting in public places such as cafeterias or lunch rooms of public buildings.

(f) Delivery of multiple copies for distribution by single biller customers such as apartment buildings or large private employers.

(g) Delivery to community organizations.

(3) Not later than the date the supply is required to distribute the report to its customers, each community water supply shall deliver a copy of the report to the department, followed within 3 months by a certification that the report has been distributed to customers, and that the information is correct and consistent with the compliance monitoring data previously submitted to the department.

(4) Not later than the date the supply is required to distribute the report to its customers, each community water supply shall deliver the report to the local health department that has jurisdiction in the county in which the supply is located. If the supply's service area is located in more than 1 county, then the report shall be delivered to all appropriate local health departments. In addition, each community water supply shall deliver the report to any other agency or clearinghouse identified in writing by the department.

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

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

(7) The governor or his or her designee, for the purposes of waiving the mailing requirement, may waive the requirement of subrule (1) of this rule for community water supplies serving fewer than 10,000 persons.

(a) Supplies serving fewer than 10,000 persons that elect to use the waiver shall do all the following:

(i) Publish the report in 1 or more local newspapers serving the area in which the supply is located.

(ii) Inform the customers that the report will not be mailed, either in the newspapers in which the report is published or by other means approved by the department.

(iii) Make the report available to the public upon request.

(b) Supplies serving 500 or fewer persons that elect to use the waiver may forego the requirements of subdivision (a) of this subrule if they provide notice at least once per year to their customers by mail, door-to-door delivery, or by posting in an appropriate location that the report is available upon request.

(8) A supply subject to R 325.10411 to R 325.10415 shall retain copies of its consumer confidence report for not less than 3 years.

History: 2001 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10416 Annual water quality reporting; child care centers and K-12 schools classified as nontransient noncommunity water systems.

Rule 416. (1) R 325.10416 to R 325.10419 apply only to the following nontransient noncommunity water systems:

(a) Child care centers classified as nontransient noncommunity water systems.

(b) K-12 schools classified as nontransient noncommunity water systems.

(2) R 325.10418 establishes the minimum requirements for the content of annual water quality reports that shall be available to consumers and to the parents or legal guardians of students or children less than 18 years of age.

History: 2001 MR 9, Eff. May 17, 2001; 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10417 Annual water quality reporting; effective dates.

Rule 417. (1) Each supplier of an existing nontransient noncommunity water system that is also a child care center or K-12 school shall make available its annual water quality reports by October 1 annually.

(2) A supplier of a new nontransient noncommunity water system that is also a child care center or K-12 school shall make available its first annual water quality report by October 1 of the year after its first full calendar year in operation and then by October 1 annually.

History: 2001 MR 9, Eff. May 17, 2001; 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10418 Annual water quality reporting; content of reports.

Rule 418. (1) Each supplier of a nontransient noncommunity water system that is also a child care center or K-12 school shall prepare an annual water quality report that contains either a summary of compliance monitoring data for the previous calendar year or copies of the laboratory reports for all compliance monitoring performed in the previous calendar year.

(2) The first annual water quality report after completion of a source water assessment by the department shall include a notification that the source water assessment has been completed and that a copy of the source water assessment is available upon request.

History: 2001 MR 9, Eff. May 9, 2001; 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10419 Annual water quality reporting; report delivery; recordkeeping.

Rule 419. (1) Each supplier of a nontransient noncommunity water system that is also a child care center or K-12 school shall post, for not less than 30 days, a statement instructing interested parties that the annual water quality report is available upon request.

(2) A supplier of a system subject to this rule shall retain copies of its annual water quality report and the notice of availability for not less than 3 years.

History: 2001 MR 9, Eff. May 17, 2001; 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10420 Annual water quality 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 or the annual water quality report may include a description of the potential health effects and the vulnerable subpopulation that may be susceptible to the level of contaminant detected using the relevant language provided in table 1 of R 325.10405.

Table 1 Contaminants for vulnerable subpopulation reporting

Contaminant	Susceptible vulnerable subpopulation	Level of concern
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)

History: 2001 MR 9, Eff. May 17, 2001; 2003 MR 2, Eff. Jan. 29, 2003.

PART 5. TYPES OF PUBLIC WATER SUPPLIES

R 325.10501 Purpose.

Rule 501. The purpose of this part is to implement section 8 of the act by establishing a basic classification system for public water supplies. The basic classification system established by this part may be modified in other parts of these rules, as applicable, to reflect the need for further breakdown due to specific criteria, requirements, or standards which may apply within a public water supply.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10502 Classification of public water supplies.

Rule 502. (1) For purposes of implementing the act, public water supplies are classified by the department into 3 types as follows:

(a) Type I: All community supplies are classified as type I public water supplies.

(b) Type II: All noncommunity supplies are classified as type II public water supplies.

(c) Type III: All water supplies which are not type I or type II public water supplies shall be classified as type III public water supplies.

(2) Type II public water supplies are further classified by the department as follows:

(a) Type IIa: Type IIa public water supplies are type II public water supplies with an average daily water production for the maximum month equal to or greater than 20,000 gallons per day.

(b) Type IIb: Type IIb public water supplies are type II public water supplies with an average daily water production for the maximum month of less than 20,000 gallons per day.

(3) When a public water supply is unable to determine average daily water production, the department may use other criteria based on similar public water supplies to make a determination of classification for purposes of subrule (2) of this rule.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10503 Waterworks systems under same ownership or operation.

Rule 503. (1) Two or more waterworks systems owned or operated by the same person at the same general location, not individually meeting the definition of a community supply or a noncommunity supply, but collectively meeting the definition of a community supply or a noncommunity supply, shall be considered by the department to be a single public water supply.

(2) A waterworks system meeting the definition of a community or noncommunity water supply and a waterworks system not meeting the definition of community or noncommunity water supply in the same general location collectively owned or operated by the same person may be considered by the department to be a single public water supply.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10504 General requirements of type I public water supplies.

Rule 504. A type I public water supply shall meet the following general requirements and other specific requirements as prescribed by the act and these rules:

(a) Obtain certified operators of treatment systems and distribution systems.

(b) Monitor for contaminants at prescribed frequencies as required by part 7 of these rules.

(c) Submit waterworks system operation reports and maintain records.

(d) Comply with the provisions of part 14 of these rules and comply with all applicable state and local plumbing codes. Public water supplies that existed before the effective date of this rule that serve facilities which are licensed by the state, including manufactured housing communities and health care facilities, are not required to comply with part 14 of these rules until January 1, 2016.

(e) Submit plans and specifications and obtain permits from the department in accordance with the provisions of the act and part 13 of these rules.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10505 Type II public water supplies generally.

Rule 505. A type II public water supply shall meet all of the following general requirements and other specific requirements as prescribed by the act and these rules:

(a) Obtain operators that are certified in treatment systems where treatment is employed that may affect public health.

(b) Provide a source of water that is in compliance with the requirements of part 8 of these rules or a source that is approved by the department. In either case, the source of water shall comply with all of the requirements of parts 6 and 10 or parts 24, 25, and 26 of these rules.

(c) Monitor for contaminants at prescribed frequencies as required by part 7 of these rules.

(d) Submit waterworks system operation reports where treatment is employed that may affect public health and shall maintain records as required in part 15 of these rules.

(e) Comply with all applicable state and local plumbing codes.

(f) Obtain permits from the department in accordance with the provisions of the act and part 13 of these rules.

History: 1979 AC; 1991 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10506 Type III public water supplies generally.

Rule 506. A type III public water supply shall meet all of the following general requirements and other specific requirements as prescribed by the act and these rules:

(a) Provide groundwater sources that are in compliance with the requirements of part 8 of these rules or, alternatively, if approved by the department, the applicable sections of parts 24, 25, and 26 of these rules.

(b) If required by the department, monitor for contaminants at prescribed frequencies as required by part 7 of these rules.

(c) Comply with all applicable state and local plumbing codes.

History: 1979 AC; 1991 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

PART 6. STATE DRINKING WATER STANDARDS AND ANALYTICAL TECHNIQUES

R 325.10601 Purpose.

Rule 601. This part establishes drinking water standards for specific contaminants that shall be met by a supplier of water to assure the protection of the public health. In addition, this part specifies methods to be used in the analyses of water samples from public water supplies to determine compliance with the state drinking water standards.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 1993 MR 6, Eff. July 2, 1993; 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10601a Compliance with standards to be determined in accordance with monitoring requirements; analytical results to be performed by certified laboratories.

Rule 601a. (1) Compliance with the drinking water standards specified in this part shall be determined in accordance with the monitoring requirements in part 7 of these rules.

(2) Analytical results that are used to determine compliance with state drinking water standards established in this part shall be performed by department or EPA-certified or provisionally certified laboratories, except that measurements for alkalinity, bromide, calcium, daily chlorite samples at the entrance to the distribution system, conductivity, magnesium, orthophosphate, pH, residual disinfectant concentration, silica, specific ultraviolet absorbance, temperature, and turbidity may be performed by personnel acceptable to the department.

History: 1993 AACS; 1998-2000 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10602 MCLs for total coliform bacteria.

Rule 602. All of the following provisions apply to the MCLs for total coliform bacteria for all public water supplies:

(a) For a water supply that collects 40 or more samples per month under R 325.10705 to R 325.10707, the supply is in compliance with the MCL for total coliforms if not more than 5.0% of the samples collected during a month are total coliform positive.

(b) For a water supply that collects less than 40 samples per month, the supply is in compliance with the MCL for total coliforms if not more than 1 sample collected during a month is total coliform positive.

(c) Any fecal coliform positive repeat sample, an E. coli positive repeat sample, or any 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.

(d) In addition to the requirements of subdivision (a) of this rule, the department may determine an MCL violation has occurred, and shall notify a supply, when the concentration of positive total coliform samples in a portion of the water system constitutes a public health hazard.

(e) Samples that are collected to meet the repeat monitoring requirements of R 325.10707 are not considered special purpose samples and shall be used to determine compliance with the MCL for total coliform.

History: 1979 AC; 1991 AACS; 1993 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10603 Radionuclides; MCLs; applicability.

Rule 603. (1) Community water supplies, also known as "supplies" in this rule and R 325.10604, shall comply with the MCLs in this rule and compliance shall be determined under R 325.10604.

(2) The MCLs for radionuclides are all of the following:

(a) The maximum contaminant level for combined radium 226 and radium 228 is 5 picoCurries per liter (pCi/l). The combined radium-226 and radium-228 value is determined by the addition of the results of the analysis for radium-226 and the analysis for radium-228.

(b) The maximum contaminant level for gross alpha particle activity, including radium 226, but excluding radon and uranium, is 15 pCi per liter.

(c) Both of the following apply to the MCL for beta particle and photon radioactivity:

(i) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirems per year.

(ii) Except for the radionuclides listed in table 1 of this rule, the concentration of man-made radionuclides causing 4 millirems total body or organ dose equivalents shall be calculated on the basis of

a 2-liter-per-day drinking water intake using the 168-hour data listed in the publication entitled "maximum permissible body burdens and maximum permissible concentration of radionuclides in air or water for occupational exposure," nbs (national bureau of standards) handbook 69, as amended August, 1963, United States department of commerce, which is adopted by reference in R 325.10112. If 2 or more radionuclides are present, then the sum of their annual dose equivalent to the total body or to any organ shall not be more than 4 millirem per year.

Table 1 Average Annual Concentrations Assumed to Produce a Total Body or Organ Dose of 4 Millirem Per Year

Radionuclide	Critical organ	pCi per liter
Tritium	Total body	20,000
Strontium-90	Bone marrow	8

(d) The maximum contaminant level for uranium is 30 micrograms per liter (ug/l).
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1993 MR 6, Eff. July 2, 1993; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10604 Radionuclides; compliance requirements.

Rule 604. (1) Compliance with R 325.10603 shall be determined based on the analytical result or results obtained at each sampling point. If 1 sampling point is in violation of an MCL, then the supply is in violation of the MCL. All of the following provisions apply:

(a) For supplies monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point. If the average of any sampling point is greater than the MCL, then the supply is out of compliance with the MCL.

(b) For supplies monitoring more than once per year, if any sample result causes the running average to exceed the MCL at any sample point, then the supply is out of compliance with the MCL immediately.

(c) Supplies shall include all samples taken and analyzed under this rule, R 325.10603, R 325.10725, R 325.10726, R 325.10728, R 325.10729, and R 325.10730 in determining compliance, even if that number is greater than the minimum required.

(d) If a supply does not collect all required samples when compliance is based on a running annual average of quarterly samples, then compliance shall be based on the running average of the samples collected.

(e) If a sample result is less than the detection limit, then zero shall be used to calculate the annual average, unless a gross alpha particle activity is being used instead of radium-226, or uranium, or both. If the gross alpha particle activity result is less than the detection limit, then half the detection limit shall be used to calculate the annual average.

(2) If the department requires confirmation samples under R 325.10725(3), then the results of the initial and confirmation samples shall be averaged for use in compliance determinations.

(3) The department may delete results of obvious sampling or analytic errors.

(4) To determine compliance with the MCLs in R 325.10603, averages of data shall be used and shall be rounded to the same number of significant figures as the MCL for the contaminant.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1993 MR 6, Eff. July 2, 1993; 1998 MR 3, Eff. Apr. 8, 1998; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10604a Disinfection for phosphate or iron removal treatment systems.

Rule 604a. Disinfection shall be provided for public water supplies that employ phosphate treatment systems or certain iron removal treatment systems.
History: 1984 MR 6, Eff. July 6, 1984; 1993 MR 6, Eff. July 2, 1993; 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10604b MCLs for volatile organic chemicals other than total trihalomethanes.

Rule 604b. (1) The maximum contaminant levels and effective dates for volatile organic chemicals in table 1 of this rule apply to community and nontransient noncommunity water supplies.

Table 1 MCLs for volatile organic chemicals

Contaminant	Maximum Contaminant Level in mg/l	Effective Date
Benzene	0.005	January 9, 1989.
Vinyl chloride	0.002	January 9, 1989.
Carbon tetrachloride	0.005	January 9, 1989.
1,2-dichloroethane	0.005	January 9, 1989.
Trichloroethylene	0.005	January 9, 1989.
1,1-dichloroethylene	0.007	January 9, 1989.
1,1,1-trichloroethane	0.20	January 9, 1989.
para-dichlorobenzene	0.075	January 9, 1989.
cis-1,2-dichloroethylene	0.07	July 30, 1992.
1,2-dichloropropane	0.005	July 30, 1992.
Ethylbenzene	0.7	July 30, 1992.
Monochlorobenzene	0.1	July 30, 1992.
0-dichlorobenzene	0.6	July 30, 1992.
Styrene	0.1	July 30, 1992.
Tetrachloroethylene	0.005	July 30, 1992.
Toluene	1	July 30, 1992.
trans-1, 2-dichloroethylene	0.1	July 30, 1992.
Xylenes (total)	10	July 30, 1992.
Dichloromethane	0.005	January 17, 1994.
1,2,4-Trichlorobenzene	0.07	January 17, 1994.
1,1,2-Trichloroethane	0.005	January 17, 1994.

(2) Compliance with the MCLs in table 1 of this rule shall be determined based on the analytical results obtained at each sampling point. If 1 sampling point is in violation of the MCL, then the supply is in violation of the MCL. All of the following provisions apply:

(a) For supplies monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point.

(b) Supplies monitoring annually or less frequently whose sample result exceeds the MCL shall begin quarterly sampling. Compliance with the MCL shall be based on the running annual average. For the purpose of calculating the running annual average, the initial exceedance shall be considered the result for the first quarter. If the department requires a confirmation sample under R 325.10716(15), then the average of the initial exceedance and the confirmation sample shall be considered the result for the first quarter. The supply shall not be considered in violation of the MCL until it has completed 1 year of quarterly sampling.

(c) If any sample result causes the running annual average to exceed the MCL at any sampling point, then the supply is out of compliance with the MCL immediately.

(d) If a supply fails to collect the required number of samples, then compliance shall be based on the total number of samples collected.

(e) If a sample result is less than the detection limit, then zero shall be used to calculate the annual average.

History: 1989 MR 8, Eff. Sept. 13, 1989; 1993 MR 6, Eff. July 2, 1993; 1994 MR 12, Eff. Jan. 5, 1995; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10604c MCL for inorganic chemicals.

Rule 604c. (1) Except as specified, the maximum contaminant levels and effective dates for inorganic chemicals in table 1 of this rule apply to community and nontransient noncommunity water supplies. These pubic water supplies are considered "water supplies" or "supplies" in this rule.

Table 1 MCLs for inorganic chemicals

Contaminant	Maximum Contaminant Level in mg/l	Effective Date
Antimony	0.006	January 17, 1994.
Arsenic	0.010	April 6, 2005.
Asbestos	7 million fibers per liter (longer than 10 um)	July 30, 1992.
Barium	2	January 1, 1993.
Beryllium	0.004	January 17, 1994.
Cadmium	0.005	July 30, 1992.
Chromium	0.1	July 30, 1992.
Cyanide (as free cyanide)	0.2	January 17, 1994.
Fluoride[1]	4.0	[effective date of this rule]
Mercury	0.002	July 30, 1992.
Nickel	MCL withdrawn	May 30, 2002
Nitrate (as Nitrogen)[2]	10	July 30, 1992.
Nitrite (as Nitrogen)[2]	1	July 30, 1992.
Total Nitrate and Nitrite (as Nitrogen)[3]	10	July 30, 1992.
Selenium	0.05	July 30, 1992.
Thallium	0.002	January 17, 1994.

[1] The MCL and effective date apply to only community water supplies.
[2] The MCLs and effective dates apply to community and noncommunity water supplies.

(2) Compliance with the MCL requirements of this rule shall be determined based on the analytical results that are obtained at each sampling point as specified in R 325.10710. If 1 sampling point is in violation of an MCL, then the water supply is in violation of the MCL. All of the following provisions apply:

(a) For supplies monitoring more than once per year, compliance with the MCL for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium is determined by a running annual average at each sampling point.

(b) Supplies monitoring annually or less frequently whose sample result exceeds the MCL for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium shall begin quarterly sampling. Compliance with the MCL shall be based on the running annual average. For the purpose of calculating the running annual average, the initial exceedance shall be considered the result for the first quarter. If the department requires a confirmation sample under R 325.10710(9), then the average of the initial exceedance and the confirmation sample shall be considered the result for the first quarter. The supply shall not be considered in violation of the MCL until it has completed 1 year of quarterly sampling.

(c) If any sample result causes the running annual average to exceed the MCL at any sampling point, then the supply is out of compliance with the MCL immediately.

(d) If a supply fails to collect the required number of samples, then compliance shall be based on the total number of samples collected.

(e) If a sample result is less than the detection limit, then zero shall be used to calculate the annual average.

(f) Compliance with the MCLs for nitrate and nitrite is determined based on 1 sample if the levels of these contaminants are below the MCLs. If the level of nitrate or nitrite or the combination of nitrate and nitrite is more than the MCLs in the initial sample, then a confirmation sample is required under R 325.10710(9)(b) and (c), and compliance shall be determined based on the average of the initial and confirmation samples.

(3) The department may allow nitrate levels above 10 milligrams per liter but not more than 20 milligrams per liter in a noncommunity water supply if the supply demonstrates, to the satisfaction of the department, all of the following:

(a) A permanent alternate source of water meeting state drinking water standards can not be obtained.

(b) The water will not be available to children under 6 months of age.

(c) Water meeting state drinking water standards, such as bottled water, will be provided to those who request it.

(d) There is continuous posting at all drinking water outlets available to the public that nitrate levels exceed 10 mg/l and the potential health effects of exposure as specified in part 4 of these rules.

(e) Adverse health effects are not documented.

History: 1993 AACS; 1994 AACS; 1998 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10604d MCLs for synthetic organic chemicals.

Rule 604d. (1) The maximum contaminant levels and effective dates for synthetic organic chemicals in table 1 of this rule apply to community and nontransient, noncommunity water supplies.

Table 1 MCLs for synthetic organic chemicals

Contaminant	Maximum Contaminant Level in mg/l	Effective Date
Alachlor	0.002	July 30, 1992.
Aldicarb	0.003	July 30, 1992.
Aldicarb sulfoxide	0.004	July 30, 1992.
Aldicarb sulfone	0.002	July 30, 1992.
Atrazine	0.003	July 30, 1992.
Benzo(a)pyrene	0.0002	January 17, 1994.
Carbofuran	0.04	July 30, 1992.
Chlordane	0.002	July 30, 1992.
Dalapon	0.2	January 17, 1994.
Di(2-ethylhexyl)adipate	0.4	January 17, 1994.
Di(2-ethylhexyl)phthalate	0.006	January 17, 1994.
Dibromochloropropane	0.0002	July 30, 1992.
Dinoseb	0.007	January 17, 1994.
Diquat	0.02	January 17, 1994.
Endothall	0.1	January 17, 1994.
Endrin	0.002	August 17, 1992.
Ethylene dibromide	0.00005	July 30, 1992.
Glyphosate	0.7	January 17, 1994.
Heptachlor	0.0004	July 30, 1992.
Heptachlor epoxide	0.0002	July 30, 1992.
Hexachlorobenzene	0.001	January 17, 1994.
Hexachlorocyclopentadiene	0.05	January 17, 1994.
Lindane	0.0002	July 30, 1992.
Methoxychlor	0.04	July 30, 1992.
Oxamyl (vydate)	0.2	January 17, 1994.
Pentachlorophenol	0.001	July 30, 1992.
Picloram	0.5	January 17, 1994.
Polychlorinated biphenyls	0.0005	July 30, 1992.
Simazine	0.004	January 17, 1994.
Toxaphene	0.003	July 30, 1992.
2,3,7,8-TCDD (dioxin)	3×10^{-8}	January 17, 1994.
2,4-D	0.07	July 30, 1992.
2,4,5-TP silvex	0.05	July 30, 1992.

(2) Compliance with the MCLs in table 1 of this rule shall be determined based on the analytical results obtained at each sampling point. If 1 sampling point is in violation of an MCL, then the supply is in violation of the MCL. All of the following provisions apply:

(a) For supplies monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point.

(b) Supplies monitoring annually or less frequently whose sample results exceed the regulatory detection level as defined in R 325.10605 shall begin quarterly sampling. Compliance with the MCL shall be based on the running annual average. For the purpose of calculating the running annual average, the initial exceedance shall be the result for the first quarter. If the department requires a confirmation sample under R 325.10717(12), then the average of the initial exceedance and the confirmation sample

shall be the result for the first quarter. The supply shall not be in violation of the MCL until it has completed 1 year of quarterly sampling.

(c) If any sample result causes the running annual average to exceed the MCL at any sampling point, then the supply is out of compliance with the MCL immediately.

(d) If a supply fails to collect the required number of samples, then compliance shall be based on the total number of samples collected.

(e) If a sample result is less than the detection limit, then zero shall be used to calculate the annual average.

History: 1993 MR 6, Eff. July 2, 1993; 1994 MR 12, Eff. Jan. 5, 1995; 1998 MR 3, Eff. Apr. 8, 1998; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10604e Treatment techniques for acrylamide and epichlorohydrin.

Rule 604e. Each public water supply that uses acrylamide or epichlorohydrin in its drinking water system shall provide annual written certification to the department, using third party or manufacturer's certification, that the combination, or product, of dose and monomer level is not more than 0.05% acrylamide dosed at 1 part per million, or equivalent, and not more than 0.01% epichlorohydrin dosed at 20 parts per million, or equivalent. This rule establishes treatment techniques for acrylamide and epichlorohydrin in place of maximum contaminant levels.

History: 1993 MR 6, Eff. July 2, 1993.

R 325.10604f Treatment techniques for lead and copper.

Rule 604f. (1) Treatment techniques for lead and copper are as follows:

(a) This rule, R 325.10410, and R 325.10710a to R 325.10710d are the requirements for lead and copper and apply to community and nontransient noncommunity water supplies. These public water supplies are considered "water supplies" or "supplies" in this rule, R 325.10410, and R 325.10710a to R 325.10710d.

(b) These rules establish a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples that are collected at consumers' taps.

(c) The lead action level is exceeded if the ninetieth percentile lead level is more than 0.015 milligrams per liter (mg/l) in tap water samples collected during a monitoring period conducted under R 325.10710a. The copper action level is exceeded if the ninetieth percentile copper level is more than 1.3 mg/l in tap water samples collected during a monitoring period conducted under R 325.10710a.

The ninetieth percentile lead and copper levels shall be computed as follows:

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

(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.

(iii) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (ii) of this subdivision is the ninetieth percentile contaminant level.

(iv) If a total of 5 samples are collected per monitoring period, the ninetieth percentile is computed by taking the average of the highest and second highest concentrations.

(v) For a water supply that has been allowed by the department to collect fewer than 5 samples under R 325.10710a(3), the sample result with the highest concentration is considered the 90th percentile value.

(d) A supply shall install and operate optimal corrosion control treatment on the system under subrules (2) and (3) of this rule. A supply that is in compliance with the applicable corrosion control treatment requirements specified by the department under subrules (2) and (3) of this rule is in compliance with the treatment requirement.

(e) A supply exceeding the lead or copper action level shall implement all applicable source water treatment requirements specified by the department under subrule (4) of this rule.

(f) A supply exceeding the lead action level after implementation of applicable corrosion control and source water treatment requirements shall complete the lead service line replacement requirements contained in subrule (5) of this rule.

(g) Under R 325.10410, all water supplies shall provide a consumer notice of lead tap water monitoring results to persons served at the sites (taps) that are tested. A supply exceeding the lead action level shall implement the public education requirements specified in R 325.10410.

(h) Tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under this subrule shall be completed under R 325.10605, R 325.10710a, R 325.10710b, and R 325.10710c.

(i) A supply shall report, to the department, the information required by the treatment provisions of this subrule and R 325.10710d.

(j) A supply shall maintain records under R 325.11506(1)(e).

(k) Failure to comply with the applicable requirements of this rule, R 325.10410, R 325.10710a, R 325.10710b, R 325.10710c, R 325.10605, R 325.10710d, and R 325.11506(1)(e) constitutes a violation of these rules for lead or copper, as applicable.

(2) Corrosion control treatment steps apply to small, medium size, and large water supplies as follows:

(a) A supply shall complete the applicable corrosion control treatment requirements described in subrule (3) of this rule by the deadlines established in this rule. A large water supply (serving more than 50,000 persons) shall complete the corrosion control treatment steps specified in subdivision (d) of this subrule, unless the supply is considered to have optimized corrosion control under subdivision (b)(ii) or (iii) of this subrule. A small water system (serving 3,300 or fewer persons) and a medium size water system (serving more than 3,300, but fewer than 50,001 persons) shall complete the corrosion control treatment steps specified in subdivision (e) of this subrule unless the supply is considered to have optimized corrosion control under subdivision (b)(i), (ii), or (iii) of this subrule.

(b) A supply is considered to have optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in subrule (3) of this rule if the supply is in compliance with 1 of the criteria specified in paragraphs (i) to (iii) of this subdivision. A supply which is considered to have optimized corrosion control under this subdivision and which has treatment in place shall continue to operate and maintain optimal corrosion control treatment and meet the requirements that the department determines appropriate to ensure optimal corrosion control treatment is maintained. All of the following provisions apply to being considered to have optimized corrosion control:

(i) A small or medium size water supply is considered to have optimized corrosion control if the supply is in compliance with the lead and copper action levels during each of 2 consecutive 6-month monitoring periods during which monitoring is conducted under R 325.10710a.

(ii) A water supply may be considered by the department to have optimized corrosion control treatment if the supply demonstrates, to the satisfaction of the department, that it has conducted activities equivalent to the corrosion control steps applicable to the system under subrule (3) of this rule. Supplies considered to have optimized corrosion control under this subdivision shall operate in compliance with the department designated optimal water quality control parameters under subrule (3)(g) of this rule and continue to conduct lead and copper tap and water quality parameter sampling under R 325.10710a(4)(c) and R 325.10710b(4), respectively. A supply shall provide the department with all of the following information to support a determination under this subdivision:

(A) The results of all test samples collected for each of the water quality parameters specified in subrule (3)(c)(iii) of this rule.

(B) A report that explains the test methods used by the water supply to evaluate the corrosion control treatments listed in subrule (3) of this rule, the results of all tests conducted, and the basis for the supply's selection of optimal corrosion control treatment.

(C) A report that explains how corrosion control has been installed and how it is being maintained to ensure minimal lead and copper concentrations at consumers' taps.

(D) The results of tap water samples collected under R 325.10710a at least once every 6 months for 1 year after corrosion control has been installed.

(iii) A water supply is considered to have optimized corrosion control if it submits results of tap water monitoring conducted under R 325.10710a and source water monitoring conducted under R 325.10710c that demonstrates, for 2 consecutive 6-month monitoring periods, that the difference between the ninetieth percentile tap water lead level computed under subrule (1)(c) of this rule and the highest source

water lead concentration is less than the practical quantitation level for lead. In addition, all of the following provisions apply:

(A) A supply whose highest source water lead level is below the method detection limit is considered to have optimized corrosion control under this paragraph if the supply's ninetieth percentile tap water lead level is less than or equal to the practical quantitation level for lead for 2 consecutive 6-month monitoring periods.

(B) A water supply considered to have optimized corrosion control under this paragraph shall continue monitoring for lead and copper at the tap not less frequently than once every 3 calendar years using the reduced number of sites specified in R 325.10710a(3) and collecting the samples at times and locations specified in R 325.10710a(4)(d)(iv).

(C) A water supply considered to have optimized corrosion control under this subdivision 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 subdivision. 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 conduct additional monitoring or to take other action the department considers appropriate consistent with the requirements of R 325.10604f(2) to ensure that the supply maintains minimal levels of corrosion in the distribution system.

(D) As of July 12, 2001, a supply is not considered to have optimized corrosion control under this subdivision, and shall implement corrosion control treatment under subparagraph (E) of this paragraph unless it meets the copper action level.

(E) A supply that is no longer considered to have optimized corrosion control under this subdivision shall implement corrosion control treatment under the deadlines in subdivision (e) of this subrule. A large water supply shall adhere to the schedule specified in that subdivision for medium size water supplies, with the time periods for completing each step being triggered by the date the supply is no longer considered to have optimized corrosion control under this subdivision.

(c) If a small or medium size water supply exceeds the lead or copper action level and the supply is required to perform the corrosion control treatment steps, the supply may cease completing the treatment steps when the supply is in compliance with both action levels during each of 2 consecutive monitoring periods conducted under R 325.10710a and the supply submits the results to the department. If the supply thereafter exceeds the lead or copper action level during a monitoring period, the supply shall recommence the applicable treatment steps beginning with the first treatment step that was not previously completed in its entirety. The department may require a supply to repeat treatment steps that were previously completed by the supply if the department determines that this is necessary to properly implement the treatment requirements of this rule. The department shall notify the supply in writing of the determination and explain the basis of the decision. If a small or medium size water supply exceeds the lead or copper action level, the supply, including supplies considered to have optimized corrosion control under subdivision (b) of this subrule, shall implement corrosion control treatment steps under subdivision (e) of this subrule.

(d) Except as provided in subdivision (b)(ii) and (iii) of this subrule, a large water supply shall complete all of the following corrosion control treatment steps by the indicated dates:

(i) Step 1: A supply shall conduct initial monitoring during 2 consecutive 6-month monitoring periods by January 1, 1993.

(ii) Step 2: A supply shall complete corrosion control studies by July 1, 1994.

(iii) Step 3: By January 1, 1997, a supply shall install optimal corrosion control treatment as designated by the department.

(iv) Step 4: A supply shall complete follow-up sampling by January 1, 1998.

(v) Step 5: A supply shall operate in compliance with the department specified optimal water quality control parameters and continue to conduct tap sampling.

(e) Except as provided in subdivision (b) of this subrule, small and medium size water supplies shall complete all of the following corrosion control treatment steps by the indicated time periods:

(i) Step 1: A supply shall conduct initial tap sampling under R 325.10604f(3)(a) until the supply either exceeds the lead or copper action level or becomes eligible for reduced monitoring. The supply that exceeds the lead or copper action level shall recommend optimal corrosion control treatment within 6 months after the end of the monitoring period during which it exceeds 1 of the action levels.

(ii) Step 2: Within 12 months after the end of the monitoring period during which a supply exceeds the lead or copper action level, the department may require the supply to perform corrosion control studies

under subdivision (3)(b) of this rule. If the department does not require the supply to perform the studies, the department shall specify optimal corrosion control treatment under subdivision (3)(d) of this rule within the following timeframes:

(A) For medium-size supplies, within 18 months after the end of the monitoring period during which the supply exceeds the lead or copper action level.

(B) For small supplies, within 24 months after the end of the monitoring period during which the supply exceeds the lead or copper action level.

(iii) Step 3: If the department requires a supply to perform corrosion control studies under subdivision (3)(b) of this rule, the supply shall complete the studies within 18 months after the department requires that the studies be conducted. If the supply has performed corrosion control studies under paragraph (ii) of this subdivision, the department shall designate optimal corrosion control treatment under subdivision (3)(d) of this rule within 6 months after completion of the corrosion control studies.

(iv) Step 4: A supply shall install optimal corrosion control treatment within 24 months after the department designates the treatment.

(v) Step 5: A supply shall complete follow-up sampling under R 325.10710a(4)(b) within 36 months after the department designates optimal corrosion control treatment. The department shall review the supply's installation of treatment and designate optimal water quality control parameters under R 325.10604f(3)(d)(ii) within 6 months after the supply's completion of follow-up sampling.

(vi) Step 6: A supply shall operate in compliance with the department designated optimal water quality control parameters under R 325.10604f(3)(d)(ii) and continue to conduct tap sampling under R 325.10710a(4)(c) and R 325.10710b(6).

(3) A water supply shall complete all the corrosion control treatment requirements described in this subrule that are applicable to the system under subrule (2) of this rule. All of the following apply:

(a) Based on the results of lead and copper tap monitoring and water quality parameter monitoring, small and medium size water systems that exceed the lead or copper action level shall recommend the installation of 1 or more of the corrosion control treatments listed in subdivision (c)(i) of this subrule that the supply believes constitutes optimal corrosion control for that system. The department may require the supply to conduct additional water quality parameter monitoring under R 325.10710b(4) to assist the department in reviewing the supply's recommendation.

(b) When required by the department, a small or medium size water supply that exceeds the lead or copper action level shall perform corrosion control studies under subdivision (c) of this subrule to identify optimal corrosion control treatment for the supply.

(c) Perform corrosion control studies as follows:

(i) A water supply that performs corrosion control studies shall evaluate the effectiveness of each of the following treatments and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for that supply:

(A) Alkalinity and pH adjustment.

(B) Calcium hardness adjustment.

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

(ii) The water supply shall evaluate each of the corrosion control treatments using pipe rig/loop tests, metal coupon tests, partial system tests, or analyses based on documented analogous treatments with other water supplies of similar size, water chemistry, and distribution system configuration.

(iii) A water supply shall measure all of the following water quality parameters in tests conducted under this paragraph before and after evaluating the corrosion control treatments listed in paragraph (i)(A) to (C) of this subdivision:

(A) Lead.

(B) Copper.

(C) pH.

(D) Alkalinity.

(E) Calcium.

(F) Conductivity.

(G) Orthophosphate, when an inhibitor containing a phosphate compound is used.

(H) Silicate, when an inhibitor containing a silicate compound is used.

(I) Water temperature.

(iv) The water supply shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and shall document the constraints with 1 or both of the following:

(A) Data and documentation demonstrating that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water supply with comparable water quality characteristics.

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

(v) A water supply shall evaluate the effect of the chemicals used for corrosion control treatment in other water quality treatment processes.

(vi) On the basis of an analysis of the data generated during each evaluation, a water supply shall recommend, to the department, in writing, the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that supply. The water system shall provide a rationale for its recommendation together with all supporting documentation specified in paragraphs (i) to (v) of this subdivision.

(d) Department designation of optimal corrosion control treatment shall be as follows:

(i) Based on consideration of available information, including, where applicable, studies performed under subdivision (c) of this subrule and a supply's recommended treatment alternative, the department will either approve the corrosion control treatment option recommended by the supply or will designate alternative corrosion control treatment from the treatment specified in subdivision (c)(i) of this subrule. When designating optimal treatment, the department shall consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

(ii) The department shall notify the supply of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. If the department requests additional information to aid its review, the water supply shall provide the information.

(e) Each supply shall properly install and operate, throughout its distribution system, the optimal corrosion control treatment designated by the department.

(f) The department shall evaluate the results of all lead and copper tap samples and water quality control parameter samples submitted by the water supply and determine whether the supply has properly installed and operated the optimal corrosion control treatment designated by the department in subdivision (d) of this subrule. Upon reviewing the results of tap water and water quality control parameter monitoring by the supply, both before and after the supply installs optimal corrosion control treatment, the department shall designate all of the following:

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

(ii) If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system, that the department determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system.

(iii) If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system.

The department may designate values for additional water quality control parameters determined by the department to reflect optimal corrosion control for the supply. The department shall notify the supply in writing of these determinations and explain the basis for its decision.

(g) All supplies optimizing corrosion control shall continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameters at or above minimum values or within ranges designated by the department, under this subdivision for all samples collected under R 325.10710b(6) to (8). Compliance with the requirements of this subdivision shall be determined every 6 months, as specified under R 325.10710b(6). A water system is out of compliance with the requirements of this subdivision for a 6-month period if it has excursions for a department specified parameter on more than 9 days during the period. An excursion occurs when the daily value for 1 or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the department. The department may delete results of obvious sampling errors from this calculation. Daily values are calculated as follows:

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

(ii) On days when only 1 measurement for the water quality parameter is collected at the sampling location, the daily value shall be the result of that measurement.

(iii) On days when a measurement is not collected for the water quality parameter at the sampling location, the daily value shall be the daily value calculated on the most recent day on which the water quality parameter was measured at the sample site.

(h) The department's determination of the optimal corrosion control treatment specified in subdivision (d) of this subrule or optimal water quality control parameters may be modified by the department. If a request for modification is by a supply or other interested person, the request shall be in writing, shall explain why the modification is appropriate, and shall provide supporting documentation. The department may modify its determination where it concludes that a change is necessary to ensure that the supply continues to optimize corrosion control treatment.

(4) A water supply shall complete the applicable source water monitoring and treatment requirements by the following deadlines:

(a) The deadlines for completing source water treatment steps are as follows:

(i) Step 1: A supply exceeding the lead or copper action level shall complete lead and copper source water monitoring under R 325.10710c(2) and make a treatment recommendation to the department under paragraph (b)(i) of this subdivision not later than 180 days after the end of the monitoring period during which the lead or copper action level was exceeded. The department shall make a determination regarding source water treatment under paragraph (b)(ii) of this subrule within 6 months after submission of monitoring results under this paragraph.

(ii) Step 2: If the department requires installation of source water treatment, the supply shall install the treatment within 24 months after the date of written notification by the department under paragraph (i) of this subdivision.

(iii) Step 3: The supply shall complete follow-up tap water monitoring under R 325.10710a(4)(b) and source water monitoring under R 325.10710c(3) within 36 months after the date of written notification by the department under paragraph (i) of this subdivision. The department shall review the supply's installation and operation of source water treatment and specify maximum permissible source water levels under R 325.10604f(4)(b)(iv) within 6 months after completion of the follow-up tap water monitoring and source water monitoring of this paragraph.

(iv) Step 4: A supply shall operate in compliance with the department specified maximum permissible lead and copper source water levels and shall continue source water monitoring.

(b) Source water treatment requirements are as follows:

(i) A system that exceeds the lead or copper action level shall recommend, in writing, to the department, the installation and operation of 1 of the source water treatments listed in paragraph (ii) of this subdivision. A supply may recommend that no treatment be installed based on a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

(ii) The department shall complete an evaluation of the results of all source water samples submitted by the supply to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If the department determines that source water treatment is needed to minimize lead or copper levels in water that is delivered to users' taps, the department will either require installation and operation of the source water treatment recommended by the supply or require the installation and operation of another source water treatment from among the following alternatives:

(A) Ion exchange.

(B) Reverse osmosis.

(C) Lime softening.

(D) Coagulation/filtration.

If the department requests additional information to aid in its review, the water supply shall provide the information by the date specified by the department in its request. The department shall notify the supply in writing of its determination and set forth the basis for its decision.

(iii) Each supply shall properly install and operate the source water treatment designated by the department under paragraph (ii) of this subdivision. The department shall review the source water samples taken by the supply both before and after the supply installs source water treatment and determine whether the supply has properly installed and operated the source water treatment designated by the department.

(iv) Based on the department's review of the source water treatment, the department shall designate the maximum permissible lead and copper concentrations for finished water entering the distribution

system. These levels shall reflect the contaminant removal capability of the treatment properly operated and maintained. The department shall notify the supply in writing and explain the basis for its decision. Each water supply shall maintain lead and copper levels below the maximum permissible concentrations designated by the department at each sampling point monitored under R 325.10710c. A supply is out of compliance with this subrule if the level of lead or copper at a sampling point is more than the maximum permissible concentration designated by the department.

(v) Upon its own initiative or in response to a request by a water supply or other interested person, the department may modify its determination of the source water treatment or maximum permissible lead and copper concentrations for finished water entering the distribution system. A request for modification by a supply or other interested person shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The department may modify its determination where it concludes that a change is necessary to ensure that the supply continues to minimize lead and copper concentrations in source water. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the department's decision, and provide an implementation schedule for completing the treatment modifications.

(5) Lead service line replacement requirements are as follows:

(a) A water supply that exceeds the lead action level in tap samples taken under R 325.10710a(4)(b) after installing corrosion control or source water treatment, or both, whichever sampling occurs later, shall replace lead service lines under the requirements of this subrule. If a supply is in violation of subrule (2) or (4) of this rule for failure to install source water or corrosion control treatment, then the department may require the supply to commence lead service line replacement after the date that the supply was required to conduct monitoring under R 325.10710a(4)(b).

(b) Both of the following apply to the schedule of lead service line replacement:

(i) Annually, a water supply shall replace not less than 7% of the initial number of lead service lines in its distribution system. The initial number of lead service lines is the number of lead lines in place when the replacement program begins. The supply shall identify the initial number of lead service lines in its distribution system, including an identification of the portion or portions owned by the system, based on a materials evaluation, including the evaluation required under R 325.10710a(1) and relevant legal authorities, for example, contracts and local ordinances, regarding the portion owned by the system. The first year of lead service line replacement shall begin on the first day following the end of the monitoring period in which the action level was exceeded in subdivision (a) of this subrule. If monitoring is required annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs. If the department has established an alternate monitoring period, then the end of the monitoring period will be the last day of that period.

(ii) A water supply resuming a lead service line replacement program after the cessation of its lead service line replacement program as allowed by subdivision (e) of this subrule shall update its inventory of lead service lines to include those sites that were previously determined not to require replacement through the sampling provision under subdivision (c) of this subrule. The supply will then divide the updated number of remaining lead service lines by the number of remaining years in the program to determine the number of lines that shall be replaced per year. The 7% lead service line replacement is based on a 15-year replacement program, so, for example, supplies resuming lead service line replacement after previously conducting 2 years of replacement would divide the updated inventory by 13. For those supplies that have completed a 15-year lead service line replacement program, the department will determine a schedule for replacing or retesting lines that were previously tested out under the replacement program when the supply re-exceeds the action level.

(c) A water supply is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken under R 325.10710a(2)(c), is less than or equal to 0.015 mg/l.

(d) A water supply shall replace that portion of the lead service line that it owns. If the supply does not own the entire lead service line, the supply shall notify the owner of the line, or the owner's authorized agent, that the supply will replace the portion of the service line that it owns and shall offer to replace the owner's portion of the line. A supply is not required to bear the cost of replacing the privately owned portion of the line, nor is it required to replace the privately owned portion where the owner chooses not to pay the cost of replacing the privately owned portion of the line, or where replacing the privately owned portion would be precluded by state, local, or common law. A water supply that does not replace the entire length of the service line also shall complete both of the following tasks:

(i) Not less than 45 days before commencing with the partial replacement of a lead service line, the water system shall provide notice to the resident or residents of all buildings served by the line explaining that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead. The water supply may provide notice under the previous sentence less than 45 days before commencing partial lead service line replacement where the replacement is in conjunction with emergency repairs. In addition, the water supply shall inform the resident or residents served by the line that the supply will, at the supply's expense, collect a sample from each partially replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed under R 325.10710a(2)(c), within 72 hours after the completion of the partial replacement of the service line. The supply shall collect the sample and report the results of the analysis to the owner and the resident or residents served by the line within 3 business days of receiving the results. Mailed notices postmarked within 3 business days of receiving the results are satisfactory.

(ii) The water supply shall provide the information required by paragraph (i) of this subdivision to the residents of individual dwellings by mail or by other methods approved by the department. If multifamily dwellings are served by the line, the supply shall have the option to post the information at a conspicuous location.

(e) A water supply shall replace lead service lines on a shorter schedule than that required by this subrule, if directed by the department. The department shall take into account the number of lead service lines in the system, where a shorter replacement schedule is feasible. The department shall make this determination in writing and notify the supply of its finding within 6 months after the supply is triggered into lead service line replacement based on monitoring referenced in subdivision (a) of this subrule.

