5-1.52 Tables. (Effective Date: May 16, 2018)

Table 1. Inorganic Chemicals and Physical Characteristics Maximum Contaminant Level Determination

Contaminants[1,2]	**MCL (mg/l) [3]**	**Determination of MCL violations**
Asbestos	7.0 million fibers/liter (MFL) (longer than 10 microns)	If the results of a monitoring sample analysis exceed the MCL, the supplier of water shall collect one more sample from the same sampling point within 2 weeks or as soon as practical. An MCL violation for all contaminants listed in this table, except for Arsenic, occurs when the average[4] of the initial sample and any confirmation sample exceeds the MCL MCL violations for Arsenic will be determined as follows: Compliance with the Arsenic MCL shall be determined based on the analytical result(s) obtained at each sampling point. For systems which are conducting monitoring at a frequency greater than annual, an Arsenic MCL violation occurs when the running annual average[11,12,13] at any sampling point is greater than the MCL. If any one sample would cause the annual average to exceed the MCL at any sampling point, the system is out of compliance with the MCL immediately. Systems monitoring annually or less frequently whose sample result exceeds the Arsenic MCL[11] must begin quarterly sampling[14]. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling and the running annual average [11,12,13] at that sampling point is greater than the Arsenic MCL. If any one sample would cause the annual average to exceed the MCL at any sampling point, the system is out of compliance with the MCL immediately.
Antimony	0.006	
Arsenic	0.010	
Barium	2.00	
Beryllium	0.004	
Cadmium	0.005	
Chromium	0.10	
Cyanide(as free cyanide)	0.2[5,6]	
Mercury	0.002	
Selenium	0.05	
Silver	0.1	
Thallium	0.002	
Fluoride	2.2	
Chloride	250.0	
Iron	0.3[7]	
Manganese	0.3[7]	
Sodium	No designated limits[8]	
Sulfate	250.0	
Zinc	5.0	
Color	15 Units	
Odor	3 Units	
Bromate[9]	0.010	Compliance is based on a running annual average of monthly samples, computed quarterly. If the average of samples covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and must notify the public.
Chlorite[10]	1.0	Compliance is based on an average of each three-sample set taken in the distribution system in accordance with Table 8B. If the average exceeds the MCL, the system is in violation of the MCL and must notify the public.

Table 1 (cont.)

[1] If EPA Methods 200.7 or 200.9 are used, the MDLs determined when samples are analyzed by direct analysis (i.e., no sample digestion) will be higher, because they were determined using a 2x preconcentration step during sample digestion. Consider the need to preconcentrate, or the use of multiple in-furnace depositions to achieve required MDLs. For direct analysis of cadmium by Method 200.7, sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits.

Preconcentration may also be required for direct analysis of antimony, lead, and thallium by Method 200.9; antimony and lead by Standard Methods 3113 B; and lead by ASTM Method D3559–90D, unless multiple in-furnace depositions are made.

[2]When metals or nitrate samples are collected, they may be acidified with a concentrated acid or a dilute (50% by volume) solution of the applicable concentrated acid. This acidification may be done at the laboratory rather than at the time of sampling, provided the shipping time and other instructions in Section 8.3 of EPA Methods 200.7, 200.8, or 200.9 are followed.

[3]mg/L = milligrams per liter

[4]Rounded to the same number of significant figures as the MCL for the contaminant in question.

[5]If Ligand Exchange and Amperometry is used for cyanide analysis; either ASTM Method D6888-04 or Method OIA–1677, DW, "Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry," January 2004 are approved. EPA–821–R–04–001, is available from ALPKEM, A Division of OI Analytical, P.O. Box 9010, College Station, TX 77842–9010; sulfide levels below those detected using lead acetate paper may produce positive method interferences. Samples should be tested using a more sensitive sulfide method to determine if a sulfide interference is present, and samples shall be treated accordingly.

[6]Cyanide samples must be adjusted with sodium hydroxide to pH 12 at the time of collection. The sample must be shipped and stored at 4 °C or less.

[7]If iron and manganese are present, the total concentration of both should not exceed 0.5 mg/L. Higher levels may be allowed by the State when justified by the supplier of water.

[8]Water containing more than 20 mg/L of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/L of sodium should not be used for drinking by people on moderately restricted sodium diets.

[9]Community and nontransient noncommunity water systems using ozone for disinfection or oxidation must comply with the bromate standard.

[10]Community and nontransient noncommunity water systems using chlorine dioxide as a disinfectant or oxidant must comply with the chlorite standard.

[11]Arsenic sampling results shall be reported to the nearest 0.001 mg/L.

[12]Any sample below the method detection limit shall be calculated at zero for the purpose of determining the annual average. If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

[13]If confirmation samples are collected, the average of the initial sample and any confirmation samples will be used for the determination of compliance and future monitoring requirements.

[14]Systems are only required to conduct the increased monitoring frequency at the sampling point where the MCL was exceeded and for only the specific contaminant(s) that triggered the system into the increased monitoring frequency.

Table 2 - Nitrate, Nitrite, Total Nitrate/Nitrite Maximum Contaminant Level Determination

Contaminants	MCL (mg/L)	Determination of MCL violation
Nitrate[1]	10 (as Nitrogen)[2]	If the results of a monitoring sample analysis exceed the MCL, the supplier of water shall collect another sample from the same sampling point, within 24 hours of the receipt of results or as soon as practical.[3] An MCL violation occurs when the average of the two results exceeds the MCL.
Nitrite	1 (as Nitrogen)	
Total Nitrate and Nitrite	10 (as Nitrogen)	

[1] Nitrate samples are to be shipped and stored at 4 °C or less and analyzed within 48 hours of collection. If the sample is chlorinated, the holding time for an unacidified sample kept at 4 °C is extended to 14 days.
[2] An MCL of 20 mg/L may be permitted at a noncommunity water system if the supplier of water demonstrates that:
(a) the water will not be available to children under six months of age;
(b) a notice that nitrate levels exceed 10 mg/L and the potential health effects of exposure will be continuously posted according to the requirements of a Tier 1 notification;
(c) the State will be notified annually of nitrate levels that exceed 10 mg/L; and
(d) no adverse health effects shall result.
[3]Systems unable to collect an additional sample within 24 hours must issue a Tier 1 notification and must collect the additional sample within two weeks of receiving the initial sample results.

Table 3. Organic Chemicals Maximum Contaminant Level Determination

Contaminants	MCL (mg/L)	Type of water system	Determination of MCL violation
General organic chemicals		Community, NTNC and Noncommunity	If the results of a monitoring sample analysis exceed the MCL, the supplier of water shall collect one to three more samples from the same sampling point, as soon as practical, but within 30 days. An MCL violation occurs when at least one of the confirming samples is positive[1] and the average of the initial sample and all confirming samples exceeds the MCL.
Principal organic contaminant (POC)	0.005		
Unspecified organic contaminant (UOC)	0.05		
Total POCs and UOCs	0.1		
Disinfection byproducts[2,3]		Community and NTNC	For systems required to monitor quarterly, the results of all analyses at each monitoring location per quarter shall be arithmetically averaged and shall be reported to the State within 30 days of the public water system's receipt of the analyses. A violation occurs if the average of the four most recent sets of quarterly samples at a particular monitoring location (12-month locational running annual average (LRAA)) exceeds the MCL. If a system collects more than one sample per quarter at a monitoring location, the system shall average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation. If a system fails to complete four consecutive quarters of monitoring, compliance with the MCL will be based on an average of the available data from the most recent four quarters. An MCL violation for systems on annual or less frequent monitoring that have been increased to quarterly monitoring as outlined in Table 9A, is determined after four quarterly samples are taken.
Total trihalomethanes	0.080		
Haloacetic acids	0.060		
		Transient noncommunity	Not applicable.

Table 3. Organic Chemicals Maximum Contaminant Level Determination (continued)

Contaminants	MCL (mg/L)	Type of Water System	Determination of MCL violation
Specific Organic Chemicals		Community, NTNC and Noncommunity	If the results of a monitoring sample analysis exceed the MCL, the supplier of water shall collect one to three more samples from the same sampling point, as soon as practical, but within 30 days. An MCL violation occurs when at least one of the confirming samples is positive1 and the average of the initial sample and all confirming samples exceeds the MCL.
Alachlor	0.002		
Aldicarb	0.003		
Aldicarb sulfone	0.002		
Aldicarb sulfoxide	0.004		
Atrazine[4]	0.003		
Benzo(a)pyrene	0.0002		
Carbofuran	0.04		
Chlordane	0.002		
Di(2-ethylhexyl)phthalate	0.006		
Dibromochloropropane(DBCP)	0.0002		
2,4-D	0.05		
Dinoseb	0.007		
Diquat	0.02		
Endrin	0.002		
Ethylene dibromide(EDB)	0.00005		
Heptachlor	0.0004		
Heptachlor epoxide	0.0002		
Hexachlorobenzene	0.001		
Lindane	0.0002		
Methoxychlor	0.04		
Methyl-tertiary-butyl-ether(MTBE)	0.010		
Pentachlorophenol	0.001		
Polychlorinated biphenyls(PCBs)[5]	0.0005		
Propylene glycol	1.0		
Simazine	0.004		
Toxaphene	0.003		
2,4,5-TP (Silvex)	0.01		
2,3,7,8-TCDD (dioxin)	0.00000003		
Vinyl chloride	0.002		

Table 3 (continued)

[1] A sample is considered positive when the quantity reported by the State approved laboratory is greater than or equal to the method detection limit.
[2]For systems monitoring yearly or less frequently, the sample results for each monitoring location is considered the LRAA for that monitoring location. Systems required to conduct monitoring at a frequency that is less than quarterly shall monitor in the calendar month identified in the monitoring plan developed under section 5-1.51(c).Compliance calculations shall be made beginning with the first compliance sample taken after the compliance date.
[3] Systems that are demonstrating compliance with the avoidance criteria in section 5-1.30(c), shall comply with the TTHM and HAA5 LRAA MCLs; however the LRAA MCLs are not considered for avoidance purposes. For avoidance purposes, TTHMs and HAA5s are based on a running annual average of analyses from all monitoring locations.
[4] Syngenta Method AG–625, "Atrazine in Drinking Water by Immunoassay," February 2001, available from Syngenta Crop Protection, Inc., 410 Swing Road, P.O. Box 18300, Greensboro, NC 27419. Telephone: 336–632–6000, may not be used for the analysis of atrazine in any system where chlorine dioxide is used for drinking water treatment. In samples from all other systems, any result for atrazine generated by Method AG–625 that is greater than one-half the maximum contaminant level (MCL) (in other words, greater than 0.0015mg/L or 1.5 µg/L) must be confirmed using another approved method for this contaminant and should use additional volume of the original sample collected for compliance monitoring. In instances where a result from Method AG–625 triggers such confirmatory testing, the confirmatory result is to be used to determine compliance
[5] If PCBs (as one of seven Aroclors) are detected in any sample analyzed using EPA Method 505 or 508, the system shall reanalyze the sample using EPA Method 508A to quantitate PCBs (as decachlorobiphenyl). Compliance with the PCB MCL shall be determined based upon the quantitative results of analyses using Method 508A.

Table 3A. Maximum Residual Disinfectant Level (MRDL) Determination

Disinfectant	MRDL[1] (mg/L)	Type of water system	Determination of MRDL violation
Chlorine	4.0 (as Cl_2)	Community and NTNC using chlorine or chloramines as disinfectant or oxidant	Compliance is based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the system. If the running annual average exceeds the MRDL, the system is in violation and must notify the public.
Chloramines[2]	4.0 (as Cl_2)		
Chlorine Dioxide	0.8 (as ClO_2)	Community, NTNC, and Transient Noncommunity using chlorine dioxide as disinfectant or oxidant	Public Health Hazard (Acute Violation) Compliance is based on daily samples collected by the system. If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one (or more) of the three samples taken in the distribution system exceeds the MRDL, the system is in violation.
			Nonacute Violation Compliance is based on daily samples collected by the system. If any two 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 system is in violation.

