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WISCONSIN STATE LEGISLATURE ... PUBLIC HEARING - COMMITTEE RECORDS

2009-10

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* Contents organized for archiving by: Stefanie Rose (LRB) (June 2012)

(f) *Requirements following waiver revocation.* A public water system whose full or partial waiver has been revoked by the department is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

1. If the public water system exceeds the lead or copper action level, or both, the water supplier shall implement corrosion control treatment in accordance with the deadlines specified in s. NR 809.542 (5), and any other applicable requirements of this paragraph.

2. If the public water system meets both the lead and the copper action level, the water supplier shall monitor for lead and copper at the tap no less frequently than once every 3 years using the reduced number of sample sites specified in sub. (3).

(g) *Pre-existing waivers.* Small water system waivers approved by the department in writing prior to April 11, 2000 shall remain in effect under the following conditions:

1. If the water supplier for a public water system has demonstrated that the public water system is free of both lead-containing and copper-containing materials, as required by par. (a) and that its 90th percentile lead levels and 90th percentile copper levels meet the criteria of par. (b), the waiver remains in effect so long as the public water system continues to meet the waiver eligibility criteria of par. (e). The first round of tap water monitoring conducted pursuant to par. (d) shall be completed no later than 9 years after the last time the water supplier has monitored for lead and copper at the tap. Samples collected every nine years shall be collected no later than every ninth calendar year.

2. If the public water system has met the materials criteria of par. (a) but has not met the monitoring criteria of par. (b), the water supplier shall conduct a round of monitoring for lead and copper at the tap demonstrating that the public water system meets the criteria of par. (b) to meet initial monitoring requirements. Thereafter, the waiver shall remain in effect as long as the public water system meets the continued eligibility criteria of par. (e). The first round of tap water monitoring conducted pursuant to par. (d) shall be completed no later than 9 years after the round of monitoring conducted pursuant to par. (b).

NR 809.548 Monitoring requirements for water quality parameters. Water suppliers for all large systems, and for all small and medium-size systems that exceed the lead or copper action level, shall monitor water quality parameters in addition to lead and copper in accordance with this section. The requirements of this section are summarized in the table at the end of this section.

(1) **GENERAL REQUIREMENTS.** (a) *Sample collection methods.* 1. Tap samples shall be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the water supplier, and seasonal variability. Tap sampling under this section is not required to be conducted at taps targeted for lead and copper sampling under s. NR 809.547 (1).

2. Samples collected at the entry points to the distribution system shall be from locations representative of each source after treatment. If a public water system draws water from more than one source and the sources are combined before distribution, the water supplier shall sample at an entry point to the distribution system during periods of normal operating conditions, i.e., when water is representative of all sources being used.

(b) *Number of samples.* 1. The water supplier shall collect 2 tap samples for applicable water quality parameters during each monitoring period specified under subs. (2) to (5) from the following number of sites:

Public Water System Size (# People Served)	# of Sites For Water Quality Parameters
>100,000	25
10,001-100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

2. Except as provided in sub. (3) (c), water suppliers shall collect 2 samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in sub. (2).

(2) INITIAL SAMPLING. Water suppliers of all large water systems shall measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each 6-month monitoring period specified in s. NR 809.547 (4) (a). Water suppliers of all small and medium-size systems shall measure the applicable water quality parameters at the locations specified below during each 6-month monitoring period specified in s. NR 809.547 (4) (a) during which the public water system exceeds the lead or copper action level.

(a) At taps:

1. pH;
2. Alkalinity;
3. Orthophosphate, when an inhibitor containing a phosphate compound is used;
4. Silica, when an inhibitor containing a silicate compound is used;
5. Calcium;
6. Conductivity; and
7. Water temperature.

(b) At each entry point to the distribution system: all of the applicable parameters listed in par. (a).

(3) MONITORING AFTER INSTALLATION OF CORROSION CONTROL. The water supplier of any large system which installs optimal corrosion control treatment pursuant to s. NR 809.542 (4) (d) shall measure the water quality parameters at the following locations and frequencies during each 6-month monitoring period specified in s. NR 809.547 (4) (b) 1. The water supplier of any small or medium-size system which installs optimal corrosion control treatment shall conduct such monitoring during each 6-month monitoring period specified in s. NR 809.547 (4) (b) 2. in which the public water system exceeds the lead or copper action level.

(a) At taps, 2 samples for:

1. pH;
2. Alkalinity;
3. Orthophosphate, when an inhibitor containing a phosphate compound is used;
4. Silica, when an inhibitor containing a silicate compound is used; and
5. Calcium, when calcium carbonate stabilization is used as part of corrosion control.

(b) Except as provided in par. (c), at each entry point to the distribution system, one sample every 2 weeks for:

1. pH;
2. When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity and the alkalinity concentration; and
3. When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used and the concentration of orthophosphate or silica, whichever is applicable.

(c) The water supplier for a groundwater system can limit entry point sampling described in par. (b) to those entry points that are representative of water quality and treatment conditions throughout the public water system. If water from untreated groundwater sources mixes with water from treated groundwater sources, the water supplier shall monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under this subsection, the water supplier shall provide to the department written information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the public water system.

(4) MONITORING AFTER THE DEPARTMENT SPECIFIES WATER QUALITY PARAMETER VALUES FOR OPTIMAL CORROSION CONTROL. After the department specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under s. NR 809.543 (6), water suppliers for all large systems shall measure the applicable water quality parameters in accordance with sub. (3) and determine compliance with the requirements of s. NR 809.543 (8) every six months with the first six-month period to begin on either January 1 or July 1, whichever comes first, after the department specifies the optimal values under s. NR 809.543 (6). Water

suppliers for any small or medium-size systems shall conduct such monitoring during each six-month period specified in this paragraph in which the public water system exceeds the lead or copper action level. For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to s. NR 809.547 (4)(d) at the time of the action level exceedance, the start of the applicable six-month monitoring period under this paragraph shall coincide with the start of the applicable monitoring period under s. NR 809.547 (4) (d). Compliance with department designated optimal water quality parameter values shall be determined as specified under s. NR 809.543 (8).

(5) REDUCED MONITORING. (a) Water suppliers for any public water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of 2 consecutive 6-month monitoring periods under sub. (4) shall continue monitoring at the entry points to the distribution system as specified in sub. (3) (b). Water suppliers for such public water systems may collect 2 tap samples for applicable water quality parameters from the following reduced number of sites during each 6-month monitoring period.

# People Served Public Water System Size	Reduced # of Sites for Water Quality Parameters
>100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

(b) 1. Water suppliers for any public water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under s. NR 809.543 (6) during 3 consecutive years of monitoring may reduce the frequency with which they collect the number of tap samples for applicable water quality parameters specified in par. (a) from every six months to annually. This sampling begins during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs. Water suppliers for any public water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under s. NR 809.543 (6) during 3 consecutive years of annual monitoring under this paragraph may reduce the frequency with which they collect the number of tap samples for applicable water quality parameters specified in par. (a) of this section from annually to every 3 years. This sampling begins no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

2. A water supplier for a public water system may reduce the frequency with which they collect tap samples for applicable water quality parameters specified in par. (a) to every 3 years if the public water system demonstrates during 2 consecutive monitoring periods that the public water system's tap water lead level at the 90th percentile is less than or equal to the practical quantitation limit for lead specified in s. NR 809.725 (1), Table A, that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L for copper in s. NR 809.541 (3) (b), and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under s. NR 809.543 (6). Monitoring conducted every three years shall be done no later than every third calendar year.

(c) Water suppliers for any public water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the department under s. NR 809.543 (6) during 3 consecutive years of annual monitoring may reduce the frequency with which they collect the number of tap samples for applicable water quality parameters specified in par. (a) from annually to every 3 years.

(d) A water supplier that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.

(e) Any water supplier that has a public water system subject to reduced monitoring frequency that fails to operate within the range of values for the water quality parameters specified by the department under s. NR 809.543 (6) for

more than 9 days in any 6-month period specified in s. NR 809.543 (8) shall resume distribution system tap water sampling in accordance with the number and frequency requirements in sub. (4). A water supplier may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in par. (a) after they have completed 2 subsequent consecutive 6-month rounds of monitoring that meet the criteria of that paragraph or may resume triennial monitoring for water quality parameters at the tap at the reduced number of sites after the water supplier demonstrates through subsequent rounds or monitoring that the public water system meets the criteria of either par. (b) 1. or 2., or both.

Summary of Monitoring Requirements for Water Quality Parameters¹

Monitoring period	Parameters ²	Location	Frequency
Initial monitoring	pH, alkalinity, orthophosphate or silica ³ , calcium, conductivity, temperature.	Taps and at entry points to distribution system.	Every 6 months.
After installation of corrosion control	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴ . pH, alkalinity, dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual ⁵ .	Taps Entry points to the distribution system ⁶ .	Every 6 months. No less frequently than every 2 weeks.
After department specifies parameter values for optimal corrosion control	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴ . pH, alkalinity, dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual ⁵ .	Taps Entry points to the distribution system ⁶ .	Every 6 months. No less frequently than every 2 weeks
Reduced monitoring	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴ . pH, alkalinity, dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual ⁵ .	Taps Entry points to the distribution system ⁶ .	Every 6 months, annually ⁷ or every 3 years ⁸ ; reduced number of sites No less frequently than every 2 weeks

Note: ¹ Table is for illustrative purposes; consult the text of this section for precise regulatory requirements.

² Water supplier for small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the public water system exceeds the lead or copper action level.

³ Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.

⁴ Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.

⁵ Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.

⁶ Water supplier for groundwater systems may limit monitoring to representative locations throughout the public water system.

⁷ Water suppliers for public water systems may reduce frequency of monitoring for water quality parameters at the tap from every 6 months to annually if they have maintained the range of values for water quality parameters in the public water system reflecting optimal corrosion control during 3 consecutive years of monitoring.

⁸ Water suppliers for public water systems may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every 3 years if they have maintained the range of values for water quality parameters in the public water system reflecting optimal corrosion control during 3 consecutive years of annual monitoring. Water suppliers for public water systems may accelerate to triennial monitoring for water quality parameters at the tap if the public water system has maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65 mg/L, and the range of water quality parameters designated by the department under s. NR 809.543(7) as representing optimal corrosion control during 2 consecutive 6-month monitoring periods.

NR 809.549 Monitoring requirements for lead and copper in source water. (1) SAMPLE LOCATION, COLLECTION METHODS AND NUMBER OF SAMPLES. (a) The water supplier of a public water system that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with s. NR 809.547 shall collect lead and copper source water samples in accordance with the requirements regarding sample location, number of samples and collection methods:

1. The water suppliers for groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment. The water supplier shall take one sample at the same sampling location unless conditions make another sampling location more representative of each source or treatment plant.

2. The water suppliers for surface water systems shall take a minimum of one sample at every 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. The water supplier shall take each sample at the same sampling location unless conditions make another sampling location more representative of each source or treatment plant. For the purposes of this paragraph, surface water systems include public water systems with a combination of surface water and groundwater sources.

3. If a public water system draws water from more than one source and the sources are combined before distribution, the water supplier shall sample at an entry point to the distribution system during periods of normal operating conditions, and when water is representative of all sources being used.

4. The department may reduce the total number of samples which are to be analyzed by allowing the use of compositing. Compositing of samples shall be done by certified laboratory personnel. Composite samples from a maximum of 5 samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, one of the following applies:

a. A follow-up sample shall be taken and analyzed within 14 days at each sampling point included in the composite.

b. If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the water supplier may use these instead of resampling.

(b) Where the results of sampling indicate an exceedance of maximum permissible source water levels established under s. NR 809.544 (2) (d), the department may require that one additional sample be collected as soon as possible after the initial sample was taken, but not to exceed 2 weeks, at the same sampling point. If a department-required confirmation sample is taken for lead or copper, then the results of the initial and confirmation sample shall be averaged in determining compliance with the department-specified maximum permissible levels. Any sample value below the detection limit shall be considered to be zero. Any value above the detection limit but below 5 ug/l, shall be considered as the measured value.

(2) *Monitoring frequency after a public water system exceeds tap water action level.* A water supplier for any public water system which exceeds the lead or copper action level at the tap shall collect one source water sample from each entry point to the distribution system no later than six months after the end of the monitoring period during which the lead or copper action level was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the department has established an alternate monitoring period, the last day of that period..

(3) **MONITORING FREQUENCY AFTER INSTALLATION OF SOURCE WATER TREATMENT.** Any water supplier which installs source water treatment pursuant to s. NR 809.544 (1) (b) shall collect an additional source water sample from each entry point to the distribution system during 2 consecutive 6-month monitoring periods by the deadline specified in s. NR 809.544 (1) (d).

(4) **MONITORING FREQUENCY AFTER DEPARTMENT SPECIFIES MAXIMUM PERMISSIBLE SOURCE WATER LEVELS OR DETERMINES THAT SOURCE WATER TREATMENT IS NOT NEEDED.** (a) A water supplier shall monitor at the frequency specified below in cases where the department specifies maximum permissible source water levels under s. NR 809.544 (2) (d) or determines that the water supplier is not required to install source water treatment under s. NR 809.544 (2) (b).

1. A water supplier of a public water system using only groundwater shall collect samples once during the 3-year compliance period in effect when the applicable department determination under par. (a) is made. The water supplier shall collect samples once during each subsequent compliance period. Triennial samples shall be collected every third calendar year.

2. A water supplier for a public water system using surface water, or a combination of surface and groundwater, shall collect samples once during each calendar year, the first annual monitoring period to begin during the year in which the applicable department determination is made under sub. (4)(a).

(b) A water supplier is not required to conduct source water sampling for lead or copper, or both, if the public water system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the public water system under par. (a) 1. or 2.

(5) **REDUCED MONITORING FREQUENCY.** (a) A water supplier for a public water system using only groundwater may reduce the monitoring frequency for lead and copper in source water to once during each compliance cycle provided that the samples are collected no later than every ninth calendar year and if the public water system meets one of the following criteria:

1. The water supplier for a public water system demonstrates that the finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the department in s. NR 809.544 (2) (d) during at least 3 consecutive compliance periods under sub. (4) (a).

2. The department has determined that source water treatment is not needed and the water supplier for a public water system demonstrates that, during at least 3 consecutive compliance periods in which sampling was conducted under sub. (4) (a), the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

(b) A water supplier for a public water system using surface water, or a combination of surface water and groundwater may reduce the monitoring frequency in sub. (4)(a) to once during each compliance cycle provided that the samples are collected no later than every ninth calendar year and if the public water system meets one of the following criteria:

1. The water supplier for the public water system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the department in s. NR 809.544 (2) (d) for at least 3 consecutive years.

2. The department has determined that source water treatment is not needed and the water supplier for the public water system demonstrates that, during at least 3 consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

(c) A public water system that uses a new source of water is not eligible for reduced monitoring for lead or copper, or both, until concentrations in samples collected from the new source during 3 consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified by the department in s. NR 809.544 (1) (e).

NR 809.55 Reporting requirements for lead and copper. All water suppliers shall report all of the following information to the department in accordance with this section:

(1) REPORTING REQUIREMENTS FOR TAP WATER MONITORING FOR LEAD AND COPPER AND FOR WATER QUALITY PARAMETER MONITORING. (a) All lead samples that are detected shall be quantified. Any sample below the method detection limit shall be calculated at zero for the purposes of determining compliance with s. NR 809.541 (3) (c).

(b) All copper samples that are detected shall be quantified. Any sample below the method detection limit shall be calculated as zero for the purposes of determining compliance with s. NR 809.541 (3) (c).

(c) Except as provided in subd. 8., a water supplier shall report the following information for all tap water samples specified in s. NR 809.547 and for all water quality parameter samples specified in s. NR 809.548 within the first 10 days following the end of each applicable monitoring period specified in ss. NR 809.547, 809.548 and 809.549, which is 6 months, annually, or every 3 years:

1. The results of all tap samples for lead and copper including the location of each site and the criteria under s. NR 809.547 (1) (c), (d), (e), (f) or (g) under which the site was selected for the public water system's sampling pool. For monitoring periods with a duration less than six months, the end of the monitoring period is the last date samples can be collected during that period as specified in ss. NR 809.547 and 809.548.

2. Documentation for each tap water lead or copper sample for which the water supplier requests invalidation pursuant to s. NR 809.547 (6) (b).

3. At a time specified by the department, or if no specific time is designated by the department, then as early as possible prior to the addition of a new source or any long-term change in water treatment, water supplier for a public water system deemed to have optimized corrosion control under s. NR 809.542(2)(c), a public water system subject to reduced monitoring pursuant to s. NR 809.547(4)(d), or a public water system subject to a monitoring waiver pursuant to s. NR 809.547(7) shall submit written documentation to the department describing the change or addition. The department must review and approve the addition of a new source or long-term change in treatment to the public water system before it is implemented by the water supplier. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants, for example, alum to ferric chloride, and switching corrosion inhibitor products, for example, orthophosphate to blended phosphate. Long-term changes may include dose changes to existing chemicals if the water supplier is planning long-term changes to the public water system finished water pH or residual inhibitor concentration. Long-term treatment changes may not include chemical dose fluctuations associated with daily raw water quality changes.

4. The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, calculated in accordance with s. NR 809.541 (3) (c), unless the department calculates the public water system's 90th percentile lead and copper levels under sub. (8).

