

WAC 246-290-300 Monitoring requirements. (1) General.

(a) The monitoring requirements specified in this section are minimums. The department may require additional monitoring when:

- (i) Contamination is present or suspected in the water system;
- (ii) A groundwater source is determined to be a potential GWI;
- (iii) The degree of source protection is not satisfactory;
- (iv) Additional monitoring is needed to verify source vulnerability for a requested monitoring waiver;
- (v) Under other circumstances as identified in a department order; or
- (vi) Additional monitoring is needed to evaluate continuing effectiveness of a treatment process where problems with the treatment process may exist.

(b) Special purpose samples collected by the purveyor do not count toward fulfillment of the monitoring requirements of this chapter unless the quality of data and method of sampling and analysis are acceptable to the department.

(c) The purveyor shall ensure samples required by this chapter are collected, transported, and submitted for analysis according to EPA-approved methods. The analyses must be performed by a laboratory accredited by the state using EPA-approved methods or other department-approved methods. Qualified water utility, accredited laboratory, health department personnel, and other parties approved by the department may conduct measurements for pH, temperature, residual disinfectant concentration, alkalinity, bromide, chlorite, TOC, SUVA, turbidity, calcium, conductivity, orthophosphate, and silica as required by this chapter, provided, these measurements are made according to EPA approved methods.

(d) Compliance samples required by this chapter must be taken at locations listed in Table 4 of this section.

(e) Purveyors failing to comply with a monitoring requirement shall notify:

- (i) The department under WAC 246-290-480; and
- (ii) The owner or operator of any consecutive system served and the appropriate water system users under 40 C.F.R. 141.201 and Part 7, Subpart A of this chapter.

(2) Selling and receiving water.

(a) Source monitoring. Purveyors, with the exception of those that "wheel" water to their consumers (i.e., sell water that has passed through another purchasing purveyor's distribution system), shall conduct source monitoring under this chapter for the sources under their control. The level of monitoring must satisfy the monitoring requirements associated with the total population served by the source.

(b) Distribution system monitoring. The purveyor of a system that receives and distributes water shall perform distribution-related monitoring requirements. Monitoring must include, but not be limited to, the following:

- (i) Collect coliform samples under subsection (3) of this section;
- (ii) Collect disinfection byproduct samples as required by subsection (6) of this section;
- (iii) Perform the distribution system residual disinfectant concentration monitoring under subsection (6) of this section, and as required under WAC 246-290-451, 246-290-664, or 246-290-694. Systems with fewer than one hundred connections shall measure residual disinfectant concentration at the same time and location that a routine or

repeat coliform sample is collected, unless the department determines that more frequent monitoring is necessary to protect public health;

(iv) Perform lead and copper monitoring required under 40 C.F.R. 141.86, 141.87, and 141.88;

(v) Perform the distribution system monitoring under 40 C.F.R. 141.23(b) for asbestos if applicable;

(vi) Other monitoring as required by the department.

(c) Reduced monitoring for regional programs. The receiving purveyor may receive reductions in the coliform, lead and copper, disinfection byproduct (including THMs and HAA5) and distribution system disinfectant residual concentration monitoring requirements, provided the receiving system:

(i) Purchases water from a purveyor that has a department-approved regional monitoring program;

(ii) Has a written agreement with the supplying system or regional water supplier that is acceptable to the department, and which identifies the responsibilities of both the supplying and receiving system(s) with regards to monitoring, reporting and maintenance of the distribution system; and

(iii) Has at least one compliance monitoring location for disinfection byproducts, if applicable.

(d) Periodic review of regional programs. The department may periodically review the sampling records of public water systems participating in a department-approved monitoring program to determine if continued reduced monitoring is appropriate. If the department determines a change in the monitoring requirements of the receiving system is appropriate:

(i) The department shall notify the purveyor of the change in monitoring requirements; and

(ii) The purveyor shall conduct monitoring as directed by the department.

(3) Bacteriological.

(a) The purveyor shall be responsible for collection and submittal of coliform samples from representative points throughout the distribution system. Samples must be collected after the first service and at regular time intervals each month the system provides water to consumers. Samples must be collected that represent normal system operating conditions.

(i) Systems providing disinfection treatment shall measure the residual disinfectant concentration within the distribution system at the same time and location of routine and repeat samples.

(ii) Systems providing disinfection treatment shall assure that disinfectant residual concentrations are measured and recorded on all coliform sample report forms submitted for compliance purposes.

(b) Coliform monitoring plan.

(i) Systems shall develop a written coliform monitoring plan that identifies sampling sites and a sample collection schedule that are representative of water throughout the distribution system. The plan is subject to department review and approval. Systems shall collect total coliform samples according to the plan. Monitoring may take place at a customer's premises, dedicated sampling station, or other designated compliance sampling location. Routine and repeat sample sites and any sampling points necessary to meet the requirements of Part 6 of this chapter and WAC 246-290-300 (3)(h) must be identified in the plan.