[1] The monitoring and MRDL requirements for chlorine and chloramines in this column apply to community or nontransient noncommunity water systems that are consecutive systems that do not add a disinfectant, but deliver water that has been treated with primary or residual disinfection other than ultraviolet light.

[2] In cases where systems switch between the use of chlorine and chloramines for residual disinfection during the year, compliance must be determined by including together all Cl_2 monitoring results of both chlorine and chloramines.

Table 4. Entry Point Turbidity Maximum Contaminant Level Determination for Unfiltered Systems [1,2]

Contaminant	MCL	Determination of MCL violation
Entry point turbidity (surface water and ground water directly influenced by surface water)	1 NTU [3,5] (Monthly Average) 5 NTU [4,5]	A violation occurs when the average of all daily entry point analyses for the month exceeds the MCL rounded off to the nearest whole number. A violation occurs when the average of two consecutive daily entry point analyses exceeds the MCL rounded off to the nearest whole number.

[1] The requirements of this table apply to unfiltered systems that the State had determined, in writing pursuant to section 5-1.30 of this Subpart, must install filtration, until filtration is installed.
[2] If formazin is used for turbidity testing, styrene divinyl benzene beads (e.g., AMCO-AEPA–1 or equivalent) and stabilized formazin (e.g., Hach StablCalTMor equivalent) may be substituted for formazin.
[3] If the daily entry point analysis exceeds one NTU, a repeat sample must be taken as soon as practicable and preferably within one hour. If the repeat sample exceeds one NTU, the supplier of water must make State notification. The repeat sample must be used for the monthly average and the two consecutive day average.
[4] If the two consecutive day average exceeds the MCL, the supplier of water shall analyze for microbiological contamination at a point downstream of the first consumer, but as close to the first consumer as is feasible. The additional microbiological sample should be taken within one hour as soon as feasible after determining the two consecutive day average. The supplier of water shall report the result of this microbiological analysis to the State within 48 hours of obtaining the result. The result of this analysis shall not be used for monitoring purposes
[5] NTU = Nephelometric Turbidity Units

Table 4A. Surface Water Turbidity Performance Standards [1]

Contaminant	Filtration type	Performance standard[1]	Determination of treatment technique violation	
Filtered water turbidity[2]	Conventional filtration and Direct Filtration	0.3 NTU[3,5]	A treatment technique violation occurs if more than five percent of the composite filter effluent measurements taken each month exceed the performance standard values.	The turbidity level of representative samples of the filtered water must at no time exceed 1 NTU.[4,5]
	Slow sand filtration	1.0 NTU[3]	A treatment technique violation occurs if more than five percent of the composite filter effluent measurements taken each month exceed the performance standard values.	The turbidity level of representative samples of the filtered water must at no time exceed 5 NTU.
	Diatomaceous earth filtration	1.0 NTU[3]		
	Alternative filtration	1.0 NTU[3,4]		

[1] The standards apply to systems with surface water sources or ground water sources directly influenced by surface water.
[2] If formazin is used for turbidity testing, styrene divinyl benzene beads (e.g., AMCO-AEPA–1 or equivalent) and stabilized formazin (e.g., Hach StablCalTMor equivalent) may be substituted for formazin.
[3] NTU= Nephelometric Turbidity Unit
[4] The performance standard applies to alternative filtration technologies capable of complying with requirement of section 5-1.30(b) of this Subpart as demonstrated to the department by pilot studies, unless the department sets a turbidity performance standard for a specific system.
[5] If the combined filter effluent turbidity exceeds 1 NTU, the system must consult with the State in accordance with section 5-1.78(d)(3) of this Subpart.

Table 5. Distribution System Turbidity Maximum Contaminant Level Determination

Contaminant	MCL	Determination of MCL violation
Distribution point turbidity	5 NTU	A violation occurs when the monthly average of the results of all distribution samples collected in any calendar month exceeds the MCL rounded off to the nearest whole number.

Table 6. Microbiological Contaminants Maximum Contaminant Level (MCL)/Treatment Technique Trigger (TTT)/ Treatment Technique Violation (TTV) Determination[1]

Contaminant/ Trigger/Violation	Sample Location	MCL or TTT or TTV	Performance Standard	Determination of MCL/TTV and TTT
Total coliform[2]	Distribution Sample Sites	TTT[3]	No positive sample[4,5]	A Level 1 TTT occurs at systems collecting 40 or more samples per month when more than 5.0 percent of the samples are total coliform positive
		TTT[3]		A Level 1 TTT occurs at systems collecting less than 40 samples per month when two or more samples are total coliform positive.
		TTT[3]		A Level 1 TTT occurs at any system that fails to collect every required repeat sample after any single total coliform positive sample.
		TTT[6]		A Level 2 TTT occurs at any system that has a second Level 1 trigger within a rolling 12-month period, unless the State has determined a likely reason that the samples that caused the first Level 1 TTT were total coliform positive and has established that the system has corrected the problem.
Escherichia coli (E. coli)		MCL/ TTT[4,6]	No positive sample[5,7]	An MCL violation and Level 2 TTT occurs when a total coliform sample is positive for *E. coli* and a repeat total coliform sample is positive.
		MCL/ TTT[4,6]	No positive sample[5,7]	An MCL violation and Level 2 TTT occurs when a total coliform sample is positive for total coliform but negative for *E. coli* and a repeat total coliform sample is positive for *E. coli.*
		MCL/ TTT[4,6]		An MCL violation and Level 2 TTT occurs when a total coliform sample is positive for total coliform but negative for *E. coli* and a repeat total coliform positive sample is not analyzed for *E. coli.*
		MCL/ TTT[4,6]		An MCL violation occurs when a system fails to collect every required repeat sample after any *E. coli* positive routine sample.

Contaminant/ Trigger/Violation	Sample Location	MCL or TTT or TTV	Performance Standard	Determination of MCL/TTV and TTT
Fecal indicator: *E. coli*, and/or enterococci, and/or coliphage[8]	Untreated Water from a Ground Water Source	TTV	No fecal indicator in samples collected from raw source water from a ground water source.[9]	A TTV occurs when a raw water sample is positive for the fecal indicator contaminant and system does not provide and document, through process compliance monitoring, 4-log virus treatment during peak flow at first customer. If repeat sampling of the raw water is directed by the State and all additional samples are negative for fecal indicator, there is no TTV.[9]
Other trigger or violation		TTV[4]		A TTV occurs when a system exceeds a TTT and then fails to conduct the required assessment or corrective actions.
		TTV[4]		A TTV occurs when a seasonal system fails to complete a State-approved start-up procedure prior to serving water to the public.

[1]All samples collected in accordance with Table 11 footnotes 1 and 2 and Table 11B of this section and samples collected in accordance with subdivision 5-1.51(g) of this Subpart shall be included in determining compliance with the MCL, TTT, and/or TTV unless any of the samples have been invalidated by the State.

[2]Total coliform method additions or modifications to approved methods:

- For total coliform (TC) samples collected from untreated surface water or GWUDI sources, the time from sample collection to initiation of analysis may not exceed 8 hours and the samples must be held below 10 degrees C during transit to the laboratory. For other TC samples, the time from collection to initiation of analysis may not exceed 30 hours. Systems are encouraged, but not required, to hold TC samples below 10 degrees C during transit.
- If the Total Coliform Fermentation Technique using standard methods 9221A or B is used, and if inverted tubes are used to detect gas production, the media should cover these tubes at least one half to two-thirds after the sample is added. Also, no requirement exists to run the completed phase on 10 percent of all TC-positive confirmed tubes. Additionally, lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for TC, using lactose broth, is less than 10 percent.
- If Membrane Filter Technique Standard Methods 9222A, B, and optionally C are used, MI agar also may be used. Verification of colonies is not required.
- If the Standard Methods Presence-Absence (P-A) Coliform Test, 9221D is used, six-times formulation strength may be used if the medium is filter-sterilized rather than autoclaved.
- If the Total Coliform Membrane Filter Technique, Standard Methods 9222 A, B, C is used, MI agar also may be used. Verification of colonies is not required.
- For any TC testing it is strongly recommended that laboratories evaluate the false-positive and negative rates for the method(s) they use for monitoring TC. Laboratories are also encouraged to establish false-positive and false-negative rates within their own laboratory and sample matrix (drinking water or source water) with the intent that if the method they choose has an unacceptable false-positive or negative rate, another method can be used. It is suggested that laboratories perform these studies on a minimum of 5% of all TC-positive samples, except for those methods where verification/ confirmation is already required. Methods for establishing false-positive and negative-rates may be based on lactose fermentation, the rapid test for β-galactosidase and cytochrome oxidase, multi-test identification systems, or equivalent confirmation tests. False-positive and false-negative information is often available in published studies and/or from the manufacturer(s).

Table 6 (cont.)

[3]The system must complete a Level 1 assessment as soon as practical after exceeding any Level 1 TTT. The system must submit the completed Level 1 assessment form to the State within 30 days after the system learns that it has exceeded a trigger. Corrective actions shall be addressed in accordance with section 5-1.71(e) of this Subpart

[4]See Table 13 for public notification requirements

[5]If any total coliform or *E. Coli* sample is positive, repeat samples must be collected in accordance with Table 11B of this section.

[6]A Level 2 assessment must be completed within 30 days after the system learns that it has exceeded a trigger. Corrective actions shall be addressed in accordance with section 5-1.71(e) of this Subpart.

[7]For notification purpose, an E. coli MCL violation in the distribution system is a public health hazard requiring Tier 1 notification. At a ground water system, Tier 1 notification is required after initial detection of *E. coli* or other fecal indicator in raw source water, if the system does not provide 4-log virus treatment and process compliance monitoring, even if not confirmed with additional sampling.

[8]For any fecal indicator sample collected as described in section 5-1.52, Table 6, the time from sample collection to initiation of analysis may not exceed 30 hours. The system is encouraged but is not required to hold samples below 10 °C during transit.

[9]If raw water source sample is fecal indicator positive, the water system, in consultation with the State, may collect an additional 5 samples within 24 hours at each source that tested fecal indicator positive. If none of the additional samples are fecal indicator positive, then there is no TTV. Note that Tier 1 notification must be made after the initial raw water fecal indicator positive sample, even if it is not confirmed with additional sampling.

Table 7. Radiological Maximum Contaminant Level Determination[1]

Contaminant	MCL	Type of water system	Determination of MCL violation[2]
Combined radium-226 and radium-228	5 picocuries per liter	Community	A violation occurs when a sample or the annual average of samples at any sampling point exceeds the MCL[3,4,5,6,7].
Gross alpha activity (including radium-226 but excluding radon and uranium)	15 picocuries per liter	Community	
Uranium[8]	30 micrograms per liter	Community	
Beta particle and photon radioactivity from manmade radionuclides	Four millirems (mrem) per year as the annual dose equivalent to the total body or any internal organ[9].	Community Water Systems designated by the State as vulnerable	A violation occurs when a sample or the annual average of samples at any sampling point exceeds the MCL[3,4,5,7,9,10,11]
		Community systems designated by the State as utilizing waters contaminated by effluents from nuclear facilities	A violation occurs when a sample or the annual average of samples at any sampling point exceeds the MCL[3,4,5,7,9,10,11]

[1]The Radionuclides Rule including the MCLs and minimum monitoring requirements applies to only community water systems.
[2]To judge compliance with the maximum contaminant levels, averages of data shall be used and shall be rounded to the same number of significant figures as the maximum contaminant level for the substance in question.
[3]For systems 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 system is out of compliance with the MCL.
[4]For systems monitoring more than once a year, if any sample result will cause the running average to exceed the MCL at any sample point, e.g., a single sample result is greater than four times of the MCL, the system is out of compliance with the MCL immediately.
[5]If a system does not collect all required samples when compliance is based on a running annual average of quarterly samples, compliance will be based on the running average of the samples collected.
[6]If a sample result is less than the detection limit, zero will be used to calculate the annual average, unless a gross alpha particle activity is being used in lieu of radium-226 and/or uranium. If the gross alpha particle activity result is less than detection and is substituted for radium-226 and/or uranium, ½ the detection limit will be used to calculate the annual average.
[7]If the MCL for radionuclides in this Table is exceeded, the community water system must give notice to the State.
[8]If uranium (U) is determined by mass-type methods (i.e., fluorometric or laser phosphorimetry), a 0.67 pCi/µg of uranium conversion factor must be used.
[9]A system must determine compliance with the MCL for beta particle and photon radioactivity by using the calculation described below:
[pCi/L found in sample (from laboratory results) / pCi/L equivalent of 4 mrem of exposure] = fraction of the maximum 4 mrem/year exposure limit
[10]To determine compliance with the MCL, a system must monitor at a frequency as described in Table 12.
[11]If the results show an MCL violation for any of the constituents, the system must conduct monthly monitoring for all species at any sampling point that exceeds the MCL. Monitoring must be conducted in accordance with Table 12 in this section. A system can resume quarterly monitoring if the rolling average of three months of samples is at or below the MCL.