5. With the exception of initial tap sampling conducted pursuant to s. NR 809.547 (4) (a), the water supplier shall designate any site which was not sampled during previous monitoring periods, and include an explanation of why sampling sites have changed;

6. The results of all tap samples for pH and, where applicable, alkalinity, calcium, conductivity, temperature and orthophosphate or silica collected under s. NR 809.548 (2) to (5);

7. The results of all samples collected at the entry points to the distribution system for applicable water quality parameters under s. NR 809.548 (2) to (5).

8. A water supplier shall report the results of all water quality parameter samples collected under s. NR 809.548 (3) to (6) during each 6-month monitoring period specified in s. NR 809.548 (4) within the first 10 days following the end of the monitoring period unless the department has specified a more frequent reporting requirement.

(d) For the water supplier of a non-transient non-community water system, or the water supplier of a community water system meeting the criteria of s. NR 809.546 (3) (g) 1. and 2., that does not have enough taps that can provide first-draw samples, the water supplier shall complete one of the following:

1. Provide written documentation to the department identifying standing times and locations for enough non-first-draw samples to make up its sampling pool under s. NR 809.547 (1) by the start of the first applicable monitoring period under s. NR 809.547 (4) that commences after April 11, 2000, unless the department has waived prior departmental approval of non-first-draw sample sites selected by the water supplier pursuant to s. NR 809.547 (2) (e).

2. If the department has waived prior approval of non-first-draw sample sites selected by the water supplier, identify, in writing, each site that did not meet the 6-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to s. NR 809.547 (2) (e) and include this information with the lead and copper tap sample results required to be submitted pursuant to par. (c) 1.

(e) No later than 60 days after the addition of a new source or any change in water treatment, unless the department requires earlier notification, a water supplier for a public water system deemed to have optimized corrosion control under s. NR 809.542 (2) (c), a public water system subject to reduced monitoring pursuant to s. NR 809.547 (4) (d), or a public water system subject to a monitoring waiver pursuant to s. NR 809.547 (7), shall send written documentation to the department describing the change.

Note: In those instances where prior department approval of the treatment change or new source is not required, the water supplier are encouraged to provide the notification to the department beforehand to minimize the risk the treatment change or new source will adversely affect optimal corrosion control.

(f) The water supplier of any small water system applying for a monitoring waiver under s. NR 809.547 (7) or subject to a waiver granted pursuant to s. NR 809.547 (7) (c), shall provide the following information to the department in writing by the specified deadline:

1. By the start of the first applicable monitoring period in s. NR 809.547 (4), the water supplier of any small water system applying for a monitoring waiver shall provide the documentation required to demonstrate that the public water system meets the waiver criteria of s. NR 809.547 (7) (a) and (b).

2. No later than 9 years after the monitoring previously conducted pursuant to s. NR 809.547 (7) (b) or (d) 1., the water supplier of each small water system desiring to maintain the monitoring waiver for a public water system shall provide the information required by s. NR 809.547 (7) (d) 1. and 2.

3. No later than 60 days after the water supplier becomes aware that the public water system is no longer free of lead-containing or copper-containing material, as appropriate, the water supplier of each small water system with a monitoring waiver shall provide written notification to the department, setting forth the circumstances resulting in the lead-containing and copper-containing materials being introduced into the public water system and what corrective action, if any, the water supplier plans to remove these materials.

4. The water supplier of any small water system with a waiver granted prior to April 11, 2000 and that has not previously met the requirements of s. NR 809.547 (7) (b) shall provide the information required by that paragraph as required by the department.

(g) The water supplier for each groundwater system that limits water quality parameter monitoring to a subset of entry points under s. NR 809.548 (3) (c) shall provide, by the commencement of the monitoring, written correspondence to the department that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the public water system.

(2) SOURCE WATER MONITORING REPORTING REQUIREMENTS. (a) A water supplier shall report the sampling results for all source water samples collected in accordance with s. NR 809.549 within the first 10 days following the end of each source water monitoring period, i.e., annually, per compliance period, per compliance cycle specified in s. NR 809.549.

(b) With the exception of the first round of source water sampling conducted pursuant to s. NR 809.549 (2), the water supplier shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

(3) CORROSION CONTROL TREATMENT REPORTING REQUIREMENTS. By the applicable dates under s. NR 809.542, the water supplier shall report the following information:

(a) For water supplier of public water systems demonstrating that they have already optimized corrosion control, information required in s. NR 809.542 (2) (b) or (c).

(b) For water supplier of public water systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under s. NR 809.543 (1).

(c) For water supplier of public water systems required to evaluate the effectiveness of corrosion control treatments under s. NR 809.543 (3), the information required by that section.

(d) For water supplier of public water systems required to install optimal corrosion control approved by the department under s. NR 809.543 (4), a letter certifying that the water supplier has completed installing that treatment.

(4) SOURCE WATER TREATMENT REPORTING REQUIREMENTS. By the applicable dates in s. NR 809.544, water supplier shall provide the following information to the department:

(a) If required under s. NR 809.544 (2) (a), their recommendation regarding source water treatment;

(b) For water suppliers required to install source water treatment under s. NR 809.544 (2) (b), a letter certifying that the water supplier has completed installing the treatment approved by the department within 24 months after the department approved the treatment.

(5) LEAD SERVICE LINE REPLACEMENT REPORTING REQUIREMENTS. Water suppliers shall report the following information to the department to demonstrate compliance with the requirements of s. NR 809.545:

(a) No later than 12 months after the end of a monitoring period in which a public water system exceeds the lead action level in sampling referred to in s. NR 809.545 (1), the water supplier must submit written documentation to the department of the material evaluation conducted as required in s. NR 809.547 (1), identify the initial number of lead service lines in the distribution system of the public water system at the time the public water system exceeded the lead action level, and provide the public water system's schedule for annually replacing at least 7 % of the initial number of lead service lines in its distribution system.

(b) No later than 12 months after the end of a monitoring period in which a public water system exceeds the lead action level in sampling referred to in s. NR 809.545 (1), and every 12 months thereafter, the water supplier shall demonstrate to the department in writing that the public water system has done one of the following:

1. Replaced in the previous 12 months at least 7% of the initial lead service lines, or a greater number of lines specified by the department under s. NR 809.545 (6), in the distribution system of the public water system.

2. Conducted sampling which demonstrates that the lead concentration in all service line samples from an individual line, taken pursuant to s. NR 809.547 (2) (cm), is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced or which meet the criteria in s. NR 809.545(3), or both, shall equal at least 7 % of the initial number of lead lines identified under sub. (5)(a), or the percentage specified by the department under s. NR 809.545 (5).

(c) The annual letter submitted to the department under par. (b) shall contain all of the following information:

1. The number of lead service lines scheduled to be replaced during the previous year of the water supplier's replacement schedule.

2. The number and location of each lead service line replaced during the previous year of the water supplier's replacement schedule.

3. If measured, the water lead concentration and location of each lead service line sampled, the sampling method and the date of sampling.

(d) The water supplier for any public water system which collects lead service line samples following partial lead service line replacement required by s. NR 809.545 shall report the results to the department within the first 10 days of the month following the month in which the water supplier receives the laboratory results, or as specified by the department. The department may waive this requirement to report these monitoring results. Water suppliers shall also report any additional information as specified by the department, and in a time and manner prescribed by the department, to verify that all partial lead service line replacement activities have taken place.

(6) PUBLIC EDUCATION PROGRAM REPORTING REQUIREMENTS. By December 31st of each year, the water supplier for any public water system that is subject to the public education requirements in s. NR 809.546 shall submit a letter to the department demonstrating that the water supplier has delivered the public education materials that meet the content requirements in s. NR 809.546 (1) and (2) and the delivery requirements in s. NR 809.546 (3). This information shall include a list of all the newspapers, radio stations, television stations, facilities and organizations to which the water supplier delivered public education materials during the previous year. The water supplier shall submit the letter required by this subsection annually for as long as the public water system exceeds the lead action level.

(a) The water supplier for any public water system that is subject to the public education requirements in s. NR 809.546 shall, within ten days after the end of each period in which the public water system is required to perform

public education in accordance with s. NR 809.546 (3), send written documentation to the department that contains all of the following:

1. A demonstration that the water supplier has delivered the public education materials that meet the content requirements in s. NR 809.546 (1) and the delivery requirements in s. NR 809.546 (3).

2. A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the water supplier delivered public education materials during the period in which the public water system was required to perform public education tasks.

(b) Unless required by the department, a water supplier that previously has submitted the information required by par. (a) 2. is not required to resubmit the information required by par. (a) 2., as long as there have been no changes in the distribution list and the water supplier certifies that the public education materials were distributed to the same list submitted previously.

(c) No later than 3 months following the end of the monitoring period, each water supplier shall mail a sample copy of the consumer notification of tap results to the department along with a certification that the notification has been distributed in a manner consistent with the requirements of s. NR 809.546 (4)

(7) REPORTING OF ADDITIONAL MONITORING DATA. Any water supplier that collects sampling data in addition to that required by this subchapter shall report the results to the department within the first 10 days following the end of the applicable monitoring period under ss. NR 809.547, 809.548 and 809.549 during which the samples are collected.

(8) REPORTING OF 90TH PERCENTILE LEAD AND COPPER CONCENTRATIONS WHERE THE DEPARTMENT CALCULATES A PUBLIC WATER SYSTEM'S 90TH PERCENTILE CONCENTRATIONS. The water supplier of a public water system is not required to report the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by sub. (1) (c) 4. if any of the following are met:

(a) The department has previously notified the water supplier that it will calculate the water system's 90th percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to par. (b) 1., and has specified a date before the end of the applicable monitoring period by which the water supplier shall provide the results of lead and copper tap water samples.

(b) The water supplier has provided all of the following information to the department by the date specified in par. (a):

1. The results of all tap samples for lead and copper including the location of each site and the criteria under s. NR 809.547 (1) (c), (d), (e), (f) or (g) under which the site was selected for the public water system's sampling pool, pursuant to sub. (1) (c) 1.

2. An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed.

(c) The department has provided the results of the 90th percentile lead and copper calculations, in writing, to the water supplier before the end of the monitoring period.

Subchapter III — Maximum Contaminant Levels, Maximum Residual Disinfectant Levels, Monitoring, Analytical Requirements and Control of Disinfection Byproducts, Disinfection Residuals and Stage 1 and Stage 2 DBP

NR 809.561 Maximum residual disinfectant level goals (MRDLGs), and maximum contaminant levels (MCLs) for disinfection byproducts, maximum residual disinfectant levels (MRDLs) and best available treatment.

(1) MAXIMUM RESIDUAL DISINFECTANT LEVEL GOALS. MRDLGs for disinfectants are as follows:

Disinfectant residual	MRDLG (mg/L)
Chlorine.....	4 (as Cl ₂)
Chloramines.....	4 (as Cl ₂)
Chlorine dioxide.....	0.8 (as ClO ₂)

(2) MAXIMUM CONTAMINANT LEVELS. The maximum contaminant levels (MCLs) for disinfection byproducts are as follows:

Disinfection byproduct	MCL (mg/L)
Total trihalomethanes (TTHM)...	0.080
Haloacetic acids (five) (HAA5)...	0.060
Bromate.....	0.010
Chlorite.....	1.0

(3) MAXIMUM RESIDUAL DISINFECTANT LEVELS. (a) The maximum residual disinfectant levels (MRDLs) for disinfectants are as follows:

Residual Disinfectants	MRDL (mg/L)
Chlorine.....	4.0 (as Cl ₂)
Chloramines.....	4.0 (as Cl ₂)
Chlorine dioxide.....	0.8 (as ClO ₂)

(b) To achieve compliance with the maximum residual disinfectant levels identified in this subsection, water suppliers shall control treatment processes by reducing disinfectant demand and by controlling disinfection treatment processes to reduce disinfectant levels.

(4) BEST AVAILABLE TREATMENT. The department, pursuant to section 1412 of the Safe Drinking Water Act and related regulations applicable to public water systems, identifies the following as the best available treatment technology, treatment techniques or other means available for achieving compliance with the maximum contaminant levels for disinfection byproducts identified in sub. (1):

Disinfectant byproduct	Best available treatment
TTHM	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant.
HAA5	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant.
Bromate	Control of ozone treatment process to reduce production of bromate.
Chlorite	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

(5) ALTERNATIVE TREATMENT. The department may approve the use of alternative treatment not listed in sub. (4), if a water supplier demonstrates to the department, using pilot studies or other means, that the alternative treatment is sufficient to achieve compliance with the MCLs in sub. (2).

NR 809.562 General requirements for disinfection byproducts and disinfection residuals Stage 1 DBP. (1) GENERAL. The following requirements establish criteria under which water supplier for community water systems, or CWSs, and nontransient, noncommunity water systems, or NTNCWSs, which add a chemical disinfectant to the water in any part of the drinking water treatment process shall modify their practices to meet MCLs and MRDLs in s. NR

809.561(2) and (3)(a), respectively, and shall meet the treatment technique requirements for disinfection byproduct precursors in s. NR 809.561 (4). Water suppliers for transient noncommunity water systems, or TNCWSs, that use chlorine dioxide as a disinfectant or oxidant shall modify their practices to meet the MRDL for chlorine dioxide in s. NR 809.561(3)(a) according to the criteria established in this section. MCLs have been established for TTHM and HAA5 and treatment technique requirements for disinfection byproduct precursors to limit the levels of known and unknown disinfection byproducts which may have adverse health effects. These disinfection byproducts may include chloroform, bromodichloromethane, dibromochloromethane, bromoform, dichloroacetic acid, and trichloroacetic acid.

(2) COMPLIANCE TIMEFRAMES. Unless otherwise noted, all public water systems shall comply with the requirements of this subchapter as follows:

(a) All public water systems serving 10,000 or more persons that are CWSs or NTNCWSs and that are supplied by a surface water source or by a groundwater source under the direct influence of surface water shall comply with this subchapter beginning January 1, 2002.

(b) Public water systems serving fewer than 10,000 persons that are CWSs or NTNCWSs and that are supplied by a surface water source or by a groundwater source under the direct influence of surface water and all public water systems using only groundwater not under the direct influence of surface water shall comply with this subchapter beginning January 1, 2004.

(c) Public water systems serving 10,000 or more persons that are transient NCWSs and use chlorine dioxide as a disinfectant or oxidant and are supplied by a surface water source or by a groundwater source under the direct influence of surface water shall comply with any requirements for chlorine dioxide and chlorite in this subchapter beginning January 1, 2002.

(d) Public water systems that are transient NCWSs and use chlorine dioxide as a disinfectant or oxidant and that serve fewer than 10,000 persons and are supplied by a surface water source or by a groundwater source under the direct influence of surface water or that are public water systems using only groundwater not under the direct influence of surface water shall comply with any requirements for chlorine dioxide in this subchapter beginning January 1, 2004.

(e) A consecutive system that does not add a disinfectant but delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light, shall comply with analytical and monitoring requirements for chlorine and chloramines in s. NR 809.565(6)(a) and the compliance requirements in s. NR 809.566(3)(a) beginning April 1, 2009 and shall report monitoring results under s. NR 809.567(3).

(3) OPERATOR CERTIFICATION. Each CWS and NTNCWS regulated under s. NR 809.561 shall be operated by qualified personnel who meet the requirements specified in ch. NR 114, subch. III and are included in a department register of qualified operators.

(4) RESPONSE TO MICROBIOLOGICAL CONTAMINATION. Notwithstanding the MRDLs in s. NR 809.561(3)(a), water suppliers for public water systems may increase in the distribution system residual disinfectant levels of chlorine or chloramines, but not chlorine dioxide, to a level and for a time necessary to protect public health, to address specific microbiological contamination problems caused by circumstances such as, but not limited to, distribution line breaks, storm run-off events, source water contamination events or cross-connection events.

(5) PUBLIC NOTIFICATION OF MCL OR MRDL VIOLATIONS. The water supplier of a public water system shall provide public notification in compliance with subch. VII when the MCL or MRDL or disinfectant residual is exceeded.

(6) REQUIRED ADDITIONAL HEALTH INFORMATION. Water suppliers for CWSs that detect TTHM above 0.080 mg/l, but are not in violation of the MCL in s. NR 809.561(2), based on an annual average, monitored and calculated under the provisions of s. NR 809.565, shall provide copies of health effects language prescribed in subch. VII and s. NR 809.835 to the users of the CWS in the CCR.

NR 809.563 Analytical requirements for disinfection byproducts and disinfection residuals Stage 1 DBP and Stage 2 DBP. (1) GENERAL. Water suppliers shall use only the analytical methods specified in this section, or otherwise approved by the department or EPA for monitoring under this subchapter, to demonstrate compliance with the requirements of this subchapter.

(2) APPROVED ANALYTICAL METHODS FOR DISINFECTANT RESIDUALS. Water suppliers shall measure residual disinfectant concentrations for total chlorine, free chlorine, combined chlorine (chloramines), and chlorine dioxide by

the methods listed in Table R. Water suppliers may also measure residual disinfectant concentrations for chlorine, chloramines and chlorine dioxide by using N,N-diethyl-p-phenylenediamine (DPD) colorimetric using a colorimeter as prescribed in the approved methods.