(f) A supply may cease replacing lead service lines when first draw samples collected under R 325.10710a(2)(b) meet the lead action level during each of 2 consecutive monitoring periods and the supply submits the results to the department. If the first draw samples thereafter exceed the lead action level, the supply shall recommence replacing lead service lines under subdivision (b)(ii) of this subrule.

(g) To demonstrate compliance with subdivisions (a) to (d) of this subrule, a supply shall report the information specified in R 325.10710d(e) to the department.

History: 1994 AACS; 2002 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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

Rule 605. The analytical techniques 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, (2008), 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 $64.00 at the time of adoption of these rules. The adopted material is available for inspection, or a copy is available at no cost from the offices of the department at the address in R 325.10116(a).

History: 1979 AC; 1991 AACS; 1993 AACS; 1998 AACS; 2000 AACS; 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10605a Rescinded.

History: 1984 MR 6, Eff. July 6, 1984; 1993 MR 6, Eff. July 2, 1993; rescinded 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10605b Rescinded.

History: 1989 MR 8, Eff. Sept. 13, 1989; 1993 MR 6, Eff. July 2, 1993; 1994 MR 12, Eff. Jan. 5, 1995; rescinded 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10605c Rescinded.
History: 1991 MR 11, Eff. Nov. 22, 1991; 1993 MR 6, Eff. July 2, 1993; 1993 MR 10, Eff. Nov. 17, 1993; rescinded 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10605d Rescinded.
History: 1993 MR 6, Eff. July 2, 1993; 1994 MR 12, Eff. Jan. 5, 1995; rescinded 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10605e Rescinded.
History: 1993 MR 6, Eff. July 2, 1993; 1994 MR 12, Eff. Jan. 5, 1995; rescinded 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10606 Alternate analytical techniques.
Rule 606. With the written permission of the department, concurred in by the administrator of the United States EPA, a public water supply owner may employ an alternate analytical technique. The use of the alternate analytical technique shall not decrease the frequency of monitoring required by these rules.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10607 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10608 Rescinded.
History: 1991 MR 11, Eff. Nov. 22, 1991; 1993 MR 6, Eff. July 2, 1993; rescinded 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10609 Rescinded.
History: 1994 MR 12, Eff. Jan. 5, 1995; rescinded 1998 MR 2, Eff. Apr. 8, 1998.

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

* Water supplies shall comply with the TTHM and HAA5 MCLs as a running annual average until the date specified in R 325.10610d(3). Supplies shall comply with the TTHM and HAA5 MCLs as a locational running annual average at each monitoring location beginning the date specified for compliance in R 325.10610d(3).

(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 based on a running annual average under R 325.10610b and for achieving compliance with the MCLs based on a locational running annual average under R 325.10610d are as follows:

Disinfection byproduct	Best available technology for compliance with running annual average	Best available technology for compliance with locational running annual average
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5).	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant	Enhanced coagulation or enhanced softening, plus GAC10; or nanofiltration with a molecular weight cutoff less than or equal to1000 Daltons; or GAC20

(c) The best technology, treatment techniques, or other means available for achieving compliance with the MCLs under subdivision (a) of this subrule as a locational running annual average under R 325.10610d 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

History: 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10610a Maximum residual disinfectant levels.

Rule 610a. (1) Maximum residual disinfectant levels (MRDLS) are as follows:

Disinfectant residual	MRDL (mg/l)
Chlorine	4.0 as chlorine
Chloramines	4.0 as chlorine
Chlorine dioxide	0.8 as chlorine dioxide

(2) The best available technologies, treatment techniques, or other means available for achieving compliance with the maximum residual disinfectant levels under subrule (1) of this rule are control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

History: 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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 both of the following:

(i) For supplies monitoring quarterly, compliance with MCLs in R 325.10610 is based on a running annual average, computed quarterly, of quarterly averages of all samples collected under R 325.10719e(2)(a).

(ii) For supplies monitoring less frequently than quarterly, compliance is based on an average of samples taken that year under R 325.10719e(2)(a) if the average does not exceed the MCLs in R 325.10610. If the average of these samples exceeds the MCL, supplies shall increase monitoring to once per quarter per treatment plant and the supply is not in violation of the MCL until it has completed 1 year of quarterly monitoring, unless the result of fewer than 4 quarters of monitoring will cause the running annual average to exceed the MCL, in which case the supply is in violation at the end of that quarter. Supplies required to increase monitoring frequency to quarterly monitoring shall calculate compliance by including the sample which triggered the increased monitoring plus the following 3 quarters of monitoring.

(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 a tier 1 MRDL violation.

(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 a tier 2 MRDL violation.

(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.
History: 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10610c Control of disinfection byproduct (DBP) precursors; treatment technique.

Rule 610c. (1) This rule applies to Subpart H supplies subject to R 325.10610b(1) that use conventional filtration. These public water supplies are considered "water supplies" or "supplies" in this rule. Compliance with this rule is based on all of the following:

(a) Subpart H systems using conventional filtration shall operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in subrule (2) of this rule unless the supply meets at least 1 of the alternative compliance criteria listed in subdivision (b) or (c) of this subrule.

(b) Subpart H systems using conventional filtration may use the following alternative compliance criteria to comply with this rule instead of complying with subrule (2) of this rule. Supplies using alternative compliance criteria shall still comply with TOC monitoring requirements in R 325.10719e(4):

(i) The supply's source water TOC level is less than 2.0 mg/l, calculated quarterly as a running annual average.

(ii) The supply's treated water TOC level is less than 2.0 mg/l, calculated quarterly as a running annual average.

(iii) The supply's source water TOC level is less than 4.0 mg/l, calculated quarterly as a running annual average; the source water alkalinity, measured under R 325.10605, is more than 60 mg/l as calcium carbonate, calculated quarterly as a running annual average; and either the TTHM and HAA5 running annual averages are not more than 0.040 mg/l and 0.030 mg/l, respectively, or before the effective date for compliance in R 325.10610(2), the supply has made a clear and irrevocable financial commitment to use technologies that will limit the levels of TTHM and HAA5 to not more than 0.040 mg/l and 0.030 mg/l, respectively. Supplies shall submit evidence of a clear and irrevocable financial commitment, in addition to a schedule containing milestones and periodic progress reports for installation and operation of appropriate technologies, to the department for approval not later than the effective date for compliance in R 325.10610(2). These technologies shall be installed and operating not later than June 30, 2005. Failure to install and operate these technologies by the date in the approved schedule is a violation of these rules.

(iv) The TTHM and HAA5 running annual averages are not more than 0.040 mg/l and 0.030 mg/l, respectively, and the supply uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

(v) The supply's source water SUVA, before any treatment and measured monthly, is less than or equal to 2.0 liters per milligram meter (l/mg-m), calculated quarterly as a running annual average.

(vi) The supply's finished water SUVA, measured monthly, is less than or equal to 2.0 l/mg-m, calculated quarterly as a running annual average.

(c) Water supplies practicing enhanced softening that cannot achieve the TOC removals required by subrule (2)(b) of this rule may use the following alternative compliance criteria instead of complying with subrule (2) of this rule; however, supplies using alternative compliance criteria shall still comply with TOC monitoring requirements in R 325.10719e(4)(b):

(i) Softening that results in lowering the treated water alkalinity to less than 60 mg/l as calcium carbonate, measured monthly and calculated quarterly as a running annual average.

(ii) Softening that results in removing not less than 10 mg/l of magnesium hardness as calcium carbonate, measured monthly and calculated quarterly as an annual running average.

(2) All of the following provisions are enhanced coagulation and enhanced softening performance requirements:

(a) Water supplies shall achieve the percent reduction of TOC specified in subdivision (b) of this subrule between the source water and the combined filter effluent, unless the department approves a supply's request for alternate minimum TOC removal (step 2) requirements under subdivision (c) of this subrule.

(b) Required step 1 TOC reductions, indicated in table 1 of this rule, are based on specified source water parameters. Supplies practicing softening are required to meet the step 1 TOC reductions in the far-right column "source water alkalinity >120 mg/l" for the specified source water TOC.

Table 1 Step 1 required removal of TOC by enhanced coagulation and enhanced softening for subpart H supplies using conventional filtration [A, B]

Source-water TOC, mg/l	Source-water alkalinity, mg/l as calcium carbonate		
	0-60	>60-120	>120C
>2.0-4.0	35.0%	25.0%	15.0%
>4.0-8.0	45.0%	35.0%	25.0%
>8.0	50.0%	40.0%	30.0%

[A] Supplies meeting at least 1 of the conditions in subrule (1)(b)(i) to (vi) of this rule are not required to operate with enhanced coagulation.
[B] Supplies with softening systems meeting 1 of the alternative compliance criteria in subrule (1)(c) of this rule are not required to operate with enhanced softening.
[C] Supplies practicing softening shall meet the TOC removal requirements in this column.

(c) Subpart H supplies using conventional filtration systems that cannot achieve the step 1 TOC removals required by subdivision (b) of this subrule due to water quality parameters or operational constraints shall apply to the department, within 3 months of failure to achieve the TOC removals required by subdivision (b) of this subrule, for approval of alternative minimum TOC removal (step 2) requirements submitted by the supply. If the department approves the step 2 requirements, then a supply's failure to meet the step 1 TOC removals will not be considered a treatment technique violation during the interim time period between the end of the 12-month data gathering monitoring period in R 325.10610b(4) and receipt of the department's approval. Until the department approves the step 2 requirements, the supply shall meet the step 1 TOC removals contained in subdivision (b) of this subrule.

(d) Applications made to the department by water supplies with enhanced coagulation systems for approval of alternative minimum TOC removal (step 2) requirements under subdivision (c) of this subrule shall include, at a minimum, results of bench- or pilot-scale testing conducted under paragraph (i) of this subdivision to determine the alternate enhanced coagulation level. All of the following apply:

(i) Alternate enhanced coagulation level is defined as coagulation at a coagulant dose and pH as determined by the method described in paragraphs (i) to (v) of this subdivision such that an incremental addition of 10 mg/l of alum, or equivalent amount of ferric salt, results in a TOC removal of less than or equal to 0.3 mg/l. The percent removal of TOC at this point is the minimum TOC removal required for the supply. Once approved by the department, this minimum requirement supersedes the minimum TOC removal required by table 1 of this rule. This requirement will be effective until the department approves a new value based on the results of a new bench- and pilot-scale test. Failure to achieve department-set alternative minimum TOC removal levels is a violation of these rules.

(ii) Bench- or pilot-scale testing of enhanced coagulation shall be conducted by using representative water samples and adding 10 mg/l increments of alum, or equivalent amounts of ferric salt, until the pH is reduced to a level less than or equal to the enhanced coagulation step 2 target pH shown in the following table:

Table 2 Enhanced coagulation step 2 target pH

Alkalinity (mg/l as calcium carbonate)	Target pH
0-60	5.5
>60-120	6.3
>120-240	7.0
>240	7.5

(iii) For waters with alkalinities of less than 60 mg/l for which addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below 5.5 before significant TOC removal occurs, the supply shall add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/l per 10 mg/l alum added, or equivalent addition of iron coagulant, is reached.

(iv) The supply may operate at any coagulant dose or pH necessary, and consistent with these rules, to achieve the minimum TOC percent removal approved under subdivision (c) of this subrule.

(v) If the TOC removal is consistently less than 0.3 mg/l of TOC per 10 mg/l of incremental alum dose at all dosages of alum, or equivalent addition of iron coagulant, the water is considered to contain TOC not amenable to enhanced coagulation. The supply may then apply to the department for a waiver of enhanced coagulation requirements. The department's determination will be made on a case-by-case basis and the department will consider supporting documentation from the water supply of bench or pilot scale testing designed to demonstrate the best level of TOC removal that is feasibly attainable, given the unique characteristics of the raw water to be treated.

(3) Water supplies shall calculate compliance using the methods in either of the following provisions, as applicable:

(a) Subpart H supplies, other than those identified in subrule (1)(b) or (c) of this rule, shall comply with requirements contained in subule (2)(b) or (c) of this rule. Supplies shall calculate compliance quarterly, beginning after the supply has collected 12 months of data, by determining an annual average using the following method:

(i) Determine actual monthly TOC percent removal, equal to:
(1 - (treated water TOC/source water TOC)) x 100.

(ii) Determine the required monthly TOC percent removal, from either table 1 of this rule or from subrule (2)(c) of this rule.

(iii) Divide the value in paragraph (i) of this subdivision by the value in paragraph (ii) of this subdivision.

(iv) Add together the results of paragraph (iii) of this subdivision for the last 12 months and divide by 12.

(v) If the value calculated in paragraph (iv) of this subdivision is less than 1.00, then the supply is not in compliance with the TOC percent removal requirements.

(b) Supplies may use the provisions in paragraphs (i) to (v) of this subdivision instead of the calculations in subdivision (a)(i) to (v) of this subrule to determine compliance with TOC percent removal requirements, as follows:

(i) In any month that the supply's treated or source water TOC level is less than 2.0 mg/l, the supply may assign a monthly value of 1.0, instead of the value calculated in subdivision (a)(iii) of this subrule, when calculating compliance under subdivision (a) of this subrule.

(ii) In any month that a supply practicing softening removes not less than 10 mg/l of magnesium hardness as calcium carbonate, the supply may assign a monthly value of 1.0, instead of the value calculated in subdivision (a)(iii) of this subrule, when calculating compliance under subdivision (a) of this subrule.

(iii) In any month that the supply's source water SUVA, before any treatment, is less than or equal to 2.0 l/mg-m, the supply may assign a monthly value of 1.0, instead of the value calculated in subdivision (a)(iii) of this subrule, when calculating compliance under subdivision (a) of this subrule.

(iv) In any month that the supply's finished water SUVA is less than or equal to 2.0 l/mg-m, the supply may assign a monthly value of 1.0, instead of the value calculated in subdivision (a)(iii) of this subrule, when calculating compliance under subdivision (a) of this subrule.

(v) In any month that a supply practicing enhanced softening lowers alkalinity below 60 mg/l as calcium carbonate, the supply may assign a monthly value of 1.0, instead of the value calculated in subdivision (a)(iii) of this subrule, when calculating compliance under subdivision (a) of this subrule.

(4) The treatment techniques to control the level of disinfection byproduct precursors in drinking water treatment and distribution systems for subpart H supplies using conventional filtration is enhanced coagulation or enhanced softening.

History: 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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 on the schedule in the following table based on the supply type:

For supplies that are not part of a combined distribution system and supplies that serve the largest population in a combined distribution system of …	The supply shall comply with monitoring required under R 325.10610d and R 325.10719h to R 325.10719n by…*
(i) 100,000 or more	April 1, 2012.
(ii) 50,000-99,999	October 1, 2012.
(iii) 10,000-49,999	October 1, 2013.
(iv) less than 10,000	October 1, 2013 if no Cryptosporidium monitoring is required under 40 CFR §141.701(a)(4) or October 1, 2014 if Cryptosporidium monitoring is required under 40 CFR §141.701(a)(4) or (a)(6). 40 CFR §141.701 is adopted by reference in R 325.10720b.
(v) For other supplies that are part of a combined distribution system, specifically consecutive supplies or wholesale supplies…	--at the same time as the supply with the earliest compliance date in the combined distribution system.

* The department may grant up to an additional 24 months for compliance with MCLs and operational evaluation levels if the supply requires capital improvements to comply with an MCL.

(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 includes the compliance date in the table in this subrule.

(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 recommended in the IDSE report prepared under 40 CFR 141.601 or 40 CFR 141.602, adopted by reference in R 325.10719g, or the calendar month identified in the monitoring plan developed under R 325.10719i not later than 12 months after the compliance date in this table.

(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).

History; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611 Filtration and disinfection.

Rule 611. (1) A supplier of a public water system shall comply with R 325.10807, R 325.10808, R 325.10812, R 325.10813, R 325.10816, R 325.10817, R 325.10818, R 325.10819, R 325.10820, and R 325.10822, shall demonstrate a safe microbiological water quality history, and may be required to demonstrate stability in other measurements of water quality; or the supplier shall provide complete treatment.

(2) The department may grant a deviation from subrule (1) of this rule if the supplier can demonstrate that the system is capable of producing finished water that meets state drinking water standards applicable to systems using only ground water not under the direct influence of surface water.

(3) Suppliers of subpart H systems shall comply with the treatment techniques of this rule, R 325.10611a, R 325.10611b, R 325.10611c, the sampling requirements of R 325.10720, the reporting and recordkeeping requirements of R 325.10720a and R 325.11506, except where noted, and the disinfection profiling and benchmarking requirements in R 325.10722. The treatment technique requirements consist of installing and properly operating water treatment processes that reliably achieve all of the following applicable removal or inactivation percentages between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer:

(a) Not less than 99.9% (3 log) inactivation or the removal of giardia lamblia cysts and not less than 99.99% (4 log) inactivation or the removal of viruses.

(b) A 99% (2 log) removal of cryptosporidium oocysts for systems serving 10,000 or more people. This subdivision applies to subpart H systems serving 10,000 or more people until December 31, 2004 and applies to all subpart H systems beginning January 1, 2005.

(4) If a supplier of a public water system does not currently provide complete treatment and if the department determines that a system requires complete treatment either under subrules (1) and (2) of this rule or because the system uses surface water or groundwater under the direct influence of surface water, then the supplier shall provide complete treatment within 18 months of the department's determination and shall provide interim disinfection and monitoring as considered necessary by the department. During the interim disinfection period, systems requiring complete treatment under subrules (1) and (2) of this rule shall demonstrate safe microbiological water quality. Subpart H systems are subject to subrule (3) of this rule within 18 months or until treatment is installed, whichever occurs first. During the interim disinfection period, subpart H systems shall also comply with both of the following provisions:

(a) The supplier shall collect at least 1 sample from the source water every 4 hours while the source is being utilized and have the sample analyzed for turbidity.

(b) If the result of 1 or more samples taken under subdivision (a) of this subrule is more than 1 ntu, then within 24 hours of the determination that a turbidity measurement is more than 1 ntu, the supplier shall collect at least 1 sample near the first service connection and have the sample analyzed for total coliform. Sample results from the coliform monitoring shall be included in determining compliance with the total coliform standard.

History: 2003 MR 2, Eff. Jan. 29, 2003; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10611a Filtration and disinfection; disinfection.

Rule 611a. (1) Subpart H supplies shall provide sufficient disinfectant contact time before the water enters the distribution system to assure adequate disinfection.

(2) Subpart H supplies shall provide disinfection treatment achieving all of the following conditions:

(a) The disinfection treatment shall be sufficient to ensure that the total treatment processes of that system achieve the standards set forth in R 325.10611(3)(a).

(b) The residual disinfectant concentration in the water entering the distribution system shall not be less than 0.2 milligrams per liter for more than 4 hours.

(c) The residual disinfectant concentration in the distribution system, measured as total chlorine, free available chlorine, combined chlorine, or chlorine dioxide shall not be undetectable in more than 5% of the samples each month for any 2 consecutive months that the supply serves water to the public. Water in the distribution system that has a heterotrophic bacteria concentration less than or equal to 500 per milliliter, measured as heterotrophic plate count (HPC), is considered to have a detectable disinfectant residual for purposes of determining compliance with this subdivision.

(d) If the department determines, based on site specific considerations, that a supply does not have means for having a sample transported and analyzed for HPC and that the supply is providing adequate disinfection in the distribution system, then the requirements of subdivision (c) of this subrule do not apply.

History: 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611b Filtration and disinfection; filtration.

Rule 611b. (1) Subpart H supplies shall comply with all of the following filtration requirements, as applicable:

For a supply using...	(i) The turbidity level of representative samples of a supply's filtered water shall at no time exceed...	(ii) Not less than 95% of the measurements taken each month shall be less than or equal to...
(a) Conventional, direct, or membrane filtration	1 ntu	0.3 ntu
(b) Slow sand or diatomaceous earth filtration	5 ntu	1 ntu
(c) An alternative filtration technology approved by the department, based on the demonstration described in subrule (3) of this rule.	The department-set turbidity level, not to exceed 5 ntu, based on the demonstration described in subrule (3) of this rule.	The department-set turbidity level, not to exceed 1 ntu, based on the demonstration described in subrule (3) of this rule.

(2) A supply using lime softening, where the final pH exceeds 8.3, may acidify representative samples before turbidity analysis using a protocol approved by the department. The approved protocol shall require the use of a concentrated acid in sufficient quantities to lower the pH to less than 8.3, dissolve only calcium carbonate and magnesium hydroxide, and not to dilute the representative sample.

(3) A public water supply may use a filtration technology not listed in subrule (1)(a) or (b) of this rule if the supply demonstrates to the department, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of R 325.10611a(2), consistently achieves the removal or inactivation percentages in R 325.10611(3), and the department approves the use of the filtration technology. For each approval, the department will set turbidity performance requirements that the supply shall meet not less than 95% of the time and the supply shall not exceed, at any time, at a level in subrule (1)(c) of this rule that consistently achieves the removal or inactivation percentages in R 325.10611(3).

History: 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611c Filtration and disinfection; filter backwash recycling; treatment technique.

Rule 611c. A subpart H system that employs conventional filtration or direct filtration treatment and that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall return these flows through the processes of a system's existing conventional or direct filtration system as defined in R 325.10103 and R 325.10104, or at an alternate location approved by the department. If capital improvements are required to modify the recycle location to meet this requirement, then all capital improvements shall be completed not later than June 8, 2006.

History: 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10611d Enhanced treatment for Cryptosporidium; requirements.

Rule 611d. (1) The requirements in this rule, R 325.10611d to R 325.10611n, and R 325.10720b to R 325.10720e establish or extend treatment technique requirements instead of maximum contaminant levels for Cryptosporidium. These requirements are in addition to requirements for filtration and disinfection in R 325.10611 to R 325.10611c, R 325.10720 to R 325.10720a, and R 325.10722.

(2) The requirements of this rule, R 325.10611d to R 325.10611n, and R 325.10720b to R 325.10720e apply to all subpart H supplies, which are community and noncommunity water supplies supplied by a surface water source and community and noncommunity water supplies supplied by a groundwater source under the direct influence of surface water (GWUDI). These public water supplies are considered "water supplies" or "supplies" in this rule, R 325.10611d to R 325.10611n, and R 325.10720b to R 325.10720e. Both of the following apply to this rule:

(a) Wholesale supplies, as defined in R 325.10109, shall comply with the requirements of this rule, R 325.10611d to R 325.10611n, and R 325.10720b to R 325.10720e based on the population of the largest supply in the combined distribution system.

(b) The requirements of this rule, R 325.10611d to R 325.10611n, and R 325.10720b to R 325.10720e apply to subpart H supplies required by these rules to provide filtration treatment, whether or not the supply is currently operating a filtration system.

(3) Supplies subject to this rule, R 325.10611d to R 325.10611n, and R 325.10720b to R 325.10720e shall comply with the following requirements:

(a) Supplies shall conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source. This monitoring may include sampling for Cryptosporidium, E. coli, and turbidity as described in 40 CFR 141.701 to 40 CFR 141.706, as adopted by reference in R 325.10720b, to determine what level, if any, of additional Cryptosporidium treatment they shall provide.

(b) Supplies that plan to make a significant change to their disinfection practice shall develop disinfection profiles and calculate disinfection benchmarks, as described in R 325.10720c to R 325.10720d and R 325.10722(4)(b).

(c) Supplies shall determine their Cryptosporidium treatment bin classification as described in R 325.10611e and provide additional treatment for Cryptosporidium, if required, as described in R 325.10611f. Supplies shall implement Cryptosporidium treatment according to the schedule in R 325.10611g.

(d) Supplies required to provide additional treatment for Cryptosporidium shall implement microbial toolbox options that are designed and operated as described in R 325.10611h to R 325.10611m.

(e) Supplies shall comply with the applicable recordkeeping and reporting requirements described in R 325.10720e.

(f) Supplies shall address significant deficiencies identified in sanitary surveys performed by EPA as described in R 325.10611n.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611e Enhanced treatment for Cryptosporidium; treatment technique; bin classification.

Rule 611e. (1) Following completion of the initial round of source water monitoring required under 40 CFR §141.701(a), as adopted by reference in R 325.10720b, subpart H supplies that are subject to R 325.10611d shall calculate an initial Cryptosporidium bin concentration for each plant for which monitoring was required. These public water supplies are also considered "water supplies" or "supplies" in this rule. Calculation of the bin concentration shall use the Cryptosporidium results reported under 40 CFR §141.701(a) and shall follow the procedures in subrule (2) of this rule.

(2) Supplies shall use the following criteria to determine bin classification:

(a) For supplies that collect a total of not less than 48 samples, the bin concentration is equal to the arithmetic mean of all sample concentrations.

(b) For supplies that collect a total of not less than 24 samples, but not more than 47 samples, the bin concentration is equal to the highest arithmetic mean of all sample concentrations in any 12 consecutive months during which Cryptosporidium samples were collected.

(c) For supplies that serve fewer than 10,000 people and monitor for Cryptosporidium for only 1 year, that is, collect 24 samples in 12 months, the bin concentration is equal to the arithmetic mean of all sample concentrations.

(d) For supplies with plants operating only part of the year that monitor fewer than 12 months per year under 40 CFR §141.701(e), as adopted by reference in R 325.10720b, the bin concentration is equal to the highest arithmetic mean of all sample concentrations during a year of Cryptosporidium monitoring.

(e) If the monthly Cryptosporidium sampling frequency varies, supplies shall first calculate a monthly average for each month of monitoring. Supplies shall then use these monthly average concentrations, rather than individual sample concentrations, in the applicable calculation for bin classification in subdivisions (a) to (d) of this subrule.

(3) Supplies shall determine their initial bin classification from the following table and using the Cryptosporidium bin concentration calculated under subrules (1) and (2) of this rule:

Bin Classification Table for Filtered Supplies

For supplies that are:	With a Cryptosporidium bin concentration of … *	The bin classification is …
… required to monitor for Cryptosporidium under 40 CFR 141.701 as adopted by reference in R 325.10720b.	Cryptosporidium less than 0.075 oocyst/L	Bin 1.
	Cryptosporidium greater than or equal to 0.075 and less than 1.0 oocysts/L	Bin 2
	Cryptosporidium greater than or equal to 1.0 and less than 3.0 oocysts/L	Bin 3
	Cryptosporidium greater than or equal to 3.0 oocysts/L.	Bin 4
… serving fewer than 10,000 people and NOT required to monitor for Cryptosporidium under 40 CFR 141.701(a)(4).	Not applicable	Bin 1

* Based on calculations in subrule (1) or (4) of this rule, as applicable.

(4) Following completion of the second round of source water monitoring required under 40 CFR §141.701(b), supplies shall recalculate their Cryptosporidium bin concentration using the Cryptosporidium results reported under 40 CFR §141.701(b) and following the procedures in subrule (2)(a) to (d) of this rule. Supplies shall then redetermine their bin classification using this bin concentration and the table in subrule (3) of this rule.

(5) The following apply to reporting the bin classification to the department:

(a) Supplies shall report their initial bin classification under subrule (3) of this rule to the department for approval not later than 6 months after the supply is required to complete initial source water monitoring based on the schedule in 40 CFR 141.701(c).

(b) Supplies shall report their bin classification under subrule (4) of this rule to the department for approval not later than 6 months after the supply is required to complete the second round of source water monitoring based on the schedule in 40 CFR 141.701(c).

(c) The bin classification report to the department shall include a summary of source water monitoring data and the calculation procedure used to determine bin classification.

(6) Failure to comply with the conditions of subrule (5) of this rule is a violation of the treatment technique requirement.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611f Enhanced treatment for Cryptosporidium; treatment technique; additional Cryptosporidium treatment requirements.

Rule 611f. (1) Subpart H supplies are also considered "water supplies" or "supplies" in this rule. Subpart H supplies that are subject to R 325.10611d shall provide the level of additional treatment for Cryptosporidium specified in the following table based on their bin classification as determined under R 325.10611e and according to the schedule in R 325.10611g:

If the supply bin classification is …	And the supply uses the following filtration treatment in full compliance with R 325.10611 to R 325.10611c, R 325.10720 to R 325.10720a, and R 325.10722, as applicable, then the additional Cryptosporidium treatment requirements are …			
	Conventional filtration or membrane filtration treatment (including softening)	Direct filtration	Slow sand or diatomaceous earth filtration	Alternative filtration technologies approved by the department under R 325.10611b(3)
Bin 1	No additional treatment	No additional treatment	No additional treatment	No additional treatment
Bin 2	1-log treatment	1.5-log treatment	1-log treatment	Note 1
Bin 3	2-log treatment	2.5-log treatment	2-log treatment	Note 2
Bin 4	2.5-log treatment	3-log treatment	2.5-log treatment	Note 3

Note 1: As determined by the department such that the total Cryptosporidium removal and inactivation is not less than 4.0-log.

Note 2: As determined by the department such that the total Cryptosporidium removal and inactivation is not less than 5.0-log.

Note 3: As determined by the department such that the total Cryptosporidium removal and inactivation is not less than 5.5-log.

(2) All of the following provisions apply to microbial toolbox options:

(a) Supplies shall use 1 or more of the treatment and management options listed in R 325.10611h, termed the microbial toolbox, to comply with the additional Cryptosporidium treatment required in subrule (1) of this rule.

(b) Supplies classified in Bin 3 and Bin 4 shall achieve not less than 1-log of the additional Cryptosporidium treatment required under subrule (1) of this rule using either 1 or a combination of the following: bag filters, bank filtration, cartridge filters, chlorine dioxide, membranes, ozone, or UV, as described in R 325.10611i to R 325.10611m.

(3) Failure by a supply in any month to achieve treatment credit by meeting criteria in R 325.10611i to R 325.10611m for microbial toolbox options that is not less than equal to the level of treatment required in subrule (1) of this rule is a violation of the treatment technique requirement.

(4) If the department determines during a sanitary survey or an equivalent source water assessment that after a supply completed the monitoring conducted under 40 CFR §141.701(a) or 40 CFR §141.701(b), as adopted by reference in R 325.10720b, significant changes occurred in the supply's watershed that could lead to increased contamination of the source water by Cryptosporidium, the supply shall take actions specified by the department to address the contamination. These actions may include additional source water monitoring or implementing microbial toolbox options listed in R 325.10611h, or both.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611g Enhanced treatment for Cryptosporidium; treatment technique; schedule for compliance with Cryptosporidium treatment requirements.

Rule 611g. (1) Following initial bin classification under R 325.10611e(3), Subpart H supplies that are subject to R 325.10611d shall provide the level of treatment for Cryptosporidium required under R 325.10611f according to the schedule in subrule (2) of this rule.

(2) Cryptosporidium treatment compliance dates are listed in the following table:

Table 1 Cryptosporidium Treatment Compliance Dates

Subpart H supplies that serve …	Shall comply with Cryptosporidium treatment requirements not later than … *
(a) Not fewer than 100,000 people.	(i) April 1, 2012.
(b) From 50,000 to 99,999 people.	(i) October 1, 2012.
(c) From 10,000 to 49,999 people.	(i) October 1, 2013.
(d) Fewer than 10,000 people.	(i) October 1, 2014.

* The department may allow up to an additional 2 years for complying with the treatment requirement for supplies making capital improvements.

(3) If the bin classification for a supply changes following the second round of source water monitoring, as determined under R 325.10611e(4), the supply shall provide the level of treatment for Cryptosporidium required under R 325.10611f on a schedule the department approves.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611h Enhanced treatment for Cryptosporidium; microbial toolbox options for meeting Cryptosporidium treatment requirements.

Rule 611h. (1) Subpart H supplies that are subject to R 325.10611d receive the treatment credits listed in the table in subrule (2) of this rule by meeting the conditions for microbial toolbox options described in R 325.10611i to R 325.10611m. Subpart H supplies apply these treatment credits to meet the treatment requirements in R 325.10611f.

(2) The following table summarizes options in the microbial toolbox:

Table 1 Microbial Toolbox Summary Table: Options, Treatment Credits, and Criteria

Toolbox Option	Cryptosporidium treatment credit with design and implementation criteria
Source Protection and Management Toolbox Options	
(a) Watershed control program	0.5-log credit for department-approved program comprising required elements, annual program status report to department, and regular watershed survey. Specific criteria are in R 325.10611i(1).
(b) Alternative source/intake management	No prescribed credit. Subpart H supplies may conduct simultaneous monitoring for treatment bin classification at alternative intake locations or under alternative intake management strategies. Specific criteria are in R 325.10611i(2).
Pre Filtration Toolbox Options	
(c) Presedimentation basin with coagulation	0.5-log credit during a month that presedimentation basins achieve a monthly mean reduction of 0.5-log or greater in turbidity or alternative department-approved performance criteria. To be eligible, basins shall be operated continuously with coagulant addition and all plant flow shall pass through basins. Specific criteria are in R 325.10611j(1).
(d) Two-stage lime softening	0.5-log credit for 2-stage softening where chemical addition and hardness precipitation occur in both stages. All plant flow shall pass through both stages. Single-stage softening is credited as equivalent to conventional treatment. Specific criteria are in R 325.10611j(2).
(e) Bank filtration	0.5-log credit for 25-foot setback; 1.0- log credit for 50-foot setback; aquifer shall be unconsolidated sand containing not less than 10% fines; average turbidity in wells shall be less than 1 NTU. Subpart H supplies using wells followed by filtration when conducting source water monitoring shall sample the well to determine bin classification and are not eligible for additional credit. Specific criteria are in R 325.10611j(3).
Treatment Performance Toolbox Options	
(f) Combined filter performance	0.5-log credit for combined filter effluent turbidity less than or equal to 0.15 NTU in not less than 95% of measurements each month. Specific criteria are in R 325.10611k(1).
(g) Individual filter performance	0.5-log credit (in addition to 0.5-log combined filter performance credit) if individual filter effluent turbidity is less than or equal to 0.15 NTU in not less than 95% of samples each month in each filter and is never greater than 0.3 NTU in 2 consecutive measurements in a filter. Specific criteria are in R 325.10611k(2).

(h) Demonstration of performance	Credit awarded to unit process or treatment train based on a demonstration to the department with a department-approved protocol. Specific criteria are in R 325.10611k(3).
Additional Filtration Toolbox Options	
(i) Bag or cartridge filters (individual filters).	Up to 2-log credit based on the removal efficiency demonstrated during challenge testing with a 1.0-log factor of safety. Specific criteria are in R 325.10611l(1).
(j) Bag or cartridge filters (in series).	Up to 2.5-log credit based on the removal efficiency demonstrated during challenge testing with a 0.5-log factor of safety. Specific criteria are in R 325.10611l(1).
(k) Membrane filtration	Log credit equivalent to removal efficiency demonstrated in challenge test for device if supported by direct integrity testing. Specific criteria are in R 325.10611l(2).
(l) Second stage filtration	0.5-log credit for second separate granular media filtration stage if treatment train includes coagulation before first filter. Specific criteria are in R 325.10611l(3)
(m) Slow sand filters	2.5-log credit as a secondary filtration step; 3.0-log credit as a primary filtration process. No prior chlorination for either option. Specific criteria are in R 325.10611l(4).
Inactivation Toolbox Options	
(n) Chlorine dioxide	Log credit based on measured CT in relation to CT table. Specific criteria in R 325.10611m(2).
(o) Ozone	Log credit based on measured CT in relation to CT table. Specific criteria in R 325.10611m(2).
(p) UV	Log credit based on validated UV dose in relation to UV dose table; reactor validation testing required to establish UV dose and associated operating conditions. Specific criteria in R 325.10611m(4).

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611i Enhanced treatment for Cryptosporidium; microbial toolbox; source toolbox components.

Rule 611i. (1) Watershed control program is a source toolbox component. Subpart H supplies that are subject to R 325.10611d receive 0.5-log Cryptosporidium treatment credit for implementing a watershed control program that meets all of the following requirements:

(a) Subpart H supplies that intend to apply for the watershed control program credit shall notify the department of this intent not later than 2 years before the treatment compliance date applicable to the supply in R 325.10611g.

(b) Subpart H supplies shall submit to the department a proposed watershed control plan not later than 1 year before the applicable treatment compliance date in R 325.10611g. The supply shall receive department approval of the watershed control plan for the supply to receive watershed control program treatment credit. The watershed control plan shall include all of the following elements:

(i) Identification of an "area of influence" outside of which the likelihood of Cryptosporidium or fecal contamination affecting the treatment plant intake is not significant. This is the area to be evaluated in future watershed surveys under subdivision (e)(ii) of this subrule.

(ii) Identification of both potential and actual sources of Cryptosporidium contamination and an assessment of the relative impact of these sources on the supply's source water quality.

(iii) An analysis of the effectiveness and feasibility of control measures that could reduce Cryptosporidium loading from sources of contamination to the supply's source water.

(iv) A statement of goals and specific actions the supply will undertake to reduce source water Cryptosporidium levels. The plan shall explain how the actions are expected to contribute to specific goals, identify watershed partners and their roles, identify resource requirements and commitments, and include a schedule for plan implementation with deadlines for completing specific actions identified in the plan.

(c) Subpart H supplies with existing watershed control programs, that is, programs in place on the effective date of this rule, are eligible to seek this credit. Their watershed control plans shall meet the criteria in subdivision (b) of this subrule and shall specify ongoing and future actions that will reduce source water Cryptosporidium levels.

(d) If the department does not respond to a Subpart H supply regarding approval of a watershed control plan submitted under this rule and the supply meets the other requirements of this rule, the watershed control program will be considered approved and 0.5-log Cryptosporidium treatment credit will be awarded unless the department subsequently withdraws that approval.

(e) Subpart H supplies shall complete all of the following actions to maintain the 0.5-log credit:

(i) Submit an annual watershed control program status report to the department. The annual watershed control program status report shall describe the supply's implementation of the approved plan and assess the adequacy of the plan to meet its goals. It shall explain how the supply is addressing any shortcomings in plan implementation, including those previously identified by the department or as the result of the watershed survey conducted under paragraph (ii) of this subdivision. It shall also describe the significant changes that have occurred in the watershed since the last watershed sanitary survey. If a supply determines during implementation that making a significant change to its approved watershed control program is necessary, the supply shall notify the department before making the changes. If a change is likely to reduce the level of source water protection, the supply shall also list in its notification the actions the supply will take to mitigate this effect.

(ii) Undergo a watershed sanitary survey every 3 years for community water supplies and every 5 years for noncommunity water supplies and submit the survey report to the department. The survey shall be conducted according to department guidelines and by persons the department approves. Both of the following apply to watershed sanitary surveys:

(A) The watershed sanitary survey shall encompass the region identified in the department-approved watershed control plan as the area of influence; assess the implementation of actions to reduce source water Cryptosporidium levels; and identify the significant new sources of Cryptosporidium.

(B) If the department determines that significant changes may have occurred in the watershed since the previous watershed sanitary survey, supplies shall undergo another watershed sanitary survey by a date the department requires, which may be earlier than the regular date in this subdivision.

(iii) The supply shall make the watershed control plan, annual status reports, and watershed sanitary survey reports available to the public upon request. These documents shall be in a plain language style and include criteria by which to evaluate the success of the program in achieving plan goals. The department may approve supplies to withhold from the public portions of the annual status report, watershed control plan, and watershed sanitary survey based on water supply security considerations.

(f) If the department determines that a Subpart H supply is not carrying out the approved watershed control plan, the department may withdraw the watershed control program treatment credit.

(2) Alternative source is a source toolbox component. All of the following provisions apply to an alternative source:

(a) A Subpart H supply may conduct source water monitoring that reflects a different intake location, either in the same source or for an alternate source, or a different procedure for the timing or level of withdrawal from the source (alternative source monitoring). If the department approves, a supply may determine its bin classification under R 325.10611e based on the alternative source monitoring results.

(b) If Subpart H supplies conduct alternative source monitoring under subdivision (a) of this subrule, supplies shall also monitor their current plant intake concurrently as described in 40 CFR §141.701, as adopted by reference in R 325.10720b.

(c) Alternative source monitoring under subdivision (a) of this subrule shall meet the requirements for source monitoring to determine bin classification, as described in 40 CFR §141.701 to 40 CFR §141.706, as adopted by reference in R 325.10720b. Subpart H supplies shall report the alternative source monitoring results to the department, along with supporting information documenting the operating conditions under which the samples were collected.

(d) If a Subpart H supply determines its bin classification under R 325.10611e using alternative source monitoring results that reflect a different intake location or a different procedure for managing the timing or level of withdrawal from the source, the supply shall relocate the intake or permanently adopt the withdrawal procedure, as applicable, not later than the applicable treatment compliance date in R 325.10611g.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611j Enhanced treatment for Cryptosporidium; microbial toolbox; pre-filtration treatment toolbox components.

Rule 611j. (1) Presedimentation is a pre-filtration treatment toolbox component. Subpart H supplies that are subject to R 325.10611d receive 0.5-log Cryptosporidium treatment credit for a presedimentation basin during any month the process meets all of the following criteria:

(a) The presedimentation basin shall be in continuous operation and shall treat the entire plant flow taken from a surface water or GWUDI source.

(b) The subpart H supply shall continuously add a coagulant to the presedimentation basin.

(c) The presedimentation basin shall achieve either of the following performance criteria:

(i) Demonstrates not less than 0.5-log mean reduction of influent turbidity. This reduction shall be determined using daily turbidity measurements in the presedimentation process influent and effluent and shall be calculated as follows:

log10(monthly mean of daily influent turbidity) - log10(monthly mean of daily effluent turbidity).

(ii) Complies with department-approved performance criteria that demonstrate not less than 0.5-log mean removal of micron-sized particulate material through the presedimentation process.

(2) Two-stage lime softening is a pre-filtration treatment toolbox component. Subpart H supplies receive an additional 0.5-log Cryptosporidium treatment credit for a 2-stage lime softening plant if chemical addition and hardness precipitation occur in 2 separate and sequential softening stages before filtration. Both softening stages shall treat the entire plant flow taken from a surface water or GWUDI source.

(3) Bank filtration is a pre-filtration treatment toolbox component. Subpart H supplies using bank filtration when they begin source water monitoring under 40 CFR §141.701(a) shall collect samples as described in 40 CFR §141.703(d) and are not eligible for this credit. The department adopts 40 CFR §141.701 and 40 CFR §141.703 by reference in R 325.10720b. Subpart H supplies receive Cryptosporidium treatment credit for bank filtration that serves as pretreatment to a filtration plant by meeting all of the following criteria:

(a) Wells with a groundwater flow path of not less than 25 feet receive 0.5-log treatment credit; wells with a groundwater flow path of not less than 50 feet receive 1.0-log treatment credit. The groundwater flow path shall be determined as specified in subdivision (d) of this subrule.

(b) Only wells in granular aquifers are eligible for treatment credit. Granular aquifers are those comprised of sand, clay, silt, rock fragments, pebbles or larger particles, and minor cement. A subpart H supply shall characterize the aquifer at the well site to determine aquifer properties. Subpart H supplies shall extract a core from the aquifer and demonstrate that in not less than 90% of the core length, grains less than 1.0 mm in diameter constitute not less than 10% of the core material.

(c) Only horizontal and vertical wells are eligible for treatment credit.

(d) For vertical wells, the groundwater flow path is the measured distance from the edge of the surface water body under high flow conditions, determined by the 100 year floodplain elevation boundary or by the floodway, as defined in Federal Emergency Management Agency flood hazard maps, to the well screen. For horizontal wells, the groundwater flow path is the measured distance from the bed of the river under normal flow conditions to the closest horizontal well lateral screen.

(e) Subpart H supplies shall monitor each wellhead for turbidity at least once every 4 hours while the bank filtration process is in operation. If monthly average turbidity levels, based on daily maximum values in the well, exceed 1 NTU, the subpart H supply shall report this result to the department and conduct an assessment within 30 days to determine the cause of the high turbidity levels in the well. If the department determines that microbial removal has been compromised, the department may revoke treatment credit until the subpart H supply implements corrective actions approved by the department to remediate the problem.

(f) Springs and infiltration galleries are not eligible for treatment credit under this rule, but are eligible for credit under R 325.10611k(3).

(g) The department may approve Cryptosporidium treatment credit for bank filtration based on a demonstration of performance study. This treatment credit may be greater than 1.0-log and may be awarded to bank filtration that does not meet the criteria in subdivisions (a) to (e) of this subrule. The bank filtration demonstration of performance study shall meet both of the following criteria:

(i) The study shall follow a department-approved protocol and shall involve the collection of data on the removal of Cryptosporidium or a surrogate for Cryptosporidium and related hydrogeologic and water quality parameters during the full range of operating conditions.

(ii) The study shall include sampling both from the production well or wells and from monitoring wells that are screened and located along the shortest flow path between the surface water source and the production well or wells.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611k Enhanced treatment for Cryptosporidium; microbial toolbox; treatment performance toolbox components.

Rule 611k. (1) Combined filter performance is a treatment performance toolbox component. Subpart H supplies that are subject to R 325.10611d and that use conventional filtration treatment or direct filtration treatment receive an additional 0.5-log Cryptosporidium treatment credit during any month the subpart H supply meets the criteria in this subrule. Combined filter effluent (CFE) turbidity shall be less than or equal to 0.15 NTU in not less than 95% of the measurements. Turbidity shall be measured as described in R 325.10605 and R 325.10720(2).