Table 8A. Inorganic Chemicals and Physical Characteristics Minimum Monitoring Requirements for Asbestos

Contaminant	Type of water system	Initial frequency by source type[5]		Repeat sampling and compliance
		Groundwater only	Surface only or surface and groundwater	
Asbestos[1]	Community and NTNC	One sample at entry point by 12/31/95 [2,3,4]	One sample at entry point by 12/31/95 [2,3,4]	If GT MCL, one sample quarterly.[6, 7] If LT MCL, one sample every nine years.

GT = Greater Than LT = Less Than

[1]If a system is not vulnerable to asbestos contamination, either at its source or due to corrosion of asbestos cement pipe, it is not required to monitor if granted a waiver by the State. The waiver must be renewed by the State every nine years. The basis for a waiver must include the following:

1. Lack of potential asbestos contamination of the water source
2. No use of asbestos cement pipe for finished water distribution and noncorrosive nature of the water.

[2]If asbestos monitoring data collected after January 1, 1990 are consistent with the requirements of this table, the State may allow systems to use that data to satisfy the initial monitoring requirement beginning January 1, 1993.

[3]If a system is vulnerable to asbestos contamination due to source water and corrosion of asbestos cement pipe or solely to corrosion of asbestos cement pipe, it shall take one sample at a tap served by asbestos cement pipe and under conditions where asbestos contamination is most likely to occur.

[4]If a system is vulnerable to asbestos contamination due to source water only, monitoring shall be conducted as follows:

- Groundwater - Collect a minimum of one sample at every entry point to the distribution system representative of each well after treatment.
- Surface water - Collect a minimum of one sample at each entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment.

[5]For both types of water sources the system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions when water is representative of all sources.

[6]A system which exceeds the MCL for asbestos shall monitor quarterly beginning in the next quarter after the violation occurred.

[7]State may decrease the quarterly monitoring requirement to the initial sampling requirement provided that the State has determined that the system is reliably and consistently below the MCL on the basis of a minimum of two quarterly groundwater samples and a minimum of four quarterly samples for surface water.

Table 8B. Inorganic Chemicals and Physical Characteristics Minimum Monitoring Requirements

Contaminant	Type of water system	Initial frequency of source type[1]		Accelerated sampling[2]
		Groundwater only	Surface only or surface and ground water	
Antimony Arsenic Barium Beryllium Cadmium Chromium Cyanide Mercury Nickel Selenium Thallium Fluoride	Community and NTNC[3,4,5]	One sample per entry point every 3 years	One sample per entry point per year[9]	If GT MCL, one sample quarterly. [6,7] If LT MCL, maintain initial frequency.
	Transient noncommunity	State discretion[8]	State discretion[8]	State discretion[8]
Bromate[9]	Community and NTNC using ozone for disinfection or oxidation	One sample per month at each entry point[10, 11]	One sample per month at each entry point[10, 11]	State discretion[8]
Chlorite[12]	Community and NTNC using chlorine dioxide for disinfection or oxidation	Daily samples at each entry point. Additional three-sample set monthly in the distribution System[11,13,14, 15]	Daily samples at each entry point. Additional three-sample set monthly in the distribution System[11,13,14, 15]	State discretion[8]

GT = Greater Than; LT = Less Than

[1] For all types of water sources the system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions when water is representative of all sources, or separately at the individual sources. The State may allow systems to composite samples in accordance with the conditions in Appendix 5-C. All samples taken and analyzed in accordance with the monitoring plan must be included in determining compliance, even if the number is greater than the minimum required.

[2] The average of the initial and confirmation sample contaminant concentration at each sampling point shall be used to determine compliance with the MCL.

[3]A waiver from the required initial monitoring frequencies may be granted by the State, based upon the following conditions:

a. A minimum of one sample shall be collected while the waiver is effective;

b. Surface water systems must have monitored annually for at least three years and ground water systems must have conducted a minimum of three rounds of monitoring with at least one sample taken since January 1, 1990;

c. All results must be less than the MCL;

d. New sources are not eligible for a waiver until completion of three rounds of sampling; and

Table 8B (cont.)

e. Waivers issued by the State shall be made in writing, shall cite the basis for determination and shall not exceed a maximum of nine years

[4] To determine the appropriate reduced monitoring frequency, the State shall consider:

a. Reported concentrations from all previous monitoring;

b. Variations in reported concentrations; and

c. Other factors which may affect contaminant concentrations such as changes in ground water pumping rates, changes in the system's configuration, operating procedures, stream flows or other characteristics.

[5] The State may require or the water system may request more frequent monitoring frequencies than is minimally required. The State, at its discretion, may require confirmation samples.

[6] The State may decrease the quarterly monitoring requirement to the initial sampling requirement provided that it is determined that the system is reliably and consistently below the MCL on the basis of a minimum of two quarterly ground water samples and a minimum of four quarterly samples for surface water.

[7] If concentrations of a listed contaminant exceed the MCL, the department requires the collection of an additional sample as soon as possible but not to exceed two weeks.

[8] State discretion shall mean requiring monitoring when the State has reason to believe the MCL has been violated, the potential exists for an MCL violation or the contaminant may present a risk to public health.

[9] Community and nontransient noncommunity water systems using ozone for disinfection or oxidation must comply with the bromate monitoring requirement.

[10] Systems required to analyze for bromate may reduce monitoring from monthly to once per quarter, if the system's running annual average bromate concentration is $\leq$0.0025 mg/l based on monthly bromate measurements for the most recent four quarters. A system may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.025 mg/L. If the average bromide concentration is equal to or greater than 0.025 mg/L, the system must resume routine monthly bromate monitoring.

[11] Failure to monitor will be treated as a monitoring violation for the entire period covered by an annual average where compliance is based on an annual average of monthly or quarterly samples or averages and a system's failure to monitor makes it impossible to determine MCL compliance.

[12] Community and nontransient noncommunity water systems using chlorine dioxide as a disinfectant or oxidant must comply with the chlorite monitoring requirement.

[13] On each day following a sample result that exceeds the chlorite MCL at the entrance to the distribution system, the system must take three chlorite distribution system samples at the following locations: as close to the first customer as possible, in a location representative of average residence time, and in a location representative of maximum residence time. The samples comprising the three-sample set required for routine monitoring must be collected at the same three locations in the distribution system that are used when following up on a daily MCL exceedance at the entry point. The system may use results of additional monitoring, conducted as the result of an entry point MCL exceedance, to meet the requirement for routine monthly monitoring.

[14] Daily chlorite monitoring at the entrance to the distribution system may not be reduced. Monthly chlorite monitoring in the distribution system may be reduced to one three-sample set per quarter after one year of monitoring where no individual chlorite sample taken in the distribution system has exceeded the chlorite MCL. If the system has had to conduct distribution system monitoring as a result of an MCL exceedance at the entry point, the system cannot reduce monitoring. The system may remain on a reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system exceeds the chlorite MCL or the system is required to conduct distribution system monitoring because of an entry point chlorite MCL exceedance.

[15] A system must monitor according to its monitoring plan as described in section 5-1.51(c) of this Subpart. Failure to monitor in accordance with the monitoring plan is a monitoring violation.

Table 8C. Inorganic Chemicals and Physical Characteristics Minimum Monitoring Requirements - Nitrates, Nitrites

Contaminant	Type of water system	Initial frequency of source type[1,6]		Accelerated sampling[7]
		Groundwater only	Surface only or surface and ground water	
Nitrate	Community and Noncommunity[2]	One sample per entry point per year	One sample per entry point quarterly	For Groundwater: if equal to or GT 50 percent MCL, quarterly for one year[3] For Surface Water: If LT 50 percent MCL, one sample per year[3,4]
Nitrite	Community and Noncommunity	One sample per entry point by 12/31/95	One sample per entry point by 12/31/95	If equal to or GT 50 percent MCL, repeat quarterly for at least one year[3,4] If LT 50 percent MCL, sample frequency at State discretion[5]

GT = Greater Than LT = Less Than

[1]The State may require, or the water system may request, more frequent monitoring frequencies than is minimally required. The State at its discretion may require confirmation samples for positive and negative results.

[2]Noncommunity water systems must sample annually beginning 1/1/93 regardless of the water source.

[3]The frequency may be reduced to annual if the State determines the systems contaminant concentration is consistently and reliably less than the MCL and annual samples are collected during the quarter(s) having the highest analytical results.

[4]A surface water shall return to quarterly monitoring if any one sample is GT 50 percent of MCL.

[5]State discretion shall mean requiring monitoring when the State has reason to believe the MCL has been violated, the potential exists for an MCL violation or the contaminant may present a risk to public health.

[6] For both types of water sources the system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant. If a system draws water from more than one source and the sources are combined before distribution the system must sample at an entry point to the distribution systems during periods of normal operating conditions when water is representative of all sources. The average of the initial and confirmation sample contaminant concentration at each sampling point shall be used to determine compliance with the MCL.

Table 8D. Inorganic Chemicals and Physical Characteristics Minimum Monitoring Requirements - Other Chemicals

Contaminant	Type of water system	Initial frequency of source type		Sampling and compliance
		Groundwater only	Surface only or surface and ground water	
Chloride Iron Manganese Silver Sodium[1] Sulfate Zinc Color Odor	Community and NTNC	State discretion[2]	State discretion[2]	State discretion[2]

[1]All community systems with sodium levels exceeding 20 mg/l will be required to sample for sodium analysis.

[2]State discretion shall mean requiring monitoring when the State has reason to believe the MCL has been violated, the potential exists for an MCL violation or the contaminant may present a risk to public health.

Table 9A. Organic Chemicals – Disinfection Byproducts Minimum Monitoring Requirements[1]

			Routine Monitoring		Reduced Monitoring[2]	
	Source Water Type	**Population Size**	**Distribution System monitoring location per monitoring period[3]**	**Frequency[4]**	**Distribution System monitoring locations per monitoring period**	**Frequency**
Total Trihalomethanes (TTHM) Haloacetic Acids (HAA5)	Surface water and GWUDI	<500	2 [5]	per year [6]	not allowed	not allowed
		500 – 3,300	2 [5]	per quarter	2 [5]	per year [6]
		3,301 – 9,999	2	per quarter	2 [7]	per year [6]
		10,000 – 49,999	4	per quarter	2 [8]	per quarter
		50,000 – 249,999	8	per quarter	4 [9]	per quarter
		250,000 – 999,999	12	per quarter	6 [10]	per quarter
		1,000,000 – 4,999,999	16	per quarter	8 [11]	per quarter
		≥5,000,000	20	per quarter	10 [12]	per quarter
	Ground water	<500	2 [5]	per year [6]	2 [5]	every third year [6]
		500 – 9,999	2	per year [6]	2 [5]	per year [6]
		10,000 – 99,999	4	per quarter	2 [7]	per year [6]
		100,000 – 499,999	6	per quarter	2 [8]	per quarter
		≥500,000	8	per quarter	4 [9]	per quarter

Table 9A (continued)

[1]To comply with monitoring requirements, certain conditions must be applied to test methods. The following apply to any samples collected for compliance with section 5-1.50(o) of this Subpart:

- Total Organic Carbon (TOC) samples. Inorganic carbon must be removed from TOC samples prior to analysis. TOC samples may not be filtered prior to analysis. TOC samples must be acidified at the time of sample collection to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified TOC samples must be analyzed within 28 days.
- SUVA Samples:

  For Specific Ultraviolet Absorbance (SUVA) samples, SUVA must be determined on water prior to the addition of disinfectants/oxidants by the system. Dissolved Organic Carbon (DOC) and Ultraviolet Absorption at 254 nm (UV254) samples used to determine a SUVA value must be taken at the same time and at the same location.