TABLE R
SDWA Approved Methodology for Disinfectant Byproducts and Disinfectant Residuals

Parameter	Reference (method number)		
	EPA ^{1,2}	Standard Methods ³	ASTM ⁴
Disinfectant Residuals			
Free Chlorine		4500-CL D, 4500-CL F, 4500-CL G, 4500-CL H	D 1253-86
Combined Chlorine		4500-CL D, 4500-CL F, 4500-CL G	
Total Chlorine		4500-CL D, 4500-CL E, 4500-CL F, 4500-CL G, 4500-CL I	D 1253-86
Chlorine Dioxide		4500-CLO ₂ D, 4500-CLO ₂ E	

¹ EPA Method 552.1 is in Methods for the Determination of Organic Compounds in Drinking Water-Supplement II, USEPA, August 1992, EPA/600/R-92/129 (available through National Information Technical Service (NTIS), PB92-207703). EPA Methods 502.2, 524.2, 551.1, and 552.2 are in Methods for the Determination of Organic Compounds in Drinking Water-Supplement III, USEPA, August 1995, EPA/600/R-95/131. (available through NTIS, PB95-261616).

² EPA Method 300.0 is in Methods for the Determination of Inorganic Substances in Environmental Samples, USEPA, August 1993, EPA/600/R-93/100. (available through NTIS, PB94-121811). EPA Method 300.1 is titled USEPA Method 300.1, Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0, USEPA, 1997, EPA/600/R-98/118 (available through NTIS, PB98-169196); also available from: Chemical Exposure Research Branch, Microbiological & Chemical Exposure Assessment Research Division, National Exposure Research Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH 45268, Fax Number: 513-569-7757, Phone number: 513-569-7586.

³ Standard Methods 4500-Cl D, 4500-Cl E, 4500-Cl F, 4500-Cl G, 4500-Cl H, 4500-Cl I, 4500-CLO₂D, 4500-CLO₂ E, 6251 B, and 5910 B shall be followed in accordance with Standard Methods for the Examination of Water and Wastewater, 19th Edition, American Public Health Association, 1995; copies may be obtained from the American Public Health Association, 1015 Fifteenth Street, NW, Washington, DC 20005. Standard Methods 5310 B, 5310 C, and 5310 D shall be followed in accordance with the Supplement to the 19th Edition of Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 1996; copies may be obtained from the American Public Health Association, 1015 Fifteenth Street, NW, Washington, DC 20005

⁴ ASTM Method D 1253-86 shall be followed in accordance with the Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 1996 edition; copies may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

(3) APPROVED ANALYTICAL METHODS FOR DISINFECTANT BYPRODUCTS. Water suppliers shall measure disinfection byproducts by the methods, as modified by the footnotes, prescribed in Table S. Samples for TTHM shall be dechlorinated upon collection to prevent further production of trihalomethanes, according to the procedures described in the methods, except acidification is not required if only THMs or TTHMs are to be determined.

Samples for maximum TTHM potential shall not be dechlorinated or acidified, and shall be held for 7 days at 25° C or above prior to analysis. Samples for bromate analyzed using EPA method 321.8 samples must be preserved at the time of sampling with 50 mg ethylenediamine (EDA)/L of sample and must be analyzed within 28 days. Samples for TTHM and HAA5 shall be collected using the containers, preservative and holding times specified in s. NR 809.203(4) Table D. In all cases, samples should be analyzed as soon after collection as possible.

Table S
Approved Methods for Disinfectant Byproduct Compliance Monitoring

Methodology ²	EPA Meth.	Standard Method	Byproduct measured ¹			
			TTHM	HAA5	Chlorite ⁴	Bromate
P&T/GC/EICD& PID	502.2		X			
P&T/GC/MS	524.2		X			
P&T/GC/MS	524.3 ⁵		X			
LLE/GC/ECD	551.1		X			
LLE/GC/ECD		6251 B		X		
SPE/GC/ECD	552.1			X		
LLE/GC/ECD	552.2			X		
Amperometric Titration ³		4500-ClO ₂ E			X	
IC	300.0			X		
IC	300.1			X		X
IC/PCR	317 rev.2					X
IC/PCR	326					X
IC/ICP-MS	321.8					X

¹ X indicates method is approved for measuring specified disinfection byproduct.

² P&T = purge and trap; GC = gas chromatography; EICD = electrolytic conductivity detector; PID = photoionization detector; MS = mass spectrometer; LLE = liquid/liquid extraction; ECD = electron capture detector; SPE = solid phase extractor; IC = ion chromatography; PCR = post column reaction.

³ If TTHMs are the only analytes being measured in the sample, then a PID is not required.

⁴ Amperometric titration may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in s. NR 809.565 (5) (a) 1. Ion chromatography shall be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in s. NR 809.565 (5) (a) 2. and 3.

⁵ EPA Method 524.3, Version 1.0. "Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry," June 2009. EPA 815-B-09-009. http://epa.gov/safewater/methods/analyticalmethods_ogwdw.html.

(4) LABORATORY CERTIFICATION FOR DISINFECTANT BYPRODUCTS. Laboratories that are certified by the department or EPA shall conduct the analysis under this section for disinfection byproducts.

(a) To receive certification to conduct analyses for the contaminants in this subchapter, a laboratory shall carry out annual analyses of performance evaluation samples approved by the department or EPA.

(b) When analyzing performance evaluation samples, the laboratory shall achieve quantitative results within the acceptance limit on a minimum of 80% of the analytes included in each PE sample.

(c) The acceptance limit shall be the 95% confidence interval calculated around the mean of the PE study data between a maximum and minimum acceptance limit of +/-50% and +/-15% of the study mean.

(d) Beginning on April 1, 2007, laboratories must achieve quantitative results on the PE sample analyses that are within the following acceptance limits:

Table T
PE Acceptance Limits

DBP	Acceptance limits (percent of true value)	Comments
TTHM		
Chloroform	±20	Laboratory must meet all 4 individual THM acceptance limits in order to successfully pass a PE sample for TTHM
Bromodichloromethane	±20	
Dibromochloromethane	±20	
Bromoform	±20	
HAA5		
Monochloroacetic Acid	±40	Laboratory must meet the acceptance limits for 4 out of 5 of the HAA5 compounds in order to successfully pass a PE sample for HAA5
Dichloroacetic Acid	±40	
Trichloroacetic Acid	±40	
Monobromoacetic Acid	±40	
Dibromoacetic Acid	±40	
Chlorite	±30	
Bromate	±30	

(e) Beginning on April 1, 2007, laboratories must report quantitative data for concentrations as low as the ones listed in Table U for all DBP samples analyzed for compliance:

Table U
Minimum Reporting Levels for DBP Samples

DBP	Minimum reporting level (mg/L) ¹	Comments
TTHM ²		
Chloroform	0.0010	
Bromodichloromethane	0.0010	

Dibromochloromethane	0.0010	
Bromoform	0.0010	
HAA5 ²		
Monochloroacetic Acid	0.0020	
Dichloroacetic Acid	0.0010	
Trichloroacetic Acid	0.0010	
Monobromoacetic Acid	0.0010	
Dibromoacetic Acid	0.0010	
Chlorite	0.020	Applicable to monitoring as prescribed in s. NR 809.565(5)(a)4.
Bromate	0.0050 or 0.0010	Laboratories that use EPA Methods 317.0 Revision 2.0, 326.0 or 321.8 must meet a 0.0010 mg/L detection limit for bromate.

¹The calibration curve must encompass the regulatory minimum reporting level (MRL) concentration. Data may be reported for concentrations lower than the regulatory MRL as long as the precision and accuracy criteria are met by analyzing an MRL check standard at the lowest reporting limit chosen by the laboratory. The laboratory must verify the accuracy of the calibration curve at the MRL concentration by analyzing an MRL check standard with a concentration less than or equal to 110% of the MRL with each batch of samples. The measured concentration for the MRL check standard must be $\pm 50\%$ of the expected value, if any field sample in the batch has a concentration less than 5 times the regulatory MRL. Method requirements to analyze higher concentration check standards and meet tighter acceptance criteria for them must be met in addition to the MRL check standard requirement.

²When adding the individual trihalomethane or haloacetic acid concentrations to calculate the TTHM or HAA5 concentrations, respectively, a zero is used for any analytical result that is less than the MRL concentration for that DBP, unless otherwise specified by the department.

(5) APPROVAL OF PERSONS MEASURING DISINFECTANT RESIDUAL CONCENTRATIONS. A person approved by the department or EPA shall measure residual disinfectant concentration.

(6) ANALYTICAL METHODS FOR ADDITIONAL REQUIRED PARAMETERS. Water suppliers for public water systems required to analyze for additional parameters not included in subs. (3) and (6) shall have these parameters analyzed by a person approved by the department or EPA using the following methods:

- (a) *Alkalinity*. For measuring alkalinity use the methods allowed in s. NR 809.113 Table A.
- (b) *Bromide*. For measuring bromide use EPA Method 300.0 or EPA Method 300.1.
- (c) *Total Organic Carbon (TOC)*. For measuring total organic carbon, use Standard Method 5310 B (High-Temperature Combustion Method) or Standard Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method) or Standard Method 5310 D (Wet-Oxidation Method).
 1. TOC samples may not be filtered prior to analysis.
 2. TOC samples shall either be analyzed or shall be acidified to achieve pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 24 hours.

3. Acidified TOC samples shall be analyzed within 28 days.

(d) *Specific ultraviolet absorbance (SUVA)*. SUVA is equal to the UV absorption at 254nm (UV_{254}) measured in m^{-1} divided by the dissolved organic carbon (DOC) concentration measured as mg/L.

1. In order to determine SUVA, it is necessary to separately measure UV_{254} and DOC.

2. When determining SUVA, water suppliers shall use the methods stipulated in par. (e) to measure DOC and the method stipulated in par. (f) to measure UV_{254} . SUVA shall be determined on water prior to the addition of disinfectants or oxidants, or both, by the water supplier.

3. DOC and UV_{254} samples used to determine a SUVA value shall be taken at the same time and at the same location.

(e) *Dissolved organic carbon (DOC)*. For measuring dissolved organic carbon, use Standard Method 5310 B (High-Temperature Combustion Method) or Standard Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method) or Standard Method 5310 D (Wet-Oxidation Method). Prior to analysis, DOC samples shall be filtered through a 0.45 μm pore-diameter filter. Water passed through the filter prior to filtration of the sample shall serve as the filtered blank. This filtered blank shall be analyzed using procedures identical to those used for analysis of the samples and shall meet the following criteria: DOC < 0.5 mg/L. DOC samples shall be filtered through the 0.45 μm pore-diameter filter prior to acidification. DOC samples shall either be analyzed or shall be acidified to achieve pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 48 hours. Acidified DOC samples shall be analyzed within 28 days.

(f) *Ultraviolet absorption at 254 nm (UV_{254})*. For measuring ultraviolet absorption at 254 nm, use Method 5910 B (Ultraviolet Absorption Method). UV absorption shall be measured at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, UV_{254} samples shall be filtered through a 0.45 μm pore-diameter filter. The pH of UV_{254} samples may not be adjusted. Samples shall be analyzed as soon as practical after sampling, not to exceed 48 hours.

(g) *pH*. For measuring pH, use any method allowed in s. NR 809.113(1) Table A.

NR 809.565 Monitoring requirements for disinfection byproducts and disinfection residuals Stage 1 DBP.

(1) **GENERAL REQUIREMENTS.** General requirements under this subchapter for analytical requirements, determining maximum contaminant levels, conducting monitoring and control of disinfection byproducts are as follows:

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

(b) Water suppliers may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, on a case-by-case basis with department approval.

(c) Failure to monitor in accordance with the monitoring plan required under sub. (6) is a monitoring violation.

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

(e) Water suppliers may use only data collected under the provisions of this subchapter.

(2) **MONITORING FREQUENCY AND LOCATION FOR TTHMS AND HAA5S.** Water suppliers shall monitor at the following frequency and locations for TTHMs and HAA5 disinfection byproducts:

(a) *Routine monitoring.* 1. Water suppliers for public water systems serving at least 10,000 persons which are supplied by a surface water source or by a groundwater source under the direct influence of surface water shall collect and have analyzed 4 water samples per quarter per treatment plant.

a. At least 25% of all samples collected each quarter at each treatment plant shall be at locations representing the maximum residence time in the public water system.

b. The remaining samples shall be taken in the distribution system at locations representing at least average residence time in the public water system and representative of the entire distribution system, taking into account the number of people served, different sources of water and different treatment methods.

2. Water suppliers for public water systems serving from 500 to 9,999 persons which are supplied by a surface water source or by a groundwater source under the direct influence of surface water shall collect and have analyzed

one water sample per quarter per treatment plant. The samples shall be collected at locations representing the maximum residence time of water in the public water system.

3. Water suppliers for public water systems serving fewer than 500 people which are supplied by a surface water source or by a groundwater source under the direct influence of surface water shall collect one sample per treatment plant annually. The samples shall be collected during the month with the warmest water temperature at locations representing the maximum residence time in the public water system.

4. Water suppliers for public water systems using chemical disinfection, using only groundwater not under the direct influence of surface water, and serving at least 10,000 people shall collect one sample per treatment plant per quarter. The sample or samples shall be collected at the location representing the maximum residence time in the public water system.

5. Water suppliers for public water systems using chemical disinfection, using only groundwater not under the direct influence of surface water, and serving fewer than 10,000 people shall collect one sample per treatment plant annually. The sample shall be collected during the month with the warmest water temperature, at locations representing the maximum residence time, in the public water system.

(b) *Monitoring after exceeding an MCL.* If a sample or the average of samples, if more than one sample is taken, exceeds the MCL for TTHMs or HAA5 disinfection byproducts, the water supplier shall collect quarterly samples until the public water system meets the requirements of reduced monitoring in par. (c).

(c) *Reduced monitoring.* Water suppliers may reduce monitoring for TTHMs and HAA5s as follows:

1. Water suppliers for surface water systems or groundwater systems under the direct influence of surface water with an annual average of TTHM of ≤ 0.040 mg/L and HAA5 ≤ 0.030 mg/L with an annual average TOC concentration of ≤ 4.0 mg/L, before any treatment may reduce monitoring to the following:

a. Water suppliers for a public water system serving at least 10,000 people may reduce monitoring to one sample per quarter per treatment plant so long as the sample is taken at a location representing maximum residence time in the public water system.

b. Water suppliers for a public water system serving from 500 to 9,999 people may reduce monitoring to one sample per year per treatment plant so long as the sample is taken at a location representing maximum residence time in the public water system during the month of warmest water temperature.

c. A water supplier for a public water system serving less than 500 people may not reduce monitoring to less than one sample during the month of warmest water temperature per treatment plant per year.

2. A water supplier for a public water system using only groundwater not under the direct influence of surface water using chemical disinfection with an annual average of TTHM of ≤ 0.040 mg/L and HAA5 ≤ 0.030 mg/L may reduce sampling to the following:

a. A water supplier for a public water system serving at least 10,000 people may reduce monitoring to one sample per year per treatment plant during the month of warmest water temperature at a location representing maximum residence time in the public water system.

b. A water supplier for a public water system serving fewer than 10,000 people may reduce monitoring to one sample per treatment plant per 3 year monitoring cycle during the month of warmest water temperature at a location representing maximum residence time in the public water system. The reduced monitoring will begin on January 1 following the quarter in which the public water system first qualifies for reduced monitoring.

3. Public water systems on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year, for public water systems which shall monitor quarterly, or the result of the sample, for public water systems which shall monitor no more frequently than annually, is no more than 0.060 mg/L and 0.045 mg/L for TTHMs and HAA5, respectively. A water supplier for a public water systems that do not meet these levels shall resume monitoring at the frequency identified in par. (a) in the quarter immediately following the quarter in which the public water system exceeds 0.060 mg/L and 0.045 mg/L for TTHMs and HAA5, respectively.

(d) *Return to routine monitoring.* The department may return a public water system to routine monitoring at the department's discretion.

(3) **MONITORING FREQUENCY AND LOCATION FOR CHLORITE AND BROMATE.** Water suppliers for public water systems shall monitor at the following frequency and locations for chlorite and bromate disinfection byproducts:

(a) *Chlorite*. Water supplier for community and nontransient noncommunity water systems using chlorine dioxide, for disinfection or oxidation, shall conduct monitoring for chlorite as follows:

1. Routine daily monitoring. A water supplier for a public water system shall take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the water supplier shall take additional samples in the distribution system the following day at the locations required by subd. 3. in addition to the sample required at the entrance to the distribution system.

2. Routine monthly monitoring. A water supplier shall take a 3-sample set each month in the distribution system. The water supplier shall take one sample at each of the following locations: near the first customer, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any additional routine sampling shall be conducted in the same manner, as 3-sample sets, at the specified locations. The water supplier may use the results of additional monitoring conducted under subd. 3. to meet the requirement for monitoring in this subdivision.

3. Additional monitoring. On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the water supplier shall take 3 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 as close to the end of the distribution system as possible, reflecting maximum residence time in the distribution system.