(2) Individual filter performance is a treatment performance toolbox component. Compliance with the criteria in this subrule shall be based on individual filter turbidity monitoring as described in R 325.10720(2)(c) to (d). Subpart H supplies using conventional filtration treatment or direct filtration treatment receive 0.5-log Cryptosporidium treatment credit, which can be in addition to the 0.5-log credit under subrule (1) of this rule, during any month the supply meets all of the following criteria:

(a) The filtered water turbidity for each individual filter shall be less than or equal to 0.15 NTU in not less than 95% of the measurements recorded each month.

(b) No individual filter may have a measured turbidity greater than 0.3 NTU in 2 consecutive measurements taken 15 minutes apart.

(c) A supply that has received treatment credit for individual filter performance and fails to meet the requirements of subdivision (a) or (b) of this subrule during any month does not receive a treatment technique violation under R 325.10611f(3) if the department determines both of the following:

(i) The failure was due to unusual and short-term circumstances that could not reasonably be prevented through optimizing treatment plant design, operation, and maintenance.

(ii) The supply has experienced not more than 2 such failures in any calendar year.

(3) Demonstration of performance is a treatment performance toolbox component. The department may approve Cryptosporidium treatment credit for drinking water treatment processes based on a demonstration of performance study. This treatment credit may be greater than or less than the prescribed treatment credits in R 325.10611f or R 325.10611j to R 325.10611m and may be awarded to treatment processes that do not meet the criteria for the prescribed credits. All of the following apply to the demonstration of performance study:

(a) Subpart H supplies cannot receive the prescribed treatment credit for any toolbox option in R 325.10611j to R 325.10611m if that toolbox option is included in a demonstration of performance study for which treatment credit is awarded under this subrule.

(b) The demonstration of performance study shall follow a department-approved protocol, using pilot plant studies or other means, and shall demonstrate the level of Cryptosporidium reduction the treatment process will achieve under the full range of expected operating conditions for the supply.

(c) Approval by the department shall be in writing and may include monitoring and treatment performance criteria that the supply shall demonstrate and report on an ongoing basis to remain eligible for the treatment credit. The department may designate those criteria where necessary to verify that the conditions under which the demonstration of performance credit was approved are maintained during routine operation.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611l Enhanced treatment for Cryptosporidium; microbial toolbox; additional filtration toolbox components.

Rule 611l. (1) Bag and cartridge filters is an additional filtration toolbox component. Subpart H supplies that are subject to R 325.10611d receive Cryptosporidium treatment credit of up to 2.0-log for individual bag or cartridge filters and up to 2.5-log for bag or cartridge filters operated in series. To be eligible for this credit, supplies shall report the results of challenge testing that meets the requirements of subdivisions (b) to (i) of this subrule to the department. The filters shall treat the entire plant flow taken from a surface water or GWUDI source. All of the following apply to bag and cartridge filters as an additional filtration toolbox component:

(a) The Cryptosporidium treatment credit awarded to bag or cartridge filters shall be based on the removal efficiency demonstrated during challenge testing that is conducted according to the criteria in subdivisions (b) to (i) of this subrule. A factor of safety equal to 1-log for individual bag or cartridge filters and 0.5-log for bag or cartridge filters in series shall be applied to challenge testing results to determine removal credit. Subpart H supplies may use results from challenge testing conducted before January 5, 2006 if the prior testing was consistent with the criteria specified in subdivisions (b) to (i) of this subrule.

(b) Challenge testing shall be performed on full-scale bag or cartridge filters, and the associated filter housing or pressure vessel, that are identical in material and construction to the filters and housings the supply will use for removal of Cryptosporidium. Bag or cartridge filters shall be challenge tested in the same configuration that the supply will use, either as individual filters or as a series configuration of filters.

(c) Challenge testing shall be conducted using Cryptosporidium or a surrogate that is removed no more efficiently than Cryptosporidium. The microorganism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate shall be determined using a method capable of discreetly quantifying the specific microorganism or surrogate used in the test. Gross measurements such as turbidity may not be used.

(d) The maximum feed water concentration that can be used during a challenge test shall be based on the detection limit of the challenge particulate in the filtrate, that is filtrate detection limit, and shall be calculated using the following equation:

Maximum Feed Concentration = 1 x 10[superscript]4 x (Filtrate Detection Limit)

(e) Challenge testing shall be conducted at the maximum design flow rate for the filter as specified by the manufacturer.

(f) Each filter evaluated shall be tested for a duration sufficient to reach 100% of the terminal pressure drop, which establishes the maximum pressure drop under which the filter may be used to comply with the requirements of R 325.10611d to R 325.10611n and R 325.10720b to R 325.10720e.

(g) Removal efficiency of a filter shall be determined from the results of the challenge test and expressed in terms of log removal values using the following equation:

LRV = LOG10(Cf)-LOG10(Cp)

Where:

LRV = log removal value demonstrated during challenge testing; Cf = the feed concentration measured during the challenge test; and Cp = the filtrate concentration measured during the challenge test. In applying this equation, the same units shall be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, then the term Cp shall be set equal to the detection limit.

(h) Each filter tested shall be challenged with the challenge particulate during all of the following periods over the filtration cycle:

(i) Within 2 hours of start-up of a new filter.

(ii) When the pressure drop is between 45 and 55% of the terminal pressure drop.

(iii) At the end of the cycle after the pressure drop has reached 100% of the terminal pressure drop.

Note to subdivision (h) of this subule: An LRV shall be calculated for each of these challenge periods for each filter tested. The LRV for the filter (LRVfilter) shall be assigned the value of the minimum LRV observed during the 3 challenge periods for that filter.

(i) If fewer than 20 filters are tested, the overall removal efficiency for the filter product line shall be set equal to the lowest LRVfilter among the filters tested. If 20 or more filters are tested, the overall removal efficiency for the filter product line shall be set equal to the 10th percentile of the set of LRVfilter values for the various filters tested. The percentile is defined by (i/(n+1)) where i is the rank of n individual data points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

(j) If a previously tested filter is modified in a manner that could change the removal efficiency of the filter product line, challenge testing to demonstrate the removal efficiency of the modified filter shall be conducted and submitted to the department.

(2) All of the following apply to membrane filtration as an additional filtration toolbox component:

(a) Subpart H supplies receive Cryptosporidium treatment credit for membrane filtration that meets the criteria of this subrule. Membrane cartridge filters that meet the definition of membrane filtration in R 325.10106 are eligible for this credit. The level of treatment credit a supply receives is equal to the lower of the values determined under both of the following:

(i) The removal efficiency demonstrated during challenge testing conducted under the conditions in subdivision (b) of this subrule.

(ii) The maximum removal efficiency that can be verified through direct integrity testing used with the membrane filtration process under the conditions in subdivision (c) of this subrule.

(b) Challenge testing demonstrates removal efficiency. The membrane used by the subpart H supply shall undergo challenge testing to evaluate removal efficiency, and the supply shall report the results of challenge testing to the department. Challenge testing shall be conducted according to all of the criteria in paragraphs (i) to (vii) of this subdivision. Subpart H supplies may use data from challenge testing conducted before January 5, 2006 if the prior testing was consistent with all of the criteria in paragraphs (i) to (vii) of this subdivision.

(i) Challenge testing shall be conducted on either a full-scale membrane module, identical in material and construction to the membrane modules used in the supply's treatment facility, or a smaller-scale membrane module, identical in material and similar in construction to the full-scale module. A module is defined as the smallest component of a membrane unit in which a specific membrane surface area is housed in a device with a filtrate outlet structure.

(ii) Challenge testing shall be conducted using Cryptosporidium oocysts or a surrogate that is removed no more efficiently than Cryptosporidium oocysts. The organism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate, in both the feed and filtrate water, shall be determined using a method capable of discretely quantifying the specific challenge particulate used in the test. Gross measurements such as turbidity may not be used.

(iii) The maximum feed water concentration that can be used during a challenge test is based on the detection limit of the challenge particulate in the filtrate and shall be determined according to the following equation:

Maximum Feed Concentration = 3.16 x 10[superscript]6 x (Filtrate Detection Limit)

(iv) Challenge testing shall be conducted under representative hydraulic conditions at the maximum design flux and maximum design process recovery specified by the manufacturer for the membrane module. Flux is defined as the throughput of a pressure driven membrane process expressed as flow per unit of membrane area. Recovery is defined as the volumetric percent of feed water that is converted to filtrate over the course of an operating cycle uninterrupted by events such as chemical cleaning or a solids removal process, that is, backwashing.

(v) Removal efficiency of a membrane module shall be calculated from the challenge test results and expressed as a log removal value according to the following equation:

LRV = LOG10(Cf)-LOG10(Cp)

Where:

LRV = log removal value demonstrated during the challenge test; Cf = the feed concentration measured during the challenge test; and Cp = the filtrate concentration measured during the challenge test. Equivalent units shall be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, the term Cp is set equal to the detection limit for the purpose of calculating the LRV. An LRV shall be calculated for each membrane module evaluated during the challenge test.

(vi) The removal efficiency of a membrane filtration process demonstrated during challenge testing shall be expressed as a log removal value (LRVC-Test). If fewer than 20 modules are tested, then LRVC-Test is equal to the lowest of the representative LRVs among the modules tested. If 20 or more modules are tested, then LRVC-Test is equal to the 10th percentile of the representative LRVs among the modules tested. The percentile is defined by (i/(n+1)) where i is the rank of n individual data points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

(vii) The challenge test shall establish a quality control release value (QCRV) for a nondestructive performance test that demonstrates the Cryptosporidium removal capability of the membrane filtration module. This performance test shall be applied to each production membrane module used by the supply that was not directly challenge tested in order to verify Cryptosporidium removal capability. Production modules that do not meet the established QCRV are not eligible for the treatment credit demonstrated during the challenge test.

(viii) If a previously tested membrane is modified in a manner that could change the removal efficiency of the membrane or the applicability of the nondestructive performance test and associated QCRV, additional challenge testing to demonstrate the removal efficiency of, and determine a new QCRV for, the modified membrane shall be conducted and submitted to the department.

(c) Direct integrity testing demonstrates removal efficiency. Subpart H supplies shall conduct direct integrity testing in a manner that demonstrates a removal efficiency equal to or greater than the removal credit awarded to the membrane filtration process. A direct integrity test is defined as a physical test applied to a membrane unit in order to identify and isolate integrity breaches for example, 1 or more leaks that could result in contamination of the filtrate. The direct integrity testing shall meet all of the following requirements:

(i) The direct integrity test shall be independently applied to each membrane unit in service. A membrane unit is defined as a group of membrane modules that share common valving that allows the unit to be isolated from the rest of the system for the purpose of integrity testing or other maintenance.

(ii) The direct integrity method shall have a resolution of 3 micrometers or less, where resolution is defined as the size of the smallest integrity breach that contributes to a response from the direct integrity test.

(iii) The direct integrity test shall have a sensitivity sufficient to verify the log treatment credit awarded to the membrane filtration process by the department, where sensitivity is defined as the maximum log removal value that can be reliably verified by a direct integrity test. Sensitivity shall be determined using the approach in either of the following as applicable to the type of direct integrity test the supply uses:

(A) For direct integrity tests that use an applied pressure or vacuum, the direct integrity test sensitivity shall be calculated according to the following equation:

LRVDIT = LOG10 (Qp /(VCF x Qbreach))

Where:

LRVDIT = the sensitivity of the direct integrity test; Qp = total design filtrate flow from the membrane unit; Qbreach = flow of water from an integrity breach associated with the smallest integrity test response that can be reliably measured, and VCF = volumetric concentration factor. The volumetric concentration factor is the ratio of the suspended solids concentration on the high pressure side of the membrane relative to that in the feed water.

(B) For direct integrity tests that use a particulate or molecular marker, the direct integrity test sensitivity shall be calculated according to the following equation:

LRVDIT = LOG10(Cf)-LOG10(Cp)

Where:

LRVDIT = the sensitivity of the direct integrity test; Cf = the typical feed concentration of the marker used in the test; and Cp = the filtrate concentration of the marker from an integral membrane unit.

(iv) Supplies shall establish a control limit within the sensitivity limits of the direct integrity test that is indicative of an integral membrane unit capable of meeting the removal credit awarded by the department.

(v) If the result of a direct integrity test exceeds the control limit established under paragraph (iv) of this subdivision, the supply shall remove the membrane unit from service. Supplies shall conduct a direct integrity test to verify the repairs, and may return the membrane unit to service only if the direct integrity test is within the established control limit.

(vi) Supplies shall conduct direct integrity testing on each membrane unit at a frequency of at least once each day that the membrane unit is in operation. The department may approve less frequent testing, based on demonstrated process reliability, the use of multiple barriers effective for Cryptosporidium, or reliable process safeguards.

(d) Indirect integrity monitoring is required on membrane units. Supplies shall conduct continuous indirect integrity monitoring on each membrane unit according to all of the criteria in this subdivision. "Indirect integrity monitoring" is defined as monitoring some aspect of filtrate water quality that is indicative of the removal of particulate matter. A supply that implements continuous direct integrity testing of membrane units under the criteria in subdivision (c)(i) to (v) of this subrule is not subject to the requirements for continuous indirect integrity monitoring. Supplies shall submit a monthly report to the department summarizing all continuous indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken in each case. All of the following apply to continuous indirect integrity monitoring on each membrane unit:

(i) Unless the department approves an alternative parameter, continuous indirect integrity monitoring shall include continuous filtrate turbidity monitoring.

(ii) Continuous monitoring shall be conducted at a frequency of at least once every 15 minutes.

(iii) Continuous monitoring shall be separately conducted on each membrane unit.

(iv) If indirect integrity monitoring includes turbidity and if the filtrate turbidity readings are above 0.15 NTU for a period greater than 15 minutes, that is, 2 consecutive 15-minute readings above 0.15 NTU, direct integrity testing shall immediately be performed on the associated membrane unit as specified in subdivision (c)(i) to (v) of this subrule.

(v) If indirect integrity monitoring includes a department-approved alternative parameter and if the alternative parameter exceeds a department-approved control limit for a period greater than 15 minutes, direct integrity testing shall immediately be performed on the associated membrane units as specified in subdivision (c)(i) to (v) of this subrule.

(3) Second stage filtration is an additional filtration toolbox component. Subpart H supplies receive 0.5-log Cryptosporidium treatment credit for a separate second stage of filtration that consists of sand, dual media, GAC, or other fine grain media following granular media filtration if the department approves. To be eligible for this credit, the first stage of filtration shall be preceded by a coagulation step and both filtration stages shall treat the entire plant flow taken from a surface water or GWUDI source. A cap, such as GAC, on a single stage of filtration is not eligible for this credit. The department shall approve the treatment credit based on an assessment of the design characteristics of the filtration process.

(4) Slow sand filtration, as secondary filter, is an additional filtration toolbox component. Subpart H supplies may receive 2.5-log Cryptosporidium treatment credit for a slow sand filtration process that follows a separate stage of filtration if both filtration stages treat entire plant flow taken from a surface water or GWUDI source and no disinfectant residual is present in the influent water to the slow sand filtration process. The department shall approve the treatment credit based on an assessment of the design characteristics of the filtration process. This subrule does not apply to treatment credit awarded to slow sand filtration used as a primary filtration process.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611m Enhanced treatment for Cryptosporidium; microbial toolbox; inactivation toolbox components.

Rule 611m. (1) Calculation of CT values is an inactivation toolbox component. All of the following apply to CT calculation of subpart H supplies that are subject to R 325.10611d:

(a) CT is the product of the disinfectant contact time (T, in minutes) and disinfectant concentration (C, in milligrams per liter). Subpart H supplies with treatment credit for chlorine dioxide or ozone under subrule (2) or (3) of this rule shall calculate CT at least once each day, with both C and T measured during peak hourly flow as specified in R 325.10605.

(b) Subpart H supplies with several disinfection segments in sequence may calculate CT for each segment, where a disinfection segment is defined as a treatment unit process with a measurable disinfectant residual level and a liquid volume. Under this approach, supplies shall add the Cryptosporidium CT values in each segment to determine the total CT for the treatment plant.

(2) CT values for chlorine dioxide and ozone is an inactivation toolbox component. Both of the following apply to CT values:

(a) Subpart H supplies receive the Cryptosporidium treatment credit listed in the following table by meeting the corresponding chlorine dioxide CT value for the applicable water temperature, as described in subrule (1) of this rule:

CT Values in milligram-minutes per liter (mg-min/L) for Cryptosporidium Inactivation by Chlorine Dioxide *

Log credit	Water Temperature, in degrees Celsius										
	less than or equal to 0.5	1	2	3	5	7	10	15	20	25	30
(i) 0.25	159	153	140	128	107	90	69	45	29	19	12
(ii) 0.5	319	305	279	256	214	180	138	89	58	38	24
(iii) 1.0	637	610	558	511	429	360	277	179	116	75	49
(iv) 1.5	956	915	838	767	643	539	415	268	174	113	73
(v) 2.0	1275	1220	1117	1023	858	719	553	357	232	150	98
(vi) 2.5	1594	1525	1396	1278	1072	899	691	447	289	188	122
(vii) 3.0	1912	1830	1675	1534	1286	1079	830	536	347	226	147

* Supplies may use this equation to determine log credit between the indicated values: Log credit = (0.001506 x (1.09116)Temp) x CT.

(b) Subpart H supplies receive the Cryptosporidium treatment credit listed in the following table by meeting the corresponding ozone CT values for the applicable water temperature, as described in subrule (1) of this rule:

CT Values in milligram-minutes per liter (mg-min/L) for Cryptosporidium Inactivation by Ozone *

Log credit	Water Temperature, in degrees Celsius										
	less than or equal to 0.5	1	2	3	5	7	10	15	20	25	30
(i) 0.25	6.0	5.8	5.2	4.8	4.0	3.3	2.5	1.6	1.0	0.6	0.39
(ii) 0.5	12	12	10	9.5	7.9	6.5	4.9	3.1	2.0	1.2	0.78
(iii) 1.0	24	23	21	19	16	13	9.9	6.2	3.9	2.5	1.6
(iv) 1.5	36	35	31	29	24	20	15	9.3	5.9	3.7	2.4
(v) 2.0	48	46	42	38	32	26	20	12	7.8	4.9	3.1
(vi) 2.5	60	58	52	48	40	33	25	16	9.8	6.2	3.9
(vii) 3.0	72	69	63	57	47	39	30	19	12	7.4	4.7

* Supplies may use this equation to determine log credit between the indicated values: Log credit = (0.0397 x (1.09757)Temp) x CT.

(3) Site-specific study is an inactivation toolbox component. The department may approve alternative chlorine dioxide or ozone CT values to those listed in subrule (2) of this rule on a site-specific basis. The department shall base this approval on a site-specific study a subpart H supply conducts that follows a department-approved protocol.

(4) Ultraviolet light is an inactivation toolbox component. Subpart H supplies receive Cryptosporidium, Giardia lamblia, and virus treatment credits for ultraviolet (UV) light reactors by achieving the corresponding UV dose values shown in subdivision (a) of this subrule. Supplies shall validate and monitor UV reactors as described in subdivisions (b) and (c) of this subrule to demonstrate that they are achieving a particular UV dose value for treatment credit. All of the following apply to UV:

(a) The following table is the UV dose table. The treatment credits listed in this table are for UV light at a wavelength of 254 nanometers as produced by a low pressure mercury vapor lamp. To receive treatment credit for other lamp types, subpart H supplies shall demonstrate an equivalent germicidal dose through reactor validation testing, as described in subdivision (b) of this subrule. The UV dose values in this table are applicable only to post-filter applications of UV in supplies.

UV Dose Table for Cryptosporidium, Giardia lamblia, and Virus Inactivation Credit

Log credit	Cryptosporidium UV dose in milli-joule per centimeters squared (mJ/ cm^2)	Giardia lamblia UV dose (mJ/cm^2)	Virus UV dose (mJ/cm^2)
(i) 0.5	1.6	1.5	39
(ii) 1.0	2.5	2.1	58
(iii) 1.5	3.9	3.0	79
(iv) 2.0	5.8	5.2	100
(v) 2.5	8.5	7.7	121
(vi) 3.0	12	11	143
(vii) 3.5	15	15	163
(viii) 4.0	22	22	186

(b) Subpart H supplies shall use UV reactors that have undergone validation testing to determine the operating conditions under which the reactor delivers the UV dose required in subdivision (a) of this subrule, that is, validated operating conditions. These operating conditions shall include flow rate, UV intensity as measured by a UV sensor, and UV lamp status. All of the following provisions apply to reactor validation testing:

(i) When determining validated operating conditions, supplies shall account for all of the following factors:

(A) UV absorbance of the water; lamp fouling and aging.

(B) Measurement uncertainty of on-line sensors.

(C) UV dose distributions arising from the velocity profiles through the reactor.

(D) Failure of UV lamps or other critical system components.

(E) Inlet and outlet piping or channel configurations of the UV reactor.

(ii) Validation testing shall include both of the following:

(A) Full scale testing of a reactor that conforms uniformly to the UV reactors used by the supply.

(B) Inactivation of a test microorganism whose dose response characteristics have been quantified with a low pressure mercury vapor lamp.

(iii) The department may approve an alternative approach to validation testing.

(c) Both of the following provisions apply to reactor monitoring:

(i) Supplies shall monitor their UV reactors to determine if the reactors are operating within validated conditions, as determined under subdivision (b) of this subrule. This monitoring shall include UV intensity as measured by a UV sensor, flow rate, lamp status, and other parameters the department designates based on UV reactor operation. Supplies shall verify the calibration of UV sensors and shall recalibrate sensors under a protocol the department approves.

(ii) To receive treatment credit for UV light, supplies shall treat not less than 95% of the water delivered to the public during each month by UV reactors operating within validated conditions for the required UV dose, as described in subdivisions (a) and (b) of this subrule. Supplies shall demonstrate compliance with this condition by the monitoring required under paragraph (i) of this subdivision.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10611n Enhanced treatment for Cryptosporidium; requirements to respond to significant deficiencies identified in sanitary surveys performed by U.S. environmental protection agency (EPA).

Rule 611n. (1) A sanitary survey is defined in R 325.10108(a). Community or noncommunity water supplies are also considered "water supplies" or "supplies" in this rule.

(2) For the purposes of this rule, a significant deficiency includes a defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that EPA determines to be causing, or has the potential for causing the introduction of contamination into the water delivered to consumers.

(3) For sanitary surveys performed by EPA, water supplies shall respond in writing to significant deficiencies identified in sanitary survey reports not later than 45 days after receipt of the report, indicating how and on what schedule the supply will address significant deficiencies noted in the survey.

(4) Supplies shall correct significant deficiencies identified in sanitary survey reports according to the schedule approved by EPA, or if there is no approved schedule, according to the schedule reported under subrule (3) of this rule if those deficiencies are within the control of the supply.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10612 Groundwater supply rules; general requirements; applicability.

Rule 612. (1) This rule, R 325.10612a, and R 325.10739 to R 325.10739b apply to all community and noncommunity water supplies that use groundwater except that it does not apply to public water supplies that combine all of their groundwater with surface water or with groundwater under the direct influence of surface water before treatment under R 325.10611. For purposes of this rule, R 325.10612a, and R 325.10739 to R 325.10739b, "groundwater supply" is defined as any community water supply or noncommunity water supply meeting this applicability statement, including consecutive supplies receiving finished groundwater.

(2) Groundwater supplies subject to this rule shall comply with all of the following requirements:

(a) Groundwater supplies shall provide the department, at the department's request, any existing information that will enable the department to conduct a sanitary survey as defined in R 325.10108.

(b) Microbial source water monitoring requirements for groundwater supplies that do not treat all of their groundwater to not less than 99.99% (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 as described in R 325.10739.

(c) Treatment technique requirements, described in R 325.10612a, that apply to groundwater supplies that have fecally contaminated source waters, as determined by source water monitoring conducted under R 325.10739, or that have significant deficiencies. A significant deficiency includes but is not limited to, a defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers. A groundwater supply with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of this rule shall implement 1 or more of the following corrective action options:

(i) Correct all significant deficiencies.

(ii) Provide an alternate source of water.

(iii) Eliminate the source of contamination

(iv) Provide treatment that reliably achieves not less than 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.

(d) Groundwater supplies that provide not less than 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 are required to conduct compliance monitoring to demonstrate treatment effectiveness, as described in R 325.10739a.

(e) If requested by the department, groundwater supplies shall provide the department with any existing information that will enable the department to perform a hydrogeologic sensitivity assessment. For the purposes of this rule, "hydrogeologic sensitivity assessment" is a determination of whether groundwater supplies obtain water from hydrogeologically sensitive settings.

(f) Groundwater supplies shall comply, unless otherwise required, with the requirements of this rule beginning December 1, 2009.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10612a Groundwater supply rules; treatment technique requirements for groundwater supplies.

Rule 612a. (1) All of the following apply to groundwater supplies that are subject to R 325.10612 with significant deficiencies or source water fecal contamination:

(a) The treatment technique requirements of this rule shall be met by groundwater supplies when a significant deficiency is identified or when a groundwater source sample collected under R 325.10739(1)(c) is fecal indicator-positive.

(b) If directed by the department, a groundwater supply with a groundwater source sample collected under sampling requirements of R 325.10739(1)(b), consecutive and wholesale supply requirements of R

325.10739(1)(d), or assessment source water requirements of R 325.10739(2) that is fecal indicator-positive shall comply with the treatment technique requirements of this rule.

(c) When a significant deficiency is identified at a Subpart H supply that uses both groundwater and surface water or groundwater under the direct influence of surface water, the Subpart H supply shall comply with this subrule except where the department determines that the significant deficiency is in a portion of the distribution system that is served solely by surface water or groundwater under the direct influence of surface water.

(d) Unless the department directs the groundwater supply to implement a specific corrective action, the groundwater supply shall consult with the department regarding the appropriate corrective action within 30 days of receiving written notice from the department of a significant deficiency, written notice from a laboratory that a groundwater source sample collected under R 325.10739(1)(c) was found to be fecal indicator-positive, or direction from the department that a fecal indicator-positive collected under sampling requirements of R 325.10739(1)(b), consecutive and wholesale supply requirements of R 325.10739(1)(d), or assessment source water requirements of R 325.10739(2) requires corrective action. For purposes of this rule, R 325.10612, and R 325.10739 to R 325.10739b, significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

(e) Within 120 days, or earlier if directed by the department, of receiving written notification from the department of a significant deficiency, written notice from a laboratory that a groundwater source sample collected under R 325.10739(1)(c) was found to be fecal indicator-positive, or direction from the department that a fecal indicator-positive sample collected under sampling requirements of R 325.10739(1)(b), consecutive and wholesale supply requirements of R 325.10739(1)(d), or assessment source water requirements of R 325.10739(2) requires corrective action, the groundwater supply shall comply with either of the following:

(i) Have completed corrective action under applicable department plan review processes or other department guidance or direction, if any, including department-specified interim measures.

(ii) Be in compliance with a department-approved corrective action plan and schedule subject to both of the following conditions:

(A) Any subsequent modifications to a department-approved corrective action plan and schedule shall also be approved by the department.

(B) If the department specifies interim measures for protection of the public health pending department approval of the corrective action plan and schedule or pending completion of the corrective action plan, the groundwater supply shall comply with these interim measures as well as with any schedule specified by the department.

(f) Groundwater supplies that meet the conditions of subdivision (a) or (b) of this subrule shall implement 1 or more of the following corrective action alternatives:

(i) Correct all significant deficiencies.

(ii) Provide an alternate source of water.

(iii) Eliminate the source of contamination.

(iv) Provide treatment that reliably achieves not less than 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 the groundwater source.

(g) A community groundwater supply that receives notice from the department of a significant deficiency or notification of a fecal indicator-positive groundwater source sample that is not invalidated by the department under R 325.10739(3) is subject to R 325.10408c.

(2) Both of the following shall conduct compliance monitoring under R 325.10739a:

(a) A groundwater supply that is not required to meet the source water monitoring requirements of R 325.10612, this rule, R 325.10612b, or R 325.10739 to R 325.10739b for 1 or more groundwater sources because it provides not less than 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 1 or more groundwater sources before December 1, 2009.

(b) A groundwater supply that places a groundwater source in service after November 30, 2009, that is not required to meet the source water monitoring requirements of R 325.10612, this rule, R 325.10612b, or R 325.10739 to R 325.10739b because the groundwater supply provides not less than 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 the groundwater source.

(3) A groundwater supply may discontinue 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 a groundwater source if the department determines and documents in writing that 4-log treatment of viruses is no longer necessary for that groundwater source. A groundwater supply that discontinues 4-log treatment of viruses is subject to the source water monitoring requirements of R 325.10739.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10612b Groundwater supply rules; treatment technique violations for groundwater supplies.

Rule 612b. (1) A groundwater supply subject to R 325.10612 with a significant deficiency is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the department) of receiving written notice from the department of the significant deficiency, either of the following conditions exist:

(a) The groundwater supply does not complete corrective action under any applicable department plan review processes or other department guidance and direction, including department specified interim actions and measures.

(b) The groundwater supply is not in compliance with a department-approved corrective action plan and schedule.

(2) Unless the department invalidates a fecal indicator-positive groundwater source sample under R 325.10739(3), a groundwater supply is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the department) of meeting the conditions of R 325.10612a(1)(a) or (b), either of the following conditions exist:

(a) The groundwater supply does not complete corrective action under any applicable department plan review processes or other department guidance and direction, including department-specified interim measures.

(b) The groundwater supply is not in compliance with a department-approved corrective action plan and schedule.

(3) A groundwater supply subject to the requirements of R 325.10739a(3) that fails to maintain not less than 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 a groundwater source is in violation of the treatment technique requirement if the failure is not corrected within 4 hours of determining the groundwater supply is not maintaining not less than 4-log treatment of viruses before or at the first customer.

(4) A groundwater supply shall give public notification under R 325.10403 for the treatment technique violations specified in subrules (1) to (3) of this rule.

History: 2009 MR 23, Eff. Dec. 4, 2009.

PART 7. SURVEILLANCE, INSPECTION, AND MONITORING

R 325.10701 Purpose.

Rule 701. The purpose of this part is to specify inspection and surveillance activities by the department to assure compliance by a public water supply with the act and these rules; to prescribe certain monitoring requirements and procedures for suppliers of water in accordance with the act and the federal act; and to establish a schedule of fees for the collection and analysis of water samples by the department as required by the act.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

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) Unless otherwise required by this rule, community and noncommunity water supplies which do not collect 5 or more routine samples per month under R 325.10705(2) and R 325.10706(2) shall undergo an initial sanitary survey by June 29, 1994, for community water systems and by June 29, 1999, for noncommunity water systems. These systems shall undergo another sanitary survey every 5 years, except noncommunity water supplies that use only disinfected groundwater not under the direct influence of surface water meeting state drinking water standards shall undergo subsequent sanitary surveys at least once every 10 years after the initial sanitary survey. 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 supplier shall take to improve drinking water quality. Sanitary surveys conducted under subrule (4) of this rule may be used to meet the sanitary survey requirements of this subrule.

(3) Subpart H systems 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. Community water supplies that have undergone sanitary surveys after December 1995 and have demonstrated outstanding performance may reduce the frequency of sanitary surveys to at least once every 5 years.

(4) This subrule is applicable to public water supplies that are subject to the groundwater supply provisions of R 325.10612. Both of the following apply:

(a) Community water supplies shall undergo a sanitary survey at least every 3 years, except as provided in subdivision (b) of this subrule. Noncommunity water supplies shall undergo a sanitary survey at least every 5 years. Each community water supply shall undergo the initial sanitary survey by December 31, 2012, unless the supply meets the requirements of subdivision (b) of this subrule. Each community water supply that meets the requirements of subdivision (b) of this subrule and each noncommunity water supply shall undergo an initial sanitary survey by December 31, 2014.

(b) The department may reduce the frequency of sanitary surveys to once every 5 years for community water supplies if the supply meets either of the following criteria:

(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.

History: 1979 AC; 1991 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10703 On-site inspections and surveillance observations.

Rule 703. On-site inspections and surveillance observations of public water supplies may include, but are not necessarily limited to, a review of all of the following:

(a) Waterworks system physical facilities and equipment.

(b) Administration and recordkeeping.

(c) Sampling techniques, and monitoring activities for water quality.

(d) The maintenance program for the waterworks system.

(e) The design and operation of the waterworks system.

(f) Compliance with operator certification requirements for treatment systems and distribution systems.

(g) A cross-connection control program.

(h) The reliability of the waterworks system.

(i) Security measures provided to protect water quality and the operation of the waterworks system.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10704 Collection and analysis of samples for coliform bacteria generally.

Rule 704. (1) Suppliers of 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.

(2) 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) 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.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10705 Collection and analysis of samples for coliform bacteria; community water systems.

Rule 705. (1) A supplier of water of a community water system shall collect samples of water to be analyzed for the presence of coliform bacteria at sites which are representative of water throughout the distribution system according to a written sample siting plan that is subject to department review and revision.

(2) The monitoring frequency for total coliforms for a community water system is based on the population served by the system as set forth in table 1 of this rule:

Table 1 Total Coliform Monitoring Frequency for Community Water Supplies

Population Served	Minimum Number of Samples Per Month
25 to 1,000 *	1
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

* Includes public water supplies which have not less than 15 service connections, but which serve fewer than 25 persons.

(3) If a community water system that serves 25 to 1,000 persons does not have a history of total coliform contamination in its current configuration and a sanitary survey conducted in the past 5 years shows that the system is supplied solely by a protected groundwater source and is free of sanitary

defects, the department may reduce the monitoring frequency specified in table 1 of this rule, except that the department shall not reduce the monitoring frequency to less than 1 sample per quarter. To be valid, the reduced monitoring frequency shall be approved, in writing, by the department.

(4) Suppliers of water for all community water systems and noncommunity water systems shall collect samples at regular time intervals throughout the monitoring period, except for those groundwater supplies which serve fewer than 4,901 persons and which are not influenced by surface water. Groundwater suppliers that serve fewer than 4,901 persons may collect all required samples on a single day if the samples are taken from different sites.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 1993 MR 6, Eff. July 2, 1993; 2002 MR 10, Eff. May 30, 2002.

R 325.10706 Collection and analysis of samples for coliform bacteria; noncommunity water system.

Rule 706. (1) A supplier of a noncommunity water system shall collect samples for total coliform analysis at sites representative of the water throughout the distribution system according to a written sample siting plan that is subject to department review and revision.

(2) A supplier of a noncommunity water system shall monitor as follows:

(a) A supplier of a noncommunity water system serving more than 1,000 people shall monitor at the same frequency as a like-sized community water system as specified in table 1 of R 325.10705.

(b) A supplier of a noncommunity water system for which complete treatment is required under R 325.10611(1) shall monitor at the same frequency as a like-sized community water system as specified in table 1 of R 325.10705.

(c) A supplier of a system using only groundwater not under the direct influence of surface water and serving fewer than 1,001 people shall monitor each calendar quarter that the system provides water to the public.

(3) The department, based on a satisfactory sanitary survey of a noncommunity water system serving fewer than 1,001 people with a protected groundwater source, may vary the frequency of sampling. However, the frequency shall be at least once per year. The decision to reduce the monitoring frequency shall be in writing.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1989 MR 8, Eff. Sept. 13, 1989; 1991 MR 11, Eff. Nov. 22, 1991; 1993 MR 6, Eff. July 2, 1993; 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10707 Repeat monitoring for coliform bacteria.

Rule 707. (1) If a routine sample is total coliform-positive, a supplier of water shall collect a set of repeat samples within 24 hours of being notified of the positive result. If a supplier of water is required to collect more than 1 routine sample per month, the supplier shall collect not less than 3 repeat samples for each total coliform-positive sample found. If a supplier of water is required to collect not more than 1 routine sample per month, the supplier shall collect not less than 4 repeat samples for each total coliform-positive sample found. The department may extend for a specified time the 24-hour limit on a case-by-case basis if the system has a logistical problem beyond its control in collecting the repeat samples within 24 hours. The requirements for a supplier of water to collect repeat samples shall not be waived.

(2) A supplier of water 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.

(3) If a supplier of water collects a routine sample from within 5 adjacent service connections of a previous coliform-positive sample before being notified of this result, the most recent sample may be considered a repeat sample instead of a routine sample.

(4) A supplier of water shall collect all repeat samples on the same day, except that for a water supply with a single-service connection, a supplier of water may collect the required repeat samples once a day over a 4-day period or collect a large volume repeat sample or samples in 1 or more sample containers of any size if the total volume collected is not less than 400 milliliters or not less than 300 milliliters for suppliers of systems who collect more than 1 routine sample per month.

(5) If 1 or more repeat samples in the set is total coliform-positive, the public water supplier shall collect an additional set of repeat samples, as set forth in this subrule and subrules (1), (2), and (4) of this

rule, and the owner of the public water supply shall notify the department not later than 24 hours or the next business day after learning of the results. The additional samples shall be collected within 24 hours of notification of the positive result, unless the department extends the limit as provided in subrule (1) of this rule. A supplier of water shall repeat this process until either total coliforms are not detected in 1 complete set of repeat samples or the supplier of water determines that the MCL for total coliforms has been exceeded and notifies the department.

(6) When it is determined that an MCL violation for coliform bacteria has occurred, a supplier of water shall do all of the following:

(a) Initiate an investigation to determine the extent of the problem, which may include the collection of additional samples.

(b) Initiate precautionary measures and appropriate corrective actions as required by the department until it is determined by the department that the problem has been resolved.

(c) Conduct additional sampling at a frequency approved by the department until such time that it is determined the problem has been resolved.

(7) If a supplier of water who collects less than 5 routine samples per month has 1 or more total coliform-positive samples and the department does not invalidate the sample or samples pursuant to the provisions of R 325.10707a, the supplier shall collect not less than 5 routine samples during the next month that the supply provides water to the public.

(8) The department may waive the requirement to collect 5 routine samples during the next month that the supplier provides water to the public if the department performs a site visit before the end of the next month that the supplier provides water to the public. The site visit shall be sufficiently detailed to allow the department to determine whether additional monitoring or corrective action, or both, is needed. An employee of the supplier is not eligible to perform this site visit.

(9) The department may waive the requirement to collect 5 routine samples during the next month that the supplier provides water to the public if the department has determined why the sample was total coliform-positive and establishes that the supplier of water has corrected the problem or will correct the problem before the end of the next month that the supplier provides water to the public. The department's decision to waive the following month's additional monitoring requirement shall be in writing and shall be available to the EPA and the public. The requirement to collect 5 routine samples during the next month that the supplier provides water to the public shall not be waived solely because all repeat samples are total coliform-negative. A supplier of water shall collect and have analyzed at least 1 routine sample before the end of the next month the supplier serves water to the public and use it to determine compliance with the MCL for total coliform, unless the department has determined that the supplier of water has corrected the contamination problem before the supplier of water took the set of repeat samples and all repeat samples were total coliform-negative.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991.

R 325.10707a Invalidation of total coliform samples.

Rule 707a. (1) A total coliform sample result may be invalidated by the department in 1 or more of the following instances:

(a) A laboratory determines that analytical results are invalid due to any of the following situations:

(i) In the absence of gas, any turbid culture in the mtf or p-a techniques.

(ii) Confluent growth.

(iii) Any sample that is inoculated 30 hours or more after it was collected.

(iv) Improper sample analysis caused a total coliform positive result.

If a sample is invalidated under this subdivision, the water supply shall collect another sample from the same location as the original sample within 24 hours of being notified until a valid result is obtained. The department may waive the 24-hour time limit on a case-by-case basis.

(b) The department, on the basis of the results of repeat samples, 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. An invalidation under this subrule may occur only if the repeat samples from the same sampling location are total coliform positive and all other repeat samples are total coliform negative.

(c) Substantial evidence suggests that a total coliform positive result is due to 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 and the result does not reflect water quality in the

distribution system. The water supply shall still collect all required repeat samples from approved sites on the sample siting plan.

(2) The decision to invalidate a total coliform positive sample shall be in writing and available to EPA and the public.

(3) A total coliform positive sample shall not be invalidated solely because all repeat samples are total coliform negative.

History: 1991 AACS; 1993 AACS; 1998 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10707b General notification requirements for total coliform and fecal coliform/Escherichia coli (E. coli).

Rule 707b. (1) Except as noted in this rule, a supplier of a public water system shall report to the department the results of the analyses as required in R 325.10734(1).

(2) A supplier that has failed to comply with a coliform monitoring requirement, including the sanitary survey requirement, shall report the monitoring violation to the department within 10 days after the system discovers the violation.

(3) A supplier of a public water system that exceeded the MCL for total coliform under R 325.10602 shall report the violation to the department not later than the end of the next business day after the supplier learns of the violation.

(4) If fecal coliform or E. coli are determined to be present in any routine or repeat sample, the supplier shall notify the department by the end of the day that the supplier is notified of the test result, unless the supplier is notified of the result after the department office is closed, in which case the supplier shall notify the department before the end of the next business day.

History: 1991 MR 11, Eff. Nov. 22, 1991; 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10708 Collection of additional samples.

Rule 708. If a sample which is needed to meet monitoring requirements is invalidated under R 325.10707a, and the public water supply does not learn of the invalidation until the following monitoring period, or 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 valid sample collected may be used to determine compliance with R 325.10705 and R 325.10706. However, a single sample shall not be attributed to more than 1 monitoring period.

History: 1979 AC; 1991 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10709 Special purpose and invalidated samples.

Rule 709. Special purpose samples, such as those taken following water main placement, replacement or repair, and samples invalidated pursuant to the provisions of R 325.10707a shall not be used to determine compliance with the provisions of R 325.10705 and R 325.10706.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 1998 MR 2, Eff. Apr. 8, 1998.

R 325.10710 Collection and analysis of samples for inorganic chemicals.

Rule 710. (1) Suppliers of water of community and noncommunity water systems shall collect water samples and cause analyses to be made for inorganic chemicals to determine compliance with the state drinking water standards in R 325.10604c. Suppliers shall monitor at the time designated by the department during each compliance period.

(2) The department may require samples to be collected and analyzed at a prescribed frequency for inorganic chemicals for type III public water supplies.

(3) Beginning in the initial compliance period, suppliers of community and nontransient, noncommunity water systems shall monitor under this rule to determine compliance with the MCLs for inorganic contaminants in R 325.10604c. Beginning in the initial compliance period, suppliers of transient, noncommunity water systems shall monitor under this rule to determine compliance with the nitrate, nitrite, and total nitrate and nitrite MCLs in R 325.10604c.

(4) Suppliers shall monitor in the following manner:

(a) Suppliers of groundwater systems shall take at least 1 sample at every entry point to the distribution system representative of each well after treatment, also known as sampling point. The

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

(b) Suppliers of surface water systems, or combined surface water and groundwater systems, shall take at least 1 sample at every entry point to the distribution system after the application of treatment or in the distribution system at a sampling point that is representative of each source after treatment, also known as sampling point. The supplier shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(c) If a system draws water from more than 1 source and the sources are combined before distribution, then the supplier shall sample at an entry point to the distribution system during periods when water is representative of all sources being used.

(d) The total number of samples that shall be analyzed to meet the requirements of this rule may be reduced by the department when compositing of samples is utilized. Provisions for compositing of samples are as follows:

(i) Composite samples from a maximum of 5 sampling points are allowed.

(ii) Compositing of samples shall be done in the laboratory.

(iii) If the concentration in the composite sample is greater than or equal to 1/5 of the MCL of any inorganic chemical, then a follow-up sample shall be collected within 14 days from each sampling point included in the composite. These samples shall be analyzed for the contaminants that exceeded 1/5 of the MCL in the composite sample.

(iv) Compositing shall only be performed using samples from within a single water system.

(v) If duplicates of the original sample taken from each sampling point used in the composite are available, then the supplier may use these instead of resampling. The duplicates shall be analyzed and the results reported to the department within 14 days after completing analysis of the composite sample if the holding time of the sample is not exceeded.

(5) The monitoring frequency conducted to determine compliance with the MCLs in R 325.10604c for antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, and thallium shall be as follows:

(a) Suppliers of groundwater systems shall take 1 sample at each sampling point during each compliance period. Suppliers of surface water systems, or combined surface water and groundwater systems, shall take 1 sample annually at each sampling point.

(b) A supplier may apply to the department for a waiver from the monitoring frequencies specified in subdivision (a) of this subrule. The department may grant a waiver for monitoring cyanide if the department determines the system is not vulnerable due to the lack of any industrial source of cyanide. Waiver provisions are as follows:

(i) A supplier shall take at least 1 sample while the waiver is effective.

(ii) The term during which a waiver is effective shall not be more than 1 compliance cycle.

(iii) A waiver may be granted if a surface water supplier has monitored annually for not less than 3 years or a groundwater supplier has conducted not less than 3 rounds of monitoring. At least 1 sample shall have been taken since January 1, 1990. Both surface and groundwater suppliers shall demonstrate that all previous analytical results were less than the MCL. Supplies that use a new water source are not eligible for a waiver until 3 rounds of monitoring from the new source have been completed.

(iv) The department shall consider all of the following factors to determine the appropriate reduced monitoring frequency:

(A) Reported concentrations from all previous monitoring.