(ii) Systems shall collect samples at regular time intervals throughout the month, except for systems that use groundwater and

serve four thousand nine hundred or fewer people may collect all required samples on a single day if the samples are taken from different sites.

(iii) Systems shall take at least the minimum number of required samples even if the system has had an *E. coli* MCL violation or has exceeded the coliform treatment technique triggers in WAC 246-290-320(2).

(iv) Systems may conduct more compliance monitoring than is required under subsection (3)(b) of this section to investigate potential problems in the distribution system and use monitoring as a tool to assist in identifying problems. Systems may take more than the minimum number of required routine samples and must include the results in calculating whether or not the coliform treatment technique triggers in WAC 246-290-320(2) have been exceeded only if the samples are taken in accordance with the plan and are representative of water throughout the distribution system.

(v) Systems shall identify repeat monitoring locations in the plan. Unless the provisions of subsection (3)(b)(i) through (iv) of this section are met, the system shall collect at least one repeat sample from the sample tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sample site. If a total coliform-positive sample is at the end of the distribution system, or one service connection away from the end of the distribution system, the system shall still take all required repeat samples. The department may allow an alternative sampling location in lieu of the requirement to collect at least one repeat sample upstream or downstream of the original sampling site. Systems may propose repeat monitoring locations to the department that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its plan. The system shall design its SOP to focus the repeat samples at locations that best verify and determine the extent of potential contamination of the distribution system area based on specific situations. The department may modify the SOP or require alternative monitoring locations as needed.

(vi) The purveyor shall:

(A) Keep the coliform monitoring plan on file with the system and make it available to the department for inspection upon request;

(B) Revise or expand the plan at any time the plan no longer ensures representative monitoring of the system, or as directed by the department; and

(C) Submit the plan to the department for review and approval when requested and as part of the water system plan required under WAC 246-290-100.

(c) Special purpose coliform samples. Special purpose coliform samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, must not be used to determine whether or not the coliform treatment technique trigger has been exceeded. Repeat samples taken in accordance with subsection (3) of this section are not considered special purpose coliform samples, and must be used to determine whether or not the coliform treatment technique trigger has been exceeded.

(d) Invalidation of total coliform samples. A total coliform-positive sample invalidated under subsection (3) of this section does not count toward meeting the minimum monitoring requirements of this section.

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

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

(B) The department, on the basis of the results of repeat samples collected as required under subsection (3) of this section, determines that the total coliform-positive samples resulted from a domestic or other nondistribution system plumbing problem. The department may not invalidate a sample on the basis of repeat sample results unless all repeat samples collected at the same tap as the original total coliform-positive sample are also total coliform-positive, and all repeat samples collected at a location other than the original tap are total coliform-negative. For example, the department may not invalidate a total coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative, or if the system has only one service connection; or

(C) The department has substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition that does not reflect water quality in the distribution system. In this case, the system shall still collect all repeat samples required under subsection (3) of this section, and use the samples to determine whether a coliform treatment technique trigger under WAC 246-290-320(2) has been exceeded.

(ii) Unless total coliforms are detected, a laboratory shall invalidate a total coliform sample if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined such as the multiple-tube fermentation technique, produces a turbid culture in the absence of an acid reaction in the presence-absence coliform test, or exhibits confluent growth or produces colonies TNTC with an analytical method using a membrane filter such as a membrane filter technique. If a laboratory invalidates a sample because of such interference, the system shall collect another sample from the same location as the original sample within twenty-four hours of notification of the interference problem, and have it analyzed for the presence of total coliforms. The system shall continue to re sample within twenty-four hours and have the samples analyzed until it obtains a valid result. The department may waive the twenty-four hour time limit on a case-by-case basis.

(e) Monitoring frequency. The number of required routine coliform samples is based on total population served.

(i) Purveyors of community systems shall collect and submit for analysis no less than the number of routine samples listed in Table 2 of this section during each calendar month of operation;

(ii) Unless directed otherwise by the department, purveyors of noncommunity systems shall collect and submit for analysis no less than the number of samples required in Table 2 of this section. Each month's population must be based on the average daily population and must include all residents and nonresidents served during that month. During months when the average daily population served is less than twenty-five, routine sample collection is not required when:

(A) Using only protected groundwater sources;

(B) The system has a clean compliance history for a minimum of twelve months;

(C) The system has no sanitary defects or significant deficiencies;

(D) The system has detected no total coliform-positive routine or repeat samples in the previous month; and

(E) The system has collected and submitted for analysis one routine sample during one of the previous two months.

(iii) Purveyors of NTNC and TNC systems are not required to collect routine samples in months when the population served is zero.