  DOC samples must be filtered through the 0.45 µm pore-diameter filter as soon as practical after sampling, not to exceed 48 hours. After filtration, DOC samples must be acidified to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified DOC samples must be analyzed within 28 days of sample collection. Inorganic carbon must be removed from the samples prior to analysis. Water passed through the filter prior to filtration of the sample must serve as the filtered blank. This filtered blank must be analyzed using procedures identical to those used for analysis of the samples and must meet the following criteria: DOC < 0.5 mg/L.

  For UV254 samples, UV absorption must be measured at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, UV254samples must be filtered through a 0.45 µm pore-diameter filter. The pH of UV254samples may not be adjusted. Samples must be analyzed as soon as practical after sampling, not to exceed 48 hours.

[2]Systems may reduce monitoring if, at all monitoring locations, the TTHM LRAA is ≤0.040 mg/L and the HAA5 LRAA is ≤0.030 mg/L. In addition, the source water annual average TOC level, before any treatment, shall be ≤4.0 mg/L at each treatment plant treating surface water or GWUDI. A system with quarterly reduced monitoring may remain on reduced monitoring as long as the TTHM LRAA is ≤0.040 mg/L and the HAA5 LRAA is ≤0.030 mg/L at each monitoring location. For systems with annual or less frequent monitoring, each TTHM sample shall be ≤0.060 mg/L and each HAA5 sample shall be ≤0.045 mg/L. In addition, the source water annual average TOC level, before any treatment, shall be ≤4.0 mg/L at each treatment plant treating surface water or GWUDI. If these conditions are not met, or at the State's discretion, the system shall resume routine monitoring in the quarter immediately following the exceedance (for quarterly systems) or in the year immediately following the exceedance (for systems that monitor annually or less frequently).

[3]A system shall monitor according to its monitoring plan as described in section 5-1.51(c) of this Subpart. Failure to monitor in accordance with the monitoring plan is a monitoring violation. All systems shall monitor during the month of highest Disinfection Byproducts concentrations. Monitoring shall be increased to quarterly at all locations if a TTHM sample is > 0.080 mg/L or a HAA5 sample is >0.060 mg/L.

[4]Systems on quarterly monitoring shall take dual sample sets every 90 days at each monitoring location, except for surface water and GWUDI systems serving a population of 500 -3,300. Ground water systems serving a population of 500 – 9,999 on annual monitoring shall take dual sample sets at each monitoring location. All other systems on annual monitoring and surface water and GWUDI systems serving a population of 500 – 3,300 are required to take individual TTHM and HAA5 samples (instead of dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. For systems serving fewer than 500 people, only one 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.

Table 9A (continued)

[5]Collect one TTHM sample at the location and during the quarter with the highest TTHM single measurement, and one HAA5 sample at the location and during the quarter with the highest HAA5 single measurement; alternatively, collect one dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.

[6]If a system is required to monitor a particular location annually or less frequently, and a TTHM sample is >0.080 mg/L or a HAA5 sample is >0.060 mg/L at any location, the system shall increase monitoring to dual sample sets once per quarter (taken every 90 days) at all locations. The system may return to routine monitoring if at least four consecutive quarters of increased monitoring have been conducted and for every monitoring location the TTHM LRAA ≤0.060 mg/L and the HAA5 LRAA is ≤0.045 mg/L.

[7]Collect one dual sample set at the location and during the quarter of the highest TTHM single measurement, and one dual sample set at the location and during the quarter of the highest HAA5 single measurement.

[8]Collect dual sample sets at the locations with the highest TTHM and HAA5 LRAAs.

[9]Collect dual sample sets at the locations with the two highest TTHM and two highest HAA5 LRAAs.

[10]Collect dual sample sets at the locations with the three highest TTHM and three highest HAA5 LRAAs.

[11]Collect dual sample sets at the locations with the three highest TTHM and three highest HAA5 LRAAs.

[12]Collect dual sample sets at the locations with the five highest TTHM and five highest HAA5 LRAAs.

Table 9B. Organic Chemicals - POCs, Vinyl Chloride, Methyl-tertiary-butyl-ether (MTBE), UOCs, Propylene Glycol Minimum Monitoring Requirements

Contaminant	Type of water system	Initial requirement[1]	Continuing requirement where detected[1]	Continuing requirement where not detected and vulnerable to contamination[1]	Continuing requirement where not detected and invulnerable to contamination[1]
Principal Organic Contaminants listed on Table 9D and Vinyl chloride and Methyl-tertiary-butyl-ether (MTBE)[2]	Community and Nontransient Noncommunity serving 3,300 or more persons	Quarterly sample per source for one year.[3]	Quarterly[4]	Annually[5]	Once every six years[6]for groundwater sources. State discretion[7] for surface water sources.
	Community and Nontransient Noncommunity serving fewer than 3,300 persons	Quarterly sample per source for one year.[3]	Quarterly[4]	Annually[5]	Once every six years[6]for groundwater sources. State discretion[7] for surface water sources.
	Noncommunity excluding NTNC	State discretion[7]	State discretion[7]	State discretion[7]	State discretion[7]
Unspecified Organic Contaminants and other POCs not listed on Table 9C or 9D and Propylene glycol	Community and Noncommunity	State discretion[7]	State discretion[7]	State discretion[7]	State discretion[7]

[1]The location for sampling of each ground water source of supply shall be between the individual well and at or before the first service connection and before mixing with other sources, unless otherwise specified by the State to be at the entry point representative of the individual well. Public water systems which rely on a surface water shall sample at points in the distribution system representative of each source or at an entry point or points to the distribution system after any water treatment plant.

Table 9B (continued)

[2] The initial requirement does not apply to MTBE monitoring

[3] The State may reduce the initial monitoring requirement to one sample if the State determines that the system is invulnerable in accordance with footnote 4.

[4] The State may decrease the quarterly monitoring requirement to annually provided that the system is reliably and consistently below the MCL based on a minimum of two quarterly samples from a ground water source and four quarterly samples from a surface water source. Systems which monitor annually must monitor during the quarter which previously yielded the highest analytical result.

[5] The State may reduce the frequency of monitoring of a ground water source to once every three years for a public water system which has three consecutive annual samples with no detection of a contaminant.

[6] The State may determine that a public water system is invulnerable to a contaminant or contaminants after evaluating every three years the following factors:

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 State reveals no previous use of the contaminant within the watershed or zone of influence, a waiver can be granted.

b. If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver can be granted.

1.Previous analytical results.

2.The proximity of the system to a potential point or nonpoint 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.

3.The environmental persistence and transport of the contaminants.

4.The number of persons served by the public water system and the proximity of a smaller system to a larger system.

5.How well the water source is protected against contamination, such as whether it is a surface or ground water system. Ground water systems must consider factors such as depth of the well, the type of soil, and wellhead protection. Surface water systems must consider watershed protection.

[7] State discretion shall mean requiring monitoring when the State has reason to believe the MCL has been violated, the potential exists for an MCL violation or the contaminant may present a risk to public health.

Table 9C. Organic Chemicals - Pesticides, Dioxin, PCBs Minimum Monitoring Requirements

Contaminant		Type of water system	Initial requirement[1,]	Continuing requirement where detected[1,2,3,4]	Continuing requirement where not detected[1]
Group 1 Chemicals Alachlor Aldicarb Aldicarb sulfoxide Aldicarb sulfone Atrazine Carbofuran Chlordane Dibromochloropropane 2,4-D Endrin Ethylene Dibromide Heptachlor Heptachlor epoxide Lindane Methoxychlor Polychlorinated biphenyls Pentachlorophenol Toxaphene 2,4,5-TP (Silvex)	Group 2 Chemicals Aldrin Benzo(a)pyrene Butachlor Carbaryl Dalapon Di(2-ethylhexyl)adipate Di(2-ethylhexyl)phthalate Dicamba Dieldrin Dinoseb Diquat Endothall Glyphosate Hexachlorobenzene Hexachlorocyclopentadiene 3-Hydroxycarbofuran Methomyl Metolachlor Metribuzin Oxamyl (vydate) Picloram Propachlor Simazine 2,3,7,8-TCDD (Dioxin)	Community and Nontransient Noncommunity serving 3,300 or more persons[3]	Quarterly sample per source, for one year [5]	Quarterly	One sample every eighteen months per source[6,7,8]
		Community and Nontransient Noncommunity serving fewer than 3,300 persons and more than 149 service connections	Quarterly samples per entry point, for one year[6,7,8]	Quarterly	Once per entry point every three years[6,7,8]
		Community and Nontransient Noncommunity serving fewer than 3,300 persons and fewer than 150 service connections	Quarterly samples per entry point for one year[6,7,8]	Quarterly	Once per entry point every three years[6,7,8]
		Noncommunity excluding NTNC	State discretion[9]	State discretion[9]	State discretion[9]

Table 9C (continued)

[1]The location for sampling of each ground water source of supply shall be between the individual well and at or before the first service connection and before mixing with other sources, unless otherwise specified by the State to be at the entry point representative of the individual well. Public water systems which take water from a surface water body or watercourse shall sample at points in the distribution system representative of each source or at entry point or points to the distribution system after any water treatment plant.

[2] The State may decrease the quarterly monitoring requirement to annually provided that system is reliably and consistently below the MCL based on a minimum of two quarterly samples from a ground water source and four quarterly samples from a surface water source. Systems which monitor annually must monitor during the quarter that previously yielded the highest analytical result. Systems serving fewer than 3,300 persons and which have three consecutive annual samples without detection may apply to the State for a waiver in accordance with footnote 6.

[3] If a contaminant is detected, repeat analysis must include all analytes contained in the approved analytical method for the detected contaminant.

[4] Detected as used in the table shall be defined as reported by the State approved laboratory to be greater than or equal to the method detection levels.

[5]The State may allow a system to postpone monitoring for a maximum of two years, if an approved laboratory is not reasonably available to do a required analysis within the scheduled monitoring period.

[6] The State may waive the monitoring requirement for a public water system that submits information every three years to demonstrate that a contaminant or contaminants was not used, transported, stored or disposed within the watershed or zone of influence of the system.

[7] The State may reduce the monitoring requirement for a public water system that submits information every three years to demonstrate that the public water system is invulnerable to contamination. If previous use of the contaminant is unknown or it has been used previously, then 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 nonpoint 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. Nonpoint sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, home and gardens, and 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 such factors as depth of the well and 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 used in production, storage or distribution of water
.

[8] The State may allow systems to composite samples in accordance with the conditions in Appendix 5-C of this Title.

[9] State discretion shall mean requiring monitoring when the State has reason to believe the MCL has been violated, the potential exists for an MCL violation or the contaminant may present a risk to public health.