(B) The degree of variation in reported concentrations.

(C) Other factors that may affect contaminant concentrations, such as changes in any of the following:

(1) Groundwater pumping rates.

(2) The system's configuration.

(3) The system's operating procedures.

(4) Stream flows or characteristics.

(v) A waiver shall be in writing and shall set forth the basis for the determination. The determination may be initiated by the department or upon an application by the public water supplier specifying the basis for its request. The department may revise the determination based on new data.

(c) Suppliers of systems exceeding the MCLs in R 325.10604c shall monitor quarterly beginning in the next quarter after the violation occurred. The department may decrease the quarterly monitoring requirement to the frequencies specified in subdivisions (a) and (b) of this subrule if it has determined that

the system is reliably and consistently below the MCL. A groundwater supplier shall take not fewer than 2 quarterly samples and a surface water supplier shall take not fewer than 4 quarterly samples before the department's determination.

(d) All new supplies or supplies that use a new source of water shall demonstrate compliance with the MCLs before serving water to the public except as otherwise required in this subdivision. The supply shall also comply with the initial sampling frequencies specified by the department to ensure a system can demonstrate compliance with the MCLs. Before January 23, 2006, new nontransient noncommunity water supplies or supplies that use a new source of water that exceed the arsenic MCL of 0.010 mg/l may use the source only if the supply complies with a consent agreement with the department stipulating a plan and schedule satisfactory to the department to meet the MCL.

(6) The following monitoring frequency shall be conducted to determine compliance with the MCL in R 325.10604c for asbestos:

(a) Suppliers of each community and nontransient, noncommunity water system shall monitor for asbestos during the first 3-year compliance period of each 9-year compliance cycle.

(b) If the supplier believes its water is not vulnerable to either asbestos contamination in its source water or asbestos contamination due to corrosion of asbestos-cement pipe, or both, then it may apply to the department for a waiver of the monitoring requirement in subdivision (a) of this subrule. If the department grants the waiver, then the supplier is not required to monitor. A waiver remains in effect until the completion of the 3-year compliance period. The department may grant a waiver based on a consideration of both of the following factors:

(i) Potential asbestos contamination of the water source.

(ii) The use of asbestos-cement pipe for finished water distribution and the corrosive nature of the water.

(c) A supplier of a system vulnerable to asbestos contamination due solely to the corrosion of asbestos-cement pipe shall take 1 sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(d) A supplier of a system vulnerable to asbestos contamination due solely to source water shall monitor under subrule (4) of this rule.

(e) A supplier of a system vulnerable to asbestos contamination due both to its source water supply and corrosion of asbestos-cement pipe shall take 1 sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(f) A supplier of a system exceeding the MCLs in R 325.10604c shall monitor quarterly beginning in the next quarter after a violation occurred.

(g) The quarterly monitoring requirement may be decreased by the department to the frequency specified in subdivision (a) of this subrule if the department determines that the system is reliably and consistently below the MCL. A groundwater supplier shall take a minimum of 2 quarterly samples and a surface water or combined surface water and groundwater supplier shall take not fewer than 4 quarterly samples before this determination.

(h) If monitoring data collected after January 1, 1990, are generally consistent with the requirements of this subrule, then that data may be used to satisfy the monitoring requirement for the initial compliance period.

(7) The monitoring frequency conducted to determine compliance with the MCLs in R 325.10604c for nitrate shall be as follows:

(a) Community water systems and nontransient, noncommunity water systems served by groundwater systems shall be monitored annually. Systems served by surface water shall be monitored quarterly.

(b) For community and nontransient, noncommunity water systems, the repeat monitoring frequency for groundwater systems shall be quarterly for at least 1 year following any 1 sample in which the concentration is 50% or more of the MCL. The sampling frequency for groundwater systems may be reduced by the department to annually after 4 consecutive quarterly samples are reliably and consistently less than the MCL.

(c) For community and nontransient, noncommunity water systems, the department may allow a surface water supplier to reduce the sampling frequency to annually if all analytical results from 4 consecutive quarters are less than 50% of the MCL. A surface water supplier shall return to quarterly monitoring if any 1 sample is 50% or more of the MCL.

(d) Suppliers of transient, noncommunity water systems shall monitor annually.

(e) After the initial round of quarterly sampling is completed, suppliers of community and nontransient, noncommunity water systems that are monitored annually shall take subsequent samples during the quarter or quarters which previously resulted in the highest analytical result.

(8) The monitoring frequency conducted to determine compliance with the MCLs in R 325.10604c for nitrite shall be as follows:

(a) A supplier of a community water system or a noncommunity water system shall take 1 sample at each sampling point during each compliance period.

(b) After the initial sample, suppliers of systems where an analytical result for nitrite is less than 50% of the MCL shall monitor at the frequency specified by the department.

(c) The repeat monitoring frequency for a system shall be quarterly for at least 1 year following any 1 sample in which the concentration is 50% or more of the MCL. The department may allow a supplier to reduce the sampling frequency to annually after determining the system is reliably and consistently less than the MCL.

(d) Suppliers monitoring annually shall take each subsequent sample during the quarter or quarters that previously resulted in the highest analytical result.

(9) Confirmation samples are required as follows:

(a) Where the results of sampling for any of the following indicate a level that is more than the MCL, the department may require the supply to collect 1 additional sample as soon as possible after the initial sample was taken, but not more than 2 weeks later, at the same sampling point and have it analyzed for the contaminant that was above the MCL:

(i) Antimony.
(ii) Arsenic.
(iii) Asbestos.
(iv)Barium.
(v) Beryllium.
(vi) Cadmium.
(vii) Chromium.
(viii)Cyanide.
(ix) Fluoride.
(x) Mercury.
(xi) Nickel.
(xii) Selenium.
(xiii) Thallium.

(b) Where nitrate or nitrite sampling results indicate a level that is more than the MCL, the supplier shall take a confirmation sample within 24 hours of the supplier's receipt of notification of the analytical results of the first sample. Suppliers that are unable to comply with the 24-hour sampling requirement shall immediately notify the persons served by the area served by the public water system under part 4 of these rules and shall analyze a confirmation sample within 2 weeks of notification of the analytical results of the first sample.

(c) If a confirmation sample required by the department is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to determine the system's compliance under R 325.10604c(2). Results of obvious sampling errors may be deleted by the department.

(10) The department may require more frequent monitoring than specified in this rule or may require confirmation samples for positive or negative results.

(11) Suppliers may apply to the department to conduct more frequent monitoring than the minimum monitoring frequencies specified in this rule.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1993 MR 6, Eff. July 2, 1993; 1994 MR 12, Eff. Jan. 5, 1995; 1998 MR 3, Eff. Apr. 8, 1998; 2002 MR 10, Eff. May 30, 2002; 2005 MR 6, Eff. Apr. 6, 2005.

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), (2008), are adopted by reference. The adopted material is contained in Title 40 CFR parts 136 to 149, which is available from the Superintendent of Documents at the address in R 325.10116(b) for a cost of $64.00 at the time of adoption of these rules. The adopted material is available for inspection, or a copy is available at no cost from the offices of the department at the address in R 325.10116(a). 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 3 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. Lead free is defined in the international plumbing code, 2003 edition, which is adopted by reference in R 408.30701. 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 are adopted by reference. The adopted material is available from the Superintendent of Documents at the address in R 325.10116(b) for a cost of $87.00 at the time of adoption of these rules. The adopted material is available for inspection, or a copy is available at no cost from the offices of the department at the address in R 325.10116(a).

(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.

History: 1994 AACS; 1998 AACS; 2002 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10710b Monitoring requirements for supplies exceeding lead and copper action levels.

Rule 710b. (1) The requirements of this rule are summarized in table 1 of this rule. The following community and nontransient noncommunity water supplies, which are considered "water supplies" or "supplies" in this rule, shall monitor for water quality parameters in addition to lead and copper under this rule:

(a) Large water supplies.

(b) Small and medium size water supplies that exceed the lead or copper action level.

(2) Sample collection methods provisions are as follows:

(a) Tap samples shall be representative of water quality throughout the distribution system taking all of the following factors into account:

(i) The number of persons served.

(ii) The different sources of water.

(iii) The different treatment methods employed by the supply.

(iv) Seasonal variability.

Tap sampling under this subdivision is not required to be conducted at taps targeted for lead and copper sampling under R 325.10710a(1).

(b) Samples collected at the entry point or points to the distribution system shall be from locations that are representative of each source after treatment. If a supply draws water from more than 1 source and the sources are combined before distribution, the supply shall sample at an entry point to the distribution system during periods of normal operating conditions, for example, when water is representative of all sources being used.

(3) The number of samples a supply is required to collect are as follows:

(a) A supply shall collect 2 tap samples for applicable water quality parameters during each monitoring period specified in subrules (4) to (7) of this rule from the following number of sites:

Supply Size (Number of People Served)	Number of Sites for Water Quality Parameters
More than 100,000	25
10,001 to 100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
Fewer than 101	1

(b) Except as provided in subrule (5)(c) of this rule, a water supply shall collect 2 samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in subrule (4) of this rule. During each monitoring period specified in subrules (5) to (7) of this rule, a supply shall collect 1 sample for each applicable water quality parameter at each entry point to the distribution system.

(4) A large water supply shall measure the applicable water quality parameters, at the locations specified in the following subdivisions at taps and at each entry point to the distribution system during each 6-month monitoring period specified in R 325.10710a(4)(a). A small or medium size water supply shall measure the applicable water quality parameters at the locations specified in the following subdivisions during each 6-month monitoring period, as specified in R 325.10710a(4)(a), that the supply exceeds the lead or copper action level:

(a) At taps, a water supply shall measure each of the following:

(i) pH.

(ii) Alkalinity.

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used.

(iv) Silica, when an inhibitor containing a silicate compound is used.

(v) Calcium.

(vi) Conductivity.

(vii) Water temperature.

(b) At each entry point to the distribution system, a water supply shall measure each of the applicable parameters that are listed in subdivision (a) of this subrule.

(5) A large water supply that installs optimal corrosion control treatment under R 325.10604f(2)(d)(iii) shall measure the water quality parameters at the locations and frequencies specified in this subrule during each 6-month monitoring period specified in R 325.10710a(4)(b)(i). A small or medium size water supply that installs optimal corrosion control treatment shall measure the water quality parameters at the locations specified in the following subdivisions during each 6-month monitoring period, as specified in R 325.10710a(4)(b)(ii), that the supply exceeds the lead or copper action level:

(a) At taps, 2 samples for each of the following:

(i) pH.

(ii) Alkalinity.

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used.

(iv) Silica, when an inhibitor containing a silicate compound is used.

(v) Calcium, when calcium carbonate stabilization is used as part of the corrosion control.

(b) Except as provided in subdivision (c) of this subrule, at each entry point to the distribution system, at least 1 sample at least every 2 weeks for each of the following:

(i) pH.

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

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

(c) A ground water supply may limit entry point sampling described in subdivision (b) of this subrule to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated ground water sources mixes with water from treated ground water sources, the supply shall monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Before the start of the monitoring under this subdivision, the supply shall provide to the department written information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(6) After the department specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under R 325.10604f(3)(f), large water supplies shall measure the applicable water quality parameters under subrule (5) of this rule and determine compliance with the requirement of R 325.10604f(3)(g) every 6 months with the first 6-month period to begin on either January 1 or July 1, whichever comes first, after the department specifies the optimal values under R 325.10604f(3)(f). A small or medium size water supply shall measure the applicable water quality parameters under subrule (5) of this rule during each 6-month period, as specified in this subrule that the supply exceeds the lead or copper action level. For the small or medium size water supply subject to a reduced monitoring frequency under R 325.10710a(4)(d) when the action level is exceeded, the start of the applicable 6-month period under this subrule shall coincide with the start of the applicable monitoring period under R 325.10710a(4)(d). Compliance with department designated optimal water quality parameter values shall be determined as specified under R 325.10604f(3)(g).

(7) Reduced monitoring provisions are as follows:

(a) A supply that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of 2 consecutive 6-month monitoring periods under subrule (6) of this rule shall continue monitoring applicable water quality parameters at the locations and frequencies specified in subrule (5) of this rule. The supply may reduce the number of sites from which it monitors during each 6-month monitoring period to the following:

Supply Size (Number of People Served)	Reduced Number of Sites For Water Quality Parameters
More than 100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
Fewer than 101	1

(b) Reduced monitoring frequency provisions are as follows:

(i) A water supply that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under R 325.10604f(3)(f) during 3 consecutive years of monitoring specified in this subdivision may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subdivision (a) of this subrule from every 6 months to annually. This sampling begins during the calendar year immediately following the end of the monitoring period in which the third consecutive year of 6-month monitoring occurs. A water supply that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under R 325.10604f(3)(f) during 3 consecutive years of annual monitoring specified in this subdivision may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in subdivision (a) of this subrule from annually to every 3 years. This sampling begins not later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

(ii) A water supply may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in subdivision (a) of this subrule to every 3 years if it demonstrates during 2 consecutive monitoring periods that its tap water lead level at the ninetieth percentile is less than or equal to the PQL for lead specified in 40 C.F.R §141.89(a)(1)(ii), as adopted by reference in R 325.10605, that its tap water copper level at the ninetieth percentile is less than or equal to 0.65 mg/l for copper in R 325.10604f(1)(c), and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department in R 325.10604f(3)(f). Monitoring conducted every 3 years shall be done not later than every third calendar year.

(c) A water supply that conducts sampling annually shall collect the samples evenly throughout the year to reflect seasonal variability.

(d) A water supply subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the department for more than 9 days in a 6-month period specified in R 325.10604f(3)(g) shall resume distribution system tap water sampling under the number and frequency requirements specified in subrule (6) of this rule. The supply may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in subdivision (a) of this subrule after it has completed 2 subsequent consecutive 6-month rounds of monitoring that meet the criteria of that subdivision or may resume triennial monitoring for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either subdivision (b)(i) or (ii) of this subrule.

(8) The results of monitoring conducted in addition to the minimum requirements of this rule shall be considered in determining the concentrations of water quality parameters.

(9) Table 1 of this rule reads as follows:

Table 1 Summary of Monitoring Requirements for Water Quality Parameters – Lead, Copper, Corrosion Control[1]

Monitoring Period	Parameters[2]	Location	Frequency
Initial monitoring	pH, alkalinity, orthophosphate or silica3, calcium, conductivity, temperature	Taps and at entry point or points to distribution system	6 months
After installation of corrosion control	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	Entry point or points to distribution system6	At least every 2 weeks
After department specifies parameter values for optimal corrosion control	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual[5]	Entry point or points to distribution system[6]	At least every 2 weeks
Reduced monitoring	pH, alkalinity, orthophosphate or silica[3], calcium[4]	Taps	Every 6 months annually[7] or every 3 years[8] at a reduced number of sites
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted control), inhibitor dosage rate and inhibitor residual[5]	Entry point or points to distribution system[6]	At least every 2 weeks

[1] Table is for illustrative purposes; consult the text of this part for precise regulatory requirements.

[2] Small and medium size water supplies shall monitor for water quality parameters during monitoring periods in which the supply exceeds the lead or copper action level.

[3] Orthophosphate shall be measured when an inhibitor containing a phosphate compound is used. Silica shall be measured when an inhibitor containing silicate compound is used.

[4] Calcium shall be measured when calcium carbonate stabilization is used as part of corrosion control.

[5] Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) shall be measured when an inhibitor is used.

[6] Ground water supplies may limit monitoring to representative locations throughout the system.

[7] Water supplies may reduce frequency of monitoring for water quality parameters at the tap from every 6 months to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of monitoring.

[8] Water supplies may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every 3 years if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of annual monitoring. Water supplies may accelerate to triennial monitoring for water quality parameters at the tap if they have maintained ninetieth percentile lead levels less than or equal to 0.005 mg/l, ninetieth percentile copper levels less than or equal to 0.65 mg/l, and the range of water quality parameters designated by the department as representing optimal corrosion control during 2 consecutive 6-month monitoring periods.
History: 1994 AACS; 1998 AACS; 2002 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10710c Monitoring requirements for lead and copper in source water.

Rule 710c. (1) Sample location, collection methods, and number of samples required for lead and copper monitoring in source water of community and nontransient noncommunity water supplies are as follows:

(a) A water supply that fails to meet the lead or copper action level based on tap samples collected under R 325.10710a shall collect lead and copper source water samples under the following requirements regarding sample location, number of samples, and collection methods:

(i) Groundwater supplies shall take a minimum of 1 sample at every entry point to the distribution system which is representative of each well after treatment, hereafter called a sampling point. The supply shall take 1 sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(ii) Surface water supplies shall take a minimum of 1 sample at every entry point to the distribution system after the application of treatment or in the distribution system at a point which is representative of each source after treatment, hereafter called a sampling point. The supply shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant. For purposes of this paragraph, surface water supplies include water supplies with a combination of surface and ground sources.

(iii) If a supply draws water from more than 1 source and the sources are combined before distribution, the supply shall sample at an entry point to the distribution system during periods of normal operating conditions, that is, when water is representative of all sources being used.

(b) If the results of sampling, taken to determine compliance with R 325.10604f(4)(b)(iv), indicate an exceedance of the maximum permissible source water levels established by the department, then the department may require that 1 additional sample be collected as soon as possible after the initial sample was taken, but not more than 2 weeks later, at the same sampling point. If a department required confirmation sample is taken for lead or copper, then the results of the initial and confirmation samples shall be averaged to determine compliance with the department specified maximum permissible levels. A sample value below the detection limit shall be considered to be zero. A value above the detection limit, but below the PQL, shall either be considered as the measured value or be considered 1/2 of the PQL.

(2) A water supply that exceeds the lead or copper action level at the tap shall collect 1 source water sample from each entry point to the distribution system not later than 6 months after the end of the monitoring period during which the lead or copper action level was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the department has established an alternate monitoring period, the last day of that period.

(3) A supply that installs source water treatment under R 325.10604f(4)(a)(ii) shall collect an additional source water sample from each entry point to the distribution system during 2 consecutive 6-month monitoring periods by the deadline specified in R 325.10604f(4)(a)(iii).

(4) The following provisions apply to the monitoring frequency after the department specifies maximum permissible source water levels or determines that source water treatment is not needed:

(a) A supply shall monitor to determine compliance with R 325.10604f(4)(b)(iv) at the frequency specified in the following paragraphs where the department specifies maximum permissible source water levels or determines that the supply is not required to install source water treatment:

(i) A water supply using only groundwater shall collect samples once during the 3-year compliance period, as defined in R 325.10103, that is in effect when the applicable department determination under this subdivision is made. The supply shall collect samples once during each subsequent compliance period. Triennial samples shall be collected every third calendar year.

(ii) A water supply using surface water or a combination of surface water and groundwater shall collect samples once during each calendar year. The first annual monitoring period shall begin during the year in which the applicable department determination is made under this subdivision.

(b) A supply is not required to conduct source water sampling for lead or copper if the supply is in compliance with the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the supply under subdivision (a)(i) and (ii) of this subrule.

(5) Reduced monitoring frequency provisions are as follows:

(a) A water supply using only groundwater may reduce the monitoring frequency for lead and copper in source water to once during each 9-year compliance cycle, as defined in R 325.10103 provided that the samples are collected not later than every ninth calendar year and if the supply meets 1 of the following criteria:

(i) The supply demonstrates that finished drinking water entering the distribution system has been maintained below the department specified maximum permissible lead and copper concentrations as required in R 325.10604f(4)(b)(iv) during not less than 3 consecutive compliance periods under subrule (4)(a) of this rule.

(ii) The department has determined that source water treatment is not needed and the supply demonstrates that, during not less than 3 consecutive compliance periods in which sampling was conducted under subrule (4)(a) of this rule, the concentration of lead in source water was less than or equal to 0.005 mg/l and the concentration of copper in source water was less than or equal to 0.65 mg/l.

(b) A water supply using surface water or a combination of surface water and groundwater may reduce the monitoring frequency in subrule (4)(a) of this rule to once during each 9-year compliance cycle, as defined in R 325.10103 provided that the samples are collected not later than every ninth calendar year and if the supply meets either of the following criteria:

(i) The supply demonstrates that finished drinking water entering the distribution system has been maintained below the department specified maximum permissible lead and copper concentrations as required in R 325.10604f(4)(b)(iv) for not less than 3 consecutive years.

(ii) The department has determined that source water treatment is not needed and the supply demonstrates that, during not less than 3 consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/l and the concentration of copper in source water was less than or equal to 0.65 mg/l.

(c) A water supply that uses a new source of water is not eligible for reduced monitoring for lead or copper until concentrations in samples collected from the new source during 3 consecutive monitoring periods are below the department specified maximum permissible lead and copper concentrations as required in R 325.10604f(4)(a)(iv).

History: 1994 AACS; 1998 AACS; 2002 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10710d Reporting requirements for lead, copper, and corrosion control.

Rule 710d. This rule applies to all community and nontransient noncommunity water supplies. These public water supplies are also considered "water supplies" or "supplies" in this rule. Supplies shall report all of the following information to the department:

(a) Reporting provisions for tap water monitoring for lead and copper and for water quality parameter monitoring are as follows:

(i) Except as provided in subparagraph (G) of this paragraph, a water supply shall report the information specified in this paragraph for all tap water samples specified in R 325.10710a and for all water quality parameter samples specified in R 325.10710b within the first 10 days after the end of each applicable monitoring period specified in R 325.10710a and R 325.10710b, for example, every 6 months, annually, every 3 years, or every 9 years. For monitoring periods with a duration less than 6 months, the end of the monitoring period is the last date samples can be collected during that period as specified in R 325.10710a to R 325.10710b. All of the following apply:

(A) The results of all tap samples for lead and copper, including the location of each site and the criteria in R 325.10710a(1)(c), (d), (e), (f), or (g) used to select the site for the system's sampling pool.

(B) Documentation for each tap water lead or copper sample for which the water supply requests invalidation under R 325.10710a(6)(b).

(C)The ninetieth percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, calculated in compliance with the provisions of R 325.10604f(1)(c)(i), unless the department calculates the system's ninetieth percentile lead and copper levels under subdivision (h) of this subrule.

(D) With the exception of initial tap sampling conducted under R 325.10710a(4)(a), a water supply shall designate sites not sampled during previous monitoring periods and include an explanation of why sampling sites have changed.

(E) The results of all tap samples for pH and, where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under R 325.10710b(b) to (e).

(F) The results of all samples collected at the entry point or points to the distribution system for applicable water quality parameters under R 325.10710b(b) to (e).

(G) A water supply shall report the results of all water quality parameter samples collected under R 325.10710b(5) to (8) during each 6-month monitoring period specified in R 325.10710b(6) within the first 10 days following the end of the monitoring period, unless the department has specified a more frequent reporting requirement.

(ii) For a nontransient noncommunity water system, or a community water system meeting the criteria of R 325.10410(3)(g), that does not have enough taps that can provide first draw samples, the supply shall do either of the following as appropriate:

(A) Provide written documentation to the department identifying standing times and locations for enough non-first draw samples to make up its sampling pool under R 325.10710a(2)(e) by the start of the first applicable monitoring period under R 325.10710a(4) that commences after April 11, 2000, unless the department has waived prior department approval of non-first draw sample sites selected by the supply under R 325.10710a(2)(e).

(B) If the department has waived prior approval of non-first draw sample sites selected by the supply, identify, in writing, each site that did not meet the 6-hour minimum standing time and the length of standing time for that particular substitute sample collected under R 325.10710a(2)(e) and include this information with the lead and copper tap sample results submitted under subdivision (a)(i) of this subrule.

(iii) At a time specified by the department, or if no specific time is designated by the department, then as early as possible prior to the addition of a new source or a long-term change in water treatment, a water supply considered to have optimized corrosion control under R 325.10604f(2)(b), a system subject to reduced monitoring under R 325.10710a(4)(d), or a system subject to a monitoring waiver under R 325.10710a(7) shall submit written documentation to the department describing the change or addition. The department shall review and approve the addition of a new source or long-term change in treatment before it is implemented by the water supply. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (for example, alum to ferric chloride), and switching corrosion inhibitor products (for example, orthophosphate to blended phosphate). Long- term changes can include dose changes to existing chemicals if the supply is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes.

(iv) A small water supply applying for a monitoring waiver under R 325.10710a(7), or subject to a waiver granted under R 325.10710a(7)(c), shall provide all of the following information to the department, in writing, by the specified deadline:

(A) By the start of the first applicable monitoring period in R 325.10710a(4), a small water supply applying for a monitoring waiver shall provide the documentation required to demonstrate that it meets the waiver criteria of R 325.10710a(7)(a) and (b).

(B) Not later than 9 years after the monitoring previously conducted under R 325.10710a(7)(b) or R 325.10710a(7)(d)(i), a small water supply desiring to maintain its monitoring waiver shall provide the information required by R 325.10710a(7)(d)(i) and (ii).

(C) Not later than 60 days after it becomes aware that the system is no longer free of lead containing or copper containing material, or both, as appropriate, a small water supply with a monitoring waiver shall provide written notification to the department, setting forth the circumstances resulting in the lead containing or copper containing materials, or both, being introduced into the system and what corrective action, if any, the supply plans to remove these materials.

(v) Each ground water supply that limits water quality parameter monitoring to a subset of entry points under R 325.10710b(5)(c), the supply shall provide, by the commencement of the monitoring, written correspondence to the department that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(b) Source water monitoring provisions are as follows:

(i) A water supply shall report the sampling results for all source water samples collected under R 325.10710c within the first 10 days after the end of each source water monitoring period, for example, annually, per compliance period, or per compliance cycle, specified in R 325.10710c.

(ii) With the exception of the first round of source water sampling conducted under R 325.10710c(2), a supply shall specify sites that were not sampled during previous monitoring periods and include an explanation of why the sampling points have changed.

(c) A supply shall report the following corrosion control treatment information to the department by the applicable dates specified in R 325.10604f(2):

(i) For a supply that has already optimized corrosion control, the information required in R 325.10604f(2)(b)(ii) or (iii).

(ii) For a supply required to optimize corrosion control, the supply's recommendation regarding optimal corrosion control treatment under R 325.10604f(3)(a).

(iii) For a supply that is required to evaluate the effectiveness of corrosion control treatments under R 325.10604f(3)(c), the information required by R 325.10604f(3)(c).

(iv) For a supply required to install optimal corrosion control designated by the department under R 325.10604f(3)(d), documentation certifying that the supply has completed installing the optimal corrosion control.

(d) A water supply shall provide the following source water treatment information to the department by the applicable dates specified in R 325.10604f(4):

(i) If required under R 325.10604f(4)(b)(i), the supply's recommendation regarding source water treatment.

(ii) For a supply required to install source water treatment under R 325.10604f(4)(b)(ii), documentation certifying that the supply has completed installing the treatment designated by the department within 24 months after the department designated the treatment.

(e) A water supply shall report all of the following lead service line replacement information to the department to demonstrate compliance with the requirements of R 325.10604f(5):

(i) Not later than 12 months after the end of a monitoring period in which a supply exceeds the lead action level in sampling referred to in R 325.10604f(5)(a), the supply shall submit written documentation to the department of the materials evaluation conducted as required in R 325.10710a(1), identify the initial number of lead service lines in its distribution system at the time the supply exceeds the lead action level, and provide the supply's schedule for annually replacing not less than 7% of the initial number of lead service lines in its distribution system.

(ii) Not later than 12 months after the end of a monitoring period in which a supply exceeds the lead action level in sampling referred to in R 325.10604f(5)(a), and every 12 months thereafter, the supply shall submit a written report to the department that demonstrates the supply has complied with either of the following requirements:

(A) Replaced, in the previous 12 months, not less than 7% of the initial lead service lines, or a greater number of lines specified by the department under R 325.10604f(5)(e), in its distribution system.

(B) Conducted sampling demonstrating that the lead concentration in all service line samples from an individual line or lines, taken under R 325.10710a(2)(c), is less than or equal to 0.015 mg/l. In those cases, the total number of lines that were replaced or that meet the criteria specified in R 325.10604f(5)(c), or both, shall equal not less than 7% of the initial number of lead lines identified under subdivision (i) of this subrule or the percentage specified by the department under R 325.10604f(5)(e).

(iii) The annual documentation submitted to the department under paragraph (ii) of this subdivision, which shall contain all of the following information:

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

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

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

(iv) At the request of the department, a supply that collects lead service line samples following partial lead service line replacement required by R 325.10604f(5) shall report the results to the department as specified in R 325.10734(1). Supplies shall also report additional information as specified by the department under R 325.11505(2) to verify that all partial lead service line replacement activities have taken place.

(f) A water supply shall provide the following public education reporting information to the department:

(i) A water supply that is subject to the public education requirements in R 325.10410 shall, within 10 days after the end of each period in which the supply is required to perform public education tasks under R 325.10410(3), send written documentation to the department that contains both of the following:

(A) A demonstration that the supply has delivered the public education materials that meet the content requirements in R 325.10410(2) and the delivery requirements in R 325.10410(3).

(B) A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the supply delivered public education materials during the period in which the supply was required to perform public education tasks.

(ii) Unless required by the department, a supply that previously has submitted the information required by paragraph (i)(B) of this subdivision need not resubmit the information required by paragraph (i)(B) of this subdivision, if there have been no changes in the distribution list and the supply certifies that the public education materials were distributed to the same list submitted previously.

(iii) Not later than 3 months following the end of the monitoring period, each supply shall mail a sample copy of the consumer notification of tap results to the department along with a certification that the notification has been distributed consistent with the requirements of R 325.10410(5).

(g) A water supply that collects sampling data in addition to that required by this part shall report the results to the department within the first 10 days following the end of the applicable monitoring period specified in R 325.10710a, R 325.10710b, and R 325.10710c during which the samples are collected.

(h) A water supply is not required to report the ninetieth percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by subrule (a)(i)(C) of this rule if all of the following provisions are satisfied:

(i) The department has previously notified the supply that it will calculate the supply's ninetieth percentile lead and copper concentrations, based on the lead and copper tap results submitted under paragraph (ii)(A) of this subdivision, and has specified a date before the end of the applicable monitoring period by which the supply shall provide the results of lead and copper tap water samples.

(ii) The supply has provided the following information to the department by the date specified in paragraph (i) of this subdivision:

(A) The results of all tap samples for lead and copper including the location of each site and the criteria under R 325.10710a(1)(c), (d), (e), (f), or (g), under which the site was selected for the system's sampling pool, under subdivision (a)(i)(A) of this subrule.

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

(iii) The department has provided the results of the ninetieth percentile lead and copper calculations, in writing, to the supply before the end of the monitoring period.

History: 1994 AACS; 1998 AACS; 2002 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10711 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1989 MR 8, Eff. Sept. 13, 1989; rescinded 1993 MR 6, Eff. July 2, 1993.

R 325.10712 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1989 MR 8, Eff. Sept. 13, 1989; rescinded 1993 MR 6, Eff. July 2, 1993.

R 325.10713 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 1989 MR 8, Eff. Sept. 13, 1989.

R 325.10714 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 1993 MR 6, Eff. July 2, 1993.

R 325.10715 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 1993 MR 6, Eff. July 2, 1993.

R 325.10716 Collection and analysis of samples for VOCs.

Rule 716. (1) Beginning with the initial compliance period, suppliers of community and nontransient, noncommunity water supplies shall collect samples and cause analyses to be made under this rule for volatile organic chemicals to determine compliance with the state drinking water standards in R 325.10604b. Each supplier shall monitor at the time designated by the department within each compliance period. The department may increase required monitoring where necessary to detect variations within a water system.

(2) For transient, noncommunity and type III public water supplies, the department may require samples to be collected and analyzed at prescribed frequencies for organic chemicals.

(3) Suppliers of groundwater systems shall take at least 1 sample at every entry point to the distribution system that is representative of each well after treatment, also known as sampling point. Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(4) Suppliers of surface water systems or combined surface water and groundwater systems shall take at least 1 sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment, also known as sampling point. Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(5) If the system draws water from more than 1 source and the sources are combined before distribution, then the system shall be sampled at an entry point to the distribution system during periods of normal operating conditions when water that is representative of all sources is being used.

(6) Suppliers of each community and nontransient, noncommunity water system shall take 4 consecutive quarterly samples for each contaminant, except for vinyl chloride, in R 325.10604b during each compliance period, beginning in the initial compliance period. Suppliers that use grandfathered samples and that did not detect any VOCs in R 325.10604b, shall, beginning with the initial compliance period, monitor annually under subrule (7) of this rule.

(7) If a supplier does not detect a contaminant in R 325.10604b in the first of the 4 consecutive quarterly samples, then the supplier shall take 1 sample annually beginning with the initial compliance period.

(8) After a supplier has performed annual sampling for not less than 3 years, the department may allow a groundwater supplier that has not previously detected any contaminant in R 325.10604b to reduce monitoring to 1 sample during each compliance period.

(9) Suppliers of each community and nontransient noncommunity groundwater system that do not detect, at or above 0.0005 milligrams per liter, a contaminant in R 325.10604b may apply to the department for a waiver from portions of the requirements of subrules (6) and (7) of this rule after completing the initial monitoring. A waiver shall be effective for not more than 6 years. The department may also issue waivers to small systems for the initial round of 1,2,4 trichlorobenzene monitoring.

(10) The following factors shall be evaluated to determine if a waiver may be granted:

(a) Knowledge of previous use, including transport, storage, or disposal, of the contaminant within the watershed or zone of influence of the system. If a determination by the department reveals no previous use of the contaminant within the watershed or zone of influence, then a waiver may be granted.

(b) If previous use of the contaminant is unknown or the contaminant has been used previously, then all of the following factors shall be used to determine whether a waiver is granted:

(i) Previous analytical results.

(ii) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities or from hazardous and municipal waste landfills and other waste-handling or treatment facilities.

(iii) The environmental persistence and transport of the contaminants.

(iv) The number of persons who are served by the public water system and the proximity of a smaller system to a larger system.

(v) How well the water source is protected against contamination, such as whether it is a surface water or groundwater system. Groundwater supplies shall consider factors such as depth of the well, the type of soil, and wellhead protection. Surface water supplies shall consider watershed protection.

(11) As a condition of a waiver, a groundwater supplier shall take 1 sample at each sampling point during the time the waiver is effective and update its vulnerability assessment considering the factors listed in subrule (10) of this rule. If the department does not reconfirm that the system is nonvulnerable based on this vulnerability assessment within 3 years of the initial determination, then the waiver is invalidated and the supplier is required to sample annually as specified in subrule (7) of this rule.

(12) Suppliers of each community and nontransient noncommunity surface water system that do not detect a contaminant in R 325.10604b may apply to the department for a waiver from the requirements of subrule (7) of this rule after completing the initial monitoring. For a waiver to remain in effect, a supplier of a system that does not detect a contaminant in R 325.10604b shall be determined by the department to be nonvulnerable based on a vulnerability assessment, considering the factors listed in subrule (10) of this rule, during each compliance period. Each supplier that receives a waiver shall sample at the frequency specified by the department.

(13) If a contaminant in R 325.10604b is detected in any sample, then all of the following provisions apply:

(a) The supplier shall monitor quarterly at each sampling point that resulted in a detection.

(b) The department may decrease the quarterly monitoring requirement specified in subdivision (a) of this subrule if it has determined that the system is reliably and consistently below the MCL. A groundwater supplier shall take not fewer than 2 quarterly samples and a surface water supplier shall take not fewer than 4 quarterly samples for this determination.

(c) If the department determines that the system is reliably and consistently below the MCL, then the department may allow the supplier to monitor annually. Suppliers that monitor annually shall monitor during the quarter or quarters that previously yielded the highest analytical result.

(d) Suppliers that conduct 3 consecutive annual samples and do not detect a contaminant may apply to the department for a waiver as specified in subrule (9) of this rule.

(e) Groundwater suppliers that detect 1 or more of the following 2-carbon organic compounds shall monitor quarterly for vinyl chloride:

(i) Trichloroethylene.

(ii) Tetrachloroethylene.

(iii) 1,2-dichloroethane.

(iv) 1,1,1-trichloroethane.

(v) cis-1,2-dichloroethylene.

(vi) trans-1,2-dichloroethylene.

(vii) 1,1-dichloroethylene.

A vinyl chloride sample shall be taken at each sampling point at which 1 or more of the 2-carbon organic compounds were detected. If the results of the first analysis do not detect vinyl chloride, then the department may reduce the quarterly monitoring frequency of vinyl chloride monitoring to 1 sample during each compliance period. Surface water suppliers shall monitor for vinyl chloride as specified by the department.

(14) Suppliers that violate the requirements of R 325.10604b shall monitor quarterly. If not fewer than 4 consecutive quarterly samples show that the system is in compliance with R 325.10604b and the department determines the system is reliably and consistently below the MCL, then the supplier may monitor at the frequency and time specified in subrule (13)(c) of this rule.

(15) The department may require a confirmation sample for positive or negative results. If a confirmation sample is required by the department, then the result shall be averaged with the first sampling result and the average shall be used for the compliance determination as specified by R 325.10604b. The department may delete results of obvious sampling errors from the calculation.

(16) The department may reduce the total number of samples a supplier shall analyze by allowing the use of compositing when the population served by the system is more than 3,300 persons. Composite samples from not more than 5 sampling points within a single water system are allowed if the detection limit of the method used for analysis is less than 1/5 of the MCL. Compositing of samples shall be done

in the laboratory and analyzed within 14 days of sample collection. All of the following provisions apply to compositing:

(a) If the concentration in the composite sample is more than or equal to 0.0005 milligrams per liter for any contaminant in R 325.10604b, then the supplier shall take a follow-up sample within 14 days from each sampling point included in the composite and shall analyze the sample.

(b) If duplicates of the original sample taken from each sampling point used in the composite are available, then the supplier may use these duplicates instead of resampling. The supplier shall analyze the duplicate and shall report the results to the department within 14 days after completing analysis of the composite sample, provided the holding time of the sample is not exceeded.

(c) The method for compositing samples specified in the provisions of 40 C.F.R. part 141, paragraph 141.24(f)(14)(iv) and (v), May 4, 2000, is adopted by reference. The adopted material is available from the superintendent of documents at the address in R 325.10116(b) for a cost of $61.00 at the time of adoption of these rules. The adopted material is available for inspection, or copies are available at no cost from the offices of the department at the address in R 325.10116(a).

(17) All new supplies or supplies that use a new source of water shall demonstrate compliance with the MCLs before serving water to the public. The supply shall also comply with the initial sampling frequencies specified by the department to ensure a supply can demonstrate compliance with the MCLs.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1993 MR 6, Eff. July 2, 1993; 1994 MR 12, Eff. Jan. 5, 1995; 1998 MR 3, Eff. Apr. 8, 1998; 2002 MR 10, Eff. May 30, 2002; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10717 Collection and analysis of samples for synthetic organic chemicals.

Rule 717. (1) Suppliers of community and nontransient, noncommunity water supplies shall collect samples and cause analyses to be made under this rule for synthetic organic chemicals to determine compliance with the state drinking water standards in R 325.10604d. Each supplier shall monitor at the time designated by the department within each compliance period.

(2) A groundwater supplier shall take at least 1 sample at every entry point to the distribution system that is representative of each well after treatment, also known as sampling point. Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(3) A surface water supplier, or combined surface water and ground water, shall take at least 1 sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment, also known as sampling point. Each sample shall be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(4) If a system draws water from more than 1 source and the sources are combined before distribution, then the supplier shall sample at an entry point to the distribution system during periods of normal operating conditions when water that is representative of all sources is being used.

(5) Each community and nontransient, noncommunity water supplier shall take 4 consecutive quarterly samples for each contaminant in R 325.10604d during each compliance period beginning with the initial compliance period.

(6) A supplier serving more than 3,300 people that does not detect a contaminant in the initial compliance period may reduce the sampling frequency to not fewer than 2 quarterly samples in 1 year during each repeat compliance period.

(7) A supplier serving fewer than 3,301 people that does not detect a contaminant in the initial compliance period may reduce the sampling frequency to at least 1 sample during each repeat compliance period.

(8) Each community and nontransient water supply may apply to the department for a waiver from the requirements of subrule (5), (6), or (7) of this rule. A supplier shall reapply for a waiver for each compliance period.

(9) The department may grant a waiver if a determination by the department does not reveal previous use, including transport, storage, or disposal, of the contaminant within the watershed or zone of influence. If previous use of the contaminant is unknown or if the contaminant has been used previously, then all of the following factors shall be used to determine whether a waiver is granted:

(a) Previous analytical results.

(b) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility, at manufacturing,

distribution, or storage facilities or from hazardous and municipal waste-handling or treatment facilities. Non-point sources include the use of pesticides to control insect and weed pests in agricultural areas, forest lands, homes, and gardens and also include other land application uses.

(c) The environmental persistence and transport of the pesticide or PCBs.

(d) How well the water source is protected against contamination due to factors such as depth of the well, the type of soil, and the integrity of the well casing.

(e) Elevated nitrate levels at the water supply source.

(f) Use of PCBs in equipment that is used in the production, storage, or distribution of water.

(10) If a contaminant in R 325.10604d is detected in any sample, then all of the following provisions apply:

(a) Each supply shall monitor quarterly at each sampling point that resulted in a detection. The department may decrease the quarterly monitoring requirement specified in this subrule if it has determined that the supply is reliably and consistently below the MCL. A groundwater supplier shall take not fewer than 2 quarterly samples and a surface water supplier shall take not fewer than 4 quarterly samples before this determination.

(b) After the department determines that the supply is reliably and consistently below the MCL, the department may allow the supply to monitor annually. Supplies that monitor annually shall monitor during the quarter that previously yielded the highest analytical result.

(c) A supplier that conducts 3 consecutive annual samples and does not detect a contaminant may apply to the department for a waiver as specified in subrule (9) of this rule.

(d) If monitoring results in detection of 1 or more of the following contaminants, then subsequent monitoring shall analyze for all the following related contaminants:

(i) Aldicarb.

(ii) Aldicarb sulfone.

(iii) Aldicarb sulfoxide.

(iv) Heptachlor.

(v) Heptachlor epoxide.

(11) A supplier that violates R 325.10604d shall monitor quarterly. If not fewer than 4 quarterly samples show that the supply is in compliance and the department determines the supply is reliably and consistently below the MCL, then the supplier shall monitor at the frequency specified in subrule (10)(b) of this rule.

(12) The department may require a confirmation sample for positive or negative results. If a confirmation sample is required, then the result shall be averaged with the first sampling result and the average shall be used for the compliance determination. The department may delete results of obvious sampling errors from this calculation.

(13) The department may reduce the total number of samples a supplier is required to analyze by allowing the use of compositing. Composite samples from not more than 5 sampling points within the same system are allowed if the detection limit of the method used for the analysis is less than 1/5 of the MCL. Compositing of samples shall be done in the laboratory and shall be analyzed within 14 days of sample collection. Both of the following provisions apply to compositing:

(a) If the concentration in the composite sample detects 1 or more contaminants in R 325.10604d, then the supplier shall take a follow-up sample within 14 days from each sampling point included in the composite and shall analyze the sample for that contaminant.

(b) If duplicates of the original sample taken from each sampling point used in the composite are available, then the supplier may use these duplicates instead of resampling. Duplicates shall be analyzed and the results reported to the department within 14 days after completion of the composite analysis or before the holding time is exceeded, whichever is sooner.

(14) If monitoring data that are collected after January 1, 1990, are generally consistent with the requirements of this rule, R 325.10604d, and R 325.10605, then the department may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period.

(15) To detect variations within a system, due to fluctuations in concentration due to seasonal use or changes in water source, the department may increase the required monitoring frequency.

(16) A determination of compliance may be based upon analytical results and other information compiled by the department.

(17) All new supplies or supplies that use a new source of water shall demonstrate compliance with the MCLs before serving water to the public. The supply shall also comply with the initial sampling frequencies specified by the department to ensure a supply can demonstrate compliance with the MCLs.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1984 MR 6, Eff. July 6, 1984; 1989 MR 8, Eff. Sept. 13, 1989; 1993 MR 6, Eff. July 2, 1993; 1994 MR 12, Eff. Jan. 5, 1995; 1998 MR 3, Eff. Apr. 8, 1998; 2000 MR 19, Eff. Dec. 8, 2000; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10717a Rescinded.
History: 1989 MR 8, Eff. Sept. 13, 1989; 1991 MR 11, Eff. Nov. 22, 1991; 1993 MR 6, Eff. July 2, 1993; rescinded 1994 MR 12, Eff. Jan. 5, 1995.