(iv) Purveyors of systems serving both a resident and a nonresident population shall base their minimum sampling requirement on the total of monthly populations served, both resident and nonresident as determined by the department, but no less than the minimum required in Table 2 of this section.

(v) Seasonal systems.

(A) In accordance with WAC 246-290-480 (2)(f)(ii), seasonal systems shall certify that a department-approved start-up procedure, which may include a requirement for start-up sampling, was completed prior to serving water to the public.

(B) Seasonal systems shall monitor every month that it is in operation unless it meets the criteria in subsection (3)(e)(ii) of this section.

(C) The department may exempt a seasonal system from some or all of the requirements in subsection (3)(e)(v)(A) of this section if the entire distribution system remains pressurized during the entire period that the system is not operating, except that systems that monitor less frequently than monthly shall still monitor during the vulnerable period designated by the department.

Table 2
Total Coliform Monitoring Frequency

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

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

*Noncommunity systems using only protected groundwater sources and serving less than twenty-five individuals, may collect and submit for analysis, one sample every three months per WAC 246-290-300 (3)(e)(ii).

(f) Repeat monitoring.

(i) If a routine sample taken under subsection (3) of this section is total coliform-positive, the system shall collect a set of repeat samples within twenty-four hours of being notified of the positive result. Additional treatment, such as batch or shock chlorination must not be started prior to the collection of repeat samples unless the department gives prior authorization. The purveyor shall contact the department to determine the best interim approach in this situation. The system shall collect no fewer than three repeat samples for each total coliform-positive sample found. The department may extend the twenty-four hour limit on a case-by-case basis if the system has a logistical problem in collecting the repeat samples within twenty-four hours that is beyond its control. Following the collection of repeat samples, and before the analytical results are known, the system may provide interim precautionary treatment or other means to protect public health.

(ii) The system shall collect all repeat samples on the same day, except the department may allow a system with a single connection to collect the required set of repeat samples over a three-day period or to collect a larger volume of repeat samples in one or more sample containers of any size, as long as the total volume collected is at least 300 mL.

(iii) The system shall collect an additional set of repeat samples in the manner specified in subsection (3)(f)(i) through (iii) of this section if one or more repeat samples in the current set of repeat samples is total coliform-positive. The system shall collect the additional set of repeat samples within twenty-four hours of being notified of the positive result, unless the department extends the time limit as provided in subsection (3)(f)(i) of this section. The system shall continue to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in WAC 246-290-320 (2)(a) has been exceeded as a re-

sult of a repeat sample being total coliform-positive and notifies the department. If a treatment technique trigger identified in WAC 246-290-320 (2)(a) is exceeded as a result of a routine sample being total coliform-positive, the system is required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.

(iv) After a system collects a routine sample and before it gets the results of the analysis of that sample, if it collects subsequent routine samples from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent samples as a repeat sample instead of as a routine sample.

(v) Results of all routine and repeat samples taken under subsection (3)(e) and (f) of this section not invalidated by the department under subsection (3)(d) of this section must be used to determine whether a coliform treatment technique trigger specified in WAC 246-290-320 (2)(a) has been exceeded.

(g) *E. coli* testing.

(i) If any routine or repeat sample is total coliform-positive, the system shall analyze that total coliform-positive culture medium to determine if *E. coli* are present. If *E. coli* are present, the system shall notify the department by the end of the day when the system is notified of the test result.

(ii) The department may allow a system, on a case-by-case basis, to forgo *E. coli* testing on a total coliform-positive sample if the system assumes that the total coliform-positive sample is *E. coli*-positive. Accordingly, the system shall notify the department as specified in WAC 246-290-320 (1)(a).

(h) Triggered source water monitoring.

(i) All groundwater systems with their own groundwater sources must conduct triggered source water monitoring unless the following conditions exist:

(A) The system has submitted a project report and received department approval that it provides at least 4-log treatment of viruses using inactivation, removal, or a department-approved combination of 4-log virus inactivation and removal before or at the first customer for each groundwater source; and

(B) The system is conducting compliance monitoring under WAC 246-290-453(2).

(ii) Any groundwater source sample required under this subsection (3) must be collected at the source prior to any treatment unless otherwise approved by the department.

(iii) Any groundwater source sample collected under this subsection (3) must be at least 100 mL in size and must be analyzed for *E. coli* using one of the analytical methods under 40 C.F.R. 141.402(c).

(iv) Groundwater systems shall collect at least one sample from each groundwater source in use at the time a routine sample collected under subsection (3) of this section is total coliform-positive and not invalidated under subsection (3)(d) of this section. These source samples must be collected within twenty-four hours of notification of the total coliform-positive sample. The following exceptions apply:

(A) The twenty-four hour time limit may be extended if granted by the department and will be determined on a case-by-case basis. If an extension is granted, the system shall sample by the deadline set by the department.