4. Reduced monitoring. Chlorite monitoring at the entrance to the distribution system required under subd. 1 may not be reduced. Chlorite monitoring in the distribution system required under subd. 2 may be reduced to one 3-sample set per quarter after one year of monitoring where no individual chlorite sample taken in the distribution system under subd. 2. has exceeded the chlorite MCL and the public water system has not been required to conduct monitoring under subd. 3. The public water system may remain on the reduced monitoring schedule until either any of the 3 individual chlorite samples taken quarterly in the distribution system under subd. 2. exceeds the chlorite MCL or the water supplier is required to conduct monitoring under subd. 3., at which time the public water system shall revert to routine monitoring.

(b) *Bromate*. 1. Routine monitoring. Water suppliers for community and nontransient noncommunity systems using ozone, for disinfection or oxidation, shall take one sample per month for each treatment plant in the public water system using ozone. Water suppliers shall take samples monthly at the entrance to the distribution system while the ozonation treatment system is operating under normal conditions.

2. Reduced monitoring before April 1, 2009. Water suppliers for public water systems required to analyze for bromate may reduce monitoring from monthly to once per quarter, if the water supplier demonstrates that average source water bromide concentration in the public water system is less than 0.05 mg/L based upon representative monthly bromide measurements for one year. The water supplier shall continue bromide monitoring to remain on reduced bromate monitoring. The public water system may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is 0.05 mg/L or greater based upon representative monthly measurements. If the running annual average source water bromide concentration is equal to or greater than 0.05 mg/L, the water supplier shall resume routine monitoring required by subd. 1.

3. Reduced monitoring on or after April 1, 2009. Water suppliers for public water systems required to analyze for bromate may reduce monitoring from monthly to once per quarter, if the water supplier demonstrates that the public water system's running annual average concentration for bromate is ≤ 0.0025 mg/L based on monthly bromate measurements under par. (b) for the most recent four quarters. Samples shall be analyzed using Method 317.0 Revision 2.0, 326.0 or 321.8. If a public water system has qualified for reduced bromate monitoring under subd.2, that public water system may remain on reduced monitoring as long as the running annual average of quarterly bromate samples ≤ 0.0025 mg/L based on samples analyzed using Methods 317.0 Revision 2.0, 326.0, or 321.8 using a detection limit of 0.0010 mg/L for bromate. If the running annual average bromate concentration is >0.0025 mg/L, the system must resume routine monitoring required by par. (b).

(4) MONITORING FREQUENCY AND LOCATION FOR DISINFECTANT RESIDUALS. Water suppliers for systems shall monitor at the following frequency and locations for disinfectant residuals:

(a) *Chlorine and chloramines*. Water suppliers for public water systems shall perform routine monitoring by measuring the residual disinfectant level at the same points in the distribution system and at the same time as total

coliforms are sampled, as specified in s. NR 809.31. Water suppliers for surface water systems may use the results of residual disinfectant concentration sampling conducted under s. NR 810.38 (1) (h) for unfiltered systems or s. NR 810.38 (2) (d) for public water systems that filter, in lieu of taking separate samples. Monitoring may not be reduced.

(b) *Chlorine dioxide*. 1. Routine monitoring. Water suppliers for community, nontransient noncommunity, and transient noncommunity water systems that use chlorine dioxide for disinfection or oxidation shall take daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the water supplier shall take samples in the distribution system the following day at the locations required by subd. 2., in addition to the sample required at the entrance to the distribution system.

2. Additional monitoring. On each day following a routine sample monitoring result that exceeds the MRDL, the water supplier shall take 3 chlorine dioxide distribution system samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system, i.e., no booster chlorination, the water supplier shall take 3 samples as close to the first customer as possible, at intervals of at least 6 hours. If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system, i.e., booster chlorination, the water supplier shall take one sample at each of the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible, reflecting maximum residence time in the distribution system.

3. Reduced monitoring. Chlorine dioxide monitoring may not be reduced.

(5) MONITORING FREQUENCY AND LOCATION FOR DISINFECTANT BYPRODUCT PRECURSORS. Water suppliers for public water systems shall monitor at the following frequency and locations for disinfection byproduct precursors (DBPP):

(a) *Routine monitoring*. 1. Water suppliers for public water systems which use conventional filtration treatment and are supplied by a surface water source or by a groundwater source under the direct influence of surface water shall monitor each treatment plant monthly for TOC no later than the point of combined filter effluent turbidity monitoring and representative of the treated water.

2. All water suppliers for public water systems required to monitor under subd. 1. shall also monitor for TOC in the source water prior to any treatment at the same time as monitoring for TOC in the treated water.

Note: These samples, source water and treated water, are referred to as paired samples.

3. At the same time as the source water sample is taken, all water suppliers shall monitor for alkalinity in the source water prior to any treatment. Water suppliers shall take one paired sample and one source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

(b) *Reduced monitoring*. Water suppliers for public water systems which use conventional filtration treatment and are supplied by a surface water source or by a groundwater source under the direct influence of surface water and which have an average treated water TOC of less than 2.0 mg/L for 2 consecutive years, or less than 1.0 mg/L for one year, may reduce monitoring for both TOC and alkalinity to one paired sample and one source water alkalinity sample per plant per quarter. The water supplier shall revert to routine monitoring in the month following the quarter when the annual average treated water TOC \geq 2.0 mg/L for the public water system.

(6) MONITORING PLANS. Each water supplier for a public water system required to monitor under this subchapter shall develop and implement a monitoring plan, and shall maintain the plan and make it available for inspection by the department and the general public no later than 30 days following the applicable compliance dates in s. NR 809.562 (2).

(a) Water suppliers for public water systems which are supplied by a surface water source or by a groundwater source under the direct influence of surface water and which serve more than 3,300 people shall submit a copy of the monitoring plan to the department no later than the date of the first report required under s. NR 809.567. The department may also require water suppliers for any other public water system to submit a monitoring plan. After review, the department may require changes in any plan elements.

(b) The plan shall include at least the following elements:

1. Specific locations and schedules for collecting samples for any parameters included in this subchapter.
2. How the water supplier will calculate compliance with MCLs, MRDLs and treatment techniques.
3. If approved for monitoring as a consecutive system, or if providing water to a consecutive system, under s. NR 809.77, the sampling plan shall reflect the entire distribution system.

NR 809.566 Compliance requirements for disinfection byproducts and disinfection residuals Stage 1 DBP.

(1) **GENERAL REQUIREMENTS.** The general requirements for compliance with this subchapter are as follows:

(a) If compliance is based on a running annual average of monthly or quarterly samples or an annual average and the water supplier for a public water system fails to monitor for TTHM, HAA5 or bromate, this failure to monitor shall be treated as a monitoring violation for the entire period covered by the annual average.

(b) If compliance is based on a running annual average of monthly or quarterly samples or averages and the water supplier's failure to monitor the public water system makes it impossible to determine compliance with MRDLs for chlorine and chloramines, failure to monitor shall be treated as a monitoring violation for the entire period covered by the annual average.

(c) All samples taken and analyzed under the provisions of this subchapter shall be included in determining compliance, even if that number is greater than the minimum required.

(d) If, during the first year of monitoring under s. NR 809.565, any individual quarter's average will cause the running annual average of that public water system to exceed the MCL, the public water system is out of compliance at the end of that quarter.

(2) **COMPLIANCE REQUIREMENTS FOR DISINFECTION BYPRODUCTS.** (a) *TTHMs and HAA5s.* Compliance for TTHMs and HAA5s shall be based one of the following:

1. For public water systems monitored quarterly, compliance with MCLs in s. NR 809.561 (3) shall be based on a running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected by the water supplier as prescribed by s. NR 809.565 (2). If the running annual arithmetic average of quarterly averages covering any consecutive 4-quarter period exceeds the MCL, the public water system is in violation of the MCL and the water supplier shall notify the public pursuant to subch. VII, in addition to reporting to the department pursuant to s. NR 809.567. If the water supplier for a public water system fails to complete 4 consecutive quarters of monitoring, compliance with the MCL for the last 4-quarter compliance period shall be based on an average of the available data.

2. For public water systems monitored less frequently than quarterly, compliance with MCLs in s. NR 809.561 (3) shall be based on an average of samples taken that year under the provisions of s. NR 809.565 (2). If the average of these samples exceeds the MCL, the water supplier shall increase monitoring to once per quarter per treatment plant and the public water system is not in violation of the MCL until it has completed one year of quarterly monitoring, unless the result of fewer than 4 quarters of monitoring will cause the running annual average to exceed the MCL, in which case the public water system is in violation at the end of that quarter. Water supplier for public water systems required to increase monitoring frequency to quarterly monitoring shall calculate compliance by including the sample which triggered the increased monitoring plus the following 3 quarters of monitoring.

3. If the running annual arithmetic average of quarterly averages covering any consecutive 4-quarter period exceeds the MCL, the public water system is in violation of the MCL and the water supplier shall notify the public pursuant to subch. VII, in addition to reporting to the department pursuant to s. NR 809.567.

(b) *Bromate.* Compliance for bromate shall be based on a running annual arithmetic average, computed quarterly, of monthly samples or, for months in which the water supplier for the public water system takes more than one sample, the average of all samples taken during the month, collected by the water supplier as prescribed by s. NR 809.565 (3) (b). If the average of samples covering any consecutive 4-quarter period exceeds the MCL, the public water system is in violation of the MCL and the water supplier shall notify the public pursuant to subch. VII, in addition to reporting to the department pursuant to s. NR 809.567. If the water supplier for a public water system fails to complete 12 consecutive months of monitoring, compliance with the MCL for the last 4-quarter compliance period shall be based on an average of the available data.

(c) *Chlorite.* Compliance for chlorite shall be based on an arithmetic average of each 3-sample set taken in the distribution system as prescribed by s. NR 809.565 (3) (a) 2. and 3. If the arithmetic average of any 3-sample set

exceeds the MCL, the public water system is in violation of the MCL and the water supplier shall notify the public pursuant to subch. VII, in addition to reporting to the department pursuant to s. NR 809.567.

(3) COMPLIANCE REQUIREMENTS FOR DISINFECTANT RESIDUALS. (a) *Chlorine and chloramines*. 1. Compliance shall be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the water supplier for a public water system under s. NR 809.565 (4) (a). If the average of quarterly averages covering any consecutive 4-quarter period exceeds the MRDL, the public water system is in violation of the MRDL and the water supplier shall notify the public pursuant to subch. VII, in addition to reporting to the department pursuant to s. NR 809.567.

2. In cases where chlorine and chloramines are used for residual disinfection during the year, compliance shall be determined by including together all monitoring results of both chlorine and chloramines in calculating compliance. Reports submitted pursuant to s. NR 809.567 shall clearly indicate which residual disinfectant was analyzed for each sample.

(b) *Chlorine dioxide*. Compliance shall be based on consecutive daily samples collected by the water supplier under s. NR 809.565 (4) (b).

1. A public water system has an acute violation of the MRDL for chlorine dioxide when any daily sample taken at the entrance to the distribution system exceeds the MRDL and on the following day one or more of the 3 samples taken in the distribution system exceeds the MRDL. If both exceedances occur, the public water system is in violation of the MRDL and the water supplier shall take immediate corrective action to lower the level of chlorine dioxide below the MRDL and shall notify the public pursuant to the procedures for acute health risks in s. NR 809.951. Failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system shall also be considered an MRDL violation and the water supplier shall notify the public of the violation in accordance with the provisions for acute violations under s. NR 809.951.

2. A public water system has a nonacute violation for chlorine dioxide when any 2 consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL. A water supplier for a public water system with a nonacute violation shall take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling and shall notify the public pursuant to the procedures for nonacute health risks in subch. VII. Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the water supplier shall notify the public of the violation in accordance with the provisions for nonacute violations under subch. VII.

(4) COMPLIANCE REQUIREMENTS FOR DISINFECTION BYPRODUCT PRECURSORS (DBPP). Compliance with disinfection byproduct precursors shall be determined as specified in s. NR 809.569 (1). Water suppliers for public water systems may begin monitoring to determine whether Step 1 TOC removals can be met 12 months prior to the compliance date for the public water system. This monitoring is not required and failure to monitor during this period is not a violation. However, any water supplier that does not monitor during this period, and then determines in the first 12 months after the compliance date that it is not able to meet the Step 1 requirements in s. NR 809.569 (1) (b) and therefore applies for alternate minimum TOC removal (Step 2) requirements, is not eligible for retroactive approval of alternate minimum TOC removal (Step 2) requirements as allowed pursuant to s. NR 809.569 (1) (c) and is in violation. Water supplier may apply for alternate minimum TOC removal (Step 2) requirements any time after the compliance date. For public water systems required to meet Step 1 TOC removals, if the value calculated under s. NR 809.569 (3) (a) or (b) is less than 1.00, the public water system is in violation of the treatment technique requirements and the water supplier shall notify the public pursuant to subch. VII in addition to reporting to the department pursuant to s. NR 809.567.

NR 809.567 Reporting and recordkeeping requirements for disinfection byproducts and disinfection residuals for Stage 1 DBP. (1) REPORTING REQUIREMENTS. Water suppliers for public water systems required to be sampled quarterly or more frequently shall report to the department within 10 days after the end of each quarter in which samples were collected, notwithstanding the provisions of s. NR 809.563. Water suppliers for public water systems required to be sampled less frequently than quarterly shall report to the department within 10 days after the end of each monitoring period in which samples were collected.

(2) REPORTING AND RECORDKEEPING REQUIREMENTS FOR DISINFECTION BYPRODUCTS. Water suppliers for public water systems monitored for disinfection byproducts shall report the information specified in the following requirements:

(a) Water supplier for public water systems monitored for TTHM and HAA5 under the requirements of s. NR 809.565 (2) on a quarterly or more frequent basis shall report all of the following:

1. The number of samples taken during the last quarter.
2. The location, date and result of each sample taken during the last quarter.
3. The arithmetic average of all samples taken in the last quarter.
4. The annual arithmetic average of the quarterly arithmetic averages for the last 4 quarters.
5. Whether the MCL was exceeded, as determined according to s. NR 809.566 (2).

(b) Water supplier for public water systems monitored for TTHMs and HAA5s under the requirements of s. NR 809.565 (2) less frequently than quarterly but at least annually shall report all of the following:

1. The number of samples taken during the last year.
2. The location, date and result of each sample taken during the last quarter.
3. The arithmetic average of all samples taken over the last year.
4. Whether the MCL was exceeded, as determined according to s. NR 809.566 (2).

(c) Water supplier for public water systems monitored for TTHMs and HAA5s under the requirements of s. NR 809.565 (2) less frequently than annually shall report all of the following:

1. The location, date and result of the last sample taken.
2. Whether the MCL was exceeded, as determined according to s. NR 809.566 (2).

(d) Water supplier for public water systems monitored for chlorite under the requirements of s. NR 809.565 (3) (a) shall report all of the following:

1. The number of samples taken each month for the last 3 months.
2. The location, date and result of each sample taken during the last quarter.
3. For each month in the reporting period, the arithmetic average of all samples taken in each 3 sample set collected in the distribution system.
4. Whether, based on s. NR 809.566 (2) (c), the MCL was exceeded, and how many times it was exceeded each month.

(e) Water supplier for public water systems monitored for bromate under the requirements of s. NR 809.565 (3) (b) shall report all of the following:

1. The number of samples taken during the last quarter.
2. The location, date and result of each sample taken during the last quarter.
3. The arithmetic average of the monthly arithmetic averages of all samples taken in the last year.
4. Whether the MCL was exceeded, as determined according to s. NR 809.566 (2) (b).

(3) REPORTING AND RECORDKEEPING REQUIREMENTS FOR DISINFECTANTS. Water supplier for public water systems monitored for disinfectants shall report the information specified in the following:

(a) Water supplier for public water systems monitored for chlorine or chloramines under the requirements of s. NR 809.565 (4) (a) shall report all of the following:

1. The number of samples taken during each month of the last quarter.
2. The monthly arithmetic average of all samples taken in each month for the last 12 months.
3. The arithmetic average of all monthly averages for the last 12 months.
4. Whether the MRDL was exceeded, as determined according to s. NR 809.566 (3) (a).

(b) Water supplier for public water systems monitored for chlorine dioxide under the requirements of s. NR 809.565 (4) (b) shall report all of the following information:

1. The dates, results and locations of samples taken during the last quarter.
2. Whether the MRDL was exceeded, as determined according to s. NR 809.566 (3) (b).
3. Whether the MRDL was exceeded in any 2 consecutive daily samples and whether the resulting violation was acute or nonacute as determined according to s. NR 809.566 (3) (b).

(4) **DISINFECTION BYPRODUCT PRECURSORS, ENHANCED COAGULATION OR ENHANCED SOFTENING TREATMENT SYSTEMS.** Water supplier for public water systems containing disinfection byproduct precursors or using enhanced coagulation or enhanced softening, shall report the information specified in the following:

(a) Water supplier for public water systems monitored monthly or quarterly for TOC under the requirements of s. NR 809.565 (5) and required to meet the enhanced coagulation or enhanced softening requirements in s. NR 809.569 (1) (b) or (c) shall report all of the following:

1. The number of paired samples of source water and treated water, both prior to continuous disinfection, taken during the last quarter.
2. The location, date and result of each paired sample and associated alkalinity taken during the last quarter.
3. For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal.
4. Calculations for determining compliance with the TOC percent removal requirements, as provided in s. NR 809.569 (3).
5. Whether the public water system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in s. NR 809.569 (1) for the last 4 quarters.