R 325.10717b Special monitoring.
Rule 717b. (1) All of the following provisions apply to sodium monitoring:
(a) A community water supply shall collect and analyze 1 sample per plant at the entry point to the distribution system to determine sodium concentration levels. A community water supply is also considered "water supply" or "supply" in this rule. Samples shall be collected and analyzed annually for a supply that utilizes surface water sources in whole or in part and at least once every 3 years for a supply that utilizes solely ground water sources. The minimum number of samples required to be taken by the supply shall be based on the number of treatment plants used by the supply, except that multiple wells drawing raw water from a single aquifer may be considered 1 treatment plant for determining the minimum number of samples.
(b) The supply shall report to the department the results of the analyses for sodium as required in R 325.10734(1). If the department requires more than annual sampling, then the supply shall report the average sodium concentration as required in R 325.10734(1) after taking the last sample used for the annual average.
(c) The supply shall notify the local health department of the sodium levels within 3 months in writing. The supply shall send a copy of the written notice to the state within 10 days of its issuance. The supply is not required to send written notice to the local health department when the department provides the notice instead of the supply.
(2) An analysis for a contaminant or parameter listed in this rule shall be conducted only by laboratories certified to conduct that analysis under part 27 of these rules or approved by the United States EPA.
History: 1989 AACS; 1991 AACS; 1993 AACS; 1994 AACS; 1998 AACS; 2002 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10717c Rescinded.
History: 1989 AACS; 1993 AACS; rescinded 2009 MR 23, Eff. Dec. 4, 2009

R 325.10718 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 1989 MR 8, Eff. Sept. 13, 1989.

R 325.10719 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1984 MR 6, Eff. July 6, 1984; 1989 MR 8, Eff. Sept. 13, 1989; 1993 MR 6, Eff. July 2, 1993; rescinded 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10719a Rescinded.
History: 1984 MR 6, Eff. July 6, 1984; 2003 MR 2, Eff. Jan. 29, 2003; rescinded 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10719b Rescinded.
History: 1984 MR 6, Eff. July 6, 1984; rescinded 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10719c Rescinded.
History: 1984 MR 6, Eff. July 6, 1984; rescinded 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10719d Rescinded.
History: 1984 MR 6, Eff. July 6, 1984; 2003 MR 2, Eff. Jan. 29, 2003; rescinded 2005 MR 6, Eff. Apr. 6, 2005.

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 table 1 of this rule:

Table 1 Routine monitoring frequency for TTHM and HAA5

Type of supply	Minimum monitoring frequency	Sample location in the distribution system
Subpart H supply serving 10,000 or more people.	4 water samples per quarter per treatment plant.	Not less than 25% of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account the number of persons served, different sources of water, and different treatment methods[1].
Subpart H supply serving from 500 to 9,999 people.	1 water sample per quarter per treatment plant.	Locations representing maximum residence time[1].
Subpart H supply serving fewer than 500 people.	1 sample per year per treatment plant during month of warmest water temperature.	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than 1 sample is taken) exceeds the MCL, the supply shall increase monitoring to 1 sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the supply meets criteria in paragraph (iv) of this subdivision.
Supply using only ground water not under direct influence of surface water using chemical disinfectant and serving 10,000 or more people.	1 water sample per quarter per treatment plant[2.]	Locations representing maximum residence time[1].
Supply using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 people.	1 sample per year per treatment plant[2] during month of warmest water temperature.	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than 1 sample is taken) exceeds the MCL, the supply shall increase monitoring to 1 sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the supply meets criteria in paragraph (iv) of this subdivision.

[1] If a supply elects to sample more frequently than the minimum required, not less than 25% of all samples collected each quarter, including those taken in excess of the required frequency, shall be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples shall be taken at locations representative of at least average residence time in the distribution system.

[2] Multiple wells drawing water from a single aquifer may be considered 1 treatment plant for determining the minimum number of samples required, with department approval.

(ii) Supplies may reduce monitoring, except as otherwise provided, under table 2 of this rule:

Table 2 Reduced monitoring frequency for TTHM and HAA5

If the supply is a...	The supply may reduce monitoring if the supply has monitored at least 1 year and the...	To this level
Subpart H supply serving 10,000 or more people which has a source water annual average TOC level, before any treatment, that is less than or equal to 4.0 mg/l.	TTHM annual average is less than or equal to 0.040 mg/l and HAA5 annual average is less than or equal to 0.030 mg/l.	1 sample per treatment plant per quarter at distribution system location reflecting maximum residence time.
Subpart H supply serving from 500 to 9,999 people which has a source water annual average TOC level, before any treatment, that is less than or equal to 4.0 mg/l.	TTHM annual average is less than or equal to 0.040 mg/l and HAA5 annual average is less than or equal to 0.030 mg/l.	1 sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature. Note: any subpart H supply serving fewer than 500 people may not reduce its monitoring to less than 1 sample per treatment plant per year.
Supplies using only ground water not under direct influence of surface water using chemical disinfectant and serving 10,000 or more people.	TTHM annual average is less than or equal to 0.040 mg/l and HAA5 annual average is less than or equal to 0.030 mg/l.	1 sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
supply using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 people.	TTHM annual average is less than or equal to 0.040 mg/l and HAA5 annual average is less than or equal to 0.030 mg/l for 2 consecutive years, or TTHM annual average is less than or equal to 0.020 mg/l and HAA5 annual average is less than or equal to 0.015 mg/l for 1 year.	1 sample per treatment plant per 3 year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the 3-year cycle beginning on January 1 following quarter in which supply qualifies for reduced monitoring.

(iii) To qualify for reduced monitoring for TTHM and HAA5 under paragraph (ii) of this subdivision, 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 paragraph (ii) of this subdivision, 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 paragraph (ii) of this subdivision, a supply may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location before treatment.

(iv) Supplies on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year, for supplies monitoring quarterly, or the result of the sample, for supplies monitoring not more frequently than annually, is not more than 0.060 mg/l and 0.045 mg/l for TTHM and HAA5, respectively. Supplies that do not meet these levels shall resume monitoring at the frequency identified in the "minimum monitoring frequency" column of table 1 of this rule, in the quarter immediately following the monitoring period in which the supply exceeds 0.060 mg/l or 0.045 mg/l for TTHM or HAA5, respectively. For supplies using only groundwater not under the direct influence of surface water and serving fewer than 10,000 people, if either the TTHM annual average is greater than

0.080 mg/l or the HAA5 annual average is greater than 0.060 mg/l, the supply shall increase monitoring to that identified in the "sample location in the distribution system" column of table 1 of this rule in the quarter immediately following the monitoring period in which the supply exceeds 0.080 mg/l or 0.060 mg/l for TTHM or HAA5, respectively.

(v) Supplies on increased monitoring may return to routine monitoring if, after at least 1 year of monitoring, the TTHM annual average is less than or equal to 0.060 mg/l and the HAA5 annual average is less than or equal to 0.045 mg/l.

(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. Monitoring may 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 is required to 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 following the applicable compliance dates in subrule (1) of this rule. 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.

History: 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

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

Rule 719f. (1) Suppliers required to monitor under R 325.10719e shall report to the department under this rule. Suppliers 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. Suppliers 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) Suppliers shall report disinfection byproducts information specified in the following table:

If supplier monitors under R 325.10719e(2) for...	Supplier shall report...
(a) TTHM and HAA5 on a quarterly or more frequent basis	(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 all samples taken in the last quarter. (iv) The annual average of the quarterly averages of this section for the last 4 quarters. (v) Whether, based on R 325.10610b(2)(a), the MCL was violated.
(b) TTHM and HAA5 less frequently than quarterly, but at least annually	(i) The number of samples taken during the last year. (ii) The location, date, and result of each sample taken during the last monitoring period. (iii) The average of all samples taken over the last year. (iv) Whether, based on R 325.10610b(2)(a), the MCL was violated.
(c) TTHM and HAA5 less frequently than annually	(i) The location, date, and result of the each sample taken. (ii) Whether, based on R 325.10610b(2)(a), the MCL was violated.
(d) 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.
(e) 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) Suppliers shall report disinfectant information specified in the following table:

If supplier monitors under R 325.10719e(3) for...	supplier 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) Suppliers shall report disinfection byproduct precursors and enhanced coagulation or enhanced softening information specified in the following table:

If supplier monitors monthly or quarterly for TOC under R 325.10719e(4)...	Supplier 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).

History: 2003 MR 2, Eff. Jan. 29, 2003.

R 325.10719g Initial distribution system evaluations.

Rule 719g. (1) This rule applies to a community water supply that uses 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. This rule applies to a nontransient noncommunity water supply that serves not fewer than 10,000 people and uses 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.

(2) Title 40 CFR part 141 Subpart U, being 40 CFR §141.600 to 40 CFR §141.605, (2008), which pertains to Initial Distribution System Evaluations, is adopted by reference. The adopted material is contained in Title 40 CFR parts 136 to 149 which is available for purchase for $64.00 at the time of adoption of these rules from the superintendent of documents at the address in R 325.10116(b). The adopted material is available for inspection, or a copy is available at no cost from the offices of the department at the address in R 325.10116(a). Both of the following apply to the adopted material:

(a) Subpart U consists of all of the following sections of Title 40 CFR part 141:

(i) 40 CFR §141.600 General requirements.

(ii) 40 CFR §141.601 Standard monitoring.

(iii) 40 CFR §141.602 System specific studies.

(iv) 40 CFR §141.603 40/30 certification.

(v) 40 CFR §141.604 Very small system waivers.
(vi) 40 CFR §141.605 Subpart V compliance monitoring location recommendations.
(b) For the purposes of this rule, the following substitutions shall be made for terms used in the portions of 40 CFR part 141 listed in subdivision (a) of this subrule.
(i) "§141.29" means R 325.10733.
(ii) "§141.64" means R 325.10610.
(iii) "§141.131" means using analytical methods for disinfection byproducts in R 325.10605 and having analyzed in a laboratory meeting the requirements of R 325.12707.
(iv) "§141.132" means R 325.10719e.
(v) "EPA" means the U.S. Environmental Protection Agency.
(vi) "State" means department as defined in R 325.10104(a).
(vii) "Subpart L" means R 325.10610 to R 325.10610c and R 325.10719e to R 325.10719f.
(viii) "Subpart V" means R 325.10610d and R 325.10719h to R 325.10719n.
History: 2009 MR 23, Eff. Dec. 4, 2009.

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 and that submitted an IDSE report shall begin monitoring at the locations and in the months the supply has recommended in the IDSE report submitted under 40 CFR §141.605 as adopted by reference in R 325.10719g following the schedule in R 325.10610d(3), unless the department requires other locations or additional locations after its review. If the supply submitted a 40/30 certification under 40 CFR §141.603 as adopted by reference in R 325.10719g or the supply qualified for a very small system waiver under 40 CFR §141.604 as adopted by reference in R 325.10719g or the supply is a nontransient noncommunity water supply serving less than 10,000, then the supply 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 are required to 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) If the supply is an undisinfected supply that begins using a disinfectant other than UV light after the dates in 40 CFR part 141 Subpart U, as adopted by reference in R 325.10719g, for complying with the Initial Distribution System Evaluation requirements, the supply shall consult with the department to identify compliance monitoring locations for 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.
History: 2009 MR 23, Eff. Dec. 4, 2009.

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 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 that was not required to submit an IDSE report under either 40 CFR 141.601 or 40 CFR 141.602, and that does not have sufficient R 325.10719e monitoring locations to identify the required number of monitoring locations indicated in 40 CFR 141.605(b) for compliance with R 325.10719h to R 325.10719j, shall identify additional 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. If the supply has more R 325.10719e monitoring locations than identified in 40 CFR 141.605(b) for compliance with R 325.10719h to R 325.10719j, the supply shall identify which monitoring locations the supply will use for compliance with R 325.10719h to R 325.10719j by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of monitoring locations have been identified. The sections under 40 CFR part 141 cited in this subdivision are adopted by reference in R 325.10719g.

(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 R 325.10610d and R 325.10719h to R 325.10719n, unless the IDSE report submitted under 40 CFR 141.600 to 40 CFR 141.605, as adopted by reference in Rule 325.10719g, contains all the information required under 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.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10719j Disinfection byproducts; reduced monitoring.

Rule 719j. (1) The community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d may reduce monitoring any time the LRAA is less than or equal to 0.040 mg/L for TTHM and less than or equal to 0.030 mg/L for HAA5 at all monitoring locations. The supply may only use data collected under R 325.10610b to R 325.10610d, R 325.10719e to R 325.10719f, and R 325.10719h to R 325.10719n to qualify for reduced monitoring. In addition, the

source water annual average TOC level, before treatment, shall be less than or equal to 4.0 mg/L at each treatment plant treating surface water or groundwater under the direct influence of surface water, based on monitoring conducted under either R 325.10719e(2)(a)(3) or R 325.10719e(4). Reduced monitoring shall be to the level specified in the following table:

Source Water Type	Population size category	Monitoring Frequency *	Distribution system monitoring location per monitoring period
Subpart H	less than 500		monitoring may not be reduced
Subpart H	500 to 3,300	per year	1 TTHM and 1 HAA5 sample: 1 at the location and during the quarter with the highest TTHM single measurement, 1 at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
Subpart H	3,301 to 9,999	per year	2 dual sample sets: 1 at the location and during the quarter with the highest TTHM single measurement, 1 at the location and during the quarter with the highest HAA5 single measurement.
Subpart H	10,000 to 49,999	per quarter	2 dual sample sets at the locations with the highest TTHM and highest HAA5 LRAAs.
Subpart H	50,000 to 249,999	per quarter	4 dual sample sets--at the locations with the 2 highest TTHM and 2 highest HAA5 LRAAs.
Subpart H	250,000 to 999,999	per quarter	6 dual sample sets--at the locations with the 3 highest TTHM and 3 highest HAA5 LRAAs.
Subpart H	1,000,000 to 4,999,999	per quarter	8 dual sample sets--at the locations with the 4 highest TTHM and 4 highest HAA5 LRAAs.
Subpart H	greater than or equal to 5,000,000	per quarter	10 dual sample sets--at the locations with the 5 highest TTHM and 5 highest HAA5 LRAAs.
Groundwater	less than 500	every third year	1 TTHM and 1 HAA5 sample: 1 at the location and during the quarter with the highest TTHM single measurement, 1 at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
Groundwater	500 to 9,999	per year	1 TTHM and 1 HAA5 sample: 1 at the location and during the quarter with the highest TTHM single measurement, 1 at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
Groundwater	10,000 to 99,999	per year	2 dual sample sets: 1 at the location and during the quarter with the highest TTHM single measurement, 1 at the location and during the quarter with the highest HAA5 single measurement.

Groundwater	100,000 to 499,999	per quarter	2 dual sample sets; at the locations with the highest TTHM and highest HAA5 LRAAs.
Groundwater	greater than or equal to 500,000	per quarter	4 dual sample sets at the locations with the 2 highest TTHM and 2 highest HAA5 LRAAs.

* Supplies on quarterly monitoring shall take dual sample sets every 90 days.

(2) The supply may remain on reduced monitoring as long as the TTHM LRAA less than or equal to 0.040 mg/L and the HAA5 LRAA less than or equal to 0.030 mg/L at each monitoring location (for supplies with quarterly reduced monitoring) or each TTHM sample less than or equal to 0.060 mg/L and each HAA5 sample less than or equal to 0.045 mg/L (for supplies with annual or less frequent monitoring). In addition, the source water annual average TOC level, before treatment, shall be less than or equal to 4.0 mg/L at each treatment plant treating surface water or groundwater under the direct influence of surface water, based on monitoring conducted under either R 325.10719e(2)(a)(iii) or R 325.10719e(4).

(3) If the LRAA based on quarterly monitoring at a monitoring location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 or if the annual (or less frequent) sample at a location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5, or if the source water annual average TOC level, before treatment, is greater than 4.0 mg/L at a treatment plant treating surface water or groundwater under the direct influence of surface water, the supply shall resume routine monitoring under R 325.10719h or begin increased monitoring if R 325.10719k applies.

(4) The department may return the supply to routine monitoring under R 325.10732.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10719k Disinfection byproducts; conditions requiring increased monitoring.

Rule 719k. (1) A community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d and that is required to monitor at a particular location annually or less frequently than annually under routine monitoring in R 325.10719h or reduced monitoring in R 325.10719j shall increase monitoring to dual sample sets once per quarter, taken every 90 days, at all locations if a TTHM sample is greater than 0.080 mg/L or a HAA5 sample is greater than 0.060 mg/L at any location.

(2) 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.

(3) The supply may return to routine monitoring once the supply has conducted increased monitoring for not less than 4 consecutive quarters and the LRAA for every monitoring location is less than or equal to 0.060 mg/L for TTHM and less than or equal to 0.045 mg/L for HAA5.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10719l Disinfection byproducts: operational evaluation levels.

Rule 719l. (1) The community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d has exceeded the operational evaluation level at a monitoring location where the sum of the 2 previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4 to determine an average, exceeds 0.080 mg/L, or where the sum of the 2 previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4 to determine an average, exceeds 0.060 mg/L.

(2) Both of the following provisions apply to operational evaluations:

(a) A supply that exceeds the operational evaluation level shall conduct an operational evaluation and submit a written report of the evaluation to the department not later than 90 days after being notified of the analytical result that causes the supply to exceed the operational evaluation level. The written report shall be made available to the public upon request.

(b) The operational evaluation shall include an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system

flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedences. Both of the following provisions apply to limiting the scope of the operational evaluation:

(i) The supply may request and the department may allow the supply to limit the scope of the evaluation if the supply is able to identify the cause of the operational evaluation level exceedance.

(ii) The request to limit the scope of the evaluation does not extend the schedule in subdivision (a) of this subrule for submitting the written report. The department shall approve this limited scope of evaluation in writing and the supply shall keep that approval with the completed report.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10719m Disinfection byproducts; requirements for remaining on reduced or increased TTHM and HAA5 monitoring.

Rule 719m. (1) The community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d may remain on reduced monitoring after the dates identified in R 325.10610d(3) for compliance with R 325.10610d and R 325.10719h to R 325.10719n only if the supply qualifies for a 40/30 certification under 40 CFR §141.603 or have received a very small system waiver under 40 CFR §141.604, plus the supply meets the reduced monitoring criteria in R 325.10719j(1), and the supply does not change or add monitoring locations from those used for compliance monitoring under R 325.10719e. If the monitoring locations under R 325.10719h to R 325.10719j differ from the monitoring locations under R 325.10719e, the supply may not remain on reduced monitoring after the dates identified in R 325.10610d(3) for compliance with R 325.10610d and R 325.10719h to R 325.10719n. The provisions of 40 CFR §141.603 and 40 CFR §141.604 are adopted by reference in R 325.10719g.

(2) The supply that was on increased monitoring under R 325.10719e(2)(a), shall remain on increased monitoring until the supply qualifies for a return to routine monitoring under R 325.10719k(3). The supply shall conduct increased monitoring under R 325.10719k at the monitoring locations in the monitoring plan developed under R 325.10719i beginning at the date identified in R 325.10610d(3) for compliance with R 325.10610d and R 325.10719h to R 325.10719n and remain on increased monitoring until the supply qualifies for a return to routine monitoring under R 325.10719k.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10719n Disinfection byproducts; reporting and recordkeeping requirements.

Rule 719n. (1) A community or nontransient noncommunity water supply that is subject to disinfection byproducts requirements of R 325.10610d shall report all of the following:

(a) The supply shall report all of the following information for each monitoring location to the department within 10 days of the end of a quarter in which monitoring is required:

(i) Number of samples taken during the last quarter.

(ii) Date and results of each sample taken during the last quarter.

(iii) Arithmetic average of quarterly results for the last 4 quarters for each monitoring location (LRAA), beginning at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter. 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, the supply shall report this information to the department as part of the first report due following the compliance date or anytime thereafter that this determination is made. 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, unless the supply is required to conduct increased monitoring under R 325.10719k.

(iv) Whether, based on R 325.10610(2), R 325.10610d and R 325.10719h to R 325.10719n, the MCL was violated at a monitoring location.

(v) Any operational evaluation levels that were exceeded during the quarter and, if so, the location and date, and the calculated TTHM and HAA5 levels.

(b) A subpart H supply that is seeking to qualify for or remain on reduced TTHM/HAA5 monitoring shall report all of the following source water TOC information for each treatment plant that treats surface water or groundwater under the direct influence of surface water to the department within 10 days of the end of a quarter in which monitoring is required:

(i) The number of source water TOC samples taken each month during last quarter.

(ii) The date and result of each sample taken during last quarter.

(iii) The quarterly average of monthly samples taken during last quarter or the result of the quarterly sample.

(iv) The running annual average (RAA) of quarterly averages from the past 4 quarters.

(v) Whether the RAA exceeded 4.0 mg/L.

(c) The department may choose to perform calculations and determine whether the MCL was exceeded or the supply is eligible for reduced monitoring instead of having the supply report that information.

(2) The supply shall retain monitoring plans and monitoring results of monitoring conducted under R 325.10610d and R 325.10719h to R 325.10719n, as required by R 325.11506(1)(g).

History: 2009 MR 23, Eff. Dec. 4, 2009.

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. Until December 31, 2004, this subdivision applies only to supplies serving 10,000 or more people. Beginning January 1, 2005, this subdivision also applies to supplies serving fewer than 10,000 people.

(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.

(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. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) may be measured instead of residual disinfectant concentration.

History: 1979 AC; 1991 AACS; 1993 AACS; 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10720a Filtration and disinfection; reporting and recordkeeping.

Rule 720a. (1) Suppliers required to monitor under R 325.10720 shall comply with reporting and recordkeeping requirements specified in R 325.11502 and shall report to the department the information required in this rule within 10 days after the end of each month the system serves water to the public, unless otherwise required.

(2) Suppliers shall report turbidity measurements required under R 325.10611b and shall include all of the following information:

(a) The total number of filtered water turbidity measurements taken during the month.

(b) The number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the turbidity limits under R 325.10611b(1)(a)(ii), (b)(ii), or (c)(ii).

(c) The date and value of any turbidity measurements taken during the month that exceed the applicable maximum turbidity value in R 325.10611b(1)(a)(i), (b)(i), or (c)(i).

(3) Suppliers shall report that they have conducted individual filter turbidity monitoring under R 325.10720(2)(c) and (d). Suppliers shall report individual turbidity measurements only if measurements demonstrate 1 or more of the conditions in subdivisions (a) to (d) of this subrule. A Supply that uses lime softening may apply to the department for alternative turbidity exceedance levels for the levels specified in subdivisions (a) to (d) of this subrule if it can demonstrate that higher turbidity levels in individual filters are due to lime carryover only and not due to degraded filter performance. Individual filter monitoring reporting requirements are as follows:

(a) For any individual filter, or combined filter effluent for systems that monitor combined filter effluent instead of individual filters, that has a measured turbidity level of more than 1.0 ntu in 2 consecutive measurements taken 15 minutes apart, the supplier shall report the filter number, the turbidity measurement, and the date or dates on which the exceedance occurred. In addition, the supplier shall report the cause for the exceedance, if known. A supplier of a system serving 10,000 or more people that cannot identify an obvious reason for the abnormal filter performance shall produce a filter profile within 7 days of the exceedance and report that the profile has been produced.

(b) For any individual filter that has a measured turbidity level of more than 0.5 ntu in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous filter operation after the filter has been backwashed or otherwise taken offline, the supplier of a system serving 10,000 or more people shall report the filter number, the turbidity measurement, and the date or dates on which the exceedance occurred. In addition, the supplier shall either produce a filter profile for the filter within 7 days of the exceedance and report that the profile has been produced, or report the obvious reason for the exceedance.

(c) For any individual filter, or combined filter effluent for systems that monitor combined filter effluent instead of individual filters, that has a measured turbidity level of more than 1.0 ntu in 2 consecutive measurements taken 15 minutes apart at any time in each of 3 consecutive months, the supplier shall report the filter number, the turbidity measurement, and the date or dates on which the exceedance occurred. In addition, the supplier shall conduct a self assessment of the filter , unless a comprehensive performance evaluation as specified in subdivision (d) of this subrule was required. If a self assessment is required, then the supplier of a system serving 10,000 or more people shall complete it within 14 days after it was triggered and the supplier of a system serving fewer than 10,000 people shall complete it by the 10th of the following month, or within 14 days if it was triggered during the last 4 days of the month. A supplier that monitors combined filter effluent instead of individual filters under R 325.10720(2)(e), shall conduct a self assessment on both filters. The supplier shall report the date the self assessment was completed. The self assessment shall consist of at least all of the following components:

(i) Assessment of filter performance.

(ii) Development of a filter profile.

(iii) Identification and prioritization of factors limiting filter performance.

(iv) Assessment of the applicability of corrections.

(v) Preparation of a filter self assessment report.

(d) For any individual filter, or combined filter effluent for systems that monitor combined filter effluent instead of individual filters, that has a measured turbidity level of more than 2.0 ntu in 2 consecutive measurements taken 15 minutes apart at any time in each of 2 consecutive months, the supplier shall report the filter number, the turbidity measurement, and the date or dates on which the exceedance occurred. In addition, the supplier shall arrange for the conduct of a comprehensive performance evaluation by the department or a third party approved by the department. Either of the following provisions apply:

(i) For a system serving 10,000 or more people, the comprehensive performance evaluation shall be arranged to be conducted not later than 30 days after the day the filter exceeded 2.0 ntu in 2 consecutive measurements for the second straight month. The evaluation shall be completed and submitted to the department not later than 90 days after the day it was triggered.

(ii) For a system serving fewer than 10,000 people, a new comprehensive performance evaluation is not required if 1 has been completed by the department, or a third party approved by the department, within the 12 previous months or if the system and the department are jointly participating in an ongoing comprehensive technical assistance project at the system. Suppliers shall report that a comprehensive performance evaluation is required, if it is required, and the date the filter exceeded 2.0 ntu in 2 consecutive measurements for the second straight month. The comprehensive performance evaluation shall be arranged to be conducted not later than 60 days after the day the filter exceeded 2.0 ntu in 2 consecutive measurements for the second straight month. The evaluation shall be completed and submitted to the department not later than 120 days after the day it was triggered.

(4) The supplier shall consult with the department as soon as practical, but not later than 24 hours after the exceedance is known, if the turbidity level of representative samples of filtered water at any time exceeds the levels in R 325.10611b(1)(a)(i), (b)(i), or (c)(i).

(5) A supplier that is required to conduct disinfection profiling and benchmarking shall report both of the following:

(a) Results of optional monitoring performed that show TTHM and HAA5 levels below 0.064 mg/l and 0.048 mg/l, respectively.

(b) If a supplier is considering a significant change to its disinfection practice, then the supplier shall report a description of the proposed change in disinfection, the system's disinfection profile for *Giardia lamblia*, and, if necessary, viruses, and disinfection benchmark, and an analysis of how the proposed change will affect the current levels of disinfection.

History: 2003 MR 2, Eff. Jan. 29, 2003; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10720b Enhanced treatment for Cryptosporidium; source water monitoring.

Rule 720b. (1) This rule applies to subpart H supplies as set forth in R 325.10611d.

(2) Title 40 CFR part 141 Subpart W sections pertaining to source water monitoring requirements, being 40 CFR §141.701 to 40 CFR §141.707, (2008), are adopted by reference, except that provisions pertaining to unfiltered systems are not adopted by reference as specified in subdivision (c) of this subrule. The adopted material is contained in Title 40 CFR parts 136 to 149 which is available for purchase for $64.00 at the time of adoption of these rules from the superintendent of documents at the address in R 325.10116(b). The adopted material is available for inspection and a copy is available at no cost from the offices of the department at the address in R 325.10116(a). All of the following apply to the adopted material:

(a) Subpart W consists of all of the following sections of Title 40 CFR part 141:

(i) 40 CFR §141.701 Source water monitoring.

(ii) 40 CFR §141.702 Sampling schedules.

(iii) 40 CFR §141.703 Sampling locations.

(iv) 40 CFR §141.704 Analytical methods.

(v) 40 CFR §141.705 Approved laboratories.

(vi) 40 CFR §141.706 Reporting source water monitoring results.

(vii) 40 CFR §141.707 Grandfathering previously collected data.

(b) For the purposes of this rule, the following substitutions shall be made for terms used in the portions of 40 CFR part 141 listed in subdivision (a) of this subrule.

(i) "§141.74" means R 325.10605.

(ii) "§141.173(b) or §141.552(a), as applicable," means R 325.10611b(3).
(iii) "§141.710 or §141.712" means R 325.10611e.
(iv) "§141.710 or determination of the mean Cryptosporidium level under §141.712, as applicable" means R 325.10611e.
(v) "§141.710(b)(5) or §141.712(a)(3), as applicable," means R 325.10611e(2)(e).
(vi) "§141.711" means R 325.10611f.
(vii) "§141.711 or §141.712, as applicable," means R 325.10611f.
(viii) "§141.713" means R 325.10611g.
(ix) "§141.717(c)" means R 325.10611j(3).
(x) "EPA" means the U.S. Environmental Protection Agency.
(xi) "State" means department.
(c) All of the following portions of 40 CFR part 141, Subpart W are not adopted by reference under this rule:
(i) 40 CFR §141.701(a)(2).
(ii) 40 CFR §141.701(a)(6).
(iii) 40 CFR §141.701(d)(2).
(iv) Other portions of 40 CFR §141.701 pertaining to unfiltered water systems.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10720c Enhanced treatment for Cryptosporidium; disinfection profiling and benchmarking; making significant change in disinfection practice.

Rule 720c. Following the completion of initial source water monitoring under 40 CFR 141.701(a), as adopted by reference in R 325.10720b, a Subpart H supply that is subject to R 325.10611d and that plans to make a significant change to its disinfection practice, as defined in R 325.10722(4)(a), shall develop disinfection profiles and calculate disinfection benchmarks for Giardia lamblia and viruses as described in R 325.10720d. Before changing the disinfection practice, the Subpart H supply shall notify the department and shall include in this notice all of the information in R 325.10722(4)(b)(i) to (iv).
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10720d Enhanced treatment for Cryptosporidium; developing the 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)(e) to calculate a disinfection benchmark.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10720e Enhanced treatment for Cryptosporidium; reporting and recordkeeping requirements.

Rule 720e. (1) Subpart H supplies that are subject to R 325.10611d shall report sampling schedules under 40 CFR §141.702 and source water monitoring results under 40 CFR §141.706 unless they notify the department that they will not conduct source water monitoring due to meeting the criteria of 40 CFR §141.701(d). These Subpart H supplies are also considered "supplies" in this rule. The department adopts 40 CFR §141.701, 40 CFR §141.702, and 40 CFR §141.706 by reference in R 325.10720b.

(2) Supplies shall report their Cryptosporidium bin classification as described in R 325.10611e.

(3) Supplies shall report disinfection profiles and benchmarks to the department as described in R 325.10720c to R 325.10720d before making a significant change in disinfection practice.

(4) Supplies shall report to the department under the following table for the microbial toolbox options used to comply with treatment requirements under R 325.10611f. Alternatively, the department may approve a supply to certify operation within required parameters for treatment credit rather than reporting monthly operational data for toolbox options.

Microbial Toolbox Reporting Requirements

Toolbox option	Supplies shall submit all of the following information:	On the following schedule:
(a) Watershed control program (WCP)	(i) Notice of intention to develop a new or continue an existing watershed control program.	Not later than 2 years before the applicable treatment compliance date in R 325.10611g.
	(ii) Watershed control plan	Not later than 1 year before the applicable treatment compliance date in R 325.10611g.
	(iii) Annual watershed control program status report.	Every 12 months, beginning 1 year after the applicable treatment compliance date in R 325.10611g.
	(iv) Watershed sanitary survey report.	For community water supplies, every 3 years beginning 3 years after the applicable treatment compliance date in R 325.10611g. For noncommunity water supplies, every 5 years beginning 5 years after the applicable treatment compliance date in R 325.10611g.
(b) Alternative source/intake management	Verification that supply has relocated the intake or adopted the intake withdrawal procedure reflected in monitoring results.	Not later than the applicable treatment compliance date in R 325.10611g.
(c) Presedimentation	Monthly verification of all of the following: (i) Continuous basin operation. (ii) Treatment of 100% of the flow. (iii) Continuous addition of a coagulant. (iv) Not less than 0.5-log mean reduction of influent turbidity or compliance with alternative department approved performance criteria.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.

Toolbox option	Supplies shall submit all of the following information:	On the following schedule:
(d) 2-stage lime softening	Monthly verification of both of the following: (i) Chemical addition and hardness precipitation occurred in 2 separate and sequential softening stages before filtration. (ii) Both stages treated 100% of the plant flow.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(e) Bank filtration	(i) Initial demonstration of both of the following: (A) Unconsolidated, predominantly sandy aquifer. (B) Setback distance of not less than 25 ft. (0.5-log credit) or 50 ft. (1.0-log credit).	Not later than the applicable treatment compliance date in R 325.10611g.
	(ii) If monthly average of daily max turbidity is greater than 1 NTU then supply shall report result and submit an assessment of the cause.	Report within 30 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(f) Combined filter performance	Monthly verification of combined filter effluent (CFE) turbidity levels less than or equal to 0.15 NTU in not less than 95% of the 4-hour CFE measurements taken each month.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(g) Individual filter performance	Monthly verification of both of the following: (i) Individual filter effluent (IFE) turbidity levels less than or equal to 0.15 NTU in not less than 95% of samples each month in each filter. (ii) No individual filter greater than 0.3 NTU in 2 consecutive readings 15 minutes apart.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(h) Demonstration of performance	(i) Results from testing following a department approved protocol.	Not later than the applicable treatment compliance date in R 325.10611g.
	(ii) As required by the department, monthly verification of operation within conditions of department approval for demonstration of performance credit.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(i) Bag filters and cartridge filters	(i) Demonstration that both of the following criteria are met: (A) Process meets the definition of bag or cartridge filtration. (B) Removal efficiency established through challenge testing that meets criteria in R 325.10611d to R 325.10611n and R 325.10720b to R 325.10720e.	Not later than the applicable treatment compliance date in R 325.10611g.
	(ii) Monthly verification that 100% of plant flow was filtered.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.

Toolbox option	Supplies shall submit all of the following information:	On the following schedule:
(j) Membrane filtration	(i) Results of verification testing demonstrating both of the following: (A) Removal efficiency established through challenge testing that meets criteria in R 325.10611d to R 325.10611n and R 325.10720b to R 325.10720e. (B) Integrity test method and parameters, including resolution, sensitivity, test frequency, control limits, and associated baseline.	Not later than the applicable treatment compliance date in R 325.10611g.
	(ii) Monthly report summarizing the following: (A) All direct integrity tests above the control limit. (B) If applicable, a turbidity or alternative state approved indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(k) Second stage filtration	Monthly verification that 100% of flow was filtered through both stages and that first stage was preceded by coagulation step.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(l) Slow sand filtration as secondary filter.	Monthly verification that both a slow sand filter and a preceding separate stage of filtration treated 100% of flow from surface water or GWUDI sources.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(m) Chlorine dioxide	Summary of CT values for each day as described in R 325.10611m.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(n) Ozone	Summary of CT values for each day as described in R 325.10611m.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.
(o) UV	(i) Validation test results demonstrating operating conditions that achieve required UV dose.	Not later than the applicable treatment compliance date in R 325.10611g.
	(ii) Monthly report summarizing the percentage of water entering the distribution system that was not treated by UV reactors operating within validated conditions for the required dose as specified in R 325.10611m.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in R 325.10611g.

(5) Supplies shall retain records under R 325.11508.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10721 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; rescinded 2003 MR 2, Eff. Jan. 29, 2003.

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.

(2) A subpart H community or nontransient noncommunity supply serving fewer than 10,000 people shall develop a disinfection profile of weekly log inactivations over 52 weeks and report to the department under R 325.10720a(5). Until the effective date of the disinfection profiling and benchmarking provisions of R 325.10720d, a supply whose TTHM and HAA5 levels are below profiling trigger levels of 0.064 mg/l and 0.048 mg/l, respectively, are not required to develop a disinfection profile. To determine these levels, TTHM and HAA5 samples shall be collected after January 1, 1998, during the month with the warmest water temperature, and at a point of maximum resident time in the distribution system.

(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), (2008), as applicable. The adopted material is contained in Title 40 CFR parts 136 to 149 which is available for purchase for $64.00 at the time of adoption of these rules from the superintendent of documents at the address in R 325.10116(b). The adopted material is available for inspection, or a copy is available at no cost from the offices of the department at the address in R 325.10116(a). 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 ($CTcalc/CT_{99.9}$) before or at the first customer during peak hourly flow.

(B) Determine successive $CTcalc/CT_{99.9}$ 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 ($CTcalc/CT_{99.9}$) for each sequence and then adding the ($CTcalc/CT_{99.9}$) values together to determine $\sum(CTcalc/CT_{99.9})$.

(ii) A supply using more than 1 point of disinfectant application before the first customer shall determine the ($CTcalc/CT_{99.9}$) 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 ∑(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, May 2003, as applicable, and develop a disinfection profile for viruses. The tables in the previous sentence are adopted by reference and available from Educational

REALMS (document C-900) at 1929 Kenny Road, Columbus, Ohio 43210-1080, Internet address www.stemworks.org, telephone number 800-276-0462, for a cost of $32.50 at the time of adoption of these rules or accessible on the Internet at http://www.epa.gov/safewater/mdbp/lt1eswtr.html. The adopted material is available for inspection, or a copy is available at no cost from the offices of the department at the address in R 325.10116(a). 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 ($CTcalc/CT_{99.99}$) before or at the first customer during peak hourly flow.

(B) Determine successive $CTcalc/CT_{99.99}$ 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 ($CTcalc/CT_{99.99}$) for each sequence and then adding the ($CTcalc/CT_{99.99}$) values together to determine $\sum(CTcalc/CT_{99.99})$.

(ii) A supply using more than 1 point of disinfectant application before the first customer shall determine the ($CTcalc/CT_{99.99}$) 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) A subpart H supply that is required to develop a disinfection profile under subrule (2) of this rule shall develop a disinfection benchmark if the supply makes a significant change to the disinfection practice. The supply shall consult with the department for approval before implementing a significant disinfection practice change. An approved significant change in disinfection practices shall not jeopardize current levels of disinfection. 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) If the supply is considering a significant change to its disinfection practice, it shall calculate a disinfection benchmark or benchmarks as described in subdivisions (c) and (d) of this subrule or in subdivision (e) of this subrule, as applicable, and provide the benchmark or benchmarks to the department. The supply may only make a significant disinfection practice change after consulting with the department for approval. The supply shall submit all of the following information to the department as part of the consultation and approval process:

(i) A description of the proposed change in disinfection practice.

(ii) Until the effective date of R 325.10720d, the disinfection profile for Giardia lamblia, and, if necessary, viruses, and disinfection benchmark. Beginning the effective date of R 325.10720d, 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) Until the effective date of R 325.10720d, if the system is making a significant change to its disinfection practice, then it shall calculate a disinfection benchmark using the following procedure:

(i) Step 1: Using the data collected to develop the disinfection profile required under subrule (2) of this rule, the system shall determine the average Giardia lamblia inactivation for each calendar month by dividing the sum of all Giardia lamblia inactivations for that month by the number of values calculated for that month.

(ii) Step 2: The supply shall determine the lowest monthly average value out of the 12 values. This value becomes the disinfection benchmark.

(d) Until the effective date of R 325.10720d, if the supply uses chloramines, ozone or chlorine dioxide for primary disinfection, then it shall calculate the disinfection benchmark from the data collected for viruses to develop the disinfection profile under subrule (2) of this rule in addition to the Giardia lamblia disinfection benchmark calculated under subdivision (c) of this subrule. This viral benchmark shall be calculated in the same manner used to calculate the Giardia lamblia disinfection benchmark in subdivision (c) of this subrule.

(e) Beginning the effective date of R 325.10720d, 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.

History: 1979 AC; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10724 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 1989 MR 8, Eff. Sept. 13, 1989.

R 325.10725 Radionuclides; applicability; monitoring generally; reporting.

Rule 725. (1) A community water supply, also known as "supply" in this rule, R 325.10726, R 325.10728, R 325.10729, and R 325.10730, shall monitor to determine compliance with R 325.10603 and report to the department under these rules.

(2) For the purposes of monitoring for gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water, "detection limit" is defined in Title 40 CFR §141.25(c), which is adopted by reference in R 325.10605.

(3) The department may require more frequent monitoring than specified in this rule, or may require confirmation samples, when the department considers it appropriate for the protection of public health or there is a need for additional sampling based on prior sampling results.

(4) Each public water supply shall monitor at a time designated by the department during each compliance period.

(5) If the MCL for radioactivity in R 325.10603 is exceeded, then the community water supply shall notify the department under R 325.10734.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10726 Radionuclides; initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium.

Rule 726. (1) A community water supply shall conduct initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium to determine compliance with R 325.10603(2)(a), (b), and(d).

(2) An existing supply shall sample at every entry point to the distribution system that is representative of all sources of water being used, known as "sampling point," under normal operating conditions. The supply shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source.

(3) A new community water supply or a community water supply that uses a new source of water shall begin to conduct initial monitoring for the new source within the first quarter after initiating use of the source. A community water supply shall conduct more frequent monitoring when ordered by the department if possible contamination or if changes in the distribution system or treatment processes occur which may increase the concentration of radioactivity in finished water.

(4) A supply shall conduct initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium in the following manner:

(a) A supply shall collect 4 consecutive quarterly samples at all sampling points before December 31, 2007. A supply that has results of samples collected from a sampling point during the compliance period that began between June 1, 2000 and December 8, 2003, may use those results to satisfy the initial monitoring requirements for that sampling point.

(b) For gross alpha particle activity, uranium, radium-226, and radium-228 monitoring, the department may waive the final 2 quarters of initial monitoring for a sampling point if the results of the samples from the previous 2 quarters are below the detection limit.

(c) If the average of the initial monitoring results for a sampling point is above the MCL, then the supply shall collect and analyze quarterly samples at that sampling point until the supply has results from 4 consecutive quarters that are at or below the MCL, unless the supply enters into another schedule as part of a formal compliance agreement with the department.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10728 Radionuclides; reduced monitoring for gross alpha particle activity, radium-226, radium-228, and uranium.

Rule 728. (1) The department may allow community water supplies to reduce the future frequency of monitoring from once every 3 years to once every 6 or 9 years at each sampling point, based on the criteria in the following table:

Table 1 Radionuclides reduced monitoring criteria

For gross alpha particle activity, uranium, and combined radium 226 radium-228, if the average of the initial monitoring results for each contaminant at a sampling point is...	Then the supply shall collect and analyze for that contaminant using at least one sample at that sampling point every ...
(a) Below the detection limit[1]	9 years
(b) At or above the detection limit, but at or below half the MCL[2]	6 years
(c) Above half the MCL, but at or below the MCL[2]	3 years
[1] For combined radium-226 and 228, both contaminants shall be below the detection limit. [2] For combined radium-226 and radium-228, the analytical results for radium-226 and 228 shall be combined.	

(2) A supply shall use the samples collected during the reduced monitoring period to determine the monitoring frequency for subsequent monitoring periods. For example, if a supply's sampling point is on a 9-year monitoring period, and the sample result is above half the MCL, then the next monitoring period for that sampling point is 3 years.

(3) If a supply has a monitoring result that exceeds the MCL while on reduced monitoring, then the supply shall collect and analyze quarterly samples at that sampling point until the supply has results from 4 consecutive quarters that are at or below the MCL, unless the supply enters into another schedule as part of a formal compliance agreement with the department.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1989 MR 8, Eff. Sept. 13, 1989; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10729 Radionuclides; compositing; substituting gross alpha for radium-226 or uranium.

Rule 729. (1) To fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a supply may composite up to 4 consecutive quarterly samples from a single entry point if analysis is done within 1 year of the first sample. The department considers analytical results from the composited sample as the average analytical result to determine compliance with the MCLs and the future monitoring frequency. If the analytical result from the composited sample is more than half the MCL, then the department may direct the supply to take additional quarterly samples before allowing the supply to sample under a reduced monitoring schedule.

(2) A gross alpha particle activity measurement may be substituted for the required radium-226 measurement if the measured gross alpha particle activity does not exceed 5 pCi/l. A gross alpha particle activity measurement may be substituted for the required uranium measurement if the measured gross alpha particle activity does not exceed 15 pCi/l. The gross alpha measurement shall have a confidence interval of 95% (1.65σ, where σ is the standard deviation of the net counting rate of the sample) for radium-226 and uranium. If a supply uses a gross alpha particle activity measurement instead of a radium-226 or uranium measurement, or both, then the gross alpha particle activity analytical result shall

be used to determine the future monitoring frequency for radium-226 or uranium, or both. If the gross alpha particle activity result is less than detection, then half the detection limit shall be used to determine compliance and the future monitoring frequency.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.10730 Radionuclides; monitoring requirements for beta particle and photon radioactivity; applicability.

Rule 730. (1) To determine compliance with the maximum contaminant levels in R 325.10603(2)(c) for beta particle and photon radioactivity, a community water supply, also considered a "water supply" or "supply" in this rule, designated by the department as either vulnerable or utilizing water contaminated by effluents from nuclear facilities, shall sample for beta particle and photon radioactivity. The department's designation shall be based on monitoring data, environmental surveillance data collected in the vicinity of nuclear facilities, or source water assessments.

(2) Beginning within 1 quarter after being notified of the department's designation and continuing until the department reviews and either reaffirms or removes the designation, a supply shall collect samples at each entry point to the distribution system, known as sampling point, under both of the following provisions:

(a) For a vulnerable supply, quarterly samples for beta emitters and annual samples for tritium and strontium 90.

(b) For a supply utilizing waters contaminated by effluents from nuclear facilities, quarterly samples for beta emitters and iodine 131 and annual samples for tritium and strontium 90. A supply shall monitor and analyze the samples under all of the following provisions:

(i) Quarterly monitoring for gross beta particle activity shall be based on the analysis of monthly samples or the analysis of a composite of 3 monthly samples.