(B) Systems with more than one groundwater source may meet the requirements of subsection (3)(h)(iv) of this section by sampling a

representative groundwater source or sources. The system shall have a department-approved triggered source water monitoring plan that identifies one or more groundwater sources that are representative of each monitoring site in the system's coliform monitoring plan under subsection (3)(b) of this section. The plan must be approved by the department before representative sampling will be allowed.

(v) Groundwater systems with an *E. coli* positive source water sample that is not invalidated under subsection (3)(h)(vii) of this section, shall:

(A) Notify the department by the end of the day when the system is notified of the test result.

(B) Provide Tier 1 public notice as required under Part 7, Subpart A of this chapter and special notification under WAC 246-290-71005 (4) and (5);

(C) If directed by the department, take corrective action as required under WAC 246-290-453(1); and

(D) Systems that are not directed by the department to take corrective action shall collect five additional samples from the same source within twenty-four hours of being notified of the *E. coli* positive source water sample. If any of the five additional samples are *E. coli* positive, the system shall take corrective action under WAC 246-290-453(1).

(vi) Any consecutive groundwater system that has a total coliform-positive routine sample collected under this subsection and not invalidated under subsection (3)(d) of this section shall notify each wholesale system it receives water from within twenty-four hours of being notified of the total coliform-positive sample and comply with subsection (3)(h) of this section.

(A) A wholesale groundwater system that receives notice from a consecutive system under subsection (3)(h)(vi) of this section shall conduct triggered source water monitoring under subsection (3)(h) of this section unless the department determines and documents in writing that the total coliform-positive sample collected was caused by a distribution system deficiency in the consecutive system.

(B) If the wholesale groundwater system source sample is *E. coli* positive, the wholesale system shall notify all consecutive systems served by that groundwater source within twenty-four hours of being notified of the results and shall meet the requirements of subsection (3)(h)(v) of this section.

(C) Any consecutive groundwater system receiving water from a source with an *E. coli* positive sample shall notify water system users as required under subsection (3)(h)(v)(B) of this section.

(vii) An *E. coli* positive groundwater source sample may be invalidated only if one of the following conditions apply:

(A) The system provides the department with written notice from the laboratory that improper sample analysis occurred; or

(B) The department determines and documents in writing that there is substantial evidence that the *E. coli* positive groundwater sample is not related to source water quality.

(viii) If the department invalidates an *E. coli* positive groundwater source sample, the system shall collect another source water sample within twenty-four hours of being notified by the department of its invalidation decision and have the sample analyzed using the same analytical method. The department may extend the twenty-four hour time limit as allowed under subsection (3)(h)(iv)(A) of this section.

(ix) Groundwater systems that fail to meet any of the monitoring requirements of subsection (3)(h) of this section shall conduct Tier 2 public notification under Part 7, Subpart A of this chapter.

(i) Assessment source water monitoring. If directed by the department, a groundwater system shall conduct assessment source water monitoring which may include, but is not limited to, the collection of at least one representative groundwater source sample each month the source provides groundwater to the public, for a minimum of twelve months.

(i) Sampling must be conducted as follows:

(A) Source samples must be collected at a location prior to any treatment. If the water system's configuration does not allow sampling at the source itself, the department may approve an alternative source sampling location representative of the source water quality.

(B) Source samples must be at least 100 mL in size and must be analyzed for *E. coli* using one of the analytical methods under 40 C.F.R. 141.402(c).

(ii) A groundwater system may use a triggered source water sample collected under subsection (3)(h) of this section to meet the requirements for assessment source water monitoring.

(iii) A groundwater system with an *E. coli* positive assessment source water sample that is not invalidated under subsection (3)(h)(vii) of this section, and consecutive systems receiving water from this source shall:

(A) Provide Tier 1 public notice under Part 7, Subpart A of this chapter and special notification under WAC 246-290-71005 (4) and (5); and

(B) Take corrective action as required under WAC 246-290-453(1).

(iv) A groundwater system that fails to conduct assessment source water monitoring as directed by the department shall provide Tier 2 public notice under Part 7, Subpart A of this chapter.

(4) Inorganic chemical and physical.

(a) A complete inorganic chemical and physical analysis must consist of the primary and secondary chemical and physical contaminants.

(i) Primary chemical and physical contaminants are antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate (as N), nitrite (as N), selenium, sodium, thallium, and for unfiltered surface water, turbidity. (Except that the MCL for arsenic under WAC 246-290-310 does not apply to TNC systems.)

(ii) Secondary chemical and physical contaminants are chloride, color, hardness, iron, manganese, specific conductivity, silver, sulfate, total dissolved solids, and zinc. Total dissolved solids are required only when specific conductivity exceeds seven hundred micromhos/centimeter.