(b) Water supplier for public water systems monitored monthly or quarterly for TOC under the requirements of s. NR 809.565 (5) and meeting one or more of the alternative compliance criteria in s. NR 809.569 (2) (b) or (c) shall report all of the following:

1. The alternative compliance criterion that the water supplier for the public water system is using.
2. The number of paired samples taken during the last quarter.
3. The location, date and result of each paired sample and associated alkalinity taken during the last quarter.
4. The running annual arithmetic average based on monthly averages or quarterly samples of source water TOC for public water systems meeting a criterion in s. NR 809.569 (2) (b) 1. and 3. or of treated water TOC for public water systems meeting the criterion in s. NR 809.569 (2) (b) 2.
5. The running annual arithmetic average based on monthly averages or quarterly samples of source water SUVA for public water systems meeting the criterion in s. NR 809.569 (2) (b) 6. or of treated water SUVA for public water systems meeting the criterion in s. NR 809.569 (2) (b) 7.
6. The running annual average of source water alkalinity for public water systems meeting the criterion in s. NR 809.569 (2) (b) 3. and 4. and of treated water alkalinity for public water systems meeting the criterion in s. NR 809.569 (2) (c) 1.
7. The running annual average for both TTHM and HAA5 for public water systems meeting the criterion in s. NR 809.569 (2) (b) 3., 4., and 5.
8. The running annual average of the amount of magnesium hardness removal (as CaCO_3 mg/L) for public water systems meeting the criterion in s. NR 809.567 (2) (c) 2.
9. Whether the public water system is in compliance with the particular alternative compliance criterion in s. NR 809.569 (2) (b) and (c).

NR 809.569 Treatment technique for control of disinfection byproduct (DBP) precursors. For public water systems using conventional treatment which are supplied by a surface water source or by a groundwater source under the direct influence of surface water, the department identifies enhanced coagulation or enhanced softening as treatment techniques to control the level of disinfection byproduct precursors in drinking water and distribution systems. Treatment technique requirements for DBP precursors shall comply with the following:

(1) **ENHANCED COAGULATION AND ENHANCED SOFTENING PERFORMANCE REQUIREMENTS.** (a) Public water systems using enhanced coagulation or enhanced softening shall achieve the percent reduction of TOC specified in par. (b) between the source water and the combined filter effluent, unless the department approves the water supplier's request for alternate minimum TOC removal (Step 2) requirements under par. (c).

(b) Required Step 1 TOC reductions, indicated in the following table, are based upon specified source water parameters measured in accordance with s. NR 809.563 (6). Public water systems practicing softening are required to meet the Step 1 TOC reductions in the far-right column, source water alkalinity >120 mg/L, for the specified source water TOC:

Table V
Step 1 Required Removal of TOC by Enhanced Coagulation and Enhanced Softening for Surface Water Systems Using Conventional Treatment

Source water TOC, mg/l	Source water alkalinity, mg/L as CaCO ₃ (in percentages)		
	0 - 60 %	> 60 - 120 %	> 120%
>2.0-4.0	35.0	25.0	15.0
>4.0-8.0	45.0	35.0	25.0
>8.0	50.0	40.0	30.0

1. Public water systems meeting at least one of the conditions in sub. (2) (b) 1. to 7. are not required to operate with enhanced coagulation.

2. Softening treatment systems meeting one of the alternative compliance criteria in sub. (2) (c) are not required to operate with enhanced softening.

3. Public water systems practicing softening shall meet the TOC removal requirements in the column marked >120% source water alkalinity in mg/L as CaCO₃.

(c) Water supplier for public water systems using conventional treatment which are supplied by a surface water source or by a groundwater source under the direct influence of surface water which cannot achieve the Step 1 TOC removals required by par. (b) due to water quality parameters or operational constraints shall apply to the department, within 3 months of failure to achieve the TOC removals required by par. (b), for approval of alternative minimum TOC (Step 2) removal requirements submitted by the water supplier. If the department approves the alternative minimum TOC removal (Step 2) requirements, the department may make those requirements retroactive for the purposes of determining compliance. Until the department approves the alternative minimum TOC removal (Step 2) requirements, the public water system shall meet the Step 1 TOC removals contained in par. (b).

(d) Applications made to the department by the water supplier for enhanced coagulation treatment systems for approval of alternative minimum TOC removal (Step 2) requirements under par. (c) shall include, as a minimum, results of bench- or pilot-scale testing conducted under subd. 1. and used to determine the alternate enhanced coagulation level.

1. Alternate enhanced coagulation level shall be determined to be coagulation at a coagulant dose and pH as determined by the method described in this subdivision and subds. 2. to 5. such that an incremental addition of 10 mg/L of alum, or equivalent amount of ferric salt, results in a TOC removal of ≤ 0.3 mg/ L. The percent removal of TOC at this point on the "TOC removal versus coagulant dose" curve shall be determined to be the minimum TOC removal required for the public water system. Once approved by the department, this minimum requirement supersedes the minimum TOC removal required by the table in par. (b). This requirement will be effective until the department approves a new value based on the results of a new bench- and pilot-scale test. Failure to achieve department-set alternative minimum TOC removal levels is a violation of this chapter and the federal national primary drinking water regulations.

2. Bench- or pilot-scale testing of enhanced coagulation shall be conducted by using representative water samples and adding 10 mg/L increments of alum, or equivalent amounts of ferric salt, until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in the following table:

Table W

Enhanced Coagulation Step 2 Target pH

Alkalinity (mg/L as CaCO ₃)	Target pH
0-60	5.5
>60-120	6.3
>120-240	7.0
>240	7.5

3. For waters with alkalinity of less than 60 mg/L for which addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below 5.5 before significant TOC removal occurs, the public water system shall add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/L per 10 mg/L alum added, or equivalent addition of iron coagulant, is reached.

4. The public water system may be operated at any coagulant dose or pH necessary, consistent with other national public drinking water rules or NPDWRs, to achieve the minimum TOC percent removal approved under par. (c).

5. If the TOC removal is consistently less than 0.3 mg/L of TOC per 10 mg/L of incremental alum dose at all dosages of alum, or equivalent addition of iron coagulant, the water is deemed to contain TOC not amenable to enhanced coagulation. The water supplier may then apply to the department for a waiver of enhanced coagulation requirements.

(2) CONVENTIONAL FILTRATION TREATMENT. (a) Public water systems using conventional filtration treatment which are supplied by a surface water source or by a groundwater source under the direct influence of surface water shall operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in sub. (1) unless the public water system meets at least one of the alternative compliance criteria listed in par. (b) or (c).

(b) Public water systems using conventional filtration treatment which are supplied by a surface water source or by a groundwater source under the direct influence of surface water may use the alternative compliance criteria in subds. 1. to 7. to comply with this section in lieu of complying with sub. (1). Public water systems shall still comply with monitoring requirements in s. NR 809.565 (5).

1. The public water system's source water TOC level, measured according to s. NR 809.563 (6) (c), is less than 2.0 mg/L, calculated quarterly as a running annual average.

2. The public water system's treated water TOC level, measured according to s. NR 809.563 (6) (c), is less than 2.0 mg/L, calculated quarterly as a running annual average.

3. The public water system's source water TOC level, measured as required by s. NR 809.563 (6) (c), is less than 4.0 mg/L, calculated quarterly as a running annual average; the source water alkalinity, measured according to s. NR 809.563 (6) (a), is greater than 60 mg/L (as CaCO₃), calculated quarterly as a running annual average; and either the TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively; or prior to the effective date for compliance in s. NR 809.562 (2), the water supplier for the public water system has made a clear and irrevocable financial commitment not later than the effective date for compliance in s. NR 809.562 (2) to use technologies that will limit the levels of TTHMs and HAA5 to no more than 0.040 mg/L and 0.030 mg/L, respectively.

4. Water suppliers shall submit evidence of a clear and irrevocable financial commitment, in addition to a schedule containing milestones and periodic progress reports for installation and operation of appropriate technologies, to the department for approval not later than the effective date for compliance in s. NR 809.562 (2).

a. These technologies shall be installed and operating not later than June 30, 2005.

b. Failure to install and operate these technologies by the date in the approved schedule shall constitute a violation of this chapter and the national primary drinking water regulations.

5. The TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively, and the public water system uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

6. The public water system's source water SUVA, prior to any treatment and measured monthly according to s. NR 809.563 (6) (d), is less than or equal to 2.0 L/mg-M, calculated quarterly as a running annual average.

7. The public water system's finished water SUVA, measured monthly according to s. NR 809.563 (6) (d), is less than or equal to 2.0 L/mg-M, calculated quarterly as a running annual average.

(c) Public water systems practicing enhanced softening that cannot achieve the TOC removals required by sub. (1) (b) may use the alternative compliance criteria in subds. 1. and 2. in lieu of complying with sub. (1) (b). Public water systems shall still comply with monitoring requirements in s. NR 809.565 (5).

1. Softening that results in lowering the treated water alkalinity to less than 60 mg/L (as CaCO₃), measured monthly according to s. NR 809.563 (6) (a) and calculated quarterly as a running annual average.

2. Softening that results in removing at least 10 mg/L of magnesium hardness (as CaCO₃), measured monthly and calculated quarterly as an annual running average.

(3) COMPLIANCE CALCULATIONS. (a) Public water systems which are supplied by a surface water source or by a groundwater source under the direct influence of surface water, other than those identified in sub. (2) (b) or (c) shall comply with requirements contained in sub. (1) (b) or (c). Water suppliers shall calculate compliance quarterly, beginning after the water supplier for the public water system has collected 12 months of data, by determining an annual average using the following method:

1. Determine actual monthly TOC percent removal, by using the following equation: $(1 - (\text{treated water TOC} / \text{source water TOC})) \times 100 = \text{percent TOC removal}$.

2. Determine the required monthly TOC percent removal from either the table in sub. (1) (b) or from sub. (1) (c).

3. Divide the value in subd. 1. by the value in subd. 2.

4. Add together the results of subd. 3. for the last 12 months and divide by 12.

5. If the value calculated in subd. 4. is less than 1.00, the public water system is not in compliance with the TOC percent removal requirements.

(b) Water supplier may use the provisions in subds. 1. to 5. in lieu of the calculations in par. (a) 1. to 5. to determine compliance with TOC percent removal requirements.

1. In any month that the public water system's treated or source water TOC level, measured according to s. NR 809.563 (6) (c), is less than 2.0 mg/L, the water supplier may assign a monthly value of 1.0, in lieu of the value calculated in par. (a) 3. when calculating compliance under the provisions of par. (a).

2. In any month that a public water system practicing softening removes at least 10 mg/L of magnesium hardness as CaCO₃, the water supplier may assign a monthly value of 1.0 in lieu of the value calculated in par. (a) 3. when calculating compliance under the provisions of par. (a).

3. In any month that the public water system's source water SUVA, prior to any treatment and measured according to s. NR 809.563 (6) (d), is ≤ 2.0 L/mg-M, the water supplier may assign a monthly value of 1.0, in lieu of the value calculated in par. (a) 3. when calculating compliance under the provisions of par. (a).

4. In any month that the public water system's finished water SUVA, measured according to s. NR 809.563 (6) (d), is ≤ 2.0 L/mg-M, the water supplier may assign a monthly value of 1.0 in lieu of the value calculated in par. (a) 3. when calculating compliance under the provisions of par. (a).

5. In any month that a public water system practicing enhanced softening lowers alkalinity below 60 mg/L as CaCO₃, the water supplier may assign a monthly value of 1.0, in lieu of the value calculated in par. (a) 3. when calculating compliance under the provisions of par. (a).

(c) Public water systems which are supplied by a surface water source or by a groundwater source under the direct influence of surface water and which are using conventional filtration treatment may also comply with the requirements by meeting the criteria in sub. (2) (b) or (c).

NR 809.60 General requirements for Stage 2 DBP disinfection byproducts control. (1) GENERAL. The following establish monitoring and other requirements for achieving compliance with maximum contaminant levels based on locational running annual averages (LRAA) for total trihalomethanes (TTHM) and haloacetic acids five (HAA5), and for achieving compliance with maximum residual disinfectant levels for chlorine and chloramine for certain consecutive systems.

(2) APPLICABILITY. A public water system is subject to these requirements if the public water system is a community water system or a nontransient noncommunity water system that uses a primary or residual disinfectant

other than ultraviolet light or delivers or receives water that has been treated with a primary or residual disinfectant other than ultraviolet light.

(3) SCHEDULE. Public water systems shall comply with the requirements on the schedule in Table X based on public water system population:

Table X	
Public Water System Population	Monitoring Compliance Dates:¹
Public water systems that are not part of a combined distribution system and public water systems that serve the largest population in the combined distribution system	
(1) PWS serving \geq 100,000	April 1, 2012.
(2) PWS serving 50,000–99,999	October 1, 2012.
(3) PWS serving 10,000–49,999	October 1, 2013.
(4) PWS serving < 10,000	October 1, 2013 if no <i>Cryptosporidium</i> monitoring is required under s. NR 809.331 or October 1, 2014 if <i>Cryptosporidium</i> monitoring is required under s. NR 809.331
Public water systems that are part of a combined distribution system	
(5) Consecutive system or wholesale system	Water suppliers shall sample using the earliest compliance date of all the public water systems in the combined distribution system determined by the public water system with the largest population using the dates indicated in (1) to (4) of this table.

¹The department may grant up to an additional 24 months for compliance with MCLs and operational evaluation levels if the public water system requires capital improvements to comply with an MCL.

(4) MONITORING FREQUENCY. The frequency of monitoring is specified in s. NR 809.61(1)(c), Table U.

(a) Water suppliers for public water systems required to be monitored quarterly shall begin monitoring in the first full calendar quarter that includes the compliance date in the table in sub. (3).

(b) Water suppliers for public water systems required to be monitored at a frequency less than quarterly shall begin monitoring in the calendar month recommended in the initial distribution system evaluation (IDSE) report they prepared for, the EPA under Subpart U of 40 CFR part 141 of the U.S. Code or for the department under subchapter VII or in the calendar month identified in the monitoring plan developed under s. NR 809.62 which shall be no later than 12 months after the compliance date in the table in par. (3).

(c) Water suppliers for public water systems required to be monitored quarterly, shall make compliance calculations at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter or earlier if the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters.

(d) If the public water system is required to be monitored at a frequency that is less than quarterly, the water supplier shall make compliance calculations beginning with the first compliance sample taken after the compliance date.

(5) CONSECUTIVE SYSTEMS. The department may determine that a public water system that receives some or all of its water supply from a wholesale system is not a consecutive system, based on any of the following factors:

(a) Receives water from a wholesale system only on an emergency basis.

(b) Receives only a small percentage and small volume of water from a wholesale system.

(6) WHOLESALE SYSTEMS. The department may determine that a public water system that provides some or all of the water supply for another public water system is not a wholesale system, based on any of the following factors:

(a) Delivers water to a consecutive system only on an emergency basis.

(b) Delivers only a small percentage and small volume of water to a consecutive system.

(7) **MONITORING AND COMPLIANCE.** (a) Water suppliers for public water systems required to be monitored quarterly shall calculate LRAAs for TTHM and HAA5 to determine that each monitoring location LRAA does not exceed the MCL.

1. If four consecutive quarters of monitoring are not completed, compliance with the MCL shall be based on the average of the available data from the most recent four quarters.

2. If more than one sample per quarter is collected at a monitoring location, all samples taken in the quarter at that location shall be averaged to determine a quarterly average to be used in the LRAA calculation.

(b) Water suppliers for public water systems required to be monitored yearly or less frequently shall establish compliance for TTHM and HAA5 by using each sample collected to determine if it is less than the MCL.

1. If any sample exceeds the MCL, the public water system shall comply with the requirements of s. NR 809.63(2).

2. If no sample exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.

(c) A public water system is in violation of the monitoring requirements for each quarter that a LRAA is calculated using a quarter in which the water supplier failed to monitor.

NR 809.61 Routine monitoring for Stage 2 DBP. (1) **MONITORING.** (a) A water supplier that submitted an IDSE report to EPA under Subpart U of 40 CFR part 141 of the U.S. Code or the department under subchapter VII shall begin monitoring at the locations and months recommended in the IDSE report submitted to EPA under Subpart U of 40 CFR part 141.605 or the department under subchapter VII following the schedule in s. NR 809.60(3), unless the department requires other locations or additional locations after its review.

(b) A water supplier that submitted a 40/30 certification from EPA under Subpart U of 40 CFR part 141.603 or the department under s. NR 809.974 or for a public water system that qualified for a very small system waiver from EPA under Subpart U of 40 CFR 141.604 or the department under s. NR 809.975 or for a public water system that is a nontransient noncommunity water system serving <10,000, shall monitor at the location or locations and dates identified in the public water system's monitoring plan in s. NR 809.565(6), updated as required by s. NR 809.62.

(c) Monitoring shall be conducted at no fewer than the number of locations identified in Table Y.

TABLE Y

Stage 2 DBP -- Disinfection byproducts monitoring frequency and locations.

Source water type	Population size category	Monitoring Frequency	Distribution system monitoring location total per monitoring period
Surface water and GWUDI:			
	<500	Annual	2
	500-3,300	quarterly	2
	3,301-9,999	quarterly	2
	10,000-49,999	quarterly	4
	50,000-249,999	quarterly	8
	250,000-999,999	quarterly	12
	1,000,000-4,999,999	quarterly	16

	≥ 5,000,000	quarterly	20
Groundwater:			
	<500	Annual	2
	500–9,999	Annual	2
	10,000–99,999	quarterly	4
	100,000–499,999	quarterly	6
	≥ 500,000	quarterly	8

(d) All public water systems shall be monitored during the month of highest DBP concentrations.