(ii) For iodine 131, a composite of 5 consecutive daily samples shall be analyzed once each quarter. As ordered by the department, more frequent monitoring shall be conducted when iodine 131 is identified in the finished water.

(iii) Annual monitoring for strontium 90 and tritium shall be conducted by means of the analysis of a composite of 4 consecutive quarterly samples or analysis of 4 quarterly samples.

(3) All of the following provisions apply for gross beta particle activity:

(a) A supply may analyze for naturally occurring potassium 40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. A supply may subtract the potassium 40 beta particle activity value from the total gross beta particle activity value to determine if the screening level in subdivision (b) of this subrule is exceeded. The potassium 40 beta particle activity shall be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

(b) If the gross beta particle activity minus the naturally occurring potassium 40 beta particle activity at a sampling point has a running annual average, computed quarterly, less than or equal to a screening level of 50 pCi/L for a vulnerable supply or 15 pCi/L for a supply utilizing waters contaminated by effluents from nuclear facilities, then the department may reduce the frequency of monitoring at that sampling point to once every 3 years. During the reduced monitoring period, a supply shall collect the same type of samples required in subrule (2)(a) of this rule for a vulnerable supply or subrule (2)(b) of this rule for a supply utilizing water contaminated by effluents from nuclear facilities.

(c) If the gross beta particle activity minus the naturally occurring potassium 40 beta particle activity exceeds the appropriate screening level in subdivision (b) of this subrule, then an analysis of the sample shall be performed to identify the major radioactive constituents present in the sample and the appropriate doses shall be calculated and summed to determine compliance with R 325.10603(2)(c)(i), using the formula in R 325.10603(2)(c)(ii). Doses shall also be calculated and combined for measured levels of tritium and strontium to determine compliance.

(4) For a supply in the vicinity of a nuclear facility, the community water supply may utilize environmental surveillance data collected by the nuclear facility instead of monitoring at the supply's entry point or points, where the department determines that the data is applicable to a particular water supply. If there is a release from a nuclear facility, then a supply which uses surveillance data shall begin monitoring at the community water supply's entry point or points under subrule (2)(a) or (b) of this rule.

(5) A community water supply designated by the department to monitor for beta particle and photon radioactivity shall not apply to the department for a waiver from the monitoring frequencies specified in subrule (2)(a) or (b) of this rule.

(6) A supply shall monitor monthly at the sampling point or points that exceed the maximum contaminant level in R 325.10603(2)(c) beginning the month after the exceedance occurs. The supply shall continue monthly monitoring until the supply has established, by the average of results from any 3 consecutive months, that the MCL is being met. A supply that establishes that the MCL is being met shall return to quarterly monitoring until it meets the requirements set forth in subrule (3)(b) of this rule.
History: 1979 AC; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10731 Sample analyses; approved laboratories and personnel.

Rule 731. For the purpose of determining compliance with the monitoring requirements prescribed by this part, samples shall be considered valid only if they have been analyzed by a laboratory approved by the department, except that measurements for alkalinity, bromide, calcium, daily chlorite samples at the entrance to the distribution system, conductivity, magnesium, orthophosphate, pH, residual disinfectant concentration, silica, specific ultraviolet absorbance, temperature, and turbidity may be performed by personnel acceptable to the department.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10732 Specific testing frequencies; sample locations and parameters.

Rule 732. (1) The department may require a supplier of water to monitor raw water, water during stages in the treatment system if treatment is employed, and water from the distribution system at frequencies and for parameters as specified by the department.

(2) Parameters required by subrule (1) may include other constituents than the MCL's including, but not limited to, chlorine residual.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10733 Modification of monitoring requirements for type I public water supplies which supply water to additional public water supplies.

Rule 733. When a type I public water supply supplies water to 1 or more other public water supplies, the department may modify the monitoring requirements prescribed by this part to the extent that the interconnection of the public water supplies justifies treating them as a single water supply for monitoring purposes. Modified monitoring shall be conducted pursuant to a schedule specified by the department and concurred in by the regional administrator.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10734 Required reporting to the department.

Rule 734. (1) Unless otherwise specified in this part, a supplier of water shall report to the department the results of a measurement or analysis required by this part within the first 10 days of the month following the month in which the results are received, or within the first 10 days following the end of the required monitoring period, whichever is sooner.

(2) Unless otherwise specified in these rules, a supplier of water shall report, to the department, within 48 hours, failing to comply with a state drinking water standard or other requirement under these rules, including failing to comply with a monitoring requirement under this part.

(3) A supplier of water shall not be required to report analytical results to the department in cases where the department laboratory performs the analysis and reports the results to the department.

(4) A public water system, upon discovering that a waterborne disease outbreak that is potentially attributable to that water system has occurred, shall report that occurrence to the department as soon as possible, but not later than the end of the next business day.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 2002 MR 10, Eff. May 30, 2002.

R 325.10735 Vigilance of threats or hazards; notification to department.

Rule 735. (1) A public water supply shall maintain continued vigilance of activities posing threats or hazards of undue contamination to the source of water.

(2) In the event of a threat of contamination of a public water supply source, the public water supply shall immediately notify the department.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10736 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 2002 MR 10, Eff. May 30, 2002.

R 325.10737 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 1991 MR 11, Eff. Nov. 22, 1991.

R 325.10738 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 2002 MR 10, Eff. May 30, 2002.

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 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.

(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, 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 will 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 and that the groundwater supply intends to use for representative sampling under this paragraph.

(iii) 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 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 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 is caused by a distribution system deficiency.

(ii) The total coliform positive sample collected under R 325.10705 to R 325.10706 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.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10739a Groundwater supply rules; compliance monitoring.

Rule 739a. (1) This subrule applies to existing groundwater sources. A groundwater supply that is not required to meet the source water monitoring requirements of R 325.10612, R 325.10612a, R 325.10739, this rule, or R 325.10739b for 1 or more groundwater sources because it provides not less than 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 1 or more groundwater sources before December 1, 2009, shall notify the department in writing that it provides not less than 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 the specified groundwater source and begin compliance monitoring under subrule (3) of this rule by December 1, 2009. Notification to the department shall include engineering, operational, or other information that the department requests to evaluate the submission. If the groundwater supply subsequently discontinues 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 a groundwater source, the supply shall conduct groundwater source monitoring as required under R 325.10739.

(2) This subrule applies to new groundwater sources. A groundwater supply that places a groundwater source in service after November 30, 2009, that is not required to meet the source water monitoring requirements of R 325.10612, R 325.10612a, R 325.10739, this rule, or R 325.10739b because the groundwater supply provides not less than 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 the groundwater source shall comply with all of the following:

(a) The groundwater supply shall notify the department in writing that it provides not less than 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 the groundwater source. Notification to the department shall include engineering, operational, or other information that the department requests to evaluate the submission.

(b) The groundwater supply shall conduct compliance monitoring as required under subrule (3) of this rule within 30 days of placing the source in service.

(c) The groundwater supply shall conduct groundwater source monitoring under R 325.10739 if the groundwater supply subsequently discontinues 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 the groundwater source.

(3) This subrule applies to monitoring requirements. A groundwater supply subject to the requirements of R 325.10612a or subrule (1) or (2) of this rule shall monitor the effectiveness and reliability of treatment for that groundwater source before or at the first customer as follows:

(a) Both of the following apply to chemical disinfection:

(i) A groundwater supply that serves more than 3,300 people shall continuously monitor the residual disinfectant concentration using analytical methods adopted by reference in R 325.10605 at a location approved by the department and shall record the lowest residual disinfectant concentration each day that water from the groundwater source is served to the public. The groundwater supply shall maintain the department determined residual disinfectant concentration every day the groundwater supply serves

water from the groundwater source to the public. If there is a failure in the continuous monitoring equipment, the groundwater supply shall conduct grab sampling every 4 hours until the continuous monitoring equipment is returned to service. The groundwater supply shall resume continuous residual disinfectant monitoring within 14 days.

(ii) A groundwater supply that serves 3,300 or fewer people shall monitor the residual disinfectant concentration using analytical methods adopted by reference in R 325.10605 at a location approved by the department and record the residual disinfection concentration each day that water from the groundwater source is served to the public. The groundwater supply shall maintain the department determined residual disinfectant concentration every day the groundwater supply serves water from the groundwater source to the public. The groundwater supply shall take a daily grab sample during the hour of peak flow or at another time specified by the department. If any daily grab sample measurement falls below the department determined residual disinfectant concentration, the groundwater supply shall take follow-up samples every 4 hours until the residual disinfectant concentration is restored to the department determined level. Alternatively, a groundwater supply that serves 3,300 or fewer people may monitor continuously and meet the requirements of paragraph (i) of this subdivision.

(b) A groundwater supply that uses membrane filtration to meet the requirements of R 325.10612, R 325.10612a and R 325.10739, this rule, and R 325.10739b shall monitor the membrane filtration process under all department specified monitoring requirements and shall operate the membrane filtration under all department specified compliance requirements. A groundwater supply that uses membrane filtration is in compliance with the requirement to achieve not less than 4-log removal of viruses when all of the following conditions are met:

(i) The membrane has an absolute molecular weight cut off (MWCO), or an alternate parameter that describes the exclusion characteristics of the membrane, that can reliably achieve not less than 4-log removal of viruses.

(ii) The membrane process is operated under department specified compliance requirements.

(iii) The integrity of the membrane is intact.

(c) A groundwater supply that uses a department approved alternative treatment to meet the requirements of R 325.10612, R 325.10612a and R 325.10739, this rule, and R 325.10739b by providing not less than 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 shall comply with both of the following:

(i) Monitor the alternative treatment under all department specified monitoring requirements.

(ii) Operate the alternative treatment under all compliance requirements that the department determines to be necessary to achieve not less than 4-log treatment of viruses.

(4) A groundwater supply that discontinues 4-log treatment of viruses under R 325.10612a(3) is subject to the source water monitoring requirements of R 325.10739.

(5) Failure to meet the monitoring requirements of subrules (1) to (3) of this rule is a monitoring violation and requires the groundwater supply to provide public notification under R 325.10404.
History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10739b Groundwater supply rules; reporting and recordkeeping.

Rule 739b. (1) In addition to the reporting requirements of R 325.10734, a groundwater supply subject to R 325.10612 shall provide all of the following information to the department:

(a) A groundwater supply conducting compliance monitoring under R 325.10739a shall notify the department any time the groundwater supply fails to meet a department specified requirement including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation under the criteria or requirements is not restored within 4 hours. The groundwater supply shall notify the department as soon as possible, but in no case later than the end of the next business day.

(b) After completing any corrective action under R 325.10612a(1), a groundwater supply shall notify the department within 30 days of completion of the corrective action.

(c) If a groundwater supply subject to the requirements of R 325.10739(1) does not conduct source water monitoring under R 325.10739(1)(e)(ii), the groundwater supply shall provide documentation to the department within 30 days of the total coliform positive sample that it met the department criteria.

(2) A groundwater supply subject to R 325.10612 shall maintain records under R 325.11509.
History: 2009 MR 23, Eff. Dec. 4, 2009.

PART 8. GROUNDWATER SOURCES

R 325.10801 Purpose.

Rule 801. The purpose of this part is to establish certain requirements and objectives for the isolation and construction of wells used by public water supplies to provide a continuous, adequate quantity of water meeting the state drinking water standards.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10802 Applicability; approval of deviation from minimum standards and requirements.

Rule 802. (1) This part applies to public water supplies that use wells to supply groundwater for a public water supply. This part sets minimum standards and requirements to be met to receive permits or approvals from the department for waterworks systems. For purpose of this part, a supplier of a proposed public water supply is considered a public water supply.

(2) Deviations from the minimum standards and requirements in this part may be approved by the department if a public water supply demonstrates that a deviation will not adversely affect the public health. Deviations from this part shall be by permit condition for type I or type II public water supplies, and in writing by the department for type III public water supplies.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10804 Type III public water supplies; applicability of other rules.

Rule 804. Type III public water supplies shall comply with part 1 well construction code, R 325.1601 to R 325.1676 promulgated under part 127 water supply and sewer systems of 1978 PA 368, MCL 333.12701 to 333.12715, except where specific requirements for type III public water supplies prescribed by this part are more restrictive.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10805 Retroactivity of rules; significant changes or major repairs made to existing well; utilization of well not in compliance with this part.

Rule 805. (1) This part is not retroactive for individual well installations constructed before January 12, 1978 unless 1 or more of the following conditions exists:

(a) Water quality from the well does not meet the state drinking water standards.

(b) The department determines that continued use of a well represents a health hazard.

(c) A well violates rules that were in effect at the time of construction.

(2) Significant changes or major repairs made to a well that existed before January 12, 1978 shall conform to this part. Significant changes include replacing the casing, modifying the depth of a well, installing new pumping equipment of a different type or of higher capacity, or modifying the pump setting. In general, a significant change or major repair shall be considered to have occurred if the pumping capacity is increased above the original capacity as a result of the work. A significant change or major repair shall not include routine maintenance or incidental repairs.

(3) A public water supply proposing to utilize water from a well or well field not in compliance with this part may be required to provide continuous treatment of the water in a manner acceptable to the department and shall obtain written approval from the department before utilizing that well or well field as part of a public water supply.

(4) A public water supply employing a complete treatment system to treat a groundwater source may be granted special consideration by the department for the location and construction of wells used as a raw water source before treatment.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10806 Change in classification of public water supply.

Rule 806. Requirements or criteria of this part for the various types of public water supplies shall be based on the facilities which the public water supply is intended to serve. If the volume of water used or the type of facilities or number of units served by a public water supply changes in such a way as to cause a change in the classification of a public water supply, the public water supply shall meet requirements applicable to the new classification.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10807 Location of well.

Rule 807. A well shall be located with due consideration given to the extent of the property, the contour of the land, elevation of the site, the depth to the water table, other geological characteristics, local groundwater conditions, and other factors necessary to provide a safe and reliable public water supply. A well shall meet all of the following requirements:

(a) Located so the well and its surrounding area is controlled and protected from potential sources of contamination.

(b) Adequate in size, design, and development for the intended use.

(c) Constructed to maintain existing natural protection against contamination of water-bearing formations and to prevent all known sources of contamination from entering the well.

(d) Protected against the entry of surface water.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10808 Standard isolation area generally.

Rule 808. The standard isolation areas from any existing or potential sources of contamination, including, but not limited to, storm and sanitary sewers, pipelines, septic tanks, drain fields, dry wells, cesspools, seepage pits, leaching beds, barnyards, or any surface water, other area or facility from which contamination of the groundwater may occur, are established for public water supplies as follows:

(a) For type I and type IIa public water supplies, the standard isolation area is an area measured with a radius of 200 feet in all directions from the well.

(b) For type IIb and type III water supplies, the standard isolation area is an area measured with a radius of 75 feet in all directions from the well.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10809 Standard isolation area; modification; approval.

Rule 809. (1) Modifications of the standard isolation area, if any, shall be determined for a site based on a study of hydrogeological conditions provided to the department by a public water supply under R 325.10813 and R 325.10814.

(2) The department may require an increase or approve a decrease in the standard isolation area of a well.

(3) Approval of the isolation area shall be obtained from the department before construction of a production well used for drinking or household purposes as part of a public water supply.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10810 Standard isolation area for type I public water supplies; ownership or control.

Rule 810. (1) A type I public water supply shall own the approved isolation area except as provided by subrule (2) of this rule to prevent use of the property which could result in contamination of the public water supply.

(2) If a type I public water supply adequately demonstrates to the department that ownership of the isolation area is not possible, adequate control of the isolation area shall be required. Adequate control may be a long-term lease or easement including provisions to prevent use of the isolation area which could result in contamination of the well.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10811 Sewers within approved isolation area.

Rule 811. (1) A storm or sanitary sewer shall not be located within the approved isolation area of a well for a type I or type IIa public water supply.

(2) A buried sewer, located within the approved isolation area for a type IIb or type III public water supply, shall be constructed with materials and joints as approved in writing by the department.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10812 Location of wells; major sources of contamination.

Rule 812. Wells serving type I and type IIa public water supplies shall be located a minimum distance of 2,000 feet, and wells serving type IIb and type III public water supplies shall be located a minimum

distance of 800 feet, from known major sources of contamination, including large scale waste disposal sites, land application of sanitary wastewater or sludges, sanitary landfills, and chemical or waste chemical storage or disposal facilities. The department may require an increase or approve a decrease in the 2,000 foot distance for type I or type IIa public water supplies or the 800 foot distance for type IIb or type III public water supplies based on a study of hydrogeological conditions or other methods approved by the department for identifying the capture zone of a well.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10813 Study of hydrogeological conditions by type I and type IIa public water supplies.

Rule 813. (1) A type I or type IIa public water supply shall prepare a study of hydrogeological conditions for determination of an isolation area and the acceptability of a test well location. The study shall be provided to the department and approval obtained.

(2) Previous studies of hydrogeological conditions that meet the criteria and intent of this rule may be considered by the department in determining the scope of or need for a study.

(3) A study of hydrogeological conditions shall mean investigations and a compilation and evaluation of data necessary to determine the isolation area, the acceptability of a test well location and construction, and the availability of water at that location. The study of hydrogeological conditions may include the following:

(a) The type of public water supply.

(b) The well capacity required of the public water supply.

(c) The test well depth and construction features.

(d) Identification of geological formations, including the thickness and characteristics of the aquifer, the number and thicknesses of protective layers, and if deemed necessary by the department, the areal extent of the protective formations.

(e) Location of the test well relative to sources of contamination.

(f) Susceptibility of the test well location to flooding.

(g) Depth to the water table from the established ground surface.

(h) Proximity of the well to surface water.

(i) An aquifer test of the well in accordance with R 325.10830.

(j) Water quality analyses.

(k) Identification of the contributing area to a well based on ground water flow simulations using a computer model as approved by the department.

(l) The location of the test well as a latitude and longitude expressed in degrees-minutes-seconds or degrees-decimal degrees to 5 significant digits.

(4) The scope of the hydrogeological study may vary depending on the capacity required of the public water supply in relation to the aquifer capacity, the need for a modification of a standard isolation area, or other factors; and may include additional determinations required by the department, such as the general aquifer characteristics and interference relative to other wells and surface waters in proximity to the well site.

(5) Where an adverse resource impact, as defined in section 32701 of 1994 PA 451, MCL 324.32701 is likely to occur, the department may require the public water supply to provide for the collection of stream or river flow measurements on stream segments likely impacted by the operation of a well or wells by the public water supply. Flow measurements shall be required on not more than 2 potentially impacted stream segments selected by the department. When required by the department, the public water supply shall provide not fewer than 5 miscellaneous measurements of flow from each stream taken at a frequency of once a month from June to October, and not more than continuous flow monitoring in each stream for 6 months before to 1 year after the well or wells are put in service.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10814 Studies of type IIb and type III public water supplies.

Rule 814. If a modification of the standard isolation area is requested by a type IIb or type III public water supply, the public water supply shall submit to the department and obtain approval for a study of hydrogeological conditions consistent with the capacity of the well and the capacity of the aquifer, and may include identification of the contributing area to a well serving the type IIb or type III public water supply based on groundwater flow simulations using a computer model as approved by the department.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10815 Conversion of a test well to a production well serving type I and type II public water supplies; procedures for department approval.

Rule 815. (1) To receive department approval of the location and acceptability of a test well for conversion to a production well serving a type I or type II public water supply, the following conditions shall be met:

(a) Approval has been obtained from the department for the land parcel on which the test well is located.

(b) For type I public water supplies, ownership or adequate control as required by R 325.10810 or an option for ownership or adequate control of the required isolation area has been secured for the land parcel on which the test well is located.

(c) Where required, a study of hydrogeological conditions has been conducted that includes identification of the capture zone of the proposed production wells and has been approved by the department.

(d) Satisfactory aquifer tests have been completed on the test well or the well capacity has been established to the satisfaction of the department by other means.

(e) Water quality analyses show results meeting the state drinking water standards.

(2) When the department finds that a test well, its location, and its construction features meet the requirements of this part, the department may authorize conversion of the test well to a production well and, where necessary, the construction of additional production wells at the location.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10816 Location of well in area subject to flooding.

Rule 816. (1) A well shall not be located in an area subject to flooding unless the well is protected as approved in writing by the department. The ground surface immediately adjacent to a well casing shall be graded so that surface water is diverted away from the casing. Surface flooding shall not be allowed closer than 25 feet from the well.

(2) The top of a well casing, any other opening into the well casing, well appurtenances, and controls shall be not less than 2 feet above the greater of the following:

(a) One hundred-year flood elevation.

(b) The maximum recorded flood elevation.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10817 Top of well casing; elevation.

Rule 817. The top of a well casing shall terminate not less than 12 inches above the established ground surface, or the floor of a pump room, well room, or well house. In addition, for type IIb and type III public water supplies the top of a well casing may terminate not less than 12 inches above the floor of an approved basement offset.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10818 Minimum well casing depth.

Rule 818. Casings for all wells serving public water supplies shall extend not less than 25 feet below the established ground surface.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10819 Well casing in rock formation.

Rule 819. (1) In an area where a well is to be developed in fractured, jointed, or cavernous rock, the well shall not be approved as a production well unless all of the following conditions exist:

(a) Adequate protective material above the aquifer.

(b) No evidence of aquifer contamination.

(c) No direct flow from surface or near surface sources to the rock aquifer.

(2) The department may also approve a well developed in fractured, jointed, or cavernous rock based on special well construction features and a hydrogeologic study.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10820 Water suction lines.

Rule 820. (1) A casing shall not be used as a suction line unless protected by a permanent outer casing.

(2) For type I and type IIa public water supplies, a buried water suction line extending outside the well casing is prohibited.

(3) For type IIb and type III public water supplies, a buried water suction line extending outside the well may be used if protected in a manner approved by the department.

(4) Any buried pump discharge line shall be under positive pressure at all times.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10821 Casing materials.

Rule 821. All casings used for wells serving a public water supply shall be of materials approved in writing by the department.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10822 Grouting.

Rule 822. All wells that serve public water supplies shall be grouted by a method approved by the department to obtain a tight bond between the well casing and the undisturbed natural earth formations, thus preventing the entrance of any surface water or near surface contaminants to the groundwater source.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991.

R 325.10823 Flowing artesian wells; well construction.

Rule 823. In areas where flowing artesian wells are commonly encountered, the well construction methods proposed by a public water supply to protect a flowing artesian aquifer and confining strata shall be submitted to the department and approval obtained prior to the start of construction.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10824 Flowing artesian wells; flow control.

Rule 824. For flowing artesian wells, a direct connection between a discharge pipe for flow control and a sewer or other source of contamination is prohibited.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10825 Elevation of discharge from well casing; location of connection to well casing.

Rule 825. (1) For type I and type IIa public water supplies, a discharge from a well casing at an elevation less than 12 inches above the established ground surface is prohibited, except where an installation with an approved pitless adapter is permitted by the department.

(2) For type IIb and type III public water supplies, a connection to a well casing may be at least 12 inches above the floor of an approved basement offset, pump room, or well room, or the requirements of subrule (1) shall be met.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10826 Construction and location of room housing pumping equipment or room housing top of well casing.

Rule 826. (1) For type I and type IIa public water supplies, a room housing pumping equipment or a room housing the top of a well casing, where used, shall be constructed above the established ground surface allowing access to the pump for maintenance or repair.

(2) For type IIb and type III public water supplies, a room housing pumping equipment may be located below the established ground surface if it is located in, or attached to, an approved basement or is drained to the ground surface by gravity.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10827 Tail pipe or pump suction pipe; termination.

Rule 827. In screened wells, the bottom of a tail pipe or pump suction pipe shall terminate not less than 5 feet above the top of the screen.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10828 Casing vents; sampling tap; relief valves.

Rule 828. (1) Casing vents shall be both of the following:

(a) Provided on all wells and constructed to prevent the entrance of contaminants into the well.

(b) Extended to the outside atmosphere above the roof level if toxic or flammable gases are present.

(2) Provisions shall be made for collection of raw water samples by installation of a proper sampling tap in a convenient location as close to each well as possible. Provisions shall be made for collection of finished water samples by installation of a proper sampling tap at each entry point to the distribution system.

(3) Air-vacuum relief valves, where used, shall be constructed to prevent entrance of contaminants into the well.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10829 Well appurtenances; type I public water supplies.

Rule 829. (1) The following is required of each well serving type I public water supplies:

(a) Each well shall be equipped with a meter or other acceptable means to measure the volume of water produced.

(b) Each well shall be provided with an electrical outlet energized with the pump motor, chemical injection taps, and space necessary for the addition of chemicals so that treatment equipment can be readily connected to the well discharge line in the event the department requires chemical treatment to protect the public health.

(c) Each well shall be equipped to allow pumping to waste without interrupting normal service in the distribution system.

(d) Each well shall be equipped with a means to measure the water level.

(2) Subdivisions (a) and (b) of subrule (1) do not apply to individual wells which are a part of a multiple well field serving a type I public water supply if the multiple well field is equipped in accordance with the provisions of subdivisions (a) and (b) or where a well is a raw water source for a treatment system when the treatment system is equipped with a meter or other acceptable means to measure the volume of water produced.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10830 Aquifer or performance testing requirements.

Rule 830. (1) Each well constructed to serve a public water supply shall undergo an aquifer test or performance test, by a method approved by the department, after installation of a production well and prior to use of a well to supply water to a waterworks system.

(2) For type I and type IIa public water supplies, aquifer tests or performance tests shall be performed on the test well or production well. The tests may be required to do any of the following:

(a) Determine the adequacy of well depth and development.

(b) Secure water samples for quality analyses.

(c) Determine well capacity and production on a long-term basis.

(d) Determine drawdown.

(e) Select permanent pumping equipment.

(f) Evaluate well efficiency.

(g) Assure proper utilization and protection of groundwater aquifers.

(3) For type IIb and type III public water supplies, aquifer tests or performance tests of wells shall demonstrate that water can be safely withdrawn from an aquifer in sufficient quantity to provide water for drinking and household purposes and of a quality meeting the state drinking water standards.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10831 New or reconditioned well; disinfection; water samples.

Rule 831. (1) A new or reconditioned well or pump installation or well facility which is opened for maintenance or inspection shall be pumped to waste until the water is as clear as reasonably possible. Thereafter, the well and pumping equipment shall be properly disinfected.

(2) Before placing a new or reconditioned well or a well facility which is opened for maintenance or inspection into service, all of the following shall occur:

(a) Testing shall show the water to be free of chlorine before collection of each bacteriologic sample.

(b) Not fewer than 2 consecutive water samples for bacteriological analyses shall be collected from the well or well facility 24 hours apart, unless an alternate interval is approved by the department.

(c) Each analysis shall not indicate the presence of coliform. Analyses for other contaminants may be required by the department.

History: 1979 AC; 1991 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10832 Abandoned wells.

Rule 832. An abandoned well shall be properly filled and sealed to prevent it from becoming a hazard or serving as a channel for contamination of the groundwater or the escape of subterranean gas.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10833 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 1991 MR 11, Eff. Nov. 22, 1991.

PART 9. SURFACE WATER SOURCES

R 325.10901 Purpose.

Rule 901. The purpose of this part is to establish certain requirements for the location and use of raw water intakes in surface water sources to assure a continuously adequate quantity of the best quality raw water available for treatment and distribution to the public.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10902 Applicability; approval of deviations from minimum standards and requirements.

Rule 902. (1) This part applies to public water supplies utilizing surface water sources. This part sets minimum standards and requirements to be met to receive permits or approvals from the department for waterworks systems or portions of waterworks systems. For purpose of this part, a supplier of a proposed public water supply is considered a public water supply.

(2) Deviations from the minimum standards and requirements of this part may be approved by the department if a public water supply demonstrates that a deviation will not adversely affect the public health. Deviations from this part shall be by permit condition for type I and type II public water supplies, and in writing by the department for type III public water supplies.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10904 Retroactivity of rules.

Rule 904. This part is not retroactive for intakes in surface water sources constructed before January 12, 1978, unless the department determines that continued use of the intake or surface water source poses a health hazard.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10905 Assessment of proposed surface water source.

Rule 905. (1) An assessment of a proposed surface water source shall be performed by the public water supply. The scope or need for the assessment shall be established in advance by the department after consultation with the owner.

(2) All of the following shall be determined for each alternate location of a surface water intake:

(a) The normal water quality.

(b) Any significant variations in water quality.

(c) Any existing or potential hazards to public health.

(d) The suitability of the water for treatment.

(e) The availability of an adequate and dependable source.

(3) Previous assessments of the same surface water source may be considered by the department in determining the scope or need for an assessment required by subrule (1) of this rule.

(4) The results of the assessment shall be submitted to the department for review, and approval shall be obtained prior to the issuance of a permit for the construction or use of an intake in a surface water source.

(5) Where the water quality of the proposed surface water source is unknown, the department may require sampling and analyses by the public water supply for a period not to exceed 1 year to determine water quality and suitability of the water for treatment.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.10906 Intake from surface water source; design capacity.
Rule 906. An intake from a surface water source shall be designed to withdraw raw water in no greater quantity than the available yield at the 100-year drought elevation or flow.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10907 Intake inlet and pipeline.
Rule 907. (1) The intake inlet shall be submerged so that hazards of the source waters, including physical hazards, icing hazards, and shipping hazards are minimized.
(2) Approval of the intake inlet configuration and construction materials shall be based on protection of the structure and control of the inlet velocity.
(3) The intake pipeline shall be constructed to reasonably protect against physical hazards associated with the surface water source.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10908 Approval of intake materials.
Rule 908. Classes and types of materials used for intake pipelines, joints, and intake inlets shall be as approved by the department.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.10909 Pressure testing required.
Rule 909. Pressure testing is required and the intake line shall meet the requirements of the pressure test prior to placing a new intake line into service.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

PART 10. TREATMENT SYSTEMS AND PUMPING FACILITIES

R 325.11001 Purpose.
Rule 1001. The purpose of this part is to establish requirements for the treatment of surface water sources or other sources of water requiring treatment, and to establish requirements for water pumping facilities operated to provide a continuously adequate quantity of water meeting the state drinking water standards.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11002 Applicability; approval of deviations from minimum standards and requirements.
Rule 1002. (1) This part applies to public water supplies regarding subpart H systems, certain other treatment systems, and all water pumping facilities. This part sets standards and requirements to be met to receive permits or approvals from the department for waterworks systems. For purpose of this part, a supplier of a proposed public water supply is considered a public water supply.
(2) Deviations from the minimum standards and requirements in this part may be approved by the department if the public water supply demonstrates that the deviation will not adversely affect public health.
(3) Any deviations to the requirements for treatment of water sources shall not be in conflict with these rules.
History: 1979 AC; 1991 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11004 Rescinded.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 1994 MR 12, Eff. Jan. 5, 1995; rescinded 2003 MR 2, Eff. Jan. 29, 2003.

R 325.11005 Treatment system; measurement of volume and rate of finished water flow.

Rule 1005. Each treatment system shall be provided with a means to measure the volume and rate of finished water produced.

History: 1954 ACS 94, Eff. 12, 1978; 1979 AC.

R 325.11006 Rated capacity of complete treatment system.

Rule 1006. (1) The department shall establish the rated capacity of new or existing complete treatment systems.

(2) The department shall notify the public water supply of its determination of rated capacity on the permit for a new complete treatment system or on the permit for an existing complete treatment system which undergoes alterations which affect rated capacity.

(3) The rated capacity of the complete treatment system is the smallest of the following rated capacities for each element or unit of the system:

(a) Intake. The rated capacity of the intake is the lesser of the intake capacity at the 100 year drought elevation or the intake capacity at the time of the lowest recorded elevation of surface water at the point of intake.

(b) Raw water supply. The rated capacity of the raw water supply is the firm capacity of raw water pumping units or the total flow from a system supplying raw water by gravity under minimum source water elevation conditions.

(c) Treatment processes. The rated capacity of treatment processes including coagulation, precipitation, sedimentation, and filtration is the established maximum allowable treatment rate. Where less than 4 filters are provided, the rated capacity of the filters is the maximum allowable treatment rate with the largest filter removed from service.

(d) Finished water supply. The rated capacity of the finished water supply to the distribution system or storage is the firm capacity of pumping systems or the total flow from a system supplying finished water by gravity under the limiting head condition.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11007 Retroactivity of rules.

Rule 1007. R 325.11006 and R 325.11008 are not retroactive for complete treatment systems constructed before January 12, 1978, unless the department determines that continued use of the existing system represents a health hazard.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11008 Complete treatment system; design and operation requirements.

Rule 1008. (1) A minimum of 2 units shall be provided for each treatment process for coagulation, sedimentation, and filtration.

(2) A sufficient primary coagulant dose shall be added to create a settleable or filterable floc at all times that a conventional filtration or direct filtration plant is in operation.

(3) Essential chemical systems for the application of disinfectants, primary coagulants, and other chemicals, as required by the department, shall be equipped to provide service at the maximum allowable treatment rate with the largest unit removed from service.

(4) Equipment provided for disinfection required under subrule (3) of this rule shall be capable of treatment at the rated treatment capacity with the largest unit removed from service.

(5) Application points for disinfection shall be provided, or be available, at all of the following locations:

(a) Before coagulation.

(b) Immediately preceding filtration.

(c) Immediately following filtration.

(d) Immediately before entry of finished water into the distribution system.

(6) Each unit or element of a complete treatment system shall be provided with a means to remove it from service without interrupting the treatment process. However, a complete bypass of the coagulation, sedimentation, or filtration processes is prohibited.

(7) Each unit or element of a complete treatment system shall be provided with a means to drain and with overflow control sufficient to prevent flooding of the facility.

(8) Common walls between finished water and water of lesser quality are prohibited.

(9) Each complete treatment system shall be provided with a means to measure the volume and rate of raw water supplied and finished water produced.

(10) A complete treatment system shall be protected from the highest recorded flood elevation or the 100-year flood elevation, whichever is greater.

(11) Components of a complete treatment system which are essential for the protection of the public health and which are required for the production of drinking water on a continuous basis shall be protected from flooding.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 2003 MR 2, Eff. Jan. 29, 2003.

R 325.11009 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 2003 MR 2, Eff. Jan. 29, 2003.

R 325.11010 Applicability of pumping facility.

Rule 1010. Until January 1, 2016, R 325.11011 and R 325.11012 apply to all raw water, finished water, and distribution system pumping installations in type I public water supplies, except distribution system pumping facilities where service is provided to less than 50 service connections or to less than 200 individuals. Beginning January 1, 2016, R 325.11011 and R 325.11012 apply to all raw water, finished water, and distribution system pumping installations in type I public water supplies.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11011 Pumping facility; capacity.

Rule 1011. A pumping facility shall have sufficient capacity to meet the service area demands with the largest unit removed from service.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11012 Pumping facility; servicing.

Rule 1012. Each unit of a pumping facility shall be provided with a means to remove it from service without interrupting service to the distribution system.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11013 Pumping facility; storage and demand.

Rule 1013. All pumping facilities operating with hydropneumatic storage systems or with less than adequate gravity storage systems shall have capacity equal to, or greater than, peak instantaneous demands. This rule shall apply to all public water supplies.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11014 Pumping facility; protection from flooding.

Rule 1014. (1) A pumping facility shall be protected from the highest recorded flood elevation or the 100-year flood elevation, whichever is greater.

(2) Components of a pumping facility essential for protection of public health and required for pumping water on a continuous basis shall be protected from flooding.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11015 Pumping facility; pressure.

Rule 1015. (1) All finished water pumping facilities shall be designed to maintain a minimum pressure of 5 psi gauge in all buried suction piping and suction piping subject to flooding.

(2) For finished water pumping facilities taking direct suction from a distribution system, a minimum pressure of 35 psi under normal operating conditions and 20 psi during emergencies such as fire fighting shall be maintained in the distribution system on the low pressure side of the facility.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11016 Protection of treatment systems and pumping facilities.

Rule 1016. Public water supplies shall take reasonable precautions to protect treatment systems and pumping facilities from trespassers and to prevent introduction of contaminants into the waterworks system.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

PART 11. DISTRIBUTION SYSTEMS AND STORAGE TANKS

R 325.11101 Purpose.

Rule 1101. The purpose of this part is to establish certain requirements for distribution systems and water storage tanks to assure a continuously adequate quantity and quality of water for drinking and household purposes.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11102 Applicability; approval of deviations from minimum standards and requirements.

Rule 1102. (1) This part applies to public water supplies. This part sets minimum standards and requirements to be met to receive permits or approvals from the department for waterworks systems. For purposes of this part, a supplier of a proposed public water supply is considered a public water supply.

(2) Deviations from the minimum standards and requirements in this part may be approved by the department if a public water supply demonstrates that a deviation will not adversely affect the public health. Deviations from this part shall be by permit condition for type I public water supplies, and in writing by the department for type II and type III public water supplies.

History: 1979 AC; 1998 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11104 Retroactivity of rules.

Rule 1104. This part is not retroactive for distribution systems and water storage tanks constructed before January 12, 1978, unless the department determines that continued use of a distribution system or storage tank poses a health hazard.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11105 Capacity of distribution system; fire hydrants; inadequately sized watermains.

Rule 1105. (1) Distribution systems shall have sufficient capacity to meet peak demands, including fire flow demands where fire protection is provided, while continuously maintaining a minimum of 35 psi throughout the distribution system under normal operating conditions and 20 psi throughout the distribution system during emergencies such as fire fighting.

(2) The department may prohibit installation of fire hydrants where watermain capacity, system source capacity, storage capacity, or pressure is inadequate to sustain fire flow demands in addition to normal user demands.

(3) Replacement of inadequately sized watermains with watermains of the same size is prohibited.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11106 Water main and joint materials.

Rule 1106. Classes and types of materials used for water mains and joints shall be as approved in writing by the department.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11107 Isolation of water mains from sources of contamination.

Rule 1107. All public water supplies shall maintain adequate vertical and horizontal isolation of water mains from sources of contamination.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11108 Distribution system valves.

Rule 1108. (1) Sufficient valves shall be provided on distribution systems to minimize interruptions in service and minimize sanitary hazards during construction or repairs.

(2) Automatic air relief and automatic vacuum relief valves, if provided on the distribution system, shall be installed and maintained to prevent contaminants from entering the distribution system.

(3) Buried stop-and-waste valves on service lines and the installation of other valves with openings subject to flooding are prohibited.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11109 Type I public water supplies; pressure testing of new water mains.
Rule 1109. For type I public water supplies, pressure testing is required for new water mains, and the requirements of the pressure test shall be met prior to placing a new water main in service.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11110 Distribution systems; flushing, disinfection, and water analysis.
Rule 1110. (1) Proper techniques shall be followed during construction to keep water mains clean and dry. New water mains shall be flushed thoroughly before disinfection.
(2) Disinfection of new water mains is required.
(3) Before placing a new water main in service, all of the following shall occur:
(a) Before collection of each bacteriologic sample, heavily chlorinated water shall be flushed from the main and appurtenances until the chlorine measurements in the water leaving the main is absent or no higher than that normally maintained in the distribution system.
(b) Not fewer than 2 consecutive water samples for bacteriological analysis shall be collected 24 hours apart unless an alternate interval is approved by the department.
(c) An analysis shall not indicate the presence of coliform. Analyses for other contaminants may be required if the department has reason to believe that these contaminants are present.
(4) A public water supply in which all or part of a distribution system is not in year-round service shall comply with subrules (2) and (3) of this rule before placing the system into service for the season.
History: 1979 AC; 1991 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11111 Distribution system records.
Rule 1111. A public water supply shall maintain adequate records on the operation of the water distribution system, on the location and type of maintenance performed, and on the type of materials and appurtenances used.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11112 Storage tanks generally.
Rule 1112. All storage tanks, including hydropneumatic or gravity storage tanks which are used for the storage of finished water, shall meet all of the following requirements:
(a) Be watertight below the maximum water level elevation.
(b) Be constructed with materials and coatings approved by the department pursuant to part 21 of these rules.
(c) Have no unprotected openings.
(d) Be provided with access to the inside of the tank for inspection or repair.
(e) Be capable of being isolated from the distribution system and drained without interrupting service to users or customers.
(f) Prevent sediment or debris which may collect in the tank from entering the distribution system.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11113 Gravity storage tanks.
Rule 1113. All gravity storage tanks shall be provided with all of the following:
(a) A watertight and properly drained roof.
(b) A vent of sufficient size.
(c) An overflow line of sufficient size.
(d) A high and low level warning device.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11114 Ground level gravity storage tanks.
Rule 1114. (1) The bottom of a ground level gravity storage tank shall be above the highest groundwater level.
(2) The bottom of a ground level gravity storage tank shall be located at least 1 foot above the 100-year flood elevation or the maximum recorded flood elevation, whichever is greater.

(3) The site of a ground level gravity storage tank shall be graded to direct surface drainage away from the tank.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11115 Hydropneumatic storage tanks.
Rule 1115. (1) For type I and type IIa public water supplies, a hydropneumatic tank shall be located above the established ground surface and installed in a wellhouse, except it shall be acceptable to expose 1 end of the hydropneumatic tank and the controls in a wellhouse and mound earth cover material over the remainder of the tank.
(2) For type IIb and type III public water supplies, a hydropneumatic tank may be partially buried if controls are located in an approved basement or in a room or pit drained by gravity to the ground surface. A totally buried hydropneumatic tank may be used if manufactured and installed as approved by the department.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11116 Type I public water supplies; pressure testing of new storage tanks.
Rule 1116. For type I public water supplies, hydrostatic pressure testing is required for new storage tanks, and the requirements of the pressure test shall be met prior to placing a new storage tank into service.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11117 Storage tanks; disinfection and water analysis.
Rule 1117. (1) Proper techniques shall be followed during construction to keep storage tanks clean and dry.
(2) A finished water storage tank shall be disinfected before initial use and after any internal maintenance or repair activity.
(3) Before placing a storage tank into service all of the following shall occur:
(a) Before collection of each bacteriologic sample, heavily chlorinated water shall be flushed from the tank, drain piping, riser and all other appurtenances until the chlorine measurements in the water leaving the tank is absent or no higher than that normally maintained in the storage tank.
(b) Not fewer than 2 consecutive water samples for bacteriological analysis shall be collected 24 hours apart unless an alternate interval is approved by the department.
(c) An analysis shall not indicate the presence of coliform. Analyses for other contaminants may be required if the department has reason to believe that these contaminants are present.
History: 1979 AC; 1991 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11118 Protection of storage tanks.
Rule 1118. Public water supplies shall take reasonable precautions to protect storage tanks from trespassers and to prevent introduction of contaminants into the distribution system or storage tanks.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

PART 12. RELIABILITY

R 325.11201 Purpose.
Rule 1201. The purpose of this part is to establish certain requirements for maintaining the reliability of public water supply systems to assure a continuous supply of water for drinking and household purposes.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11202 Applicability; approval of deviations from minimum requirements.
Rule 1202. (1) This part applies to type I public water supplies and are minimum requirements of the department.
(2) Deviations from the minimum requirements in this part may be approved in writing by the department. For purposes of this part, a supplier of a proposed public water supply is considered a public water supply.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

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. An updated reliability study that is submitted to the department within 2 years after the effective date of this rule may be considered acceptable by the department if the study is based on a 10-year planning period or if any of the items in subrule (3)(b)(vii) to (ix) and (c) of this rule are missing.

(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.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11204 Required capacity of waterworks systems; applicability.

Rule 1204. A type I public water supply shall provide sufficient capacity in the waterworks system to meet the approved finished water supply requirements. That capacity may be 1 or any combination of the following:

(a) Rated capacity from an approved surface water supply or complete treatment system.

(b) Firm capacity from an approved groundwater supply where firm capacity equals the flow with the largest producing well out of service.

(c) The available capacity obtained under contract and capable of delivery from another approved public water supply.

(d) Finished water storage capacity in excess of the established normal waterworks system requirements.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11205 Minimum number of wells.

Rule 1205. For type I public water supplies where groundwater is the sole source of water supply, a minimum of 2 wells, with separate pumping units as required, shall be provided.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11206 Interruption of power service; applicability; compliance date.

Rule 1206. (1) A type I public water supply that provides service to 100 or more living units shall provide a means to continuously supply finished water to the entire distribution system during periods when the normal power service is interrupted. A group living facility with 200 or more beds based on full

capacity is equivalent to 100 or more living units and shall comply with this rule. Examples of a group living facility include a health care facility, correctional facility, and group home.

(2) Both of the following type I public water supplies that existed before the effective date of this rule are not required to comply with this rule until January 1, 2016:

(a) Those that serve 100 or more living units and that serve fewer than 200 individuals.

(b) Those that serve 100 or more living units and that serve facilities which are licensed annually by the state including manufactured housing communities and health care facilities.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11207 Interruption in water service to distribution system.

Rule 1207. If an interruption in water service to the distribution system occurs due to a failure in the source of supply, the water shall be disinfected in a manner approved by the department and compliance with the state drinking water standards shall be demonstrated by additional bacteriological monitoring. The department may require the supplier of water to provide notice to customers or users of the public water supply in accordance with the provisions of part 4.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

PART 13. CONSTRUCTION PLANS AND SPECIFICATIONS AND PERMITS

R 325.11301 Purpose.