(b) Purveyors shall monitor for all primary and secondary chemical and physical contaminants identified in WAC 246-290-310, Table 5 and Table 6. Samples must be collected in accordance with the monitoring requirements referenced in 40 C.F.R. 141.23 introductory text, 141.23(a) through 141.23(j), and 40 C.F.R. 143.4, except for composite samples for systems serving less than three thousand three hundred one persons. For these systems, compositing among different systems may be allowed if the systems are owned or operated by a department-approved satellite management agency.

(c) Samples required by this subsection must be taken at designated locations under 40 C.F.R. 141.23(a) through 141.23(j), and 40 C.F.R. 143.4, and Table 4 of this section.

- (i) Wellfield samples are allowed from department designated wellfields; and
- (ii) Under 40 C.F.R. 141.23 (a)(3), alternate sampling locations may be used if approved by the department. The process for determining these alternate sites is described in department guidance. Purveyors of community and NTNC systems may ask the department to approve an alternate sampling location for multiple sources within a single system that are blended prior to entry to the distribution system. Alternate sampling plans must address the following:
 - (A) Source vulnerability;
 - (B) Individual source characteristics;
 - (C) Previous water quality information;
 - (D) Status of monitoring waiver applications; and
 - (E) Other information deemed necessary by the department.
- (d) Composite samples:
 - (i) Under 40 C.F.R. 141.23 (a)(4), purveyors may ask the certified laboratory to composite samples representing as many as five individual samples from within one system. Sampling procedures and protocols are outlined in department guidance; and
 - (ii) For systems serving a population of less than three thousand three hundred one, the department may approve composite sampling between systems when those systems are part of an approved satellite management agency.
- (e) When the purveyor provides treatment for one or more inorganic chemical or physical contaminants, the department may require the purveyor to sample before and after treatment. The department shall notify the purveyor if and when this additional source sampling is required.
- (f) Inorganic monitoring plans.
 - (i) Purveyors of community and NTNC systems shall prepare an inorganic chemical monitoring plan and base routine monitoring on the plan.
 - (ii) The purveyor shall:
 - (A) Keep the monitoring plan on file with the system and make it available to the department for inspection upon request;
 - (B) Revise or expand the plan at any time the plan no longer reflects the monitoring requirements, procedures or sampling locations, or as directed by the department; and
 - (C) Submit the plan to the department for review and approval when requested and as part of the water system plan required under WAC 246-290-100.
- (g) Monitoring waivers.
 - (i) Purveyors may request in writing, a monitoring waiver from the department for any nonnitrate/nitrite inorganic chemical and physical monitoring requirements identified in this chapter.
 - (ii) Purveyors requesting a monitoring waiver shall comply with applicable subsections of 40 C.F.R. 141.23 (b)(3), and 141.23 (c)(3).
 - (iii) Purveyors shall update and resubmit requests for waiver renewals as applicable during each compliance cycle or period or more frequently as directed by the department.
 - (iv) Failure to provide complete and accurate information in the waiver application may be grounds for denial of the monitoring waiver.
- (h) The department may require the purveyor to repeat sample for confirmation of results.
 - (i) Purveyors with emergency and seasonal sources shall monitor those sources when they are in use.

(5) Lead and copper. Monitoring for lead and copper shall be conducted in accordance with 40 C.F.R. 141.86 (a) - (f), 141.87, and 141.88. All systems that have fewer than five drinking water taps used for human consumption shall collect at least one sample from each tap and then collect additional samples from those taps on different days during the monitoring period to meet the required number of samples as described in 40 C.F.R. 141.86(c).

(6) Disinfection byproducts (DBP), disinfectant residuals, and disinfection byproduct precursors (DBPP). Purveyors of community and NTNC systems providing water treated with chemical disinfectants and TNC systems using chlorine dioxide shall monitor as follows:

(a) General requirements.

(i) Systems shall collect samples during normal operating conditions.

(ii) All monitoring shall be conducted in accordance with the analytical requirements in 40 C.F.R. 141.131.

(iii) Systems required to monitor under this subsection shall prepare and implement a monitoring plan in accordance with 40 C.F.R. 141.132(f) or 40 C.F.R. 141.622, as applicable.

(A) Community and NTNC surface water and GWI systems that deliver water that has been treated with a disinfectant other than ultraviolet light and serve more than three thousand three hundred people shall submit a monitoring plan to the department.

(B) The department may require submittal of a monitoring plan from systems not specified in subsection (6)(a)(iii)(A) of this section, and may require revision of any monitoring plan.

(C) Failure to monitor for TTHM, HAA5, or bromate will be treated as a violation for the entire period covered by the annual average where compliance is based on a locational running annual average or running annual average of monthly or quarterly samples or averages, as applicable.

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

(b) Disinfection byproducts - Community and NTNC systems only.

(i) TTHMs and HAA5.

(A) Systems shall monitor for TTHM and HAA5 in accordance with 40 C.F.R. 141.620, 141.621, and 141.622.