Table 9D. Organic Chemicals - POCs Minimum Monitoring Requirements

Contaminant	Specific Contaminants for analysis	
POCs	Benzene[1]	cis-1,3-Dichloropropene
	Bromobenzene	Trans-1,3-Dichloropropene
	Bromochloromethane	ethylbenzene[1]
	Bromomethane	hexachlorobutadiene
	N-Butylbenzene	Isopropylbenzene
	Sec-Butylbenzene	p-Isopropyltoluene
	Tert-Butylbenzene	Methylene Chloride[1]
	Carbon Tetrachloride[1]	n-Propylbenzene
	Chlorobenzene	Styrene[1]
	Chloroethane	1,1,1,2-Tetrachloroethane
	Chloromethane	1,1,2,2-Tetrachloroethane
	2-Chlorotoluene	Tetrachloroethene[1]
	4-Chlorotoluene	Toluene[1]
	Dibromomethane	1,2,3-Trichlorobenzene
	1,2-Dichlorobenzene[1]	1,2,4-Trichlorobenzene[1]
	1,3-Dichlorobenzene	1,1,1-Trichloroethane[1]
	1,4-Dichlorobenzene[1]	1,1,2-Trichloroethane[1]
	Dichlorodifluoromethane	Trichloroethene[1]
	1,1-Dichloroethane	Trichlorofluoromethane
	1,2-Dichloroethane[1]	1,2,3-Trichloropropane
	1,1-Dichloroethene[1]	1,2,4-Trimethylbenzene
	cis-1,2-Dichloroethene[1]	1,3,5-Trimethylbenzene
	trans-1,2-Dichloroethene[1]	m-Xylene[1]
	1,2-Dichloropropane[1]	o-Xylene[1]
	1,3-Dichloropropane	p-Xylene[1]
	2,2-Dichloropropane	
	1,1-Dichloropropene	

[1]Notification must contain mandatory health effect language.

Table 10. Turbidity Minimum Monitoring Requirements for Unfiltered Systems Pending Filtration[1]

Contaminant	Source Type		Surface only, surface and ground water, or ground water directly influenced by surface water
	Type of water system	Groundwater only	
Entry point turbidity	Community	State discretion[2]	Collect and analyze one sample per day from each entry point. All results must be recorded to two significant figures.
	Noncommunity	State discretion[2]	Collect and analyze one sample annually. Monitoring requirement may be increased at State discretion.[2]
Distribution point turbidity	Community	State discretion[2]	Five distribution samples each week unless otherwise determined by the State. No two samples may be obtained on the same day and no two samples are to be collected from the same distribution point during the week.
	Noncommunity	State discretion[2]	State discretion[2]

[1]The requirements of this table apply to unfiltered systems that the State has determined, in writing pursuant to section 5-1.30 of this Subpart, must install filtration. These requirements only apply until filtration is installed.

[2]State discretion shall mean requiring monitoring when the State has reason to believe the MCL has been violated, the potential exists for an MCL violation or the contaminant may present a risk to public health.

Table 10A. Turbidity Minimum Monitoring Requirements[1]

Contaminant	Type of water system	Source type	
		Groundwater	Surface water[1]
Filtered water turbidity	Community and Noncommunity	Not applicable	Continuous monitoring for composite filter effluent and individual filters.[2,3,4,5]
Raw water turbidity	Unfiltered surface: Community and Noncommunity	Not applicable	Every four hours or continuous monitoring. [5]
Distribution point turbidity	Community	State discretion [6]	Five distribution samples each week unless otherwise determined by the State. No two samples may be obtained on the same day and no two samples are to be collected from the same distribution point during the same week.
	Noncommunity	State discretion [6]	State discretion [6]

[1]Surface water sources or groundwater sources directly influenced by surface water.

[2]Effective January 1, 2002 systems serving 10,000 or more people must record the results of individual filter monitoring every fifteen minutes, and combined filter effluent every four hours. Effective January 14, 2005 systems serving fewer than 10,000 persons must record the results of individual filter monitoring every fifteen minutes, and combined filter effluent every four hours. Until January 14, 2005, systems serving fewer than 10,000 persons must continuously monitor the composite filter effluent turbidity, or record the turbidity every four hours. The state may allow systems with two filters to monitor the combined filter effluent continuously (recording every 15 minutes) in lieu of monitoring individual filter turbidity. Results of individual filter monitoring must be maintained for at least three years.

[3]If there is a failure in the continuous turbidity monitoring equipment, the system must conduct grab sampling every four hours instead of continuous monitoring, but for no more than five working days following the failure of the equipment.

[4]For systems using slow sand filtration or filtration treatment, other than conventional treatment, direct filtration or D.E. filtration, the State may reduce sampling frequency to once per day if it determines that less frequent monitoring is sufficient to indicate effective filtration performance.

[5]If a system uses continuous monitoring, it must use the turbidity values recorded every four hours to determine if a treatment technique violation occurs, unless the State has approved in writing a different time interval.

[6]State discretion shall mean requiring monitoring when the State has reason to believe the MCL has been violated, the potential exists for an MCL violation or the contaminant may present a risk to public health.

Table 11 Microbiological Minimum Monitoring Requirements (Refer to Table 11B following any positive samples) [1,2,3,4]

Contaminant	Type of Water System	Number of Routine Samples Based on Population			
		Population Served	Minimum Number of Samples per Month[4]	Population Served	Minimum Number of Samples per Month[4]
Total coliform in distribution system[5]	Community	Up to 1,000[6,7]	1	59,001 to 70,000	70
		1,001 to 2,500	2	70,001 to 83,000	80
		2,501 to 3,300	3	83,001 to 96,000	90
		3,301 to 4,100	4	96,001 to 130,000	100
		4,101 to 4,900	5	130,001 to 220,000	120
		4,901 to 5,800	6	220,001 to 320,000	150
		5,801 to 6,700	7	320,001 to 450,000	180
		6,701 to 7,600	8	450,001 to 600,000	210
		7,601 to 8,500	9	600,001 to 780,000	240
		8,501 to 12,900	10	780,001 to 970,000	270
		12,901 to 17,200	15	970,001 to 1,230,000	300
		17,201 to 21,500	20	1,230,001 to 1,520,000	330
		21,501 to 25,000	25	1,520,001 to 1,850,000	360
		25,001 to 33,000	30	1,850,001 to 2,270,000	390
		33,001 to 41,000	40	2,270,001 to 3,020,000	420
		41,001 to 50,000	50	3,020,001 to 3,960,000	450
		50,001 to 59,000	60	3,960,001 or more	480
Total coliform in distribution system[5]	Noncommunity using surface water or groundwater directly influenced by surface water	All	Same as community		
	Noncommunity using only groundwater not directly influenced by surface water[9]	≤1,000	Quarterly[8,9]		
		>1,000	Same as community		
	Seasonal	All	Monthly[9]		
Escherichia coli (E. coli)	Community and Noncommunity	All	Any routine or repeat samples that are Coliform positive must be analyzed for *E. coli.*[4,10]		
Fecal Indicator in Raw Source Water[10]	All ground water systems unless providing 4-log virus treatment and process compliance monitoring	All	State discretion[11]		

Table 11 (cont.)

[1]Public water supply systems must collect total coliform samples at sites that are representative of water throughout the distribution system and throughout the reporting period, in accordance with a written monitoring plan which is subject to State review and revision as described in section 5-1.51(c) of this Subpart. A public water system that uses only groundwater and serves 4,900 or fewer people may collect all required samples on a single day if they are taken from different sites.

[2]Public water systems using surface water or groundwater directly influenced by surface water, and which do not provide filtration, must collect and analyze at least one sample for total coliforms near the first service connection each day the turbidity level of the raw water exceeds 1.49 NTU. This sample shall be collected within 24 hours. Results of this sample must be included in determining compliance with the MCLs and TTTs in Table 6 of this section.

[3]Samples taken to determine disinfection practices after pipe repair, replacement, or similar activity are not to be used for determining compliance with the MCLs or TTTs in Table 6 of this section.

[4]See Table 11B for repeat sampling requirements following any total coliform or *E. Coli* positive samples.

[5]If chlorine or chloramines are used as the disinfectant, a chlorine residual determination shall be made at the same time and location that the sample is collected for total coliform analysis. Monitoring for heterotrophic bacteria may be substituted for free chlorine residuals. The State may allow a public water system that uses both: (1) a surface water source, or a ground water source under direct influence of surface water, and (2) a ground water source, to take disinfectant residual samples at points other than the total coliform sampling points if the State determines that such points are more representative of treated (disinfected) water quality within the distribution system. A heterotrophic plate count result equal to or less than 500 colonies per milliliter is considered to be equivalent to a measurable free chlorine residual.

[6]The State may, in writing, reduce the monitoring frequency to quarterly for a community water system serving 1,000 or fewer persons and using ground water only if the system is in compliance with 10 NYCRR Subpart 5-4; has a clean compliance history for a minimum of 12-months; is free of sanitary defects; and has a protected water source. The system must meet at least one of the following criteria: an annual site visit by the State or State-approved party that is equivalent to a Level 2 assessment and correction of all identified sanitary defects; cross connection control, as approved by the State; continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the State; or demonstration of maintenance of at least a 4-log removal or inactivation of viruses. Systems that have been granted a disinfection waiver are not eligible for reduced monitoring frequency.

[7]A community water system on quarterly monitoring must begin monthly monitoring if it meets any of the following conditions: a Level 2 assessment is triggered; two Level 1 assessments in a rolling 12-month period are triggered; an *E. coli* MCL violation; a coliform TTV; or two total coliform monitoring violations in a rolling 12-month period. Monthly monitoring must begin in the month following the event.

[8]A noncommunity water system on quarterly monitoring must begin monthly monitoring if it meets any of the following conditions: a Level 2 assessment is triggered; two Level 1 assessments in a rolling 12-month period are triggered; an *E. coli* MCL violation; a coliform TTV; two total coliform monitoring violations; or one total coliform monitoring violation and one Level 1 assessment in a rolling 12-month period. Monthly monitoring must begin in the month following the event.

[9]A noncommunity water system may return to quarterly monitoring if they meet the following criteria: within the last 12 months, the system must have a completed sanitary survey or Level 2 assessment, be free of sanitary defects, have a protected water source; and the system must have a clean compliance history for a minimum of 12 months.

[10]Fecal indicators include *E. coli*, enterococci, and coliphage. Only *E. coli* testing will be required, unless otherwise directed by the State.

[11]State discretion shall mean that monitoring is required when the State has reason to believe the MCL or TT has been violated, the potential exists for an MCL violation or TTV; or the contaminant may present a risk to public health.

Table 11A. Microbiological/Filtration Avoidance Criteria
Minimum Monitoring Requirements[1]

Contaminant[2]	Type of water system	Population served	Minimum number of samples per week[3,4]
Raw water fecal or total coliform	Community and Noncommunity	Up to 500 501 to 3,300 3,301 to 10,000 10,001 to 25,000 25,001 or more	1 2 3 4 5

[1]The monitoring requirement applies to surface water sources and groundwater sources directly influenced by surface water.
[2]Either fecal or total coliform density measurements are acceptable. If both analyses are performed, the fecal coliform results will take precedence.
[3]Monitoring sampling must be performed on separate days.
[4]Samples must be taken and analyzed every day the system serves water to the public and the turbidity of the raw water exceeds 1.49 NTU. The samples count toward the weekly sampling requirement.