Rule 1301. This part applies to type I and type II public water supplies. This part prescribes requirements regarding the submission of plans and specifications or other pertinent information for the construction or alteration of a waterworks system, or a portion of a waterworks system, to be met to receive permits by the department for that construction or alteration. For purposes of this part, a supplier of a proposed type I or type II public water supply is considered a public water supply.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11302 Submission of plans and specifications for construction or alteration of waterworks system; guidance material.

Rule 1302. (1) For type I public water supplies, before the construction or alteration of a waterworks system, or a portion of a waterworks system, plans and specifications shall be submitted to the department by a public water supply or its designated agent for review, approval, and issuance of a permit, unless otherwise accepted under R 325.11304.

(2) A permit application shall be submitted with the plans and specifications, shall identify and summarize plans or projects, and, if applicable, shall indicate the authorization of the designated agent for the public water supply.

(3) Both of the following shall be used, whenever applicable, when preparing plans and specifications:

(a) Recommended standards for water works, prepared by the Great Lakes Upper Mississippi board of state sanitary engineers under R 325.10113.

(b) Suggested practices for waterworks design, construction, and operation for type I public water supplies, prepared by the Michigan department of environmental quality, water bureau under R 325.10113.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11303 Engineering report or basis of design; approval.

Rule 1303. (1) If requested by the department, a public water supply shall submit an engineering report for a significant project or a basis of design, or both, for approval by the department, before plans and specifications are submitted for the construction or alteration of a portion of a waterworks system.

(2) The department may reject or return any plans and specifications submitted by a public water supply for the construction or alteration of a waterworks system, or a portion of a waterworks system, unless an engineering report or basis of design, or both, as requested by the department, have been approved.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11304 Type I and type II public water supplies; construction details and sketch of proposed waterworks system; replacement of watermains and appurtenances; permit.

Rule 1304. (1) Type II public water supplies shall submit construction details and an acceptable scaled drawing properly dimensioned showing important aspects of the general layout of a proposed waterworks system, or portion of a waterworks system, and shall obtain a permit for the construction or alteration of source facilities, pumping facilities, distribution systems, and storage facilities, and any treatment for public health purposes or treatment such as chemical injection that may affect public health, prior to construction.

(2) Type I public water supplies are not required to submit plans and specifications or to obtain a permit for the replacement of an adequately sized watermain or other appurtenance on a distribution system which does not affect flow or capacity.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11305 Review of plans and specifications by department.

Rule 1305. (1) Upon receipt of plans and specifications or other pertinent information for the construction or alteration of a waterworks system, or portion of a waterworks system, the department shall review them as soon as practicable to determine their completeness with regard to the minimum requirements specified by these rules, and to determine their adequacy. In making its review, the department shall not approve the plans and specifications unless it determines that the waterworks system, or portion of a waterworks system, is designed to protect the public health.

(2) If the department determines that plans and specifications or other pertinent information are incomplete or inadequate, it shall notify the public water supply or authorized agent and may request the submission of revised plans and specifications or other pertinent information with appropriate corrections or additions. The department shall not grant an approval of these submittals or issue a permit until the plans and specifications or other pertinent information are complete and are judged to be adequate.

(3) The department may designate an agent or representative, including a local health department, for the purposes of reviewing information submitted and issuing permits for type II public water supplies, where appropriate.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11306 Approval of plans and specifications; permit.

Rule 1306. (1) Upon a determination by the department that the plans and specifications or other pertinent information for the construction or alteration of a waterworks system, or portion of a waterworks system, are complete and adequate, the department shall mark the plans or scaled drawing showing approval and shall issue a permit to the public water supply.

(2) A permit issued under the act and these rules shall expire unless construction or alteration commences within 2 years from the date of issuance. A public water supply may apply for a permit extension in accordance with these rules prior to expiration of a permit. A request for a permit extension shall be submitted in writing identifying the project and the number on the permit issued by the department for which the extension is requested and the reason for requesting the extension.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11307 Denial of permit.

Rule 1307. The department may deny a permit request when it determines that a public water supply cannot provide a continuous and adequate supply of water meeting the state drinking water standards.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11308 Permit terms and conditions.

Rule 1308. The department may attach any term or condition to a permit issued under the act and these rules to a public water supply that it deems necessary to assure proper construction, alteration, and operation of a waterworks system, or a portion of a waterworks system, to protect the public health.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11309 Revision of approved plans and specifications.

Rule 1309. (1) Changes from approved plans or specifications or other pertinent information which would affect the well or watermain isolation or capacity, flow, treatment, or operation of the waterworks

system, or portion thereof, shall be submitted to the department and approval obtained before construction of the changes. Changes from approved proposals shall be submitted in advance of any construction work which will be affected by the changes to allow sufficient time for review and approval by the department.

(2) Revisions or minor changes not affecting isolation, capacity, flows, treatment, or operation may be allowed during construction without the approval of the department.

(3) As-built plans, clearly showing the work as constructed, shall be submitted to the department upon request.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11310 Minimizing operational interference with existing waterworks system; construction program.

Rule 1310. The department may request a public water supply to submit for approval a program for construction which minimizes operational interference with an existing waterworks system, and which allows the public water supply to maintain continuous service of water to customers or users of that waterworks system in a safe and reliable manner. If requested, the program shall be submitted before commencing construction or an alteration of a waterworks system.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11311 Revocation of permit.

Rule 1311. The department may revoke a permit if it determines that a public water supply or its designated agent is not constructing or making an alteration to a waterworks system in accordance with approved plans and specifications, other approved information, or the act. The department shall notify the public water supply before revocation of the permit and provide an opportunity to take corrective action as may be required. The department shall revoke the permit and simultaneously order the public water supply to halt construction authorized by that permit if the public water supply does not effect the corrections within a reasonable period of time.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

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 public water supply system due to a reversal of flow.

(b) "Safe air gap" means the minimum distance of a water inlet or opening above the maximum high water level or overflow rim in a fixture, device, or container to which public water is furnished which shall be not less than 2 times the inside diameter of the water inlet pipe, but shall not be less than 1 inch and need not be more than 12 inches.

(c) "Secondary water supply" means a water supply system maintained in addition to a public water supply, including, but not limited to, water systems from ground or surface sources not meeting the requirements of Act No. 399 of the Public Acts of 1976, being §§325.1001 to 325.1023 of the Michigan Compiled Laws, or water from a public water supply which in any way has been treated, processed, or exposed to any possible contaminant or stored in other than an approved storage facility.

(d) "Submerged inlet" means a water pipe or extension thereto from a public water supply terminating in a tank, vessel, fixture, or appliance which may contain water of questionable quality, waste or other contaminant, and which is unprotected against backflow.

(e) "Water utility" means a governmental unit, municipal or private corporation, association, partnership, or individual engaged in furnishing water to the public for household or drinking purposes.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

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, and rules including:

(a) The state plumbing act, 2002 PA 733, MCL 338.3511 to 338.3569.

(b) Local ordinances or rules providing acceptable protection against cross connections.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11403 Cross-connections prohibited.

Rule 1403. (1) A cross-connection shall not be made between a public water supply system and a secondary water supply.

(2) A cross-connection shall not be made by submerged inlet.

(3) A cross-connection shall not be made between a public water supply and piping which may contain sanitary waste or a chemical contaminant.

(4) A cross-connection shall not be made between a public water supply system and piping immersed in a tank or vessel which may contain a contaminant.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11404 Local cross connection control programs.

Rule 1404. (1) A water utility 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. Public water supplies may use the Cross Connection Rules Manual prepared by the Michigan department of environmental quality, water bureau, under R 325.10113 as guidance when developing a cross connection control program. When the plan is approved, the water utility shall implement the program for removal of all existing cross connections and prevention of all future cross connections.

(2) As 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 utility 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.

(e) A description of the time allowed for a customer to complete necessary corrections.

(f) A description of the record keeping methods.
History: 1979 AC; 1998 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11405 Corrections and protective devices.

Rule 1405. (1) A user of public water supply shall obtain written approval by the water utility or authorized inspection agency of any proposed corrective action or protective device before using or installing it.

(2) 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, after a reasonable period of time, the water utility shall physically separate the public water supply from the onsite piping system in a manner that the 2 systems cannot again be connected by any unauthorized person.

(3) A water utility shall report annually to the department on the status of the cross connection control program on a form provided by the department.
History: 1979 AC; 1998 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11406 Piping identification.

Rule 1406. When a secondary water source is used in addition to a public water supply system, exposed public water and secondary water piping shall be identified by distinguishing colors or tags and so maintained that each pipe may be traced readily in its entirety. If piping is so installed that it is impossible to trace it in its entirety, it will be necessary to protect the public water supply at the service connection in a manner acceptable to the department.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1998 MR 2, Eff. Apr. 8, 1998.

R 325.11407 Private water storage tanks.

Rule 1407. A private water storage tank supplied from a public water supply system shall be deemed a secondary water supply unless it is designed and approved for potable water usage.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

PART 15. OPERATION REPORTS AND RECORDKEEPING

R 325.11501 Purpose.

Rule 1501. The purpose of this part is to establish requirements of certain public water supplies for the periodic submission of operation reports and for the retention of certain records as required by the provisions of the act and the federal act.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11502 Monthly operation reports of public water supplies employing treatment.

Rule 1502. (1) A community water supply where treatment is employed or a noncommunity water supply where treatment is employed for public health purposes, or treatment such as chemical injection that may affect public health, shall prepare an operation report on a form provided by the department for each month of operation. The report shall identify areas where data entry is required under R 325.10719e, R 325.10719f, R 325.10720, and R 325.10720a and shall include all of the following information:

(a) General operation data, including turbidity determinations.

(b) A summary of samples analyzed, including distribution system sampling and residual disinfectant concentration.

(c) Information on daily treatment system pumpage.

(d) Information on chemical application.

(e) Analyses of general parameters relating to the quality of the treated drinking water.

(2) The operation report shall be submitted to the department during the month following the month for which the operation report was prepared, unless otherwise required in part 7 of these rules.

History: 1979 AC; 1991 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11503 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; rescinded 2003 MR 2, Eff. Jan. 29, 2003.

R 325.11504 Annual reports.

Rule 1504. (1) A type I public water supply which does not submit a monthly operation report shall submit an annual report on a form provided by the department. The department may require certain type II public water supplies to submit annual reports. The report shall include a summary of water pumpage and water use.

(2) The type I public water supply shall submit the annual report to the department on or before March 31 following the year covered by the report.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11505 Additional reports required by department.

Rule 1505. (1) The department may require a public water supply to submit reports required under this part on a more frequent basis if the department finds that discrepancies, violations, or other problems are or may be occurring based on the department's review of a monthly or annual operation report or based on a sanitary survey, on-site inspection, surveillance observation, or special investigation conducted by the department.

(2) The department may require a public water supply to submit other reports as it deems necessary to evaluate the adequacy of the public water supply.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11505a Submission of C * T calculations.

Rule 1505a. A public water supply that employs a disinfectant shall, within 6 months of a written request from the department, submit a determination of the C*T calculations. The public water supply shall submit the supporting data as necessary for the department to determine compliance with the provisions of R 325.10611a(2)(a).

History: 1991 AACS; 2003 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11506 Retention of records; generally.

Rule 1506. (1) A community or noncommunity water supply shall retain on its premises or at a convenient location near its premises all of the following records:

(a) Records of bacteriological analyses that are required under part 7 of these rules, which shall be kept for not less than 5 years.

(b) Records of chemical analyses that are required under part 7 of these rules, which shall be kept for not less than 10 years.

(c) Records of microbiological analyses and turbidity analyses that are required under part 7 of these rules, which shall be kept for not less than 5 years.

(d) Records of radiological analyses that are required under part 7 of these rules, which shall be kept for not less than 10 years.

(e) Original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, department determinations, and any other information that is required under R 325.10604f(2) to (5), R 325.10410, and R 325.10710a to R 325.10710c, which shall be retained for not less than 12 years.

(f) Results of the disinfection profile and benchmark, which shall be retained indefinitely.

(g) Copies of monitoring plans developed under these rules shall be kept for the same period of time as the records of analyses taken under the plan are required to be kept under this subrule, except as specified elsewhere in these rules.

(2) Actual laboratory reports for chemical, bacteriological, turbidity, disinfection profile and benchmark, and radiological analyses shall be kept; however, the analyses data may be transferred to tabular summaries if all of the following information is included:

(a) The date, place, and time of sampling and the name of the person who collected the sample.

(b) Identification of the sample as a routine distribution system sample, check sample, raw or treated water sample, or other special purpose sample.

(c) The date of the analysis.

(d) The laboratory and the person who was responsible for performing the analysis.

(e) The analytical technique or method used.

(f) The results of the analysis.

(3) Records of action taken by the supply to correct violations of the state drinking water standards shall be kept for not less than 3 years after the last action taken with respect to the particular violation.

(4) Copies of any written reports, summaries, or communications which relate to sanitary surveys of the public water supply and which were conducted by the public water supply itself, by a private consultant, by the department, or by any local, state, or federal agency shall be kept for not less than 10 years after completion of the sanitary survey involved.

(5) Records that involve a variance or an exemption that was granted to a public water supply shall be kept for not less than 5 years after the expiration date of the variance or exemption.

(6) Records that involve any emergency or public notification regarding a public water supply shall be kept for not less than 3 years after the emergency or public notification.

History: 1979 AC; 1994 AACS; 2002 AACS; 2003 AACS; 2005 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11507 Retention of records; filterbackwash.

Rule 1507. A subpart H supply that employs conventional filtration or direct filtration treatment and that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall collect and retain on file all of the following recycle flow information for review and evaluation by the department:

(a) Copy of the recycle notification and information submitted to the department under 40 CFR §141.76(b), (2008), which is adopted by reference. The adopted material is contained in Title 40 CFR parts 136 to 149 which is available for purchase for $64.00 at the time of adoption of these rules from the

superintendent of documents at the address in R 325.10116(b). The adopted material is available for inspection and a copy is available at no cost from the offices of the department at the address in R 325.10116(a).

(b) A list of all recycle flows and the frequency with which they are returned.

(c) The average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(d) The typical filter run length and a written summary of how filter run length is determined.

(e) The type of treatment provided for the recycle flow.

(f) Data on the physical dimensions of the equalization or treatment units, or both, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11508 Retention of records; enhanced treatment for Cryptosporidium.

(1) Subpart H supplies that are subject to the enhanced treatment for Cryptosporidium provisions in R 325.10611d, also called "supplies" in this rule, shall keep results from the initial round of source water monitoring under 40 CFR 141.701(a), as adopted by reference in R 325.10720b, and the second round of source water monitoring under 40 CFR 141.701(b), as adopted by reference in R 325.10720b, until 3 years after bin classification under R 325.10611e for the particular round of monitoring.

(2) Supplies shall keep a notification to the department that they will not conduct source water monitoring due to meeting the criteria of 40 CFR 141.701(d), as adopted by reference in R 325.10720b, for 3 years.

(3) Supplies shall keep the results of treatment monitoring associated with microbial toolbox options under R 325.10611i to R 325.10611m for 3 years.

History: 2009 MR 23, Eff. Dec. 4, 2009.

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 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.

History: 2009 MR 23, Eff. Dec. 4, 2009.

PART 16. GENERAL PLANS

R 325.11601 Purpose.

Rule 1601. This part establishes requirements of certain public water supplies for the submission and updating of waterworks system general plans to satisfy the requirements of subsection (1) of section 4 of the act.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11602 Type I and type II public water supplies; submission of general plans to department.

Rule 1602. (1) A current general plan for type I public water supplies that address the pertinent requirements of this part shall be submitted to the department. Neither of the following type I public water supplies that existed before the effective date of this rule is required to comply with this subrule until January 1, 2016.

(a) Those serving less than 50 service connections or less than 200 persons.

(b) Those serving facilities which are licensed annually by the state, including manufactured housing communities and health care facilities.

(2) The department, by written notice, may require specific type II public water supplies to provide a general plan. The public water supply so notified shall provide a general plan to the department within 1 year after receipt of the written notice.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11603 Updating requirements.

Rule 1603. (1) Public water supplies having previously provided a general plan to the department meet the requirements of this part unless the department determines that the plans previously submitted are inadequate or outdated.

(2) Upon receiving written notice from the department, public water supplies shall provide an updated general plan within 6 months.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11604 Contents of general plans for all applicable systems.

Rule 1604. The general plan for a waterworks system shall contain a description of the waterworks system, including both of the following:

(a) The general layout of the entire waterworks system, including treatment systems and distribution systems, and the location of valves, hydrants, storage tanks, watermains, pumps, wells, and pumping facilities.

(b) Rated capacity of the waterworks system, including capacity of the developed water source, treatment system, storage tanks, pumping facilities, and equipment to maintain system reliability.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11605 Community water supplies that have distribution system intended to provide fire protection; additional general plan requirements.

Rule 1605. The general plan for a waterworks system that has a distribution system intended to provide fire protection purposes shall include all of the following information:

(a) A hydraulic analysis of the distribution system showing pressure contours under peak demands.

(b) An inventory of water main by size and material and age.

(c) Service area maps including existing and future service area boundaries.

History: 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11606. Publicly owned or operated community water supplies; additional general plan requirements.

Rule 1606. (1) The general plan for a waterworks system that is publicly owned or operated shall include a capital improvements plan that identifies water system needs for 5-year and 20-year planning periods. A publicly owned or operated community water supply that existed before the effective date of this rule is not required to comply with this subrule until January 1, 2016.

(2) A publicly owned or operated community system 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.
History: 2009 MR 23, Eff. Dec. 4, 2009.

PART 17. OWNERSHIP OF PUBLIC WATER SUPPLIES

R 325.11701 Purpose.

Rule 1701. The purpose of this part is to prescribe certain requirements and procedures in accordance with section 10 of the act for private ownership of certain type I public water supplies when public ownership cannot be achieved.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11702 Intent.

Rule 1702. Regulatory jurisdiction over public water supplies in this state is for the declared purpose of protecting the public health and to assure that public water supplies and waterworks systems are properly planned, constructed, maintained, and operated. It is a well established principle in this state that type I public water supplies be operated and maintained in an effective manner at all times and that adequate provision be made for a continuing administrative authority to accomplish this objective. Department procedures which have been in effect have strongly encouraged public ownership of all type I public water supplies. Accordingly, it is the department's belief that all avenues must be thoroughly explored with local governmental units to achieve public ownership of those public water supplies. If it is determined by the department that a local unit of government will not accept responsibility for ownership and operation of a type I public water supply, specific procedures must be established prior to issuance of a permit for construction of waterworks systems associated therewith.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11703 Applicability and general requirements.

Rule 1703. (1) Except as noted in this part, this part applies to both of the following:

(a) A private owner that proposes to construct a privately owned type I public water supply.

(b) A privately owned type I public water supply.

(2) The department shall approve a new privately owned public water supply only by issuance of a permit. To receive from the department a permit to construct a type I public water supply, the owner of the proposed type I public water supply shall perform all of the following:

(a) Submit to the department the information required under part 13 of these rules.

(b) Submit to the department proof of refusal to accept ownership or operational responsibility of that public water supply from the governing entity under whose jurisdiction the public water supply is included, as required under R 325.11705.

(c) On a form provided by the department, stipulate to conditions required by the department to ensure the public water supply will meet the requirements of the act and these rules. At a minimum, the conditions shall include all of the following:

(i) Supply water to the public according to the act and these rules and transfer the supply to the governmental entity by an acceptable agreement between the parties as required under R 325.11706.

(ii) Establish and maintain an escrow fund under R 325.11707 to R 325.11708. This paragraph does not apply to facilities that are required to be licensed by the state, such as manufactured housing communities and health care facilities.

(iii) Provide or obtain easements, or isolation areas, or both, and abandon wells as required under R 325.11709.

(iv) Provide service connections to not more than the number provided for in the permit to construct as required under R 325.11710.

(v) Receive department approval before transferring ownership of the supply as required under R 325.11711.

(vi) Provide contact information of system operation personnel as required under R 325.11712.

(3) A privately owned public water supply whose classification under part 5 of these rules changes to type I shall comply with subrule (2)(b) and (c) of this rule.

(4) A new owner of a privately owned type I public water supply shall comply with subrule (2)(b) and (c) of this rule as required under R 325.11711.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11704 Delegation of acceptance of ownership and operational responsibility of water supply by city, village, or township.

Rule 1704. A city, village, or township may delegate to a county, authority, district, or other public entity the acceptance of ownership and operational responsibility of any water supply within its jurisdiction. This delegation may be considered by the department to be adequate public ownership to meet the requirements of the act and these rules.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

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 division 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.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11706 Stipulations by owner of privately owned type I public water supply.

Rule 1706. (1) At the time an owner of a type I public water supply which is, or is proposed to be, privately owned submits plans and specifications to the department, the owner shall stipulate that the public water supply shall be operated in such a manner as to assure the customers or users thereof a sufficient quantity of water under adequate pressure and a quality of water meeting the state drinking water standards.

(2) The owner of a type I public water supply, which is proposed to be privately owned, shall stipulate to transfer the ownership and operation of the entire public water supply to a governing body of a city, village, or township, or its designated public entity, by an acceptable agreement between the parties, and with prior approval by the department.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11707 Escrow fund.

Rule 1707. (1) The purpose of a continuing cash escrow fund is to be available to the department for immediate repairs, improvements, operations, or maintenance of the public water supply if the owner fails to meet the responsibilities under the act and these rules.

(2) The amount of the escrow fund required shall be calculated on the basis of $500.00 per living unit proposed to be served by the public water supply, but in no case shall the escrow fund amount be less than $10,000.00, or exceed $50,000.00.

(3) Upon establishment of a written agreement between the privately owned public water supply and the governing body of a city, village, or township which establishes a date certain by which the privately owned public water supply ownership shall be transferred to that governing body, the department may reduce the amount of the required escrow fund.

(4) When the ownership of a privately owned public water supply is transferred, the department shall authorize return of the escrow fund and accrued interest to the owner from which the public water supply was transferred.

(5) When additional living units are added, a type I public water supply with an established escrow fund shall recalculate the escrow amount based on the sum of existing and proposed number of living units and increase its escrow fund accordingly.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11708 Removal and replacement of funds from escrow account.

Rule 1708. (1) Upon a determination by the department that removal of funds from an escrow account is required, only the director or his designated agent may remove funds from the escrow account to make the necessary corrections.

(2) The owner of a privately owned type I public water supply shall replace all funds removed from the account by the director or his designated agent as required for needed improvements or corrections to the waterworks system within 90 days after removal of the funds to maintain the account at the original level.

(3) If the financial institution that created the escrow fund sends notice that it intends to terminate the escrow fund, the public water supply shall obtain an alternate escrow fund within 30 days after termination.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11709 Privately owned public water supply; easements; isolation area for wells; abandonment of wells.

Rule 1709. (1) The owner of a public water supply which is proposed to be privately owned shall provide or obtain all necessary easements for any portion of the waterworks system which is not located in the public right-of-way.

(2) The isolation area for wells serving a public water supply which is, or is proposed to be, privately owned shall be defined in the plans and specifications submitted to the department pursuant to the act and part 13 of these rules and shall be considered to be a part of the waterworks system.

(3) If the wells associated with a privately owned waterworks system are abandoned, ownership or easements shall be retained as may be necessary for the operation of the remainder of the waterworks system. The procedures for abandonment of wells shall be in accordance with the requirements of the act and part 8 of these rules.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11710 Privately owned waterworks system; additional service connections.

Rule 1710. The owner of a privately owned waterworks system shall not provide additional service connections to other living units or facilities in excess of the total number specified on, and approved by issuance of, a permit by the department. If an owner of a privately owned waterworks system wishes to provide service to additional living units or facilities, a permit shall be obtained from the department.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11711 Transfer of ownership of a privately owned type I public water supply.

Rule 1711. (1) If ownership of a privately owned type I public water supply is transferred to another private owner, the former owner shall notify and receive approval from the department before the change in ownership.

(2) The new owner shall comply with R 325.11703(2)(b) to (c).

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11712 Filing names of operation personnel.

Rule 1712. The owner of a privately owned waterworks system shall file with the department the name, address, and telephone number of not less than 2 persons having direct responsibility for the daily operation and maintenance of the waterworks system who can be contacted in the event of any emergency or requirement relative to its operation.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.11713 Rescinded.

History: 1979 AC; rescinded 2009 MR 23, Eff. Dec. 4, 2009.

PART 19. EXAMINATION AND CERTIFICATION OF OPERATORS

R 325.11901 Classification of treatment systems.

Rule 1901. (1) Complete treatment systems are classified based on population served by the public water supply or rated treatment capacity of the treatment system as follows:

(a) Class F-1: Complete treatment systems for community supplies serving a population greater than 20,000, or with a rated treatment capacity greater than 5.0 million gallons of water per day.

(b) Class F-2: Complete treatment systems for community supplies serving a population from 4,000 to 20,000, or with a rated treatment capacity from 2.0 to 5.0 million gallons of water per day.

(c) Class F-3: Complete treatment systems for community supplies serving a population from 1,000 to 4,000 or with a rated treatment capacity from 0.5 to 2.0 million gallons of water per day.

(d) Class F-4: Complete treatment systems for community supplies serving a population of less than 1,000, or with a rated treatment capacity less than 0.5 million gallons of water per day.

(e) Class F-5: Complete treatment systems for noncommunity supplies.

(2) Limited treatment systems are classified based on population served by the public water supply or rated treatment capacity of the treatment system as follows:

(a) Class D-1: Limited treatment systems for community supplies serving a population greater than 20,000, or with a rated treatment capacity greater than 5.0 million gallons of water per day.

(b) Class D-2: Limited treatment systems for community supplies serving a population from 4,000 to 20,000, or with a rated treatment capacity from 2.0 to 5.0 million gallons of water per day.

(c) Class D-3: Limited treatment systems for community supplies serving a population from 1,000 to 4,000, or with a rated treatment capacity from 0.5 to 2.0 million gallons of water per day.

(d) Class D-4: Limited treatment systems for community supplies serving a population of less than 1,000, or with a rated treatment capacity less than 0.5 million gallons of water per day.

(e) Class D-5: Limited treatment systems for noncommunity supplies.

(3) Waterworks systems that use as a source surface water or ground water under the direct influence of surface water shall be classified as F systems.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 2000 MR 19, Eff. Dec. 8, 2000.

R 325.11902 Classification of distribution systems and other public water supplies.

Rule 1902. The following classifications are assigned to public water supplies:

(a) Class S-1: Distribution systems for community supplies serving a population greater than 20,000.

(b) Class S-2: Distribution systems for community supplies serving a population from 4,000 to 20,000.

(c) Class S-3: Distribution systems for community supplies serving a population from 1,000 to 4,000.

(d) Class S-4: Distribution systems for community supplies serving a population of less than 1,000.

(e) Class S-5: Nontransient noncommunity water supplies with no treatment or community supplies with no treatment and a distribution system limited in extent.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 2000 MR 19, Eff. Dec. 8, 2000.

R 325.11903 Change in classification of treatment system, distribution system, or public water supply.

Rule 1903. Any public water supply classified in accordance with R 325.11901 and R 325.11902 may be placed in a different classification by the department by reason of:

(a) Incorporation in the treatment system of special features of design.

(b) Making operation different from usual.

(c) Treating a particularly difficult type of raw water.

(d) Upon a finding that the population served has changed.

(e) The use of complex treatment systems.

(f) The presence of a large service population.

(g) When the distribution system is extensive or complex.

(h) When a treatment system failure will not impact public health.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 2000 MR 19, Eff. Dec. 8, 2000.

R 325.11904 Notification of change in classification.

Rule 1904. (1) A public water supply affected by a change in classification shall be notified by the department by mail. A change in classification by the department shall be effective 6 months after the date of the next applicable examination.

(2) The classification of a newly constructed waterworks system shall be effective at the time of initial operation.

History: 1979 AC; 2000 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11905 Certification of operators.

Rule 1905. (1) Any waterworks system or portion of a system which has been classified in accordance with R 325.11901 or R 325.11902 shall be under the supervision of an operator in charge certified in the system classification as specified in these rules.

(2) A certified operator may operate any waterworks system as follows:

(a) Within a classification at or below the level of his or her certificate.

(b) At a different classification as follows:

(i) A certified operator who holds an F certificate meets the qualifications to operate a D treatment system of comparable numerical classification.

(ii) A certified operator who holds an F certificate or D certificate meets the qualifications to operate a class S-5 system.

(3) A shift operator shall be on site and in charge of each operating shift at a community supply in the F classification when the operator in charge is not on site.

(4) The department may waive the requirement of subrule (3) of this rule upon approval of an operational plan submitted by the public water supply that demonstrates that public health will be adequately protected when a certified shift operator is not on site. The operational plan shall include provision for a back-up operator holding an F-4 or higher certificate.

(5) Shift operators at a community supply in the F classification are required to hold an F-4 or higher certificate, except that shift operators at community supplies with a rated treatment capacity more than 100,000,000 gallons of water per day shall hold an F-3 or higher certificate.

(6) For purposes of training a shift operator to occupy a vacant position, the department may authorize a deviation from the requirements of subrule (3) of this rule by granting a provisional certification for a period of time, which shall not be more than 2 years. A person who occupies a position pursuant to this subrule shall otherwise be qualified to become certified by examination during this time and shall be titled an operator trainee.

(7) A class D-1 or class D-2 system shall designate one or more operators holding a D-4 or higher certificate as a back-up operator.

(8) A class S-1 or class S-2 system shall designate one or more operators holding an S-4 or higher certificate as a back-up operator.

(9) A waterworks system shall have in place a plan for proper operation of the waterworks system when the operator in charge is not available.

(10) Any form of operator certification not currently recognized in these rules shall be considered null and void as of the effective date of these rules.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 2000 MR 19, Eff. Dec. 8, 2000.

R 325.11906 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 2000 MR 19, Eff. Dec. 8, 2000.

R 325.11906a Restricted certificates for existing operators.

Rule 1906a. (1) The owner of a waterworks system classified for the first time as a result of these revised rules as a class F-5, class D-5, or class S-5 system may designate to the department an operator currently employed by the owner as the certified operator in charge of the system. The designation shall be made within 90 days after notification by the department that the system has been classified as such or by December 8, 2002. If the class F-5, class D-5, or class S-5 system has an acceptable record of compliance with the safe drinking water act requirements and provided that the designated operator attends a specific department approved training program, the department shall issue a site specific, restricted certification to the operator designated in this subrule.

(2) The owner of a waterworks system reclassified as a result of these revised rules may designate to the department a properly certified operator currently employed by the owner as the operator in charge of the system and any other properly certified operator or operators currently employed by the owner as a shift operator or operators. The designation shall be made within 90 days after notification by the department that the system has been reclassified or by December 8, 2002. The department shall issue site specific, restricted certification to the operator or operators designated in this subrule.

(3) The owner of a manufactured housing community waterworks system may designate to the department an operator currently employed by the owner as the certified operator in charge of the system or portion of the system. The designation shall be made within 90 days after notification by the department of the system's classification or reclassification as such or by December 8, 2002. Provided that the designated operator attends a specific department approved training program, the department shall issue site specific, restricted certification to the operator designated in this subrule.

(4) 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 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 in accordance with R 325.11917.

History: 2000 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11906b Notices to the department.

Rule 1906b. (1) A public water supply shall provide to the department upon request the name of the operator in charge of the waterworks system or portion of the system, any shift operator, and any back-up operator required under R 325.11905.

(2) A public water supply shall notify the department within 7 days when the supply no longer has the services of an operator in charge, a shift operator, or a back-up operator.

History: 2000 MR 19, Eff. Dec. 8, 2000.

R 325.11907 Advisory board; terms of office; filling vacancies.

Rule 1907. (1) The members of the advisory board shall be appointed by the director pursuant to the provisions of section 9 of the act for a term of 3 years each. Members of the advisory board may be reappointed.

(2) Member vacancies in an unexpired term shall be filled by the director by appointment to complete the 3-year term.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991.

R 325.11908 Advisory board; powers and duties.

Rule 1908. (1) The advisory board shall meet not less than twice each year at designated times and places and shall advise the department in program implementation and any revisions to the operator certification program. The advisory board shall assist the department in examining all persons making application for certification who meet the minimum requirements established by the department pursuant to R 325.11911. The advisory board shall schedule at least 1 annual examination for treatment system operators in the F-1, F-2, F-3, F-4 and D-1, D-2, D-3, D-4 classes and at least 1 annual examination for the distribution system operators in the S-1, S-2, S-3, S-4 classes, and shall provide public notice of the date, time, and place for each examination not less than 90 days before the date set for the examination.

(2) The advisory board shall approve a protocol for the examination of operators in class F-5, class D-5, and class S-5 systems.

(3) After review of the application and the results of the examination, the department shall issue or deny an applicant a certificate in the appropriate public water supply classification.

(4) The advisory board shall evaluate and either approve or disapprove continuing education training, shall categorize such training as "technical", "managerial," or "other" and shall determine the continuing education training hour value in each category. All continuing education training approved by the advisory board shall relate to the duties, responsibilities, operation, maintenance, or supervision of a drinking water system.

History: 1979 AC; 2000 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11909 Advisory board; selection of officers; quorum; expenses and compensation.

Rule 1909. (1) Each year, the advisory board shall select, from its membership, a chair and such other officers as may be needed to conduct its business.

(2) Five members of the advisory board constitute a quorum.

(3) Members of the advisory board shall not be compensated, but shall be entitled to all actual and necessary expenses incurred in the performance of their official duties in accordance with the rates established by the latest edition of the standard travel regulations of this state.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991.

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 other than a class F-5, class D-5 or class S-5, an individual shall submit, to the department, not less than 45 days before the announced examination date, an application for examination on a form provided by the department. To be certified for the operation of a class F-5, class D-5, or class S-5 an individual shall submit, to the department, not less than 20 days before the examination date, an application for examination on a form provided by the department. 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.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 2000 MR 19, Eff. Dec. 8, 2000.

R 325.11911 Applicant for certification; grading.

Rule 1911. (1) An applicant for certification shall be graded in 4 major divisions as follows:

(a) Educational qualifications of the applicant.

(b) Experience qualifications of the applicant, where applicable.

(c) The examination.

(d) The laboratory examination, where applicable.

(2) An applicant shall satisfy the minimum criteria established by the department as outlined in table 1 for educational qualifications before admission to the examination.

Table 1 Education Points Required to Write an Examination Educational Qualifications

F-1	80	D-1	70	S-1	70
F-2	70	D-2	60	S-2	60
F-3	60	D-3	60	S-3	60
F-4	60	D-4	60	S-4	60
F-5	60	D-5	60	S-5	60

Schedule of Points Given for Formal Education

8TH Grade	40
10TH Grade	50
H.S. Diploma, GED or Equivalent	60
2 yr. Associate Degree	70
Bachelor Degree	70
Advanced Degree	70
*Approved Two year Water/Wastewater Tech.	80
Bachelor of Science in Engineering, Chemistry or Microbiology	80
Advanced Degree in Engineering, Chemistry or Microbiology	90

Education Points Allowed as Substitution for Experience

	F-1	F-2	F-3	F-4	D-1	D-2	D-3	D-4	S-1	S-2	S-3	S-4
**Science B.S.	12	9	6	0	12	9	6	3	12	9	6	3
**Adv Degree	18	12	6	0	18	12	6	3	18	12	6	3
Bach Degree	4	4	0	0	2	2	0	0	2	2	0	0
Adv Degree	4	4	0	0	2	2	0	0	2	2	0	0
*W/WW Tech	0	0	0	3	0	0	0	6	0	0	0	6

*Curriculum approved by advisory board of examiners **Degree shall be in engineering, chemistry, or microbiology

(3) Criteria used for grading shall be determined by the department subject to the approval of the advisory board and shall be made available by the department.

(4) An applicant for certification may be required to submit, to the department, on request, names of persons familiar with the experience qualifications of the applicant.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 2000 MR 19, Eff. Dec. 8, 2000.

R 325.11912 Examination.

Rule 1912. (1) A written examination shall be prepared by the department with the concurrence of the advisory board for each public water supply classification, except the F-5, D-5, or S-5 classifications.

(2) A performance-based laboratory examination may be prepared by the department with the concurrence of the advisory board for any classification.

(3) Examinations shall be administered by the department subject to review by the advisory board.

(4) Examinations for F-5, D-5, or S-5 classifications may be any combination of training, written, or oral examination or performance based examination approved by the advisory board.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 1991 MR 11, Eff. Nov. 22, 1991; 2000 MR 19, Eff. Dec. 8, 2000.

R 325.11913 Rescinded.

History: 1979 AC; 1991 AACS; 2000 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11914 Reciprocity.

Rule 1914. (1) An operator certificate in a comparable classification may be issued by the department, without examination, to an individual who holds a similar operator certificate in another state, a territory or possession of the United States, or another country, if the requirements for certification of operators under which the certificate was issued are comparable to the requirements prescribed by this part.

(2) The department may issue a temporary certificate for an individual who petitions for reciprocity under subrule (1) of this rule. The temporary certificate shall expire at such time as the individual has an opportunity to obtain the results from taking the next available equivalent Michigan certification exam but shall not exceed 18 months in duration. If the individual fails the equivalent Michigan certification exam, he or she will not be eligible for any additional temporary certification.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; 2000 MR 19, Eff. Dec. 8, 2000.

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

* A certificate holder is not required to meet the requirements of this column to renew a certificate that was issued on or before the effective date of this rule. A certificate holder shall meet the requirements of this column to renew a certificate that was issued after the effective date of this rule.

(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.

History: 1979 AC; 1991 AACS; 2000 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11915a Reinstatement.

Rule 1915a. The department may reinstate an expired certificate within 1 year from the expiration date of the certificate when an individual has completed the necessary continuing education requirements as prorated from the certificate's expiration date. Upon department approval, a new certificate shall be issued.

History: 1991 MR 11, Eff. Nov. 22, 1991; 2000 Mr 19, Eff. Dec. 8, 2000.

R 325.11916 Rescinded.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC; rescinded 1991 MR 11, Eff. Nov. 22, 1991.

R 325.11917 Suspension or revocation of certificates.

Rule 1917. (1) After notice and a hearing before the advisory board, the director may deny exam application to an individual or place on probation, suspend, or revoke the certificate of an operator if the director determines that any of the following provisions apply:

(a) The operator is incompetent or unable to properly perform the duties of a waterworks system operator.

(b) An individual or operator has committed fraud or has falsified an application, examination, report, or record with respect to a water supply.

(c) The operator has been negligent in the discharge of properly assigned duties or responsibilities with respect to a water supply.

(d) An individual or operator has impersonated or misrepresented a certified operator or falsified a certificate of completion or training record.

(2) The department shall provide a notice of probation, suspension, or revocation, in writing, to the operator and to the owner of the public water supply where the operator is employed.

(3) The department shall not accept an application for examination during the time period of suspension for an operator who has a suspended certificate.

(4) Upon recommendation of the advisory board, the director shall determine the length of suspension of a certificate.

(5) Renewal of a suspended certificate is allowed if the applicant meets all renewal requirements including the training and continuing education requirements; however, the renewal does not affect the terms of suspension in any way.

(6) The department shall not accept an application for examination from an operator for a period of 5 years from the effective date of the revocation of certificate.

(7) Upon recommendation of the advisory board, the director may place a certified operator on probation for up to 2 years in accordance with the provisions of subrule (1) of this rule. A certificate holder who is placed on probation is subject to the terms and conditions of the order of probation.

History: 1979 AC; 1991 AACS; 2000 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11918 Appeals.

Rule 1918. An individual who feels aggrieved by an action of the department pursuant to the act or this part, or who wishes to appeal any other action of the department with respect to certification may request a hearing pursuant to Act No. 306 of the Public Acts of 1969, as amended, being §§24.201 to 24.315 of the Michigan Compiled Laws, and part 2 of these rules.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

PART 21. APPROVAL OF CHEMICALS AND OTHER MATERIALS

R 325.12101 Purpose.

Rule 2101. The purpose of this part is to prescribe certain requirements for the approval of chemicals, materials, coatings, additives, or other substances proposed to be used in the treatment or during the distribution of drinking water, or which are proposed to be used in contact with drinking water prior to, or during, distribution to the customer or user of a public water supply; and to prohibit a person from using unapproved chemicals or materials which may come into contact with, or serve as an additive to, drinking water.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

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 which are hereby adopted by reference. The department adopts by reference ANSI/NSF standards 60-2005 Drinking Water Treatment Chemicals (September 11, 2005) as amended by 60-2005 Addendum 1 (October 24, 2006) and 61-2008 Drinking Water System Components (December 19, 2008). The adopted material is available from NSF at 789 North Dixboro Road, Ann Arbor, MI 48105, telephone 734-827-6817, Internet address http//www.nsf.org for a cost at the time of adoption of these rules of $325.00 for 60-2005, $45.00 for 60-2005 Addendum 1 and $325.00 for 61-2008. The adopted material is available for inspection at the offices of the department at 525 W Allegan Street, Lansing, Michigan.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12103 Approval criteria.
Rule 2103. Approval by the department of chemicals and other materials shall be based on a determination that the chemical or material and its component parts singly or together will not be detrimental to public health. It is the responsibility of the manufacturer or distributor to provide the data upon which a determination may be made by the department.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12104 Change in product designation or composition.
Rule 2104. (1) Written approval by the department for a product, material, or chemical shall not extend to a change in composition or designation thereof. It is the responsibility of the manufacturer or distributor to make application to the department for approval of a product with a changed composition or designation.
(2) The department may contact a manufacturer or distributor to determine the status of a chemical or material previously approved. If contact with the manufacturer or distributor cannot be made, previous approval of a chemical or material manufactured or distributed by that manufacturer or distributor may be suspended.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12105 Generic approval.
Rule 2105. The department may grant approval to specified chemicals or materials commonly used in the treatment or distribution of drinking water. Generic approvals may reference nationally recognized specifications such as those of the American waterworks association, the American society for testing materials, and others.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12106 Specific approval of proprietary products.
Rule 2106. Specific approval is required by the department for the use of proprietary products. Approval shall include the complete name or other manufacturer's designation of the product, the purpose and condition of use, and, if applicable, the maximum acceptable dose to be applied to drinking water.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12107 Form of approval.
Rule 2107. Approval given by the department for a chemical or material shall be by letter or a form describing the product, its intended use, and any special conditions or limitations attached to the written approval. Approval by the department shall not be an endorsement of any material, chemical, or product, but shall be based on its toxicity with regard to public health.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12108 Rescission or suspension of approval.

Rule 2108. Upon finding that a manufacturer or distributor of a chemical or a material which may come into contact with drinking water has submitted false information regarding that chemical or material, or upon finding that a chemical or material previously approved has changed in composition, or upon finding at a later date that a chemical or material or constituent thereof may pose a hazard to the public health, the department shall rescind or suspend approval of that chemical or material for use in a waterworks system.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12109 Introduction of chemical or material into waterworks system by unauthorized person prohibited.

Rule 2109. No person, except the supplier of water, his duly authorized agent, or the department, shall introduce, or cause to be introduced, any chemical or material into a waterworks system, or a portion thereof, regardless of whether that chemical or material has been previously approved by the department pursuant to this part.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12110 Effect of approval.

Rule 2110. Approval of a chemical or material by the department does not imply that a chemical or material may be used in a waterworks system without submitting necessary plans and specifications for approval by the department and for the issuance of a permit pursuant to part 13 of these rules.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

PART 23. EMERGENCY RESPONSE PLANS

R 325.12301 Purpose.

Rule 2301. The purpose of this part is to establish requirements of type I public water supplies and certain type II public water supplies to prepare plans and procedures and identify personnel and equipment that can be implemented or utilized in the event of an emergency, including a terrorist or other intentional attach on the public water supply.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

Compiler's note to R 325.12301: The word "attach" evidently should read "attack."

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. Neither of the following type I public water supplies that existed before the effective date of this rule is required to comply with this subrule until 3 years after the effective date of this rule:

(a) Those serving less than 50 service connections or less than 200 individuals.

(b) Those serving facilities which are licensed annually by the state, including manufactured housing communities and health care facilities.

(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.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12303 Contents.

Rule 2303. (1) An emergency response plan shall, at a minimum, outline a program for rapid correction or mitigation of emergencies and shall include actions, procedures, and an identification of equipment which can significantly lessen the impact of terrorist acts or other intentional actions on the public health and the safety and supply of drinking water provided to the public. The emergency response plan may include 1 or more of the following:

(i) Roles and responsibilities for waterworks personnel in an emergency.

(ii) An inventory of emergency response equipment, first aid supplies, replacement equipment, chemicals, and other materials readily available for correction of problems.

(iii) Operational procedures to be implemented in an emergency, including emergency treatment measures in the event of contamination, mutual aid agreements with other public water supplies, personnel safety measures such as evacuation plans and lock down procedures, and water sampling and monitoring plans to identify potential public health threats.

(iv) Identification of alternate water sources available in a short-term situation as well as for a long-term duration, such as a a plan for interconnection with adjacent public water supplies or agreements with water haulers in the event of waterworks system failures or loss of pressure.

(v) Both internal and external communication procedures in an emergency, including appropriate means for notification of customers or users of a public water supply affected by an emergency. Public notification shall include a description of precautions or measures to be taken to protect the health of those customers or users.