(B) With department approval, systems may reduce monitoring in accordance with 40 C.F.R. 141.623.

(C) Systems on department-approved reduced monitoring schedules may be required to return to routine monitoring, or initiate increased monitoring in accordance with 40 C.F.R. 141.625 or 40 C.F.R. 141.627, as applicable.

(D) Systems must meet requirements of 40 C.F.R. 141.628 and 40 C.F.R. 141.625(c) to return to routine monitoring.

(E) Systems must calculate operational evaluation levels each calendar quarter and take action, as needed, in accordance with 40 C.F.R. 141.626.

(F) NTNC systems serving ten thousand or more people and community systems must comply with the provisions of 40 C.F.R. Subpart U - Initial Distribution System Evaluation under:

40 C.F.R. 141.600 General requirements.

40 C.F.R. 141.601 Standard monitoring.

40 C.F.R. 141.602	System specific studies.
40 C.F.R. 141.603	40/30 certification.
40 C.F.R. 141.604	Very small system waivers.
40 C.F.R. 141.605	Subpart V compliance monitoring location recommendations.

(ii) Chlorite - Only systems that use chlorine dioxide.

(A) Systems using chlorine dioxide shall conduct daily and monthly monitoring in accordance with 40 C.F.R. 141.132 (b) (2) (i) and additional chlorite monitoring in accordance with 40 C.F.R. 141.132 (b) (2) (ii).

(B) With department approval, monthly monitoring may be reduced in accordance with 40 C.F.R. 141.132 (b) (2) (iii) (B). Daily monitoring at entry to distribution required by 40 C.F.R. 141.132 (b) (2) (i) (A) may not be reduced.

(iii) Bromate - Only systems that use ozone.

(A) Systems using ozone for disinfection or oxidation must conduct bromate monitoring in accordance with 40 C.F.R. 141.132 (b) (3) (i).

(B) With department approval, monthly bromate monitoring may be reduced to once per quarter in accordance with 40 C.F.R. 141.132 (b) (3) (ii) (B).

(c) Disinfectant residuals.

(i) Chlorine and chloramines. Systems that deliver water continuously treated with chlorine or chloramines, including consecutive systems, shall monitor and record the residual disinfectant level in the distribution system under WAC 246-290-300 (2) (b), 246-290-451, 246-290-664(6), or 246-290-694(8).

(ii) Chlorine dioxide. Community, NTNC, or TNC systems that use chlorine dioxide shall monitor in accordance with 40 C.F.R. 141.132 (c) (2) and record results.

(d) Disinfection byproducts precursors.

Community and NTNC surface water or GWI systems that use conventional filtration with sedimentation as defined in WAC 246-290-660(3) shall monitor under 40 C.F.R. 141.132(d), and meet the requirements of 40 C.F.R. 141.135.

(7) Organic chemicals.

(a) Purveyors of community and NTNC water systems shall comply with monitoring requirements under 40 C.F.R. 141.24 (f) (1) - (f) (15), 141.24 (f) (18) - (19), 141.24 (f) (21), 141.24 (h) (1) - (11), and 141.24 (h) (14) - (17).

(b) Sampling locations shall be as defined in 40 C.F.R. 141.24(f) and 141.24(h).

(i) Wellfield samples are allowed from department designated wellfields; and

(ii) Under 40 C.F.R. 141.24 (f) (3) and 141.24 (h) (3), alternate sampling locations may be allowed if approved by the department. These alternate locations are described in department guidance. Purveyors may ask the department to approve an alternate sampling location for multiple sources within a single system that are blended prior to entry to the distribution system. The alternate sampling location shall consider the following:

(A) Source vulnerability;

(B) An updated organic monitoring plan showing location of all sources with current and proposed sampling locations;

(C) Individual source characteristics;

(D) Previous water quality information;

- (E) Status of monitoring waiver applications; and
- (F) Other information deemed necessary by the department.

(c) Composite samples:

(i) Purveyors may ask the certified lab to composite samples representing as many as five individual samples from within one system. Sampling procedures and protocols are outlined in department guidance;

(ii) For systems serving a population of less than three thousand three hundred one, the department may approve composite sampling between systems when those systems are part of an approved satellite management agency.

(d) The department may require the purveyor to sample both before and after treatment for one or more organic contaminants. The department shall notify the purveyor if and when this additional source sampling is required.

(e) Organic chemical monitoring plans.

(i) Purveyors of community and NTNC systems shall prepare an organic chemical monitoring plan and base routine monitoring on the plan.

(ii) The purveyor shall:

(A) Keep the monitoring plan on file with the system and make it available to the department for inspection upon request;

(B) Revise or expand the plan at any time the plan no longer reflects the monitoring requirements, procedures or sampling locations, or as directed by the department; and

(C) Submit the plan to the department for review and approval when requested and as part of the water system plan required under WAC 246-290-100.