Table 11B Repeat Microbiological Sampling Requirements following Total Coliform Positive and/or Fecal Indicator Positive Sample(s) [1]

Table 11B Repeat Microbiological Sampling Requirements Following Total Coliform Positive and/or Fecal Indicator Positive Sample(s)[1]

Type of Positive Sample	Type of Water System/Source	System Size	Number of Repeat Samples Required Within 24 Hours of Notification	Sampling Location	Required Action for Positive Repeat Samples
Routine total coliform sample(s) from distribution system	Surface water, GWUDI, or ground water performing 4-log virus treatment and process compliance monitoring	More than one service connection	Three distribution system samples	The same sampling site where the original coliform-positive sample was collected, one sample within five service connections upstream, one sample within five service connections downstream in accordance with a state approved sampling plan.	Distribution sampling must be repeated until total coliform is not detected in repeat samples, or it is determined that a treatment technique has been triggered or an MCL has been violated.[2, 3]
		One service connection	One distribution system sample[4]	Original sampling location	
	Ground water system or ground water source not providing (or not documenting) 4-log virus treatment[5]	Population >1,000	Three distribution system samples and one source water sample from each source collected in accordance with a State-approved sampling plan[6]	The same distribution system sampling site where the original coliform-positive sample was collected, one sample within five service connections upstream, one sample within five service connections downstream. An additional sample must be collected from each raw water source or according to State approved sampling plan.[6, 7]	Distribution sampling must be repeated until total coliform is not detected in repeat samples, or it is determined that a treatment technique has been triggered or an MCL has been violated.[2, 3]
		Population ≤1,000 and more than one service connection	Three distribution system samples and one source water sample from each source collected in accordance with a	The same distribution system sampling site where the original coliform-positive sample was collected, one sample within five service connections upstream, and one sample within five service connections downstream. An additional sample must be collected from each raw water source or	

Table 11B Repeat Microbiological Sampling Requirements Following Total Coliform Positive and/or Fecal Indicator Positive Sample(s)[1]

Type of Positive Sample	Type of Water System/Source	System Size	Number of Repeat Samples Required Within 24 Hours of Notification	Sampling Location	Required Action for Positive Repeat Samples
Routine total coliform sample(s) from distribution system	Ground water system or ground water source not providing (or not documenting) 4-log virus treatment[5]		State-approved sampling plan. [5, 8]	according to State approved sampling plan.[6, 7, 8]	Distribution sampling must be repeated until total coliform is not detected in repeat samples, or it is determined that a treatment technique has been triggered or an MCL has been violated.[2, 3]
		One service connection	One distribution system sample and source water sample(s) in accordance with a State-approved sampling plan[4, 6, 8]	Original sampling location. An additional sample must be collected from each raw water source or according to State approved sampling plan.[6, 7, 8]	
		Wholesale System of any size	After notification by consecutive system of total coliform-positive sample[6, 7, 9, 11]	Collect one raw water sample at each source or in accordance with a State-approved sampling plan.[6, 7, 9]	As directed by State[10]
Source water sample(s) fecal indicator positive[7, 10]	Ground water system or ground water source not providing or not documenting 4-log virus treatment	All	Five raw water samples for fecal indicator or immediate corrective action as directed by State[6, 9, 11]	Fecal indicator sampling from source or sources with initial fecal indicator positive samples[6, 7]	As directed by State[10, 11]

[1]After any total coliform positive sample from the distribution system, the system must collect repeat samples on the same day and within 24 hours of being notified.

Table 11B (cont.)

[2]The month following a total coliform positive sample, systems collecting samples quarterly must collect a minimum of three routine distribution system samples. The State may waive, in writing, the requirement to collect three routine samples the following month the system provides water to the public, if the State carries out an onsite visit before the end of the following month and the State determines why the sample was total coliform positive and establishes that the system has corrected the problem. The State cannot waive the requirement to collect three routine samples solely on the basis that all the repeat samples were total coliform negative. Before the end of the following month the system serves water to the public, at least one routine sample to determine compliance with the MCLs and TTTs must be collected by the system as required in Table 11.

[3]Results of all routine and repeat microbiological samples not invalidated by the State must be used to determine whether a coliform TTT specified in Table 6 has been exceeded.

[4]The State may allow a system with a single service connection to collect the required set of repeat samples over a three-day period or to collect a larger volume repeat sample(s) in one or two more sample containers of any size, as long as the total volume collect is at least 300 mL. If *E. coli* is used as the fecal indicator at a ground water system with a single well, a single sample of two (2) times the minimum sample volume or two (2) bottles of minimum required sample volume may be collected consecutively from the tap and the third sample collected from the raw water source. This source water sample result must be used to determine compliance with all Table 6 requirements.

[5]If a consecutive system purchasing (or otherwise obtaining) ground water from a wholesale system has a total coliform-positive sample from the distribution system, the system must notify the wholesale system and collect distribution system repeat samples as specified in Table 11B within 24 hours. The wholesale system must collect raw source water sample(s) unless the system provides 4-log virus treatment at peak flow before or at the first customer as confirmed through process compliance monitoring.

[6]Sampling plan requirements are given in section 5-1.51 (c) of this Subpart.

[7]Fecal indicators include *E. coli*, enterococci and coliphage. Sampling for fecal indicators other than *E. coli* is at State discretion.

[81]A system with a single well or a ground water source serving 1,000 or fewer persons may collect a single raw water sample to serve as both a distribution repeat sample to replace the upstream location sample and a raw water sample taken following a routine total coliform positive sample, if *E. coli* is used as the fecal indicator. If this dual-purpose source water sample is collected, the sample result must be used to determine compliance with all Table 6 requirements.

[9]Wholesale system source water sampling requirements are in addition to distribution system sampling requirements for consecutive systems.

[10]In the event of a fecal indicator positive sample from the raw source water, the state must be notified immediately and may require immediate corrective action. In no case will notification be later than 24 hours as described in section 5-1.78(d)(4) of this Subpart.

[11]If a ground water wholesale system does not perform 4-log virus treatment and process compliance monitoring, and has a fecal indicator positive sample from a raw source water, the system must notify any consecutive systems as well as any of its own customers.

Table 12. Radiological Minimum Monitoring Requirements

Contaminant	Type of water system	Monitoring Requirement[1]	
		Initial	**Reduced monitoring[2,3]**
Combined Ra-226 and Ra-228, uranium and gross alpha particle activity	Community	Four consecutive quarterly samples at every entry point before December 31, 2007.[4,5,6]	One sample every nine years at every entry point when monitoring results are below the detection limit.[7,8] One sample every six years at every entry point when monitoring results are at or above the detection limit but below half of the MCL.[7,8] One sample every three years at every entry point when monitoring results are above half of the MCL but at or below the MCL.[7,8]
	Noncommunity	Not applicable	
Beta particle and photon radioactivity from manmade radionuclides	Community systems designated by the State as vulnerable[9]	Quarterly samples for beta particle and annual samples for tritium and Sr-90, beginning within one quarter after being notified by the State.[10,11]	If the gross beta particle activity minus the naturally occurring K-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 50 pCi/L (screening level), the State may reduce the frequency of monitoring at that sampling point to once every 3 years.[14,15]
	Community systems designated by the State as utilizing waters contaminated by effluents from nuclear facilities[9]	Quarterly samples for beta emitters and I-131 and annual samples for tritium and Sr-90, beginning within one quarter after being notified by the State.[10,11,12,13]	If the gross beta particle activity minus the naturally occurring K-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/L (screening level), the State may reduce the frequency of monitoring at that sampling point to once every 3 years.[14,15]

Table 12 (cont.)

[1]All radiological samples must be collected at every entry point to distribution system (EPTDS).
[2]The State may allow systems to reduce the frequency of monitoring based on initial monitoring or historical results as noted in footnote 4 below.
[3]Systems on a reduced monitoring schedule must perform quarterly sampling if a sample result exceeds the MCL.
[4]The State may allow historical monitoring data collected between June 2000 and December 8, 2003 for systems with;

(1) only one entry point to the distribution system;
(2) multiple entry points and having appropriate historical monitoring data for each entry point to the distribution system;
(3) appropriate historical data for a representative point in the distribution system, provided that the State finds that the historical data satisfactorily demonstrate that each entry point to the distribution system is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of contaminant levels between entry points.

[5]The State may waive the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit.
[6]If the average of the initial monitoring results for a sampling point is above the MCL, the system must collect and analyze quarterly samples at the sampling point until the system has results from four consecutive quarters that are at or below the MCL.
[7]A gross alpha particle activity measurement may be substituted for the required radium-226 measurement provided that 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 provided that 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. When a system uses a gross alpha particle activity measurement in lieu of a radium-226 and/or uranium measurement, the gross alpha particle activity analytical result will be used to determine the future monitoring frequency for radium-226 and/or uranium. If the gross alpha particle activity result is less than detection, ½ the detection limit can be used to substitute to radium-226 and determine compliance for future monitoring frequency.
[8]Radium-228 measurement can not be substituted by the gross alpha particle activity result.
[9]For systems in the vicinity of a nuclear facility, the State may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring the systems entry point(s), where the State determines that such data is applicable.
[10]Systems already designated by the State must continue to sample until the State reviews and either reaffirms or removes the designation.
[11]Quarterly monitoring for gross beta particle activity shall be based on the analysis of monthly samples or the analysis of a composite of three monthly samples
[12]Annual monitoring for Sr-90 and tritium shall be conducted by means of the analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples.
[13]For iodine-131, a composite of five consecutive daily samples shall be analyzed once each quarter. As ordered by the State, more frequent monitoring shall be conducted when iodine-131 is identified in the finished water.
[14]Systems must collect all samples for beta emitters, tritium and strontium-90 during the reduced monitoring period.
[15]A system that exceeds the gross beta particle activity minus the naturally occurring potassium-40 beta particle screening level (50 pCi/L for vulnerable systems or 15 pCi/L for systems utilizing waters contaminated by effluents from nuclear facilities), must further analyze the sample for the major radioactive constituents. The potassium-40 beta particle activity must be calculated by multiplying elemental potassium concentrations in mg/L by a factor of 0.82

Table 13 - REQUIRED NOTIFICATIONS

Contaminant/Situation (Subpart 5-1 citations)	**Single sample exceeds MCL/MRDL[1]**	**MCL/MRDL/TT[1] violation**	**Failure to meet monitoring requirements and/or failure to use applicable testing procedure**
Public Health Hazard (Section 5-1.1(bz))[2]	Not applicable	State Tier 1	State Tier 1
Escherichia coli (E. coli) in distribution system (Section 5-1.52, Tables 6, 11 and 11B)	State[3] Not applicable, or Tier 1[4]	State Tier 1	State Tier 3, or Tier 1[5]
E. coli or other fecal indicator detected in ground water source at system not providing both 4-log virus treatment and process compliance monitoring (Section 5-1.52, Tables 6, 11 and 11B)	Tier 1[2,3,5,6]	Tier 1[6]	State Tier 3, or Tier 1[2,5,7]
Total coliform in distribution system (Section 5-1.52, Tables 6, 11 and 11B)	Not applicable	State[8] Tier 2, or Tier 1[9]	State Tier 3, or Tier 2 as directed by State
Entry Point Turbidity monthly average (Section 5-1.52, Tables 4 and 10)	State[10]	State Tier 2	State Tier 3
Entry Point Turbidity two-day average (Section 5-1.52, Tables 4 and 10)	State	State Tier 2, or Tier 1[11]	State Tier 3
Raw Water Turbidity (Subdivision 5-1.30(d) and Section 5-1.52, Table 10A)	State	State Tier 2, or Tier 1[11]	State Tier 3
Filtered Water Turbidity Single exceedance of the maximum allowable Turbidity level (Section 5-1.52, Tables 4A and 10A)	State	State Tier 2, or Tier 1[11]	State Tier 3
Filtered Water Turbidity Treatment Technique violation (Section 5-1.52, Tables 4A and 10A)	Not applicable	State Tier 2	State Tier 3

Table 13 (cont.)