(e) Water suppliers for public water systems on quarterly monitoring shall take dual sample sets every 90 days at each monitoring location, except for water supplier for surface water systems or groundwater under the direct influence of surface water systems serving 500–3,300. Water suppliers for groundwater systems serving 500–9,999 on annual monitoring shall take dual sample sets at each monitoring location. All other public water systems on annual monitoring and surface water systems or groundwater under the direct influence of surface water systems serving 500–3,300 shall take individual TTHM and HAA5 samples, instead of a dual sample set, at the locations with the highest TTHM and HAA5 concentrations, respectively. For public water systems serving fewer than 500 people, only one location with a dual sample set per monitoring period is required if the highest TTHM and HAA5 concentrations occur at the same location and month.

(f) Water suppliers for undisinfected systems that begin using a disinfectant other than UV light after the dates for complying with the Initial Distribution System Evaluation requirements shall consult with the department to identify compliance monitoring locations for s. NR 809.60 and develop a monitoring plan under s. NR 809.62 that includes those monitoring locations.

(2) ANALYTICAL METHODS AND LABORATORIES. (a) Samples shall be analyzed using an approved method listed in s. NR 809.563(2) Table R for TTHM and HAA5.

(b) The analysis under par. (a) shall be conducted by laboratories that are certified by EPA or the department under ch. NR 149.

NR 809.62 Monitoring plan for Stage 2 DBP. (1) GENERAL MONITORING PLAN REQUIREMENTS. Monitoring plans shall be developed, implemented and kept up to date by water suppliers for all public water systems that are required to be monitored for TTHMs and HAA5s and shall be kept on file for department and public review.

(a) Monitoring plans under this section shall be completed no later than the date the public water system is required to begin initial compliance monitoring under s. NR 809.61.

(b) The monitoring plan shall contain the all of the following elements:

1. Monitoring locations.
2. Monitoring dates.
3. Compliance calculation procedures.
4. Monitoring plans for any other public water systems in a combined distribution system.

(c) If a public water system was not required to submit an IDSE report to the EPA under Subpart U of 40 CFR 141.601 or 141.602 or the department under subchapter VII and does not have sufficient monitoring locations to identify the required number of locations indicated in Subpart U of 40 CFR 141.605(b) or under s. NR 809.976; the water supplier shall do all of the following:

1. Identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified.
2. Provide the rationale for identifying the locations as having high levels of TTHM or HAA5. Water suppliers should compare the number of monitoring locations required under s. NR809.565 with the number of monitoring locations under s. NR 809.61 Table T. If the public water system was required to have more monitoring locations under s. NR

809.565 than under s. NR 809.62 compliance monitoring, the water supplier shall identify which locations will be used by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations under s. NR 809.61 Table T have been identified.

(2) SUBMITTAL OF MONITORING PLANS. If a public water system serves > 3,300 people, the water supplier shall submit a copy of a monitoring plan to the department prior to the date the water supplier for the public water system is required to conduct initial monitoring under s. NR 809.61, unless the IDSE report submitted under Subpart U of 40 CFR part 141 of the Federal Regulation or subchapter VIII contains all the information required by this paragraph.

(3) REVISING MONITORING PLANS. Water suppliers shall revise monitoring plans to reflect changes in treatment, distribution system operations and layout including new service areas, or other factors that may affect TTHM or HAA5 formation, or as approved by the department.

a. The department shall be consulted regarding the need for changes and the appropriateness of changes to a monitoring plan.

b. If monitoring locations are changed, existing compliance monitoring locations with the lowest LRAA shall be replaced with new locations that are expected have the highest TTHM or HAA5 levels in the distribution system.

c. The department may also require other modifications in the public water systems monitoring plan.

d. If the public water system serves > 3,300 people, the water supplier shall submit a copy of the modified monitoring plan to the department prior to the date the public water system is required to comply with the revised monitoring plan.

NR 809.63 Requirements for reduced and increased monitoring for Stage 2 DBP. (1) REDUCED MONITORING. The department may reduce the monitoring frequency when the LRAA is less than or equal to 0.040 mg/L for TTHM and less than or equal to 0.030 mg/L for HAA5 at all compliance monitoring locations. The reduced sampling frequency and number of sample sites are given in Table Z:

Table Z			
Reduced Stage 2 Monitoring Frequency and Number of Sites			
Source Water Type	Population Size Category	Monitoring Frequency	Distribution System Monitoring Location Total per Monitoring Period
Surface Water or GWUDI	less than 500	Annual	Monitoring may not be reduced.
	500 to 3,300	Annual	1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	3,301 to 9,999	Annual	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement.
	10,000 to 49,999	quarterly	2 dual sample sets at the locations with the highest TTHM and highest HAA5 LRAAs
	50,000 to 249,999	quarterly	4 dual sample sets at the locations with the two highest TTHM and two highest HAA5 LRAAs
	250,000 to 999,999	quarterly	6 dual sample sets at the locations with the three highest TTHM and three highest HAA5 LRAAs
	1,000,000 to 4,999,999	quarterly	8 dual sample sets at the locations with the four highest TTHM and four highest HAA5 LRAAs
	5,000,000 or more	quarterly	10 dual sample sets at the locations with the five highest TTHM and five highest HAA5 LRAAs

Ground-water	less than 500	every third year (triennial)	1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	500 to 9,999	Annual	1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	10,000 to 99,999	Annual	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement
	100,000 to 499,999	quarterly	2 dual sample sets at the locations with the highest TTHM and highest HAA5 LRAAs
	500,000 or more	quarterly	4 dual sample sets at the locations with the two highest TTHM and two highest HAA5 LRAAs

(a) Water suppliers for public water systems on quarterly monitoring shall take dual sample sets every 90 days.

(b) Public water systems on annual monitoring and surface water or GWUDI systems serving 500 to 3,300 people may use a single site if the highest TTHM and HAA5 concentrations occur at the same time and place. Any such public water system may be required to take individual TTHM and HAA5 samples, instead of a dual sample set, at sites identified as the highest TTHM and HAA5 sites, respectively. If separate sites for individual TTHM and HAA5 samples are used, then the TTHM sample shall be collected during the quarter with highest historical TTHM levels and the HAA5 sample shall be collected during the quarter with the highest historical HAA5 level.

(c) Only data collected under the provisions of s. NR 809.565 and under this section may be used to qualify for reduced monitoring.

(d) To remain on reduced monitoring, a public water system shall meet the following conditions:

1. Public water systems on a quarterly reduced monitoring schedule may remain on that reduced schedule as long as the TTHM LRAA ≤ 0.040 mg/L and the HAA5 LRAA ≤ 0.030 mg/L at each monitoring location.

2. Public water systems on an annual or less frequent reduced monitoring schedule may remain on that reduced schedule as long as each TTHM sample ≤ 0.060 mg/L and each HAA5 sample ≤ 0.045 mg/L.

3. In addition to subd. 1. and 2., for a surface water or GWUDI system, the source water annual average TOC level, before any treatment, shall be ≤ 4.0 mg/L, based on monitoring conducted under s. NR 809.565.

(e) If the LRAA based on quarterly monitoring at any monitoring location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 or if the annual (or less frequent) sample at any location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5, or if the source water annual average TOC level, before any treatment, is > 4.0 mg/L at any treatment plant treating surface water or groundwater under the direct influence of surface water, the water supplier shall resume routine monitoring under s. NR 809.62 or begin increased monitoring under sub. (2).

(f) The department may return a public water system to routine monitoring, at any time, at the department's discretion.

(2) CONDITIONS REQUIRING INCREASED MONITORING. (a) A public water system that is required to monitor at a particular location annually or less frequently than annually under s. NR 809.62 or 809.63(1), shall increase monitoring to dual sample sets once per quarter at all locations if a TTHM sample is > 0.080 mg/L or a HAA5 sample is > 0.060 mg/L at any location.

(b) Samples shall be taken every 90 days plus or minus 5 days beginning from the date of collection of the original sample that exceeded the MCL for either TTHM or HAA5.

(3) MCL VIOLATION DETERMINATION. A public water system is in violation of the MCL when the LRAA for TTHM or HAA5 exceeds the MCLs in s. NR 809.561(3), calculated based on four consecutive quarters of monitoring or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters.

(4) RETURN TO REDUCED MONITORING. The department may return a public water system to routine monitoring once the water supplier has completed increased monitoring for at least four consecutive quarters and the LRAA for every monitoring location is ≤ 0.060 mg/L for TTHM and ≤ 0.045 mg/L for HAA5.

(5) VIOLATION OF MONITORING REQUIREMENTS. A public water system is in violation of the monitoring requirements if the water supplier fails to monitor during a quarter and for each subsequent quarter that the monitoring result would have been used in calculating a LRAA.

NR 809.64 Additional disinfection byproducts requirements for consecutive systems under Stage 2 DBP. A consecutive system that does not add a disinfectant but receives and delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light, shall comply with analytical and monitoring requirements for chlorine and chloramines in s. NR 809.565(4)(a) and the compliance requirements in s. NR 809.566(3)(a) beginning April 1, 2009, unless required to comply earlier by the department, and shall report monitoring results under s. NR 809.567(3)(a).

NR 809.65 Operational evaluation levels for disinfection byproducts under Stage 2 DBP. (1) OPERATIONAL EVALUATION. An operational evaluation shall be conducted if any of the following occurs:

(a) The average sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4, exceeds 0.080 mg/L at any monitoring location.

(b) The average sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4, exceeds 0.060 mg/L at any monitoring location.

(2) OPERATIONAL EVALUATION REPORTING. If an operational evaluation must be performed as required in sub. (1), it shall be submitted as a written report to the department no later than 90 days after being notified of the analytical result that causes the public water system to exceed the operational evaluation level. The written report shall be made available to the public upon request.

(3) CONTENTS OF AN OPERATIONAL REPORT. An operational evaluation shall include an examination of the system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedances.

(4) LIMITING THE SCOPE OF AN OPERATIONAL EVALUATION. A water supplier may request and the department may allow the water supplier to limit the scope of the operational evaluation if the water supplier is able to identify the cause of the operational evaluation level exceedance. The request to limit the scope of the evaluation does not extend the schedule required under sub. (2) for submitting the written report. If the department approves this limited scope of evaluation, the approval shall be in writing and the water supplier shall keep the written approval with the completed report.

NR 809.66 Requirements for remaining on reduced TTHM and HAA5 monitoring based on Stage 1 DBP results. (1) REMAINING ON REDUCED MONITORING. A public water system may remain on reduced monitoring after the dates identified in s. NR 809.60(3) for compliance with this subchapter only if the public water system qualified for a 40/30 certification by EPA under Subpart U §141.603 of the Federal Regulations or received a very small system waiver under Subpart U of 40 CFR 141.604 of the Federal Regulations, and if the public water system meets the reduced monitoring criteria in NR 809.63(1) and all of the following criteria:

(a) The public water system does not change or add monitoring locations from those used for compliance monitoring under ss. NR 809.565(6) and 809.566.

(b) The public water system's monitoring locations under s. NR 809.62 have not been changed from the public water system's monitoring locations under s. NR 809.565(6) after the compliance dates identified in s. NR 809.60(3).

NR 809.67 Requirements for remaining on increased TTHM and HAA5 monitoring based on Stage 1 DBP results. (1) INCREASED MONITORING DUE TO DBP 1. A public water system that is on increased monitoring under ss. NR 809.565 and 809.566 shall remain on increased monitoring until the public water system qualifies for a return to routine monitoring under s. NR 809.61.

(2) INCREASED MONITORING DUE TO DBP 2. Water suppliers shall conduct increased monitoring under s. NR 809.63(2) at the monitoring locations in the monitoring plan developed under s. NR 809.62 beginning on the date identified in s. NR 809.60(3) for compliance with this subchapter and the public water system shall remain on increased monitoring until the public water system qualifies for a return to routine monitoring under s. NR 809.61.

NR 809.68 Reporting and recordkeeping requirements for Stage 2 DBP. (1) REPORTING.

(a) Water suppliers shall report all of the following information for each monitoring location to the department no later than 10 days after the end of any quarter in which monitoring is required:

1. Number of samples taken during the quarter.
2. Date and results of each sample taken during the quarter.
3. Arithmetic average of quarterly results for the four quarters immediately previous for each monitoring location (LRAA), beginning at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter. If the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, the water supplier shall report this information to the department as part of the first report due following the compliance date or anytime thereafter that this determination is made. If the public water system is required to conduct monitoring at a frequency that is less than quarterly, the water supplier shall make compliance calculations beginning with the first compliance sample taken after the compliance date, unless the public water system is required to conduct increased monitoring under s. NR 809.62.
4. If the MCL for TTHM or HAA5s was violated at any monitoring location.
5. Any operational evaluation levels that were exceeded during the quarter and, if so, the location and date, and the calculated TTHM and HAA5 levels.

(b) Water suppliers for surface water or groundwater under the direct influence of surface water systems seeking to qualify for or remain on reduced TTHM or HAA5 monitoring, shall report the following source water TOC information for each treatment plant that treats surface water or groundwater under the direct influence of surface water to the department no later than 10 days after the end of any quarter in which monitoring is required:

1. The number of source water TOC samples taken each month during the previous quarter.
2. The date and result of each sample taken during the previous quarter.
3. The quarterly average of monthly samples taken during the previous quarter or the result of the quarterly sample.
4. The running annual average (RAA) of quarterly averages from the past four quarters.
5. Whether the RAA exceeded 4.0 mg/L.

(c) The department may choose to perform calculations and determine whether the MCL was exceeded or the public water system is eligible for reduced monitoring in lieu of having the water supplier report that information

(2) RECORDKEEPING. The water supplier shall retain any s. NR 809.62 monitoring plans and monitoring results collected under s. NR 809.61 as required by s. NR 809.97.

Subchapter IV — Subchapter IV — Miscellaneous Chemical Monitoring Requirements, Raw Surface Water Standards, and Certified Laboratories

NR 809.70 Secondary inorganic chemical and physical standards. (1) SECONDARY STANDARDS. Waters containing inorganic chemicals in quantities above the limits contained in this section are not hazardous to health but may be objectionable to an appreciable number of persons. The following are the secondary standards for inorganic chemicals:

Table AA

Parameters	Standard (Milligrams per liter)
Aluminum	0.05 to 0.2
Chloride	250
Color	15 units
Copper	1.0
Corrosivity	Noncorrosive
Fluoride ¹	2.0
Foaming agents	0.5

Hydrogen Sulfide	not detectable
Iron	0.3
Manganese	0.05
Odor	3 (Threshold No.)
Silver	0.1
Sulfate	250
Total Residue	500
Zinc	5

¹The primary maximum contaminant level for fluoride is contained in s. NR 809.11.

(2) **APPLICABILITY OF SECONDARY STANDARDS.** The secondary standards contained in this section apply to all public water systems. Compliance with these standards shall be calculated in accordance with s. NR 809.61.

(3) **COMPLIANCE WITH THE SECONDARY DRINKING WATER STANDARD AND PUBLIC NOTIFICATION FOR FLUORIDE.** Water suppliers for community water systems that exceed the secondary maximum contaminant level for fluoride as determined by the last single sample taken in accordance with the requirement of s. NR 809.12, but do not exceed the maximum contaminant level for fluoride as specified in s. NR 809.11, shall provide the notice as specified in s. NR 809.957 to all billing units annually, all new billing units at the time service begins and annually to the department and the department of health and family services.

NR 809.71 Sampling and analytical requirements for secondary standards. (1) **COMPLAINTS ON AESTHETIC WATER QUALITY.** If the department receives complaints regarding the aesthetic quality of the water, the water supplier may be required to implement a monitoring program to determine compliance with s. NR 809.60.

(2) **DEPARTMENT REQUIRED REMEDIAL ACTION.** If it is determined by the department that physical or chemical substances or both in excess of those standards contained in s. NR 809.60 are objectionable to an appreciable number of persons and are detrimental to the public welfare, the department may, on its own motion, require remedial action by the water supplier to insure that the public receives the highest quality water practicably obtainable.

(3) **LABORATORY REQUIREMENTS.** The department may require that laboratory test results submitted to the department under this section be performed by a laboratory certified or registered under ch. NR 149.

NR 809.73 Sampling and analytical requirements for other chemicals. (1) **OTHER CHEMICAL TESTING.** If the department determines that the public health, safety or welfare requires testing for chemical or physical constituents in water which are not contained in this chapter, the department may order such testing as it deems necessary.

(a) The department shall provide public notice and an opportunity for public hearing within 90 days after any order under this subsection.

(b) Hearings under this subsection shall be class 1 hearings and shall be held in accordance with ch. 227, Stats.

(c) Such testing shall be done at a laboratory certified or registered by EPA or under ch. NR 149 as the department may require on a case-by-case basis.

(2) **TREATMENT CONTROL TESTING.** Testing for other constituents shall be performed at public water systems as determined necessary by the department for design and control of treatment processes for contaminants which may affect public health or welfare. Such testing shall be done at a laboratory certified or registered by EPA or under ch. NR 149 as the department may require on a case-by-case basis.