(f) Monitoring waivers.

(i) Purveyors may request in writing, a monitoring waiver from the department for any organic monitoring requirement;

(ii) Purveyors requesting a monitoring waiver shall comply with 40 C.F.R. 141.24 (f)(7), 141.24 (f)(10), 141.24 (h)(6), and 141.24 (h)(7);

(iii) Purveyors shall update and resubmit requests for waiver renewals as directed by the department; and

(iv) Failure to provide complete and accurate information in the waiver application shall be grounds for denial of the monitoring waiver.

(g) Purveyors with emergency and seasonal sources shall monitor those sources under the applicable requirements of this section when they are actively providing water to consumers.

(8) Radionuclides. Monitoring for radionuclides shall be conducted under 40 C.F.R. 141.26.

(9) *Cryptosporidium* and *E. coli* source monitoring. Purveyors with surface water or GWI sources shall monitor the sources in accordance with 40 C.F.R. 141.701 and 702.

(10) Contaminants with a SAL under WAC 246-290-315, Table 9.

(a) Purveyors shall monitor for contaminants with a SAL in accordance with Tables 3 and 4 of this section. Source sample locations and blended samples are allowed as consistent with other federally regulated organic contaminants referenced in subsection (7)(b) of this section.

TABLE 3
SAL MONITORING

Contaminant or Group of Contaminants	Applicable Water System Classification	Initial Sampling	Routine Sampling Frequency	Sampling Location
Organic Contaminants				
Per- and polyfluoroalkyl substances (PFAS)	Community and NTNC, and if applicable, TNC	One sample on or before December 31, 2025	Once every three years	Per the locations described in WAC 246-290-300 (7)(b) and Table 4 of this section

(b) Purveyors shall monitor for PFAS contaminants using an approved method in WAC 246-390-075 (17)(a) and all method specific contaminants as listed on Table 7 in WAC 246-390-075.

(i) Purveyors, on a schedule determined by the department, but no later than December 31, 2025, shall complete initial sampling for PFAS from a sample location representing each source as listed in Table 4 of this section.

(ii) Initial PFAS sampling prioritization and scheduling is based on the following criteria:

(A) Susceptibility of the source water to contamination by surface activities due to physical attributes of the source;

(B) Vulnerability of the source water to PFAS contamination; and

(C) Population served.

(iii) Purveyors of TNC systems determined by the department to be at risk of PFAS contamination due to proximity of the system's water supply to known PFAS contamination shall collect a sample for analysis as directed by the department and, if detected, comply with the follow-up requirements under WAC 246-290-320(8).

(c) Analytical results for contaminants or groups of contaminants listed in Table 3 of this section reported prior to January 1, 2023, that meet the SDRL and requirements established in chapter 246-390 WAC with the effective date of January 1, 2022, or later may be used to comply with the initial PFAS monitoring requirement in this chapter.

(d) For sources that become active after January 1, 2022, purveyors shall perform the required monitoring as part of the source approval process under WAC 246-290-130.

(e) The department may require a confirmation sample. If a confirmation sample is required by the department, the result will be averaged with the first sampling result and the average is used as the final result. The department has the discretion to delete results of obvious sampling errors from this calculation.

(f) After completing initial sampling as described in Table 3 of this section, each source must be monitored as follows:

(i) For sources with organic results less than the SDRL, purveyors shall begin routine monitoring as described in Table 3 of this section, unless a monitoring waiver is granted by the department under (h) of this subsection.

(ii) For sources with organic detections equal to or greater than the SDRL, purveyors shall conduct follow-up monitoring under WAC 246-290-320(8).

(iii) For sources with inorganic detections below the SAL, purveyors shall monitor as identified in subsection (4) of this section.

(iv) For sources with inorganic detections above the SAL, purveyors shall conduct follow-up monitoring under WAC 246-290-320(9).

(g) For public water systems required to sample for PFAS under EPA's fifth Unregulated Contaminant Monitoring Rule (UCMR5), if the minimum reporting limits are less than fifty percent of any SAL, the

department shall accept data that has been accepted by EPA under UCMR5 for the purposes of meeting initial monitoring requirements under WAC 246-290-300. Public water systems required to sample for PFAS shall submit all results to the department to be considered in compliance with the initial monitoring requirements.

(i) If the minimum reporting limit for a result is greater than twenty percent of any SAL, but the result is reported as a nondetect, then follow-up monitoring per WAC 246-290-320 will not be required.

(ii) If a detection is reported below the minimum detection limit and is greater than twenty percent of a SAL, then one additional quarter of follow-up monitoring will be required per WAC 246-290-320 (8) (b).

(h) Monitoring waivers for contaminants with a SAL.

(i) The department may grant a waiver for SAL monitoring requirements identified in this chapter.