Contaminant/Situation (Subpart 5-1 citations)	**Single sample exceeds MCL/MRDL[1]**	**MCL/MRDL/TT[1] violation**	**Failure to meet monitoring requirements and/or failure to use applicable testing procedure**
Distribution Point Turbidity (Section 5-1.52, Tables 5, 10 and 10A)	Not applicable	State Tier 2	State Tier 3
Treatment Technique violations other than turbidity[12,13] (Sections 5-1.12, 5-1.30, 5-1.32, 5-1.81, and 5-1.83 and Subdivision 5-1.71(d))	Not applicable	State Tier 2, or Tier 1[2,13]	State Tier 3[13], or Tier 2[12]
Free chlorine residual less than 0.2 mg/L at the entry point[14] (Subdivision 5-1.30(d))	Not applicable	State	Not applicable
Free chlorine residual less than required minimum for a ground water system or ground water source required to provide 4-log virus treatment[15] (Subdivision 5-1.30(a))	Not applicable	State Tier 2, or Tier 1[9]	Tier 2
Inorganic chemicals and physical characteristics listed in Tables 8A and 8B (Section 5-1.52, Tables 1, 8A, and 8B)	State	State Tier 2	State Tier 3
Chloride, iron, manganese, silver, sulfate, and zinc (Section 5-1.52, Tables 1 and 8D)	Not applicable	State Tier 3	State Tier 3
Sodium (Section 5-1.52, Tables 1 and 8D)	State if the level exceeds 20 mg/L	Tier 2 if the level exceeds 270 mg/L	Tier 3
Nitrate, Nitrite, Total Nitrate and Nitrite (Section 5-1.52, Tables 2 and 8C)	State	State Tier 1	State Tier 1, or Tier 3[16]
Lead and Copper (Sections 5-1.40 to 1.48)	Not applicable	State Tier 2	State Tier
Organic Chemicals Group 1 and 2 (Section 5-1.52, Table 9C)	State	State Tier 2	State Tier 3

Table 13 (cont.)

Contaminant/Situation (Subpart 5-1 citations)	**Single sample exceeds MCL/MRDL1**	**MCL/MRDL/TT[1] violation**	**Failure to meet monitoring requirements and/or failure to use applicable testing procedure**
Principal Organic Contaminants Unspecified Organic Contaminants Total POCs and UOCs (Section 5-1.52, Tables 3, 9B and 9D)	State	State Tier 2	State Tier 3
Radiological Contaminants (Section 5-1.52, Tables 7 and 12)	State	State Tier 2	State Tier 3
Monitoring and Control of Disinfection Byproduct Precursors (Sections 5-1.60 to 5-1.64)	Not applicable	State Tier 2	State Tier 3
Disinfectant residuals Chlorine and Chloramine (Section 5-1.52, Tables 3A and 15A)	State	State Tier 2	State Tier 3
Disinfectant residual Chlorine dioxide at entry point (Section 5-1.52, Tables 3A, 15 and 15A)	State	State Tier 2	State Tier 3, or Tier 2[17]
Disinfectant residual Chlorine dioxide in distribution system (Section 5-1.52, Tables 3A, 15 and 15A)	State	State Tier 1[18]	State Tier 1[18]
Disinfection byproducts Trihalomethanes Haloacetic acids (Section 5-1.52, Tables 3 and 9A) and Bromate and Chlorite (Section 5-1.52, Tables 1 and 8B)	Not applicable	State Tier 2	State Tier 3

Table 13 (cont.)

Contaminant/Situation (Subpart 5-1 citations)	**Single sample exceeds MCL/MRDL[1]**	**MCL/MRDL/TT[1] violation**	**Failure to meet monitoring requirements and/or failure to use applicable testing procedure**
Acrylamide and Epichlorohydrin (Subdivision 5-1.51(m))	Not applicable	State Tier 2	Not applicable
Operation under a variance or exemption (Sections 5-1.90 to 5-1.96)	Not applicable	Tier 3	Not applicable
Violation of conditions of a variance or exemption (Sections 5-1.90 to 5-1.96)	Not applicable	State Tier 2	Not applicable
Disruption of water service of four hours or more (Subdivision 5-1.23(b))	Not applicable	State[19]	Not applicable

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

[2]Community systems must describe in their annual water supply statement (see section 5-1.72(e) and (f)) any Public Health Hazard that is determined to be a violation, and any uncorrected significant deficiency, and must indicate whether corrective action has been completed. This notice must be repeated every year until the annual report documents that corrective action has been completed in accordance with section 5-1.22 of this Subpart.

[3]State notification must be made by the supplier of water within 24 hours of learning of an *E. coli* positive sample.

[4]Public notification normally does not have to be issued for an *E. coli* positive sample prior to the results of the repeat samples. However, there may be situations where the State determines that a Tier 1 notification is necessary to protect the public health. The supplier of water must provide the Tier 1 notification no later than 24 hours after learning of the State's determination.

[5]Failure to test for *E. coli* requires a Tier 1 notification if testing is not performed after any repeat sample tests positive for coliform. All other *E. coli* monitoring and testing procedure violations require Tier 3 notification.

[6]At a ground water system, Tier 1 notification is required after initial detection of *E. coli* or other fecal indicator in raw source water, if the system does not provide 4-log virus treatment and process compliance monitoring. Confirmation of *E. coli* or other fecal indicator in the source water requires Tier 1 notification. Failure to take confirmatory samples may be a public health hazard requiring Tier 1 notification.

[7]Notice of the fecal indicator positive raw water sample must be made in the annual water supply statement (see section 5-1.72(e)), until the annual report documents that corrective action has been completed.

[8]State notification must be made by the supplier of water within 24 hours of learning of the violation.

[9]Tier 2 notification is normally required; however, there may be situations where the State determines that a Tier 1 notification is necessary to protect the public health. The supplier of water must provide the Tier 1 notification no later than 24 hours after learning of the State's determination.

[10]If the daily entry point analysis exceeds one NTU, a repeat sample must be taken as soon as practicable, and preferably within one hour. If the repeat sample exceeds one NTU, the supplier of water must make state notification.

[11]Systems must consult with the State within 24 hours after learning of the violation. Based on this consultation, the State may subsequently decide to elevate the violation from a Tier 2 to a Tier 1 notification. If consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notification no later than 48 hours after the system learns of the violation.

[12]These violations include the following: failure to comply with the treatment technique or monitoring requirements in section 5-1.30(a), (b), (c), and (g) of this Subpart; failure to comply with the avoidance criteria in section 5-1.30(c) of this Subpart; failure to cover a finished water storage facility or treat its discharge required in section 5-1.32 of this Subpart; failure to report to the state information required in section 5-1.72(c)(3) of this Subpart; failure to maintain records required in section 5-1.72(d)(7) of this Subpart; and failure to meet the treatment and bin classification requirements associated with *Cryptosporidium* in section 5-1.83 of this Subpart. Failure to collect three or more samples for *Cryptosporidium* analysis as required in section 5-1.81 of this Subpart is a Tier 2 violation requiring public notification. Failure to perform any other monitoring and testing procedure as required in section 5-1.81 of this Subpart is a Tier 3 violation.

[13]Any significant deficiency that is not corrected, or where correction has not begun according to a State-approved corrective action plan within 120 days, or as directed by the State, is a TTV and must be addressed in accordance with section 5-1.12. If the deficiency is a public health hazard, the deficiency must be addressed as directed by the State and Tier 1 notification is required.

[14]Applies to systems that have surface water or groundwater directly influenced by surface water as a source and use chlorine. The system must make State notification whether the residual was restored to at least 0.2 mg/L within four hours.

[15]Required minimum chlorine residual at point that demonstrates adequate CT for disinfected water from ground water sources at first customer.

[16]Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL requires a Tier 1 notification. Other monitoring violations for nitrate or nitrite require a Tier 3 notification.

[17]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 requires a Tier 2 notification. Other monitoring violations for chlorine dioxide at the entrance to the distribution system require a Tier 3 notification.

[18]If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one 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 the day after the MRDL is exceeded at the entry point also triggers Tier 1 notification.

[19]Tier 1 notification is required if the situation meets the definition of a public health hazard.

Table 14A
CT Values ($CT_{99.9}$) for 99.9 Percent Inactivation of *Giardia Lamblia* Cysts by Free Chlorine at 0.5 Degrees Celsius or Lower[1]

Free chlorine residual (mg/L)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	137	163	195	237	277	329	390
0.6	141	168	200	239	286	342	407
0.8	145	172	205	246	295	354	422
1.0	148	176	210	253	304	365	437
1.2	152	180	215	259	313	376	451
1.4	155	184	221	266	321	387	464
1.6	157	189	226	273	329	397	477
1.8	162	193	231	279	338	407	489
2.0	165	197	236	286	346	417	500
2.2	169	201	242	297	353	426	511
2.4	172	205	247	298	361	435	522
2.6	175	209	252	304	368	444	533
2.8	178	213	257	310	375	452	543
3.0	181	217	261	316	382	460	552

[1]These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

Table 14B
CT Values ($CT_{99.9}$) for 99.9 Percent Inactivation of *Giardia Lamblia* Cysts by Free Chlorine at 5.0 Degrees Celsius[1]

Free chlorine residual (mg/L)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	97	117	139	166	198	236	279
0.6	100	120	143	171	204	244	291
0.8	103	122	146	175	210	252	301
1.0	105	125	149	179	216	260	312
1.2	107	127	152	183	221	267	320
1.4	109	130	155	187	227	274	329
1.6	111	132	158	192	232	281	337
1.8	114	135	162	196	238	287	345
2.0	116	138	165	200	243	294	353
2.2	118	140	169	204	248	300	361
2.4	120	143	172	209	253	306	368
2.6	122	146	175	213	258	312	375
2.8	124	148	178	217	263	318	382
3.0	126	151	182	221	268	324	389

[1]These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

Table 14C
CT Values ($CT_{99.9}$) for 99.9 Percent Inactivation of *Giardia Lamblia* Cysts by Free Chlorine at 10.0 Degrees Celsius[1]

Free chlorine residual (mg/L)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	73	88	104	125	149	177	209
0.6	75	90	107	128	153	183	218
0.8	78	92	110	131	158	189	226
1.0	79	94	112	134	162	195	234
1.2	80	95	114	137	166	200	240
1.4	82	98	116	140	170	206	247
1.6	83	99	119	144	174	211	253
1.8	86	101	122	147	179	215	259
2.0	87	104	124	150	182	221	265
2.2	89	105	127	153	186	225	271
2.4	90	107	129	157	190	230	276
2.6	92	110	131	160	194	234	281
2.8	93	111	134	163	197	239	287
3.0	95	113	137	166	201	243	292

[1]These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

Table 14D
CT Values ($CT_{99.9}$) for 99.9 Percent Inactivation of *Giardia Lamblia* Cysts by Free Chlorine at 15.0 Degrees Celsius[1]

Free chlorine residual (mg/L)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	49	59	70	83	99	118	140
0.6	50	60	72	86	102	122	146
0.8	52	61	73	88	105	126	151
1.0	53	63	75	90	108	130	156
1.2	54	64	76	92	111	134	160
1.4	55	65	78	94	114	137	165
1.6	56	66	79	96	116	141	169
1.8	57	68	81	98	119	144	173
2.0	58	69	83	100	122	147	177
2.2	59	70	85	102	124	150	181
2.4	60	72	86	105	127	153	184
2.6	61	73	88	107	129	156	188
2.8	62	74	89	109	132	159	191
3.0	63	76	91	111	134	162	195

[1]These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

Table 14E
CT Values ($CT_{99.9}$) for 99.9 Percent Inactivation of *Giardia Lamblia* Cysts by Free Chlorine at 20.0 Degrees Celsius[1]

Free chlorine residual (mg/L)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	36	44	52	62	74	89	105
0.6	38	45	54	64	77	92	109
0.8	39	46	55	66	79	95	113
1.0	39	47	56	67	81	98	117
1.2	40	48	57	69	83	100	120
1.4	41	49	58	70	85	103	123
1.6	42	50	59	72	87	105	126
1.8	43	51	61	74	89	108	129
2.0	44	52	62	75	91	110	132
2.2	44	53	63	77	93	113	135
2.4	45	54	65	78	95	115	138
2.6	46	55	66	80	97	117	141
2.8	47	56	67	81	99	119	143
3.0	47	57	68	83	101	122	146

[1]These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

Table 14F
CT Values ($CT_{99.9}$) for 99.9 Percent Inactivation of *Giardia Lamblia* Cysts by Free Chlorine at 25.0 Degrees Celsius and Higher[1]

Free chlorine residual (mg/L)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4	24	29	35	42	50	59	70
0.6	25	30	36	43	51	61	73
0.8	26	31	37	44	53	63	75
1.0	26	31	37	45	54	65	78
1.2	27	32	38	46	55	67	80
1.4	27	33	39	47	57	69	82
1.6	28	33	40	48	58	70	84
1.8	29	34	41	49	60	72	86
2.0	29	35	41	50	61	74	88
2.2	30	35	42	51	62	75	90
2.4	30	36	43	52	63	77	92
2.6	31	37	44	53	65	78	94
2.8	31	37	45	54	66	80	96
3.0	32	38	46	55	67	81	97

[1]These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

Table 14G
CT Values ($CT_{99.9}$) for 99.9 Percent Inactivation of *Giardia Lamblia* Cysts by Chlorine Dioxide and Ozone[1,2]

	Degrees Celsuis					
	≤1	**5**	**10**	**15**	**20**	**≥25**
Chlorine dioxide	63	26	23	19	15	11
Ozone	2.9	1.9	1.4	0.95	0.72	0.48

[1]These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature for determining $CT_{99.9}$ values between indicated temperatures.