(2) An emergency response plan prepared under this part shall include the general plan of the public water supply as required under subsection (1) of section 4 of the act.

(3) A public water supply shall identify in an emergency response plan the type, number, and capacity of standby power sources to operate a waterworks system in a power outage or other situation requiring the use of other power sources.

(4) The emergency response plan shall contain a schedule for updating the plan.

(5) The emergency response plan shall include a listing of critical customers or users for whom the provision of a continuous supply of safe drinking water is most urgent.

(6) An emergency response plan shall be located and distributed as necessary to assure effective use of the emergency response plan by all necessary waterworks system personnel.

(7) For purposes of consistency in developing emergency response plans, public water supplies may use the American waterworks association manual M 19, emergency planning for water utilities, in R 325.10113, as guidance.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12304 Emergency procedure.

Rule 2304. (1) When an emergency affecting a public water supply is discovered, the public water supply shall immediately notify the department by telephone of that emergency. The public water supply shall indicate in that notification the type of emergency, its discovery, the cause, the corrective actions planned to meet the emergency, and plans for notification to customers or users of the public water supply affected.

(2) A public water supply shall, within 90 days after an emergency, file a written report with the department outlining in detail its discovery, the cause, the corrective actions taken by the public water supply to meet the emergency, and the procedures by which its customers or users were notified. The report shall outline in detail the area of the waterworks system affected by the emergency, its duration, and the ability of the public water supply to cope with the emergency by providing an adequate supply of safe drinking water.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

PART 24. WATER HAULING EQUIPMENT STANDARDS

R 325.12401 Purpose.

Rule 2401. The purpose of this part is to prescribe standards for tanks and equipment used by water haulers to transport drinking water which shall serve as criteria by which a water hauler may obtain a license for a water transportation tank pursuant to part 25 of these rules.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12402 Water transportation tank materials and coatings.

Rule 2402. Materials or coatings on a water transportation tank or its appurtenances which come into contact with drinking water shall be of approved steel, stainless steel, fiberglass, metal, plastic, rubber, or other nontoxic materials given written approval by the department. Materials used in the construction of, or transported by, a water transportation tank shall not impart any substances to the water which may

result in a violation of the state drinking water standards, or impart other undesirable physical properties to the water.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12403 Water transportation tank; outlets.
Rule 2403. The outlet from a water transportation tank shall be located to provide complete drainage of the tank or any compartment thereof. Outlet valves shall be of sanitary construction and readily cleanable. Valve outlets, unless equipped with a permanent hose, shall be provided with a sanitary cap.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12404 Manhole covers and openings.
Rule 2404. (1) Manhole covers and openings shall be constructed to allow reasonable access for cleaning purposes and to protect the sanitary quality of the water.
(2) Manholes and other openings in the top of the tank shall be higher than the surrounding area and shall be designed to prevent drainage from entering the opening.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12405 Fill connections.
Rule 2405. If used, a fill connection shall be constructed in a manner to prevent contamination and shall be capped at all times when not in use.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12406 Baffles.
Rule 2406. If used, baffles shall not interfere with free drainage of the water transportation tank. Baffles shall be constructed to allow accessibility to all areas for inspection and cleaning purposes.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12407 Pumps.
Rule 2407. If used, pumps shall be operated in a sanitary manner, and all couplings or connections shall be capped or otherwise protected from contamination when not in use.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12408 Transfer hose and piping.
Rule 2408. (1) Connections between the pump and the water transportation tank may be made with flexible tubing. Hose connectors shall be attached to the hose to allow easy removal for cleaning.
(2) Transfer hose or piping shall be constructed of nontoxic materials, maintained in a sanitary condition, and used in such manner to prevent contamination of the water and to prevent cross-connections.
(3) If 2 or more lengths of flexible transfer hose are used, they shall be connected either by the use of sanitary couplings or a piece of sanitary tubing with clamps. Sanitary caps shall be furnished for each end of the hose, the pump, and the outlet valve.
(4) A hose carrier bracket shall be provided to adequately support the hose and a means shall be provided to support the loose end of the hose to prevent contamination.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

PART 25. LICENSING OF WATER HAULERS

R 325.12501 Purpose.
Rule 2501. The purpose of this part is to implement section 18 of the act by specifying certain criteria and requirements for licensing of water haulers and for their containers, equipment, and operation.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 315.12502 License.
Rule 2502. A person shall not engage in, or carry on the business of, hauling bulk water for drinking or household purposes, except for his own household use, without a license issued pursuant to the act and

these rules. Compliance with this rule may be waived in emergency situations upon approval by the department.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12503 Application for license.

Rule 2503. A person engaged in the business of hauling water for drinking or household purposes shall apply for a license using a license application form provided by the department.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4 , 2009.

R 325.12504 Issuance of license.

Rule 2504. If the department, after such investigations as it deems necessary, is satisfied that a water hauler has the qualifications and equipment to perform water hauling services in a manner consistent with these rules, it shall issue a license to the water hauler. A license issued pursuant to this rule is not transferable.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12505 Source and quality of water; chlorine; storage tanks.

Rule 2505. (1) All water hauled by a water hauler shall meet state drinking water standards and shall be from a public water supply or other source approved by the department.

(2) A water hauler shall add chlorine, in an amount specified by the department, when receiving water from a source and upon delivery of the water after hauling. The amount of chlorine to be added in each instance shall be specified on the license issued by the department for the water transportation tank. The department may require chlorine residual tests of the water hauled upon receipt of the water from the source, after addition of chlorine, and at delivery of the water. At the point of delivery of the water, a free chlorine residual of 1.0 mg/l is required. The department may approve an alternate means of disinfection upon written request by a water hauler or may not require disinfection while hauling if the water is delivered to a water bottling facility and disinfected prior to use by the public.

(3) When transporting water to a public water supply, a water hauler shall deliver water only to tanks or facilities approved by the department.
History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12506 Licensing of water hauler's water transportation tanks.

Rule 2506. (1) All tanks used to transport or to carry water shall be licensed annually by the department.

(2) At the same time a water hauler applies for a water hauling license pursuant to R 325.12503, an application for a license for each water transportation tank used for the bulk transport of water for drinking or household purposes shall also be made on an application form provided by the department.

(3) If the department, after such investigations as it deems necessary, determines that the water transportation tank and appurtenances are in compliance with part 24 of these rules, it shall issue a license for the tank to be used for hauling water.

(4) The license issued by the department shall be kept available in the water hauling vehicle for inspection.

(5) The license is not transferable from 1 water transportation tank to another. In addition to the license issued by the department, there shall be displayed on both sides of the tank, in letters not less than 2 inches high, the words "Licensed Water Hauling Tank." Directly adjacent to the words shall be affixed a seal furnished by the department which shall designate the calendar year of the license.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12507 Expiration and renewal of licenses.

Rule 2507. All licenses issued under the provisions of this part expire on the last day of June of each year. Application for renewal of a license may be made after March 31 of each year.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12508 Trip records.

Rule 2508. A water hauler licensed by the department shall maintain trip records of all water hauled. The water hauler shall retain trip records for 2 years.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12509 Denial of license.

Rule 2509. If the department finds that water hauling equipment is not in compliance with part 24 of these rules, the department shall not issue or renew a license for the water transportation tank. If the department finds that a water hauler is not in compliance with the provisions of this part, the department shall not issue or renew the license for the water hauler. In each case, the water hauler shall be notified in writing of the license denial and the reasons for denial by the department. The water hauler may request a hearing before the department if aggrieved by the department's decision, pursuant to the provisions of Act No. 306 of the Public Acts of 1969, as amended, and part 2 of these rules.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12510 Suspension or revocation of license.

Rule 2510. If the department determines that a water hauler licensed under the provisions of the act and these rules is not operating in an approved manner, is hauling water that does not meet state drinking water standards, or is operating a business or vehicles under conditions which may cause a hazard to the public health, the department shall notify the licensee and shall provide an opportunity for the water hauler to take corrective action as may be required. If the licensee does not effect the corrections within a reasonable time, the department shall suspend or revoke the license of the water hauler.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

PART 26. BOTTLED WATER

R 325.12601 Applicability.

Rule 2601. The provisions of this part apply to all persons providing bottled drinking water for drinking or household purposes.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12602 Application for approval of source.

Rule 2602. (1) A person providing bottled drinking water shall submit an application to the department requesting approval of the source of water being used or planned to be used for bottled water. A person may request approval of more than 1 source of water on a single application.

(2) After receipt of the application, the department may approve the source or sources of water upon a finding that the source or sources meet the state drinking water standards and the requirements of the act and these rules.

(3) A person shall not use a source of water for bottled water unless prior approval from the department has been obtained.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12603 Sources of water; monitoring.

Rule 2603. If water is obtained from a source other than a type I or type II public water supply, the department may require a person providing bottled water to sample the source of water from time to time and submit records of that sampling to the department.

History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12604 Out-of-state sources.

Rule 2604. (1) A person providing bottled drinking water and utilizing an out-of-state source of water shall submit an application to the department as required by R 325.12602. The application shall show proof of approval of the source from the state agency with jurisdiction.

(2) After consultation with the state agency having jurisdiction, the department shall approve the source for bottled water if the other state's inspection, surveillance, and approval procedures are acceptable to the department, and the source meets the state drinking water standards.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12605 Maintenance of records.
Rule 2605. A person providing bottled drinking water shall maintain records of all sources from which water is purchased or obtained for bottled water and shall submit those records to the department on an annual basis.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

R 325.12606 Rescission or suspension of approval.
Rule 2606. Upon its finding that a person has submitted false information on an application submitted to the department for approval of a source for bottled water pursuant to R 325.12602, or if a source for bottled water does not meet the state drinking water standards, or if a person has violated the provisions of the act or this part, the department may rescind or suspend approval of the source for bottled water.
History: 1954 ACS 94, Eff. Jan. 12, 1978; 1979 AC.

PART 27. LABORATORY CERTIFICATION

R 325.12701 Purpose.
Rule 2701. An analytical result that is used to determine compliance with a state drinking water standard established in part 6 shall be the result of an analysis performed by a department- or EPA-certified laboratory, except that measurements for alkalinity, bromide, calcium, daily chlorite samples at the entrance to the distribution system, conductivity, magnesium, orthophosphate, pH, residual disinfectant concentration, silica, specific ultraviolet absorbance, temperature, and turbidity may be performed by personnel acceptable to the department. This part sets forth requirements established by the federal act for laboratory certification.
History: 1994 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12702 Certification for inorganic chemical analyses.
Rule 2702. (1) To receive certification to conduct analyses for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium, a laboratory shall comply with both of the following provisions:
(a) Analyze performance evaluation samples provided by the United States environmental protection agency, the department, or by a third party, with the approval of the department or the United States environmental protection agency, at least once per year.
(b) For each contaminant that has been included in the performance evaluation sample and for each method for which the laboratory desires certification, achieve quantitative results on the analyses that are within the acceptance limits in table 1 of this rule.

Table 1 Acceptance limits

Contaminant	Acceptance Limit milligrams per liter (mg/l)
Antimony	+/-30% at 0.006 mg/l.
Arsenic	+/-30% at 0.003 mg/l
Asbestos	2 standard deviations based on study statistics.
Barium	+/-15% at 0.15 mg/l.
Beryllium	+/-15% at 0.001 mg/l.
Cadmium	+/-20% at 0.002 mg/l.
Chromium	+/-15% at 0.01 mg/l.
Copper	+/-10% at 0.050 mg/l.
Cyanide	+/-25% at 0.1 mg/l.
Fluoride	+/-10% at 1 to 10 mg/l.
Lead	+/-30% at 0.0050 mg/l.
Mercury	+/-30% at 0.0005 mg/l.
Nickel	+/-15% at 0.01 mg/l.
Nitrate	+/-10% at 0.4 mg/l.
Nitrite	+/-15% at 0.4 mg/l.
Selenium	+/-20% at 0.01 mg/l.
Thallium	+/-30% at 0.002 mg/l.

(2) To receive certification to conduct analyses for lead and copper, a laboratory shall be in compliance with all of the following requirements:

(a) Analyze performance evaluation samples, including lead and copper, that are provided by the United States environmental protection agency, the department, or by a third party, with the approval of the department or the United States environmental protection agency, at least once per year by each method for which the laboratory desires certification.

(b) Achieve quantitative acceptance limits as specified in table 1 of this rule and as follows:

(i) Lead: +/-30% of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.005 mg/l. the practical quantitation level, or PQL, for lead is 0.005 mg/l.

(ii) Copper: +/-10% of the actual amount in the performance evaluation sample when the actual amount is greater than or equal to 0.050 mg/l. the practical quantitation level, or PQL, for copper is 0.050 mg/l.

(c) Achieve method detection limits (MDLs) according to the procedures specified in 40 C.F.R. part 136, appendix B, as follows:

(i) Lead: 0.001 mg/l, only if source water compositing is performed.

(ii) Copper: 0.001 mg/l, or 0.020 mg/l when atomic absorption direct aspiration is used, only if source water compositing is performed.

(d) All lead and copper levels measured between the PQL and MDL shall be either reported as measured or they shall be reported as 1/2 the PQL specified for lead and copper in subdivision (b) of this subrule. All levels below the lead and copper MDLs shall be reported as zero.

(e) All copper levels measured between the PQL and the MDL shall be either reported as measured or they shall be reported as 1/2 the PQL (0.025 mg/l). All levels below the copper MDL shall be reported as zero.

History: 1994 MR 12, Eff. Jan. 5, 1995; 1998 MR 3, Eff. Apr. 8, 1998; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.12705 Certification for VOC analyses.

Rule 2705. (1) To receive certification to conduct analyses for the VOCs, other than vinyl chloride, in table 1 of R 325.10604b, a laboratory shall be in compliance with all of the following requirements:

(a) Analyze performance evaluation samples which include the VOCs, other than vinyl chloride, in table 1 of R 325.10604b, and which are provided by the United States environmental protection agency, the department, or by a third party, with the approval of the department or the United States environmental protection agency, at least once per year by each method for which the laboratory desires certification.

(b) Achieve the quantitative acceptance limits specified in subdivisions (c) and (d) of this subrule for not less than 80% of the regulated organic chemicals in table 1 of R 325.10604b.

(c) Achieve quantitative results on the analyses performed under subdivision (a) of this subrule that are within +/-20% of the actual amount of the substances in the performance evaluation sample when the actual amount is greater than or equal to 0.010 mg/l.

(d) Achieve quantitative results on the analyses performed under subdivision (a) of this subrule that are within +/-40% of the actual amount of the substances in the performance evaluation sample when the actual amount is less than 0.010 mg/l.

(e) Achieve a method detection limit of 0.0005 mg/l, according to the procedures specified in 40 C.F.R. part 136, appendix B.

(2) To receive certification for vinyl chloride, a laboratory shall be in compliance with all of the following requirements:

(a) Analyze performance evaluation samples provided by the United States environmental protection agency, the department, or by a third party, with the approval of the department or the United States environmental protection agency, at least once per year by each method for which the laboratory desires certification.

(b) Achieve quantitative results on the analyses performed under subdivision (a) of this subrule that are within +/-40% of the actual amount of vinyl chloride in the performance evaluation sample.

(c) Achieve a method detection limit of 0.0005 mg/l, according to the procedures specified in 40 C.F.R. part 136, appendix B.

(d) Obtain certification for the VOCs listed in part 6, table 1 of R 325.10604b.

(3) Each certified laboratory shall determine the method detection limit (MDL), as defined in 40 C.F.R. part 136, appendix B, at which the laboratory is capable of detecting VOCs. The acceptable MDL is 0.0005 mg/l.

(4) To composite samples, the laboratory shall be in compliance with both of the following provisions:

(a) For compositing samples before gas chromatograph (GC) analysis, be in compliance with all of the following provisions:

(i) Add 5 ml or equal larger amounts of each sample (up to 5 samples are allowed) to a 25-ml glass syringe. Special precautions shall be taken to maintain zero headspace in the syringe.

(ii) The samples shall be cooled at 4° Celsius during compositing to minimize volatilization losses.

(iii) Mix well and draw out a 5-ml aliquot for analysis.

(iv) Follow sample introduction, purging, and desorption steps described in the method.

(v) If less than 5 samples are used for compositing, a proportionately smaller syringe may be used.

(b) For compositing samples before GC/MS analysis, be in compliance with all of the following provisions:

(i) Inject 5-ml or equal larger amounts of each aqueous sample (up to 5 samples are allowed) into a 25-ml purging device using the sample introduction technique described in the method.

(ii) The total volume of the sample in the purging device shall be 25 ml.

(iii) Purge and desorb as described in the method.

(5) 40 C.F.R. part 136, appendix B, is adopted by reference in these rules. The adopted material is available from the superintendent of documents at the address in R 325.10116(b) for a cost of $61.00 at the time of adoption of these rules. The adopted material is available for inspection, or copies are available at no cost from the offices of the department at the address in R 325.10116(a).

History: 1994 MR 12, Eff. Jan. 5, 1995; 1998 MR 3, Eff. Apr. 8, 1998; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.12706 Certification for SOC analyses.

Rule 2706. To receive certification to conduct analyses for the SOCs in table 1 of R 325.10604d, a laboratory shall be in compliance with both of the following provisions:

(a) Analyze performance evaluation samples which include the SOCs in table 1 of R 325.10604d, that are provided by the United States environmental protection agency, the department, or by a third party, with the approval of the department or the United States environmental protection agency, at least once per year by each method for which the laboratory desires certification.

(b) For each contaminant that has been included in the performance evaluation sample, achieve quantitative results on the analyses that are within the acceptance limits listed in table 1 of this rule.

Table 1 Acceptance limits

Contaminant	Acceptance Limits (percent)
DBCP	+/-40.
EDB	+/-40.
Alachlor	+/-45.
Atrazine	+/-45.
Benzo[a]pyrene	2 standard deviations.
Carbofuran	+/-45.
Chlordane	+/-45.
Dalapon	2 standard deviations.
Di(2-ethylhexyl)adipate	2 standard deviations.
Di(2-ethylhexyl)phthalate	2 standard deviations.
Dinoseb	2 standard deviations.
Diquat	2 standard deviations.
Endothall	2 standard deviations.
Endrin	+/-30.
Glyphosate	2 standard deviations.
Heptachlor	+/-45.
Heptachlor epoxide	+/-45.
Hexachlorobenzene	2 standard deviations.
Hexachlorocyclopentadiene	2 standard deviations.
Lindane	+/-45.
Methoxychlor	+/-45.
Oxamyl	2 standard deviations.
PCBs (as decachlorobiphenyl)	0-200.
Picloram	2 standard deviations.
Simazine	2 standard deviations.
Toxaphene	+/-45.
Aldicarb	2 standard deviations.
Aldicarb sulfoxide	2 standard deviations.
Aldicarb sulfone	2 standard deviations.
Pentachlorophenol	+/-50.
2,3,7,8-TCDD (dioxin)	2 standard deviations.
2,4-D	+/-50.
2,4,5-TP (silvex)	+/-50.

History: 1994 MR 12, Eff. Jan. 5, 1995; 2005 MR 6, Eff. Apr. 6, 2005.

R 325.12707 Certification for disinfection byproducts analyses.

Rule 2707. To receive certification to conduct analyses for the disinfection byproduct contaminants in R 325.10610, R 325.10610c to R 325.10610d, and R 325.10719g to R 325.10719n, the laboratory shall comply with all of the following:

(a) Analyze Performance Evaluation (PE) samples that are acceptable to United States environmental protection agency or the department not less than once during each consecutive 12-month period by each method for which the laboratory desires certification.

(b) The laboratory shall achieve quantitative results on the PE sample analyses that are within the acceptance limits in table 1 of this rule:

Table 1 Acceptance limits

DBP	Acceptance limits(percent of true value)
TTHM	
Chloroform	+/-20 Laboratory shall meet all 4 individual THM acceptance limits to successfully pass a PE sample for TTHM
Bromodichloromethane	+/-20
Dibromochloromethane	+/-20
Bromoform	+/-20
HAA5	
Monochloroacetic Acid	+/-40 Laboratory shall meet the acceptance limits for 4 out of 5 of the HAA5 compounds in order to successfully pass a PE sample for HAA5
Dichloroacetic Acid	+/-40
Trichloroacetic Acid	+/-40
Monobromoacetic Acid	+/-40
Dibromoacetic Acid	+/-40
Chlorite	+/-30
Bromate	+/-30

History: 2009 MR 23, Eff. Dec. 4, 2009.

PART 28. SOURCE WATER PROTECTION GRANT ASSISTANCE

R 325.12801 Definitions.

Rule 2801. As used in this part:

(a) "Abandoned well" means any of the following which presents a threat to the groundwater resource and which no longer serves the purpose for which it was intended or has been taken out of service:

(i) A water well.

(ii) A monitoring well.

(iii) An oil well.

(iv) A gas well.

(v) A mineral well.

(vi) A drainage well.

(vii) A recharge well.

(viii) A test well.

(ix) An injection well.

(x) Other unplugged borings.

(b) "Aquifer test" means a groundwater resource assessment completed under the act, R 325.10813 governing the study of hydrogeological conditions by suppliers of water of type I and type IIa public water supplies, and R 325.10814 governing the studies of suppliers of water of type IIb and type III public water supplies.

(c) "Contaminant source inventory" means the identification of sources of contamination or land uses within a source water protection area that have a potential to adversely impact the drinking water resource.

(d) "Delineation" means the area identified by a hydrogeologic investigation conducted for the purpose of determining a wellhead protection area that meets the requirements of the state of Michigan wellhead protection program.

(e) "Designation" means the area identified by a hydrologic investigation conducted for the purpose of determining a surface water intake protection area that meets the requirements of the state of Michigan surface water intake protection program.

(f) "Elements" means the 7 areas that shall be addressed to obtain approval of a source water protection program and includes all of the following:

(i) Roles and duties.

(ii) Delineation of the wellhead protection area.
(iii) Identification of potential and known contaminant sources.
(iv) Management strategies.
(v) Contingency plans for the source water protection area.
(vi) New wells or surface water intakes.
(vii) Public participation.

(g) "Grant applicant" means a community public water supply, or a not-for-profit, nontransient, noncommunity public water supply that applies for grant assistance under the source water protection grant program on behalf of the persons or municipality served by the public water supply.

(h) "Grant assistance" means the dedication of grant funds to a public water supply to support the development and implementation of a source water protection program.

(i) "Grant cycle" means a 1-year period beginning the date the grant assistance is awarded.

(j) "Grant-eligible activity" means a task undertaken by a community or nontransient, noncommunity public water supply for the purpose of determining a source water protection area or developing and implementing a source water protection program that is eligible for grant assistance in accordance with these rules.

(k) "Grant program priority list" means an annual list of grant applicants developed by the department that ranks the applicants for prioritization of grant assistance.

(l) "Intake" means the point where water is withdrawn from a surface water source.

(m) "Local team" means a group of not less than 3 persons that includes the public water supply superintendent, a representative of the municipality, and a representative from at least 1 of the following entities whose purpose is to facilitate the development, implementation and long-term maintenance of a wellhead protection program:
(i) Local health department.
(ii) Local fire department.
(iii) Business and industry.
(iv) Agriculture.
(v) Education.
(vi) Planning.
(vii) Environmental or watershed groups.
(viii) The general public. A local team for a nontransient, noncommunity public water supply shall include representation from not less than 3 of the groups listed in this subdivision.

(n) "Low tritium public water supply" means a community supply or nontransient, noncommunity water supply that has had its well water sampled for tritium and had sample results of not more than 1.0 tritium unit (TU).

(o) "Outfall" means the point of discharge of a drain or sewer.

(p) "Provisional wellhead protection area" means the area which has been approved by the department in accordance with the state of Michigan wellhead protection program as the wellhead protection area based on computer manipulation of existing state of Michigan databases.

(q) "Sensitivity" means a measure of the physical attributes of the source water protection area and how readily those attributes protect the intake from contaminants.

(r) "Source water assessment" means an evaluation of a public water supply system under the federal act that identifies the areas that supply public drinking water, inventories contaminants, determines sensitivity, and assesses water susceptibility to contamination, or as updated with current information.

(s) "Source water protection area" means either a wellhead protection area or provisional wellhead protection area for groundwater sources of drinking water or a surface water intake protection area for surface water sources of drinking water.

(t) "Source water protection program" means a program that has been approved by the department upon meeting the criteria for approval under the state of Michigan source water protection program, including programs protecting groundwater and surface water sources.

(u) "Surface water intake protection area" means the area most likely to contribute contaminants to the drinking water source as approved by the department in accordance with the state of Michigan surface water intake protection program.

(v) "Surface water intake protection program" means a program protecting surface water sources that has been approved by the department upon meeting the criteria for approval under the state of Michigan source water protection program.

(w) "Susceptibility" means the ranking from very high to very low of the likelihood a source of drinking water could become contaminated.

(x) "Total grant assistance" means the maximum amount of grant assistance each grant cycle that a public water supply may receive.

(y) "Well" means the point where water is withdrawn from a groundwater source.

(z) "Wellhead protection area" means the area which has been approved by the department in accordance with the state of Michigan wellhead protection program, which represents the surface and subsurface area surrounding a water well or well field, which supplies a public water supply, and through which contaminants are reasonably likely to move toward and reach the water well or well field within a 10-year time of travel.

(aa) "Wellhead protection program" means a program protecting groundwater sources that has been approved by the department upon meeting the criteria for approval under the state of Michigan source water protection program.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12802 Applicant qualifications.

Rule 2802. (1) Community and not-for-profit, nontransient, noncommunity public water supplies that utilize groundwater or surface water as a source of water, exclusive of federally owned public water supplies, may qualify for grant assistance.

(2) A public water supply that applies for grant assistance shall provide a local match equal to the grant assistance requested in the grant application.

(3) A public water supply that receives grant assistance shall be able to complete the grant-eligible activities specified in the grant application within 1 year from the time the grant assistance is awarded to the public water supply.

(4) Public water supplies that have outstanding prior year fees as prescribed in the act are not eligible for grant assistance.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12803 Submission of applications.

Rule 2803. (1) An applicant for grant assistance shall apply to the department on a form prescribed and provided by the department.

(2) The department shall establish a deadline for submission of applications in the grant application process and shall notify applicants of the application deadline on the form prescribed and provided by the department.

(3) An applicant shall provide a description of the grant-eligible activities for which the grant assistance is to be applied.

(4) An application shall include proof, through 1 of the following, of a local match to the grant assistance and proof that the grant assistance and local match will be expended on grant-eligible activities, as applicable:

(a) Providing documentation of a line item budget dedicated to the grant-eligible activities identified in the grant application. The line item budget shall include the dedication of funds to grant-eligible activities in an amount equal to the grant assistance plus the local match.

(b) Providing documentation of a contractually binding agreement committing the applicant to an expenditure of funds in an amount equal to the grant assistance plus the local match for the grant-eligible activities identified in the grant application.

(c) Providing documentation of previous expenditures on grant-eligible activities equivalent to or greater than the grant assistance requested in the grant application.

(d) Providing documentation of the match through a combination of any of the items specified in this subrule.

(5) Previous expenditures by the applicant to seal abandoned wells as defined in part 127 of 1978 PA 368, MCL 333.12701 to 333.12771, within a source water protection area or within a 1-mile radius of a low tritium public water supply well may be utilized as the local match.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12804 Long-term commitment to source water protection.

Rule 2804. (1) A grant applicant shall demonstrate a long-term commitment to the development, implementation, and maintenance of a source water protection program by providing both of the following:

(a) A time line for completion of the grant-eligible activities.

(b) A time line for the completion of each of the elements required of a state-approved source water protection program.

(2) The applicant shall demonstrate the establishment of a local team whose goal is to facilitate the development, implementation, and maintenance of a source water protection program.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12805 Priority lists.

Rule 2805. (1) Before awarding grants, the department shall develop 1 or both of the following:

(a) A wellhead protection grant program priority list of applicants considered eligible for grant assistance.

(b) A surface water intake protection grant program priority list of applicants considered eligible for grant assistance.

(2) For the purpose of providing grant assistance, the grant program priority lists shall take effect on the first day of each grant cycle established by the department.

(3) The grant program priority lists shall be based upon all of the following criteria:

(a) The establishment of a local team.

(b) Coordination of the local team with an adjacent municipality.

(c) The adoption of a local ordinance or resolution related to source water protection.

(d) The manner in which the local match is provided.

(e) The proposed time line for completion of a source water protection program.

(f) Incorporation of the source water protection program into other land use planning strategies.

(g) For surface water source applicants, the intake susceptibility rating as determined by an existing or updated public water supply source water assessment.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12806 Availability of grant funds.

Rule 2806. (1) Grant assistance shall be provided to an eligible grant applicant to the extent that grant funds are available as determined by the department.

(2) An eligible applicant denied grant assistance during the year a grant program priority list is developed shall be prioritized on the next annual grant program priority list using the same criteria, unless the applicant submits an amendment to the grant application that alters the applicant's status on the grant program priority list or unless conditions change for the original grant submittal.

(3) An applicant that has not received grant assistance upon application in any previous grant cycle shall be placed on the grant program priority list ahead of an applicant who was funded in a previous year and funded in the current grant cycle of application if all of the following provisions apply:

(a) The applicant meets the minimum points requirement for funding in the priority list score as specified in R 325.12807(2).

(b) The awarding of grant assistance to the applicant is in compliance with R 325.12810.

(c) Grant funds are available.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12807 Priority list score.

Rule 2807. (1) A maximum number of points may be awarded a grant applicant for prioritization on the annual grant program priority list as listed below:

(a) A wellhead protection grant program applicant may be awarded a maximum of 25 points.

(b) A surface water intake protection grant program applicant may be awarded a maximum of 30 points.

(2) A minimum of 10 points is required in the priority list score to be eligible for grant assistance.

(3) A maximum of 5 points shall be assigned a grant applicant for the development of a local team. The points shall be assigned in accordance with the following schedule:

(a) Five points for a team that includes representation by the public water supply superintendent, the municipality, and any 6 of the following entities:

(i) The local health department.
(ii) The local fire department.
(iii) Business and industry.
(iv) Agriculture.
(v) Education.
(vi) Planning.
(vii) An environmental or watershed group.
(viii) The general public.

(b) Four points for a team that includes representation by the public water supply superintendent, the municipality, and any 5 of the following entities:
(i) The local health department.
(ii) The local fire department.
(iii) Business and industry.
(iv) Agriculture.
(v) Education.
(vi) Planning.
(vii) An environmental or watershed group.
(viii) The general public.

(c) Three points for a team that includes representation by the public water supply superintendent, the municipality, and any 4 of the following entities:
(i) The local health department.
(ii) The local fire department.
(iii) Business and industry.
(iv) Agriculture.
(v) Education.
(vi) Planning.
(vii) An environmental or watershed group.
(viii) The general public.

(d) Two points for a team that includes representation by the public water supply superintendent, the municipality, and any 3 of the following entities:
(i) The local health department.
(ii) The local fire department.
(iii) Business and industry.
(iv) Agriculture.
(v) Education.
(vi) Planning.
(vii) An environmental or watershed group.
(viii) The general public.

(e) One point for a team that includes representation by the public water supply superintendent, the municipality, and any 2 of the following entities:
(i) The local health department.
(ii) The local fire department.
(iii) Business and industry.
(iv) Agriculture.
(v) Education.
(vi) Planning.
(vii) An environmental or watershed group.
(viii) The general public.

(4) Two points shall be assigned for a local team that includes representation from an adjacent municipality which has land in the projected or approved source water protection area or which receives service from the applicant or if the approved source water protection area lies entirely within the jurisdiction of a municipality and the public water supply does not provide service to an area outside of the jurisdiction of the municipality.

(5) A maximum of 3 points shall be assigned a grant applicant for the adoption of an ordinance or resolution as follows:

(a) Three points for the passage of a local ordinance related to the development and implementation of a local source water protection program.

(b) One point for the adoption of a local resolution that demonstrates a commitment to the development and implementation of a local source water protection program.

(6) A maximum of 6 points shall be assigned a grant applicant based upon the manner in which the local match is demonstrated as follows:

(a) Six points for demonstrating that the local match has been provided through the previous expenditure of funds on grant-eligible activities.

(b) Three points for demonstrating that the local match and the grant assistance have been committed through a contractually binding agreement with a consultant.

(c) One point for demonstrating that the local match has been provided as an identifiable item within a local budget dedicating the local match and the grant assistance to grant-eligible activities.

(7) A maximum of 3 points shall be assigned a grant applicant based upon the time line for completion of a source water protection program as follows:

(a) Three points for a program completed before the date of the grant application.

(b) Two points for a time line for program completion within 1 year of the date of application.

(c) One point for a time line for program completion within 3 years of the date of application.

(8) A maximum of 6 points shall be assigned the grant applicant as follows:

(a) Three points for a plan to incorporate the source water protection program into a municipality's master plan or other regional land use planning program.

(b) Three points for a plan to implement a public outreach, education, or planning program of not less than 3 years duration.

(9) A maximum of 5 points shall be assigned the surface water intake protection program grant applicant based on the intake susceptibility rating as determined by a public water supply source water assessment as follows:

(a) Five points for a very high susceptibility rating.

(b) Three points for a high susceptibility rating

(c) One point for a moderately high susceptibility rating.

(10) If the priority list score results in a tie between 2 applicants on that priority list, then the award of grant funds shall be provided to the applicants as follows:

(a) The applicant that has received the lesser amount in total grant funds through application in previous grant cycles shall be awarded the grant funds in the current grant cycle of application.

(b) If the applicants have received the same amount in total grant funds through application in previous grant cycles, then the applicant whose public water supply exhibits the greatest population-to-grant dollars ratio shall be awarded the grant assistance.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12808 Total wellhead protection grant assistance; supplemental grant assistance.

Rule 2808. (1) The total grant assistance received by a public water supply in the wellhead protection grant program shall be based upon the total population served by the public water supply.

(2) The total grant assistance available to a public water supply shall be as follows:

(a) A public water supply that serves a population of 500 persons or less shall be eligible for total grant assistance of not more than $7,500.00.

(b) A public water supply that serves a population of 501 to 3,300 persons shall be eligible for total grant assistance of not more than $15,000.00.

(c) A public water supply that serves a population of 3,301 to 10,000 persons shall be eligible for total grant assistance of not more than $30,000.00.

(d) A public water supply that serves a population of more than 10,000 persons shall be eligible for total grant assistance of not more than $50,000.00

(3) A grant applicant that requests grant assistance in excess of the population-based limit for the total grant assistance shall be granted the maximum allowable grant assistance in accordance with subrule (2) of this rule if other requirements for grant assistance are fulfilled.

(4) The total grant assistance available to a public water supply based upon the population served shall be increased based upon supplemental grant assistance that reflects the number of wells which the public water supply owns and operates as follows:

(a) A public water supply that owns and operates 3 to 5 wells shall be eligible for supplemental grant assistance of not more than $5,000.00.

(b) A public water supply that owns and operates 6 to 10 wells shall be eligible for supplemental grant assistance of not more than $10,000.00.

(c) A public water supply that owns and operates 11 to 15 wells shall be eligible for supplemental grant assistance of not more than $15,000.00

(d) A public water supply that owns and operates more than 15 wells shall be eligible for supplemental grant assistance of not more than $20,000.00.

(5) A grant applicant that requests supplemental grant assistance in excess of the maximum based upon the number of wells owned and operated by the public water supply shall be provided the maximum grant assistance in accordance with subrule (4) of this rule.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12809 Total surface water intake protection grant assistance.

Rule 2809. The total surface water intake protection grant assistance available to a public water supply shall be based on the susceptibility rating as follows:

(a) A public water supply with a susceptibility rating of very high or high shall be eligible for total grant assistance of not more than $20,000.00.

(b) A public water supply with a susceptibility rating of moderately high or moderate shall be eligible for total grant assistance of not more than $15,000.00.

(c) A public water supply with a susceptibility rating of moderately low, low or very low shall be eligible for total grant assistance of not more than $10,000.00.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12810 Distribution of available grant funds for groundwater public water supplies based upon population served and surface water public water supplies based on susceptibility.

Rule 2810. (1) If the requests for grant assistance for groundwater public water supplies exceeds the grant funds available in a grant cycle, then the maximum and minimum grant assistance provided to groundwater public water supplies according to the population served shall be based upon a percentage of the total grant funds available for the grant cycle as follows:

(a) Groundwater public water supplies serving a population of 500 persons or less shall receive not more than 30%, and not less than 15%, of the total grant funds available in any given grant cycle.

(b) Groundwater public water supplies serving a population of 501 to 3,300 persons shall receive not more than 50%, and not less than 25%, of the total grant funds available in any given grant cycle.

(c) Groundwater public water supplies serving a population of 3,301 to 10,000 persons shall receive not more than 30%, and not less than 15%, of the total grant funds available in any given grant cycle.

(d) Groundwater public water supplies serving a population of more than 10,000 persons shall receive not more than 30%, and not less than 15% of the total grant funds available in any given grant cycle.

(2) The department may provide a greater percentage of the available grant funds to groundwater public water supplies of a given population served if requests for grant assistance do not exceed the established minimum percentage of total grant funds available to groundwater public water supplies of other population-served categories.

(3) If requests for grant assistance for surface water public water supplies exceeds the grant funds available in a grant cycle, then the maximum and minimum grant assistance provided to surface water public water supplies according to the susceptibility rating shall be based upon a percentage of the total grant funds available for the grant cycle as follows:

(a) Surface water public water supplies with a susceptibility rating of very high shall receive 50% of the total grant funds available in any given grant cycle.

(b) Surface water public water supplies with a susceptibility rating of high shall receive 25% of the total grant funds available in any given grant cycle.

(c) Surface water public water supplies with a susceptibility rating of moderately high shall receive 25% of the total grant funds available in any given grant cycle.

(4) The department may provide a greater percentage of the available grant funds to surface water public water supplies of a given susceptibility rating if requests for grant assistance do not exceed the established percentage of total grant funds available to surface water public water supplies of other susceptibility ratings.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12811 Disbursement of grant assistance.

Rule 2811. (1) The department shall disburse the grant assistance upon submittal of a project report demonstrating that the applicant has completed the grant-eligible activities identified in the grant application.

(2) The department may provide a partial disbursement of the grant assistance upon submittal of a project report demonstrating that the applicant has completed a corresponding and appropriate portion of the grant-eligible activities identified in the grant application. A partial disbursement of the grant assistance shall not exceed 50% of the total cost of the corresponding and appropriate portion of the grant-eligible activities for which the partial disbursement is requested.

History: 1999 MR 1, Eff. Jan. 25, 1999.

R 325.12812 Grant-eligible activities to support local source water protection programs; contact person; formation of local team; team responsibilities.

Rule 2812. (1) Grant-eligible activities shall support the development or implementation of a local source water protection program and be consistent with the state of Michigan source water protection program.

(2) A public water supply shall provide the department with the name, title, and address of a contact person who shall take the lead in the development and implementation of the local source water protection program, including local administration of the source water protection grant. The contact person shall submit quarterly progress reports on a form provided by the department.

(3) A public water supply shall provide the department with evidence of the formation of a local team. The team shall consist of the public water supply superintendent, the municipality, and at least 1 of the following entities:

(a) The local health department.

(b) The local fire department.

(c) Business and industry.

(d) Agriculture.

(e) Education.

(f) Planning.

(g) An environmental or watershed group.

(h) The general public.

(4) The local team shall be responsible for providing a time line for the completion of grant-eligible activities identified in the grant application.

(5) The local team shall be responsible for providing a time line for the completion of a source water protection program.

History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12813 Source water protection program elements.

Rule 2813. (1) The following source water protection program elements include grant-eligible activities for which grant funds may be applied:

(a) The establishment of roles and duties.

(b) Either of the following program elements:

(i) For a wellhead protection program, delineation of a wellhead protection area as approved by the department.

(ii) For a surface water intake protection program, the designation of a surface water intake protection area as approved by the department.

(c) The completion of a contaminant source and land use inventory.

(d) The development or implementation of management strategies and programs to control contaminant sources or land use.

(e) The development and implementation of a contingency plan.

(f) The phasing of new wells or intakes into a source water protection program.

(g) The development or implementation of public participation strategies in a source water protection program.

(2) Program development and implementation activities, such as a contaminant source and land use inventory, development and implementation of management strategies, contingency planning and public participation, are eligible for grant assistance in more than 1 grant cycle.
History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12814 Grant-eligible activities; development and implementation of certain partnership agreements.

Rule 2814. The development and implementation of partnership agreements between municipalities for the purpose of source water protection is grant-eligible.
History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12815 Grant-eligible delineation and designation activities.

Rule 2815. (1) All of the following apply to grant-eligible wellhead protection area delineation activities:

(a) Grant-eligible delineation activities shall be proposed, described, and completed under the wellhead protection area delineation guidance established by the department in the state of Michigan wellhead protection program.

(b) Grant-eligible activities include the following:

(i) The compilation of existing hydrogeologic information.

(ii) The installation of observation wells for an aquifer test on an existing public water supply well.

(iii) Aquifer tests and aquifer test analysis on an existing public water supply well.

(iv) Surveying.

(v) Collection of static water levels.

(vi) Groundwater modeling, including particle tracking.

(c) If considered necessary by the department due to the lack of accessibility to existing wells, the area geology indicates a public water supply may be a low tritium public water supply, or a known groundwater contamination is present within the wellhead protection area, the following activities may be deemed grant-eligible:

(i) The installation of monitoring wells for the collection of static water level information.

(ii) The collection and analysis of tritium samples.

(iii) The installation of sentinel wells to monitor water quality within the wellhead protection area.

(2) Both of the following apply to surface water intake protection area designation activities:

(a) Grant-eligible designation activities shall be proposed, described, and completed pursuant to the surface water intake protection area designation guidance established by the department in the state of Michigan surface water intake protection program.

(b) Grant-eligible activities include the following:

(i) The compilation of existing hydrologic information.

(ii) Stream flow monitoring or hydrodynamic modeling to determine seasonal fluctuations, time of travel, and other impacts upon source water.
History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12816 Grant-eligible contaminant source and land use inventory activities.

Rule 2816. (1) Contaminant source and land use inventories to identify existing and potential threats to a public water supply are grant-eligible within the source water protection area or within a 1-mile radius of the well field for a low tritium public water supply well.

(2) Grant-eligible contaminant source and land use inventory activities include the following:

(a) Record searches to identify potential sources of contamination and land uses that have a potential to impact the source water.

(b) General surveys to identify potential sources of contamination and land uses that have a potential to impact the source water.

(c) On-site inspection of facilities that have a potential to impact the source water.

(d) Record searches to identify historical land uses that have a potential to impact the source water.

(e) The mapping of existing and potential sources of contamination within the source water protection area.

(f) Updating a contaminant source inventory.

(g) The development and implementation of a program to locate and identify abandoned wells in the source water protection area.

(h) The development and implementation of a program to identify nonpoint sources and to locate and identify outfalls with the potential to impact the surface water intake protection area.
History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12817 Grant-eligible management activities.

Rule 2817. (1) Grant-eligible management activities shall provide an elevated level of protection to the source water protection area or within a 1-mile radius of the well field for a low tritium public water supply well.

(2) Grant-eligible management activities include the following:

(a) The development and implementation of best management practices that reduce the risk of source water contamination.

(b) The development and implementation of source water protection resolutions or ordinances.

(c) On-site inspections for the purpose of improving facility management of potential sources of contamination.

(d) The development and implementation of a program to control abandoned wells, excluding the actual sealing of abandoned wells in a source water protection area.

(e) Incorporation of a source water protection program into a municipality's master plan or other regional land use planning program.
History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12818 Grant-eligible contingency plan and emergency response protocol activities.

Rule 2818. The development and implementation of a contingency plan and emergency response protocol for a source water protection area or within a 1-mile radius of the well field for a low tritium public water supply well are grant-eligible activities.
History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12819 Grant-eligible new well and new surface water intake activities.

Rule 2819. (1) Grant-eligible activities for new wells include all of the following:

(a) Completion of a delineation for a new well or well field, exclusive of the cost incurred to conduct an aquifer test that is a requirement of the public water supply program for the construction of new wells.

(b) The development and implementation of a wellhead protection program for a new well or well field.

(c) Incorporation of a new well or well field into an existing wellhead protection program.

(2) Grant-eligible activities for new surface water intakes include both of the following:

(a) The development and implementation of a surface water intake protection program for a new intake.

(b) Incorporation of a new intake into an existing surface water intake protection program.
History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.12820 Grant-eligible public participation activities.

Rule 2820. (1) Grant-eligible activities for public participation shall provide a positive benefit to the source water protection program by raising public awareness in matters pertaining to source water protection and utilization of the source water resource by a public water supply.

(2) Grant-eligible activities for public participation include the following:

(a) The development and implementation of a school curriculum related to source water protection.

(b) The development and implementation of a strategy to educate the general public on issues related to source water protection.

(c) The development, production, and circulation of educational materials.

(d) The development, preparation, and production of media announcements, such as news releases, newspaper articles, and radio announcements.

(e) Signing activities which identify an approved source water protection area or which promote the concept of source water protection, such as storm drain stenciling and the construction and placement of road signs.
History: 1999 AACS; 2009 MR 23, Eff. Dec. 4, 2009.