(ii) As a condition of the waiver, the department may require a purveyor take a minimum of one sample per source while the waiver is effective.

(11) Other contaminants. On the basis of public health concerns, the department may require a purveyor to monitor for additional contaminants.

TABLE 4
MONITORING LOCATION

Sample Type	Sample Location
Asbestos	One sample from distribution system or if required by department, from the source.
Bacteriological	From representative points throughout distribution system.
<i>Cryptosporidium</i> and <i>E. coli</i> (Source Water) - WAC 246-290-630(16)	Under 40 C.F.R. 141.703.
Complete Inorganic Chemical & Physical	From a point representative of the source, after treatment, and prior to entry to the distribution system.
Lead/Copper	From the distribution system at targeted sample tap locations.
Nitrate/Nitrite	From a point representative of the source, after treatment, and prior to entry to the distribution system.
Disinfection Byproducts - TTHMs and HAA5 - WAC 246-290-300(6)	Under 40 C.F.R. 141.132 (b)(1) (Subpart L of the C.F.R.).
Disinfection Byproducts - TTHMs and HAA5 - WAC 246-290-300(6)	Under 40 C.F.R. 141.600 - 629 (IDSE and LRAA in Subparts U and V of the C.F.R.).
Disinfection Byproducts - Chlorite (Systems adding chlorine dioxide)	Under 40 C.F.R. 141.132 (b)(2).
Disinfection Byproducts - Bromate (Systems adding ozone)	Under 40 C.F.R. 141.132 (b)(3).
Disinfectant Residuals - Chlorine and Chloramines	Under 40 C.F.R. 141.132 (c)(1).
Disinfectant Residuals - Chlorine dioxide	Under 40 C.F.R. 141.132 (c)(2).

Sample Type	Sample Location
Disinfection Precursors - Total Organic Carbon (TOC)	Under 40 C.F.R. 141.132(d).
Disinfection Precursors - Bromide (Systems using ozone)	From the source before treatment.
Radionuclides	From a point representative of the source, after treatment and prior to entry to distribution system.
Organic Chemicals (VOCs, SOCs, & PFAS)	From a point representative of the source, after treatment and prior to entry to distribution system.
Other contaminants without an MCL, MRDL, TT or SAL	As directed by the department.

[Statutory Authority: RCW 43.20.050, 70A.125.080, and 70A.130.010. WSR 21-23-097, § 246-290-300, filed 11/17/21, effective 1/1/22. Statutory Authority: RCW 43.20.050 and 70.119A.080. WSR 17-01-062, § 246-290-300, filed 12/14/16, effective 1/14/17. Statutory Authority: RCW 43.20.050(2) and 70.119A.080. WSR 11-17-062, § 246-290-300, filed 8/15/11, effective 10/1/11. Statutory Authority: RCW 43.20.050 and 70.119A.080. WSR 10-20-068, § 246-290-300, filed 9/29/10, effective 11/1/10. Statutory Authority: RCW 43.20.050. WSR 09-21-045, § 246-290-300, filed 10/13/09, effective 1/4/10. Statutory Authority: RCW 70.119A.180 and 43.20.050. WSR 08-03-061, § 246-290-300, filed 1/14/08, effective 2/14/08. Statutory Authority: RCW 43.20.050 and 70.119A.080. WSR 04-04-056, § 246-290-300, filed 1/30/04, effective 3/1/04. Statutory Authority: RCW 43.20.050 (2) and (3) and 70.119A.080. WSR 03-08-037, § 246-290-300, filed 3/27/03, effective 4/27/03. Statutory Authority: RCW 43.02.050 [43.20.050]. WSR 99-07-021, § 246-290-300, filed 3/9/99, effective 4/9/99. Statutory Authority: RCW 43.20.050. WSR 94-14-001, § 246-290-300, filed 6/22/94, effective 7/23/94; WSR 93-08-011 (Order 352B), § 246-290-300, filed 3/25/93, effective 4/25/93; WSR 92-04-070 (Order 241B), § 246-290-300, filed 2/4/92, effective 3/6/92. Statutory Authority: Chapter 43.20 RCW. WSR 91-07-031 (Order 150B), § 246-290-300, filed 3/15/91, effective 4/15/91. Statutory Authority: RCW 43.20.050. WSR 91-02-051 (Order 124B), recodified as § 246-290-300, filed 12/27/90, effective 1/31/91. Statutory Authority: P.L. 99-339. WSR 89-21-020 (Order 336), § 248-54-165, filed 10/10/89, effective 11/10/89. Statutory Authority: RCW 34.04.045. WSR 88-05-057 (Order 307), § 248-54-165, filed 2/17/88. Statutory Authority: RCW 43.20.050. WSR 83-19-002 (Order 266), § 248-54-165, filed 9/8/83.]