NR 809.74 Additional requirements for public water systems which chlorinate or fluoridate water. (1) **PUBLIC WATER SYSTEMS WHICH ADD FLUORIDE.** (a) The water supplier for a community water system artificially fluoridating the water shall establish a monitoring program in order to maintain the fluoride concentration within the range of 1.0 to 1.5 milligrams per liter as recommended by the dental health section of the department of health services for optimum dental benefits.

(b) The monitoring program shall include:

1. Submission of the results of daily fluoride tests of samples from the distribution system.

2. One sample per month taken from a representative location in the distribution system and submitted to the state laboratory of hygiene. The sample submitted to the state laboratory of hygiene shall be a portion of a split sample so that the operator can determine the fluoride concentration with the operator's equipment and compare it to the state

laboratory results. The fluoride concentration obtained by the operator shall be noted on the data sheet prior to submission to the state laboratory.

3. For public water systems with large distribution systems and multiple sources, more than one fluoride test per day may be necessary to assure proper feed rates. See s. NR 811.51(7) for testing equipment requirements.

4. The department may approve exceptions to the daily fluoride test requirement if the water supplier is able to demonstrate that the optimum fluoride concentration in par. (a) can be maintained utilizing a reduced monitoring program.

(2) **CHLORINE.** The water suppliers for all waterworks which chlorinate water shall test chlorine residuals at locations and intervals necessary to control the chlorination process. At groundwater supplies, the chlorine residual of a sample from a representative location in the distribution system shall be checked at least twice per week. Water suppliers for public water systems having surface water treatment plants or GWUDI systems shall determine the chlorine residual in the plant effluent continuously and in the distribution system at least daily in representative locations. Where water quality changes rapidly, residuals shall be tested at more frequent intervals as specified by the department and in those individual cases, continuous monitoring equipment may be required if the department determines it is necessary to protect public health. Chlorine residual testing is required when bacteriological samples are taken.

NR 809.75 Raw surface water standards. The intake water for surface water treatment plants shall be the highest quality reasonably available and which, with appropriate treatment and adequate safeguards, will meet the drinking water standards in this chapter.

NR 809.76 Laboratory Certification. (1) **LABORATORY CERTIFICATION FOR COMPLIANCE SAMPLES.** For the purpose of compliance with ss. NR 809.113, 809.118, 809.119, 809.203, 809.25, 809.243, 809.54, 809.549 and 809.563, samples shall be analyzed at the state laboratory of hygiene, at a laboratory facility acceptable to the U.S. environmental protection agency, or at a laboratory certified for the safe drinking water test category under ch. NR 149. For the purpose of compliance with ss. NR 809.311, 809.323 and 809.334, bacteriological samples shall be analyzed at a laboratory facility certified or approved by the department of agriculture, trade and consumer protection, or at a laboratory facility acceptable to the U.S. environmental protection agency. For the purpose of compliance with s. NR 809.52 radiological samples shall be analyzed at a laboratory facility certified or acceptable to the U.S. environmental protection agency.

(2) **LABORATORY CERTIFICATION FOR OPERATIONAL SAMPLES.** Water suppliers for all community water systems utilizing surface water sources or GWUDI shall analyze bacteriological samples for in-plant operational control at a laboratory facility approved by the department of agriculture, trade and consumer protection.

NR 809.77 Monitoring of consecutive public water systems. When a public water system supplies water to one or more other public water systems, the department may modify the monitoring requirements imposed by this chapter to the extent that the interconnection of the public water systems justifies treating them as a single public water system for monitoring purposes. Any modified monitoring shall be conducted pursuant to a schedule specified by the department and concurred in by the administrator of the U.S. environmental protection agency.

Subchapter V — Reporting, Consumer Confidence Reports and Record Keeping

NR 809.80 Reporting requirements. (1) **REPORTING PERIODS.** Unless a shorter reporting period is specified in this chapter, the water supplier shall use a laboratory that will report to the department the results of any test measurement or analysis required by this chapter within one of the following time periods, whichever is shortest:

(a) The first 10 days following the month in which the analysis is completed.

(b) The first 10 days following the end of the required monitoring period as stipulated by the department.

(2) **VIOLATION REPORTING.** Unless another time period is specified in this chapter, the water supplier shall report to the department, no later than 24 hours after receiving the test results, the failure to comply with any maximum contaminant level, or monitoring requirement, or treatment technique set forth in this chapter.

(3) REPORTING RESPONSIBILITY. The supplier of water is not required to report analytical results to the department if the laboratory doing the analysis has reported the results electronically to the department within the time frames contained in this section. The water supplier is responsible for analytical results that are not reported within the required time frames.

(4) ELECTRONIC REPORTING. (a) When determining compliance with any water quality monitoring, or drinking water maximum contaminant levels specified in this chapter, the department shall accept analytical results only from laboratories that report results directly to the department in a department approved electronic format and are certified under ch. ATCP 77, ch. NR 149 for safe drinking water analyses or laboratories approved by EPA for radionuclide analyses.

(b) Results of microbiological samples collected to satisfy requirements of subch. I shall be reported to the department and the water supplier within 24 hours of the time the results are obtained by the laboratory. When results are obtained on a weekend or holiday, the results shall be provided to the water supplier and the department as soon as practicable.

(c) Analytical results other than those under par. (b) obtained to satisfy requirements of this chapter shall be reported as required under subs. (1) and (2).

(d) The department may approve submission of compliance data required under this chapter in alternate formats on a case-by-case basis if the alternate format does not create a delay in determining compliance with any requirement in this chapter or have the potential for delaying response to a public health threat.

(5) PUBLIC NOTICE REPORTING. The water supplier, within 10 days of completion of each public notification required under subch. VII, shall submit to the department a certification that it has fully complied with the public notification regulations. The water supplier shall include with this certification a representative copy of each type of notice distributed, published, posted, or made available to the persons served by the public water system or to the media, or both.

(6) MONTHLY OPERATING REPORTS – WITHOUT FILTRATION. A water supplier for a public water system that uses a groundwater source under the direct influence of surface water and does not provide filtration treatment shall report monthly to the department the information specified in this subsection.

(a) Source water quality information shall be reported to the department within 10 days after the end of each month the public water system serves water to the public. Information that shall be reported includes:

1. The cumulative number of months for which results are reported.
2. The number of fecal or total coliform samples, whichever are analyzed during the month, or if the water supplier monitors for both, only the number of fecal coliform samples, the dates of sample collection, and the dates when the turbidity level exceeded 1 NTU.
3. The number of samples during the month that had equal to or less than 20/100 ml fecal coliforms or equal to or less than 100/100 ml total coliforms, whichever are analyzed.
4. The cumulative number of fecal or total coliform samples, whichever are analyzed, during the previous 6 months the public water system served water to the public.
5. The cumulative number of samples that had equal to or less than 20/100 ml fecal coliforms or equal to or less than 100/100 ml total coliforms, whichever are analyzed, during the previous 6 months the public water system served water to the public.
6. The percentage of samples that had equal to or less than 20/100 ml fecal coliforms or equal to or less than 100/100 ml total coliforms, whichever are analyzed, during the previous 6 months the public water system served water to the public.
7. The maximum turbidity level measured during the month, the dates of occurrence for any measurements which exceeded 5 NTU, and the dates the occurrences were reported to the department.
8. For the first 12 months of record keeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after one year of record keeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 12 months the public water system served water to the public.
9. For the first 120 months of record keeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after 10 years of record keeping for turbidity measurements, the dates and cumulative

number of events during which the turbidity exceeded 5 NTU in the previous 120 months the public water system served water to the public.

(b) Disinfection information specified in s. NR 810.38 (1) shall be reported to the department within 10 days after the end of each month the public water system serves water to the public. Information that shall be reported includes:

1. For each day, the lowest measurement of residual disinfectant concentration in mg/l in water entering the distribution system.

2. The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/l and when the department was notified of the occurrence.

3. The daily residual disinfectant concentrations (in mg/l) and disinfectant contact times (in minutes) used for calculating the CT values.

4. If chlorine is used, the daily measurements of pH of disinfected water following each point of chlorine disinfection.

5. The daily measurements of water temperature in °C following each point of disinfection.

6. The daily CT_{calc} and CT_{calc}/CT_{99.9} values for each disinfectant measurement or sequence and the sum of all CT_{calc}/CT_{99.9} values ($\Sigma(\text{CT}_{\text{calc}}/\text{CT}_{99.9})$) before or at the first customer.

7. The daily determination of whether disinfection achieves adequate *Giardia lamblia* cyst and virus inactivation, i.e., whether (CT_{calc}/CT_{99.9}) is at least 1.0, or where disinfectants other than chlorine are used, other indicator conditions that the department determines are appropriate, are met.

8. The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to s. NR 810.31:

a. Number of instances where the residual disinfectant concentration is measured;

b. Number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

c. Number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

d. Number of instances where no residual disinfectant concentration is detected and where HPC is > 500/ml;

e. Number of instances where the residual disinfectant concentration is not measured and HPC is > 500/ml;

f. For the current and previous month the public water system serves water to the public, the value of "V" in the following formula:

$$V = c + d + e/a + b \times 100$$

where:

a = the value in this subd. 8. a.

b = the value in this subd. 8. b.

c = the value in this subd. 8. c.

d = the value in this subd. 8. d.

e = the value in this subd. 8. e.

g. If the department determines, based on site specific considerations, that a water supplier has no means for having a sample transported and analyzed for HPC by a certified laboratory within the requisite time and temperature conditions specified by s. NR 810.38 and that the public water system is providing adequate disinfection in the distribution system, the requirements of this subd. 8. a. to f. do not apply.

9. A water supplier need not report the data listed in subds. 1. and 3. to 6. if all data listed in par. (b) remain on file at the public water system and department determines that:

a. The water supplier has submitted to the department all the information required by subds. 1. to 8. for at least 12 months; and

b. The department has determined that the public water system is not required to provide filtration treatment.

(c) No later than 10 days after September 30, the end of each federal fiscal year, each water supplier shall provide to the department a report which summarizes the public water system's compliance with all wellhead protection program requirements specified in s. NR 810.30(2)(b).

(d) No later than 10 days after September 30, the end of each federal fiscal year, each water supplier shall provide to the department a report of the on-site inspection conducted during that year pursuant to s. NR 810.32(2)(c), unless the on-site inspection was conducted by the department. If the inspection was conducted by the department, the department shall provide a copy of its report to the public water system.

(e) 1. Each water supplier, upon discovering that a waterborne disease outbreak potentially attributable to their public water system has occurred, shall report that occurrence to the department as soon as possible, but no later than by the end of the next business day.

2. If at any time the turbidity exceeds 5 NTU, the water supplier shall consult with the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under s. NR 809.952(2)(c).

3. If at any time the disinfectant residual falls below 0.2 mg/l in the water entering the distribution system, the water supplier shall notify the department as soon as possible, but no later than by the end of the next business day. The water supplier also shall notify the department by the end of the next business day whether or not the residual was restored to at least 0.2 mg/l within 4 hours.

(7) MONTHLY OPERATING REPORTS – WITH FILTRATION. A water supplier for a public water system that uses a surface water source or a groundwater source under the direct influence of surface water and provides filtration treatment shall report monthly to the department the information specified in this subsection.

(a) Turbidity measurements as required by s. NR 810.38 (2)(a) shall be reported within 10 days after the end of each month the public water system serves water to the public. Information that shall be reported includes:

1. The total number of filtered water turbidity measurements taken during the month and the highest daily turbidity measurement for each day.

2. The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limits specified in s. NR 810.29 for the filtration technology being used.

3. The date and value of any turbidity measurements taken during the month which exceed 1.0 NTU for public water systems using conventional or direct filtration, or which exceed the maximum level set in s. NR 810.29.

(b) Disinfection information specified in s. NR 810.38 shall be reported to the department within 10 days after the end of each month the public water system serves water to the public. Information that shall be reported includes:

1. For each day, the lowest measurement of residual disinfectant concentration in mg/l in water entering the distribution system.

2. The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/l and when the department was notified of the occurrence.

3. The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to s. NR 810.31:

a. Number of instances where the residual disinfectant concentration is measured;

b. Number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

c. Number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

d. Number of instances where no residual disinfectant concentration is detected and where HPC is > 500/ml;

e. Number of instances where the residual disinfectant concentration is not measured and HPC is > 500/ml;

f. For the current and previous month the public water system serves water to the public, the value of "V" in the following formula:

$$V = c + d + e/a + b \times 100$$

where:

a = the value in this subd. 3. a.

b = the value in this subd. 3. b.

c = the value in this subd. 3. c.

d = the value in this subd. 3. d.

e = the value in this subd. 3. e.

g. If the department determines, based on site specific considerations, that a water supplier has no means for having a sample transported and analyzed for HPC by a certified laboratory within the requisite time and temperature conditions specified by s. NR 810.38 and that the public water system is providing adequate disinfection in the distribution system, the requirements of this subd. 3. a. to f. do not apply.

4. A water supplier need not report the data listed in subd. 1. if all data listed in this paragraph remains on file at the public water system and the department determines that the water supplier has submitted all the information required by this paragraph for at least 12 months.

(c) 1. If during any 4 hour monitoring period the turbidity exceeds 1.0 NTU or at any time during the month, turbidity measurements indicate the 95th percentile turbidity level of 0.5 NTU will be exceeded for that month, the water supplier shall inform the department as soon as possible, but no later than the end of the next business day.

2. If at any time the disinfectant residual falls below 0.2 mg/l in the water entering the distribution system, the water supplier shall notify the department as soon as possible, but no later than the end of the next business day. The water supplier also shall notify the department by the end of the next business day whether or not the residual was restored to at least 0.2 mg/l within 4 hours.

(8) RECORDS RETENTION AND REPORTING. Public water systems shall maintain the results of individual filter monitoring taken under s. NR 810.38(2) for at least 3 years. Water suppliers shall report that they have conducted individual filter turbidity monitoring under s. NR 809.765 within 10 days after the end of each month the public water system serves water to the public. Water suppliers shall report individual filter turbidity measurement results taken under s. NR 810.38(2) within 10 days after the end of each month the public water system serves water to the public only if measurements demonstrate one or more of the conditions in pars. (a) to (d). Water suppliers for public water systems that use lime softening may apply to the department for alternative exceedance levels for the levels specified in pars. (a) to (d) if they can demonstrate that higher turbidity levels in individual filters are due to lime carryover only and not due to degraded filter performance.

(a) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in 2 consecutive measurements taken 15 minutes apart, the water supplier shall report the filter number, the turbidity measurement, and the dates on which the exceedance occurred. In addition, the water supplier shall either produce a filter profile for the filter within 7 days of the exceedance, if the water supplier is not able to identify an obvious reason for the abnormal filter performance, and report that the profile has been produced or report the obvious reason for the exceedance.

(b) For any individual filter that has a measured turbidity level of greater than 0.5 NTU in 2 consecutive measurements taken 15 minutes apart at the end of the first 4 hours of continuous filter operation after the filter has been backwashed or otherwise taken offline, the water supplier shall report the filter number, the turbidity, and the dates on which the exceedance occurred. In addition, the water supplier shall either produce a filter profile for the filter within 7 days of the exceedance, if the water supplier not able to identify an obvious reason for the abnormal filter performance, and report that the profile has been produced or report the obvious reason for the exceedance.

(c) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in 2 consecutive measurements taken 15 minutes apart at any time in each of 3 consecutive months, the water supplier shall report the filter number, the turbidity measurement, and the dates on which the exceedance occurred. In addition, the water supplier shall conduct a self-assessment of the filter within 14 days of the exceedance and report that the self-assessment was conducted. The self-assessment shall consist of at least the following components: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report.

(d) For any individual filter that has a measured turbidity level of greater than 2.0 NTU in 2 consecutive measurements taken 15 minutes apart at any time in each of 2 consecutive months, the water supplier shall report the filter number, the turbidity measurement, and the dates on which the exceedance occurred. In addition, the water supplier shall arrange for the conduct of a comprehensive performance evaluation by the department or a third party approved by the department no later than 30 days following the exceedance and have the evaluation completed and submitted to the department no later than 90 days following the exceedance.

(e) The following turbidity exceedances shall be reported as follows:

1. If at any time the turbidity exceeds 1 NTU on representative samples of filtered water in a public water system using conventional filtration treatment or direct filtration, the water supplier system shall inform the department as soon as possible, but no later than the end of the next business day.

2. If at any time the turbidity in representative samples of filtered water exceeds the maximum level set by the department under s. NR 810.29(5) for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration or diatomaceous earth filtration, the water supplier shall inform the department as soon as possible, but no later than the end of the next business day.

(9) **WATERBORNE DISEASE REPORTING.** Each water supplier, upon discovering that a waterborne disease outbreak potentially attributable to the water supplier's public water system has occurred, shall report that occurrence to the department as soon as possible, but no later than by the end of the next business day.

(10) **ADDITIONAL RECORD REPORTING.** Upon the request of the department, the water supplier shall submit to the department copies of any records required to be maintained under s. NR 809.82 or copies of any documents then in existence which the department is entitled to inspect under the authority of s. 281.97, Stats.

(11) **REPORTING FORMAT.** The department may specify the format for reporting analytical results required under this chapter.