[2]The use of these alternative disinfectants shall be approved in accordance with the provisions of section 5-1.22 of this Section.

Table 14H. CT Values ($CT_{99.9}$) for 99.9 Percent Inactivation of *Giardia Lamblia* Cysts by Chloramines[1]

Water Temperature, in Degrees Celsius					
<1	5	10	15	20	25
3,800	2,200	1,850	1,500	1,100	750

[1]These values are for pH values of 6 to 9. These CT values may be assumed to achieve greater than 99.99 percent inactivation of viruses only if chlorine is added and mixed in the water prior to the addition of ammonia. If this condition is not met, the system must demonstrate, based on on-site studies or other information, as approved by the State, that the system is achieving at least 99.99 percent inactivation of viruses. CT values between the indicated temperatures may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature for determining $CT_{99.9}$ values between indicated temperatures.

Table 14I. CT Values (mg·min/L) for *Cryptosporidium* Inactivation by Chlorine Dioxide[1]

Log Credit	Water Temperature, in Degrees Celsius										
	<=0.5	1	2	3	5	7	10	15	20	25	30
0.25	159	153	140	128	107	90	69	45	29	19	12
0.5	319	305	279	256	214	180	138	89	58	38	24
1.0	637	610	558	511	429	360	277	179	116	75	49
1.5	956	915	838	767	643	539	415	268	174	113	73
2.0	1275	1220	1117	1023	858	719	553	357	232	150	98
2.5	1594	1525	1396	1278	1072	899	691	447	289	188	122
3.0	1912	1830	1675	1534	1286	1079	830	536	347	226	147

[1] Systems may use this equation to determine log credit between the indicated values:
Log credit = $(0.001506 \times (1.09116)^{Temp}) \times CT$.

Table 14J. CT Values (mg·min/L) for *Cryptosporidium* Inactivation by Ozone[1]

Log Credit	Water Temperature, in Degrees Celsius										
	<=0.5	1	2	3	5	7	10	15	20	25	30
0.25	6.0	5.8	5.2	4.8	4.0	3.3	2.5	1.6	1.0	0.6	0.39
0.5	12	12	10	9.5	7.9	6.5	4.9	3.1	2.0	1.2	0.78
1.0	24	23	21	19	16	13	9.9	6.2	3.9	2.5	1.6
1.5	36	35	31	29	24	20	15	9.3	5.9	3.7	2.4
2.0	48	46	42	38	32	26	20	12	7.8	4.9	3.1
2.5	60	58	52	48	40	33	25	16	9.8	6.2	3.9
3.0	72	69	63	57	47	39	30	19	12	7.4	4.7

[1] Systems may use this equation to determine log credit between the indicated values:
Log credit = $(0.0397 \times (1.09757)^{Temp}) \times CT$.

Table 14K. UV Dose Table for *Cryptosporidium*, *Giardia lamblia*, and Virus Inactivation Credit[1,2,3,4]

Log Credit	*Cryptosporidium* UV dose (mJ/cm^2)	*Giardia lamblia* UV dose (mJ/cm^2)	Virus UV dose (mJ/cm^2)
0.5	1.6	1.5	39
1.0	2.5	2.1	58
1.5	3.9	3.0	79
2.0	5.8	5.2	100
2.5	8.5	7.7	121
3.0	12	11	143
3.5	15	15	163
4.0	22	22	186

[1] Ultraviolet light. Systems receive *Cryptosporidium, Giardia lamblia,* and virus treatment credits for ultraviolet (UV) light reactors by achieving the corresponding UV dose values shown in this table. Systems must use validated UV reactors and monitor UV reactors as described in footnotes 3 and 4 of this table to demonstrate that they are achieving a particular UV dose value for treatment credit.

[2]UV dose table. The treatment credits listed in this table are for UV light at a wavelength of 254 nm as produced by a low pressure mercury vapor lamp. To receive treatment credit for other lamp types, systems must demonstrate an equivalent germicidal dose through reactor validation testing, as described in footnote 3 of this table. The UV dose values in this table are applicable only to unfiltered systems (either by filtration waiver or those that do not require filtration) and to post-filter applications of UV in filtered systems.

[3]Reactor validation testing. Systems must use UV reactors that have undergone validation testing to determine the operating conditions under which the reactor delivers the UV dose required in footnote 2 of this table (*i.e.*, validated operating conditions). These operating conditions must include flow rate, UV intensity as measured by a UV sensor, and UV lamp status.

When determining validated operating conditions, systems must account for the following factors: UV absorbance of the water; lamp fouling and aging; measurement uncertainty of on-line sensors; UV dose distributions arising from the velocity profiles through the reactor; failure of UV lamps or other critical system components; and inlet and outlet piping or channel configurations of the UV reactor.

Validation testing must include full scale testing of a reactor that conforms uniformly to the UV reactors used by the system and inactivation of a test microorganism whose dose response characteristics have been quantified with a low pressure mercury vapor lamp. The State may approve an alternative approach to validation testing.

[4]Reactor monitoring.

To receive treatment credit for UV light, systems must treat at least 95 percent 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 footnotes 2 and 3 of this table. Systems must demonstrate compliance with this condition by monitoring UV intensity as measured by a UV sensor, flow rate, lamp status, and other parameters designated by the State.

Table 15 Entry Point Disinfectant Monitoring Frequency for Systems Using Chemical Disinfection[1]

Water System Source Type	Population served	Samples per day[4]
Surface Water or Ground Water under the Direct Influence of Surface Water (GWUDI)[2, 3]	Up to 500	1
	501 - 1,000	2
	1,001 - 2,500	3
	2,501 - 3,300	4
	> 3,300	Continuous monitoring required[5]
Ground Water System or ground water source required to provide 4-log virus treatment and process compliance monitoring [6, 7, 8]	≤ 3,300	1[9]
	> 3,300	Continuous monitoring required[5]
Ground Water System or ground water source with other than 4-log virus treatment	Any	1[9]

[1]See also Table 15A for distribution system disinfectant residual sampling locations and frequency depending on disinfectant used.

[2]If at any time chlorine residual concentration falls below 0.2 mg/L at the entry point for a surface water or GWUDI system, the system must collect and analyze a grab sample every four hours until the chlorine residual concentration is again equal to or greater than 0.2 mg/L.

[3]Entry point samples collected at Surface Water or GWUDI systems

[4]The day's grab samples may not be conducted at the same time.

[5]If there is a failure in the continuous monitoring equipment, grab samples, every four hours, may be conducted in lieu of continuous monitoring, but for no more than five working days (fourteen working days for ground water systems) following the failure of the equipment.

[6]If at any time the disinfectant concentration at a ground water system falls below the minimum required in the process compliance monitoring plan approved by the State, the system must collect and analyze a grab sample every four hours until the disinfectant residual concentration is again at or above minimum required levels, without exceeding other applicable concentration requirements in Table 3A.

[7]Any ground water system required to provide 4-log virus treatment because of fecal contamination of the source or because of significant deficiencies in system operation, and using chemical disinfection, must demonstrate minimum disinfectant residual at a location that demonstrates adequate concentration to provide the required treatment at the first customer during peak flow according to the sampling plan developed for the system. These samples to confirm the minimum disinfection residual are to be collected at the frequency in this table.

[8]Lowest daily concentration must be recorded on operation report.

[9]A minimum of one disinfectant residual concentration must be recorded on operation report every day.

Table 15A Disinfectant Residual Minimum Distribution System Monitoring Requirements for Systems Using Chemical Disinfection

Disinfectant	Type of Water System	Routine Monitoring
Chlorine Chloramines	Community and Nontransient Noncommunity	Sample at the same time and same points in the distribution system as total coliform sampling[1]
Chlorine Dioxide[2]	Community, Nontransient Noncommunity and Transient Noncommunity	Daily sample at the entrance to the distribution system[3]

[1]Community Water Systems using surface water or ground water under the direct influence of surface water may use heterotrophic plate count results of equal to or less than 500 colonies per milliliter as equivalent to a free chlorine residual as outlined in table 11, footnote 5, in lieu of taking separate samples for disinfection residuals

[2]Monitoring is required if chlorine dioxide is used for either oxidation or disinfection.

[3]If the Maximum Residual Disinfectant Level (MRDL) of 0.8 mg/L is exceeded, the system must take three samples in the distribution system on the following day. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used and there are no rechlorination stations, the system must take 3 samples as close to the first customer as possible, at intervals of at least 6 hours. If chlorine is used and there is a rechlorination station, the system must take one sample as close to the first customer as possible, one sample representing average residence time, and one sample representing maximum residence time.

Table 16. Additional Contaminants for which Reporting is Required Pursuant to 5-1.72 (e)-(h) of this Subpart

Contaminant Name	
2,4-dinitrotoluene	2-methyl-1-phenol
2,6-dinitrotoluene	Alachlor ESA
DCPA monoacid	1,2-diphenylhydrazine
DCPA di acid	Diazinon
4,4'-DDE	Disulfoton
EPTC	Fonofos
Molinate	Terbufos
MTBE	Aeromonas Hydrophilia
Nitrobenzene	Polonium-210
Terbacil	RDX
Acetochlor	Algae and toxins
Perchlorate	Echoviruses
Diuron	Coxsackie viruses
Linuron	Helicobacter pylori
Prometon	Microsporidia
2,4,6-trichlorophenol	Caliciviruses
2,4-dichlorophenol	Adenoviruses
2,4-dinitrophenol	Lead – 210
	Napthalene

Table 17. Information Collection Rule Contaminant Reporting Requirements

Contaminant	Reporting Requirements for Finished Water
Total Trihalomethanes (chloroform, bromodichloromethane, dibromochloromethane, and bromoform)	Report as a group if detected
Haleocetic Acids (mono-, di-, and trichloroacetic acid, and mono- and di-bromoacetic acid)	Report as a group if detected
Haloacetilenitriles (dichloro-, trichloro-, bromochloro-, and dibromoacetonitrile)	Report as a group if detected
Haloketones (1,1-dichloropropanone and 1,1,1-trichloropropanine)	Report as a group if detected
Chloropicrin	Reporting required if detected
Chloral Hydrate	Reporting required if detected
Total Organic Halides	Reporting required if detected
Disinfectant Residual	Reporting required if detected
Cyanogen Chloride	Report if detected and treatment plant uses Chloramines
Chlorate	Report if detected and treatment plant uses Hypochlorite Solutions
Bromate, Aldehydes	Report if detected and treatment plant uses Ozone
Chlorine Dioxide residual, Chlorite, Chlorate, Bromate, Aldehydes	Report if detected and treatment plant uses Chlorine Dioxide
Total Coliforms	Report if detected
Fecal Coliforms or *Escherichia coli*	Report if detected
Giardia	Report if detected
Total Culturable Viruses	Report if detected