NR 809.82 Record maintenance. Any water supplier of a public water system subject to the provisions of this chapter shall retain on the premises or at a convenient location near the premises the following records:

(1) **ANALYTICAL RESULT RECORDS.** Records of microbiological analyses and turbidity analyses made pursuant to chs. NR 810 and 811 and this chapter shall be kept for not less than 5 years. Records of chemical analyses made pursuant to chs. NR 810 and 811 and this chapter shall be kept for not less than 10 years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that all of the following information is included:

(a) The date, place, and time of sampling, and the name of the person who collected the sample.

(b) Identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample or other special purpose sample.

(c) Date of analysis.

(d) Laboratory and person responsible for performing analysis.

(e) The analytical technique/method used.

(f) The results of the analysis.

(2) **VIOLATION CORRECTION RECORDS.** Records of action taken by the water supplier to correct violations of this chapter shall be kept for a period of not less than 3 years after the last action taken with respect to the particular violation involved.

(3) **SANITARY SURVEY RECORDS.** Copies of any written reports, summaries or communications relating to sanitary surveys of the public water system conducted by the water supplier, by a private consultant, or by any local, state or federal agency, shall be kept for a period of not less than 10 years after completion of the sanitary survey involved.

(4) **CONDITIONAL WAIVER OR VARIANCE RECORDS.** Records concerning a conditional waiver or variance granted to the public water system shall be kept for a period of not less than 5 years following the expiration of the conditional waiver or variance.

(5) **LEAD AND COPPER CONTROL RECORDS.** The water supplier for any public water system subject to the requirements of subch. II shall retain on the premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, department determinations, and any other information required by ss. NR 809.542 to 809.549. Each water supplier shall retain the records for no less than 12 years.

(6) **PUBLIC NOTICE RECORDS.** The department shall keep copies of public notices issued pursuant to subch. VII and certifications made to the department pursuant to s. NR 809.80 for 3 years after issuance.

(7) **MONITORING PLAN RECORDS.** Copies of monitoring plans developed pursuant to this chapter shall be kept for the same period of time as the records of analyses taken under the plan are required to be kept under sub. (1), except as specified elsewhere in this chapter.

NR 809.83 Consumer confidence report applicability and deadlines. (1) **PURPOSE AND APPLICABILITY.** Water supplier for community water systems shall deliver to their customers an annual report containing information

on the quality of the water and the characterization of risks, if any, from exposure to contaminants detected in the drinking water delivered by their public water system. The report shall be written in an accurate and understandable manner.

(a) Customers under this paragraph are defined as billing units or service connections to which water is delivered by a community water system.

(b) Detected under this paragraph refers to all contaminants identified in subch. I and means any quantity reported by a safe drinking water certified laboratory.

(2) DEADLINES. (a) Each existing community water system shall deliver its report by July 1 annually. Reports shall contain data collected during, or prior to, the previous calendar year.

(b) A new community water system shall deliver its first report by July 1 of the year after its first full calendar year in operation and annually thereafter.

(c) A community water system that sells water to another community water system shall deliver the applicable information required in s. NR 809.833 to the buyer system by one of the following dates:

1. No later than April 1 annually.

2. On a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

NR 809.833 Content of consumer confidence reports. Water suppliers for each community water system shall provide to their customers an annual report that contains all of the information specified in this section and s. NR 809.835.

(1) INFORMATION ON THE SOURCE OF THE WATER DELIVERED. Each report shall identify the sources of the water delivered by the community water system by providing information on all of the following:

(a) The type of the water, including, surface water, groundwater.

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

(c) If a source water assessment has been completed, the report shall notify consumers of the availability of this information and the means to obtain it. In addition, water suppliers are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. If a public water system has received a source water assessment from the department, the report shall include a brief summary of the public water system's susceptibility to potential sources of contamination, using language provided by the department or written by the water suppliers.

(2) DEFINITIONS. (a) Each report shall include all of the following definitions:

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

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

(b) A report for a community water system operating under a variance or an exemption issued under subch. VIII shall include the following definition, "Variances and Exemptions: state or EPA permission not to meet an MCL or a treatment technique under certain conditions."

(c) A report which contains data on contaminants which EPA regulates using any of the following terms shall include the applicable definitions:

1. "Treatment technique: A required process intended to reduce the level of a contaminant in drinking water."

2. "Action level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a public water system shall follow."

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

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

(3) INFORMATION ON DETECTED CONTAMINANTS. With the exception of *Cryptosporidium*, reports shall contain the following information in the specified format, for regulated contaminants subject to a MCL, action level,

maximum residual disinfectant level, microbial contaminants, or treatment technique, unregulated contaminants for which monitoring is required under subch. I, and disinfection by-products for which monitoring is required under subchs. III:

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

(b) The data shall be derived from data collected to comply with EPA and department monitoring and analytical requirements during calendar year 1998 for the first report and subsequent calendar years thereafter except that:

1. If a public water system is allowed to be monitored for regulated contaminants less often than once a year, the tables shall include the date and results of the most recent sampling and the report shall include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. No data older than 5 years need be included.

2. Results of monitoring in compliance with requirements issued under 40 CFR Sub. D, part 141.142 and 141.143 under the information collection rule need only be included for 5 years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

(c) For detected regulated contaminants, listed in Appendix A to this subchapter, the tables shall contain all of the following:

1. The MCL for that contaminant expressed as a number equal to or greater than 1.0, as provided in Appendix A to this subchapter.

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

3. If there is no MCL for a detected contaminant, the table shall indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report shall include the definitions for treatment technique or action level, or both, as appropriate, specified in this paragraph.

4. For contaminants subject to an MCL, except turbidity and total coliforms, the highest contaminant level used to determine compliance with requirements of this chapter and the range of detected levels as follows:

a. When compliance with the MCL is determined annually or less frequently: the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.

b. When compliance with the MCL is determined by calculating a running annual average of all samples taken at a sampling point: the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL.

c. When compliance with the MCL is determined on a public water system-wide basis by calculating a running annual average of all samples at all sampling points: the average and range of detection expressed in the same units as the MCL.

Note: When rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in Appendix A of this subchapter.

5. For turbidity:

a. When it is reported pursuant to s. NR 810.29, the highest average monthly value.

b. When it is reported pursuant to s. NR 810.29, the highest monthly value. The report should include an explanation of the reasons for measuring turbidity.

c. When it is reported pursuant to s. NR 810.29, the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in s. NR 810.29 for the filtration technology being used. The report should include an explanation of the reasons for measuring turbidity.

6. For lead and copper: the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level.

7. For total coliform, one of the following:

a. The highest monthly number of positive samples for public water systems collecting fewer than 40 samples per month.

b. The highest monthly percentage of positive samples for public water systems collecting at least 40 samples per month.

8. For fecal coliform, the total number of positive samples.

9. The likely sources of detected contaminants to the best of the water supplier's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and should be used when available to the water supplier. If the water supplier lacks specific information on the likely source, the report shall include one or more of the typical sources for that contaminant listed in Appendix A to this subchapter that are most applicable to the public water system.

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

(e) The tables shall clearly identify any data indicating violations of MCLs or treatment techniques and the report shall contain a clear and readily understandable explanation of the violation including: the length of the violation, the potential adverse health effects, and actions taken by the water supplier to address the violation. To describe the potential health effects, the water supplier shall use the relevant language of Appendix A to this subchapter.

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

(4) INFORMATION ON CRYPTOSPORIDIUM, RADON AND OTHER CONTAMINANTS. (a) If the water supplier has performed any monitoring for *Cryptosporidium*, including monitoring performed to satisfy the requirements of 40 CFR sub. D, part 141, s. 141.143 (information collection rule), which indicates that *Cryptosporidium* may be present in the source water or the finished water, the report shall include all of the following:

1. A summary of the results of the monitoring.
2. An explanation of the significance of the results.

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

1. The results of the monitoring.
2. An explanation of the significance of the results.

(c) If the water supplier has performed additional monitoring which indicates the presence of other contaminants in the finished water, the report shall include all of the following:

1. The results of the monitoring.
2. An explanation of the significance of the results noting the existence of a health advisory or a proposed regulation.

Note: To determine the significance of the results it is recommended that water supplier call the Safe Drinking Water Hotline at 800-426-4791.

(5) COMPLIANCE WITH ALL DRINKING WATER REGULATIONS. In addition to the requirements of sub. (3) (f), the report shall note any violation that occurred during the year covered by the report of a requirement listed in this subsection. The report also shall include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the water supplier has taken to correct the violation. All of the following violations shall be included:

(a) Failure to comply with requirements for monitoring and reporting of compliance data.

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

(c) Lead and copper control requirements that are prescribed by subch. II. For public water systems that fail to take one or more actions prescribed by s. NR 809.541 (4), 809.542, 809.543, 809.544 or 809.545, the report shall include the applicable language of Appendix A to this subchapter for lead, copper or both.

(d) Treatment techniques for Acrylamide and Epichlorohydrin that are prescribed by subch. I. For public water systems that violate the requirements of s. NR 809.26 (4), the report shall include the relevant language from Appendix A to this subchapter.

(e) Failure to comply with required recordkeeping of compliance data.

(f) Failure to comply with special monitoring requirements prescribed by ss. NR 809.13 and 809.26.

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

(6) EXEMPTIONS. If a public water system is operating under the terms of a conditional waiver or variance issued under subch. VIII, the report shall contain all of the following:

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

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

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

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

(7) ADDITIONAL INFORMATION. (a) *Contaminants in drinking water.* The report shall contain a brief explanation regarding contaminants, which may reasonably be expected to be found in drinking water including bottled water. This explanation may include the language of subs. 1. to 3. or water supplier may use their own comparable language. The report also shall include the language of subd. 4.

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

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

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

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

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

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

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

3. "In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which shall provide the same protection for public health."

4. "Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the environmental protection agency's safe drinking water hotline (800-426-4791)."

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

(c) *Non-English translations.* In communities where non-English speaking residents comprise a significant portion of the population served, the report shall contain information in the appropriate language or languages regarding the importance of the report, or contain a telephone number or address where the residents may contact the public water system to obtain a translated copy of the report or assistance in the appropriate language. In communities where a specific non-English speaking group comprises at least 5% of the population of the community served, the report shall be translated into that language.

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

(e) *Additional public education.* The water suppliers may include additional information as they deem necessary for public education consistent with, and not detracting from, the purpose of the report.

(f) *Public water systems with significant deficiencies or E. coli positives under s. NR 809.325.*

1. A water supplier for any groundwater system that receives notice from the department of a significant deficiency or notice from a laboratory of a fecal indicator-positive groundwater source sample required under s. NR 809.325(2), that is not invalidated by the department under s. NR 809.323(2), must inform their customers of any significant deficiency that is uncorrected at the time of the next report or of any fecal indicator-positive groundwater source sample in the next report.

2. The water supplier must continue to inform the public annually until the department determines that particular significant deficiency is corrected or the fecal contamination in the groundwater source is addressed under s. NR 809.327(1). Each report must include all the following applicable elements:

a. The nature of the particular significant deficiency or the source of the fecal contamination, if the source is known, and the date the significant deficiency was identified by the department or the dates of the fecal indicator-positive groundwater source samples.

b. If the fecal contamination in the groundwater source has been addressed under s. NR 809.327(1) and the date of such action.

c. For each significant deficiency or fecal contamination in the groundwater source that has not been addressed under s. NR 809.327(1), the department approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed.

d. If the public water system receives notice of a fecal indicator-positive groundwater source sample that is not invalidated by the State under s. NR 809.323(2), the potential health effects using the health effects language of Appendix A of subchapt. V.

3. If directed by the department, a water supplier for a public water system with significant deficiencies that have been corrected before the next report is issued must inform the customers, of the public water system, of the significant deficiency, how the deficiency was corrected, and the date of correction under subd. 1.

NR 809.835 Required additional health information for consumer confidence reports. (1) ADDITIONAL HEALTH INFORMATION FOR VULNERABLE POPULATIONS. All reports shall prominently display the following language: "Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the environmental protection agency's safe drinking water hotline at 800-426-4791."

(2) **ADDITIONAL ARSENIC INFORMATION.** Beginning July 1, 2002 a water supplier for a public water system that detects arsenic above 0.005 mg/L and up to and including 0.01 mg/L:

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

(b) May write their own educational statement, but only in consultation with the department.

(3) **ADDITIONAL LEAD INFORMATION.** Water suppliers for public water systems which detect lead above the action level in more than 5%, but fewer than 10%, of homes sampled:

(a) Shall include a short informational statement about the special impact of lead on children using language such as: "Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials

used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the environmental protection agency's safe drinking water hotline (800-426-4791)."

(b) May write their own educational statement, but only in consultation with the department.

NR 809.837 Consumer confidence report delivery and recordkeeping. (1) GENERAL DELIVERY REQUIREMENTS. Except as provided in sub. (7), water suppliers for each community water system shall mail or otherwise directly deliver one copy of the report to each customer.

(2) **DELIVERY TO CONSUMERS THAT ARE NOT BILLED.** The water supplier shall make a good faith effort to reach consumers who do not get water bills, using means recommended by the department. EPA expects that an adequate good faith effort will be tailored to the consumers who are served by the public water system but are not bill-paying customers, such as renters or workers. A good faith effort to reach consumers would include a mix of methods appropriate to the particular public water system such as: Posting the reports on the Internet; mailing to postal patrons in metropolitan areas; advertising the availability of the report in the news media; publication in a local newspaper; posting in public places such as cafeterias or lunch rooms of public buildings; delivery of multiple copies for distribution by single-biller customers such as apartment buildings or large private employers; delivery to community organizations.

(3) **DELIVERY TO THE DEPARTMENT.** No later than the date the public water system is required to distribute the report to its customers, the water supplier for each community water system shall mail a copy of the report to the department, followed within 3 months by a certification that the report has been distributed to customers, and that the information is correct and consistent with the compliance monitoring data previously submitted to the department.

(4) **DELIVERY TO OTHER AGENCIES.** No later than the date the public water system is required to distribute the report to its customers, the water supplier for each community water system shall deliver the report to any other agency or clearinghouse identified by the department.

(5) **REPORT AVAILABILITY.** The water supplier for each community water system shall make its reports available to the public upon request.

(6) **INTERNET POSTING.** The water supplier for each community water system serving 100,000 or more persons shall post its current year's report to a publicly accessible site on the Internet.

(7) **GOVERNOR'S WAIVER OF REPORT DELIVERY.** The Governor of Wisconsin or the governor's designee may waive the requirement of sub. (1) for community water systems serving fewer than 10,000 persons.

(a) The water supplier for a public water system that has received a waiver under this subsection shall do all of the following:

1. Publish the reports in one or more local newspapers serving the area in which the public water system is located.

2. Inform the customers that the reports will not be mailed, either in the newspapers in which the reports are published or by other means approved by the department:

3. Make the reports available to the public upon request.

(b) The water supplier for a public water system serving 500 or fewer persons that has received a waiver under this subsection may forego the requirements of par. (a) 1. and 2. if they provide notice at least once per year to their customers by mail, door-to-door delivery or by posting in an appropriate location that the report is available upon request.

(8) **RETENTION OF REPORTS.** Any public water systems subject to this subchapter shall retain copies of its consumer confidence report for no less than 3 years.

**Appendix A to Subchapter V
Consumer Confidence Report Information**

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR; multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Microbiological contaminants:						
Total Coliform Bacteria	MCL: (public water systems that collect ≥ 40 samples/month) 5% of monthly samples are positive; (systems that collect < 40 samples/month) 1 positive monthly sample.	N/A	MCL: (public water systems that collect ≥ 40 samples/month) 5% of monthly samples are positive; (public water systems that collect < 40 samples/month) 1 positive monthly sample.	0	Naturally present in the environment	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
Fecal coliform and E. coli	0	N/A	0	0	Human and animal fecal waste.	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
Total organic carbon (ppm)	TT	N/A	TT	N/A	Naturally present in the environment	Total organic carbon has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. Their byproducts include trihalomethanes and haloacetic acids. Drinking water containing these

						byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
Turbidity (NTU)	TT	N/A	TT	N/A	Soil runoff.	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
Fecal Indicators: enterococci or coliphage	TT		TT	N/A	Human and animal fecal waste	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems
Radioactive contaminants:						
Beta/photon emitters (mrem/yr)	4 mrem/yr	N/A	4	N/A	Decay of natural and man-made deposits.	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Alpha emitters (pCi/l)	15 pCi/l	N/A	15	N/A	Erosion of natural deposits.	Certain minerals are radioactive and may emit a

						form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Combined radium (pCi/l)	5 pCi/l	N/A	5	N/A	Erosion of natural deposits.	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
Uranium (ug/l)	30 ug/l	N/A	30	0	Erosion of natural deposits.	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer or kidney toxicity.

Inorganic contaminants:

Antimony (ppb)	.006	1000	6	6	Discharge from petroleum refineries, fire retardants, ceramics, electronics, solder.	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
Arsenic (ppb)	0.010 ¹	1000	10 ¹	0 ¹	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
Asbestos (MFL)	7 MFL	N/A	7	7	Decay of asbestos cement water; Erosion of natural deposits.	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
Barium (ppm)	2	N/A	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Beryllium (ppb)	.004	1000	4	4	Discharge from metal refineries	Some people who drink water containing beryllium