

WAC 246-290-451 Disinfection of drinking water. (1) No portion of a public water system containing potable water shall be put into service, nor shall service be resumed until the facility has been effectively disinfected.

(a) In cases of new construction, drinking water shall not be furnished to the consumer until satisfactory bacteriological samples have been analyzed by a laboratory certified by the state;

(b) In cases of existing water mains, when the integrity of the main is lost resulting in a significant loss of pressure that places the main at risk to contamination, the purveyor shall use standard industry practices to ensure adequate and safe water quality prior to the return of the line to service, including at least one of the following:

- (i) Flushing;
- (ii) Disinfection; or
- (iii) Bacteriological sampling.

(c) If a cross-connection is confirmed, the purveyor shall satisfy the reporting requirements as described under WAC 246-290-490(8).

(2) The procedure used for disinfection shall conform to standards published by the American Water Works Association, or other industry standards acceptable to the department.

(3) The purveyor of a system using surface water or GWI shall meet disinfection requirements specified in Part 6 of this chapter.

(4) If the department determines that any of the following conditions apply, the purveyor shall provide continuous disinfection of the source and meet the requirements under subsection (6) of this section:

(a) A groundwater source is in hydraulic connection to surface water under WAC 246-290-640(4);

(b) A history of unsatisfactory total coliform sampling results for a groundwater source;

(c) A microbial contaminant threat within a groundwater source sanitary control area as defined in WAC 246-290-135;

(d) A microbial contaminant threat to a source, as documented in a susceptibility assessment, a sanitary survey, or a special purpose investigation which also includes, but is not limited to, one or more of the following conditions:

- (i) A poorly constructed source;
- (ii) An inadequate surface seal;
- (iii) High groundwater;
- (iv) Lack of confining layers in the aquifer;
- (v) A shallow well source, with the first open interval fifty feet or less from the ground surface at the wellhead;
- (vi) A drilled well in fractured bedrock; or
- (vii) A source at risk of flooding.

(e) Desalination of a seawater water source by reverse osmosis.

(5) If the department determines that any of the following conditions apply, the purveyor shall provide continuous disinfection of the distribution system and meet the requirements under subsection (7) of this section:

- (a) *E. coli* MCL violations;
- (b) Level 1 or level 2 assessment treatment technique triggers;
- (c) Failure to complete level 1 or level 2 assessments as required under WAC 246-290-320 (2) (b);
- (d) Failure to complete corrective actions required under WAC 246-290-320 (2) (d); or
- (e) Facility failures that threaten to degrade water quality in the distribution system.

(6) If disinfection is required under subsection (4) of this section, the following requirements must be met:

(a) Provide any combination of free chlorine residual concentration (C), measured in mg/L at or before the first customer and contact time (T), measured in minutes between the location of chlorine treatment and residual measurement, that result in a CT product ($C \times T$) of greater than or equal to six without exceeding the chlorine MRDL in WAC 246-290-310(5).

(b) The department may require the purveyor to provide longer contact times, higher chlorine residuals, or additional treatment to protect the health of consumers served by the water system.

(c) To demonstrate the required level of treatment is maintained, the purveyor shall:

(i) Monitor the residual disinfectant concentration at the point of entry to the distribution system, or at a department-approved location, at least once per day, five days per week or each day that water is supplied by the treatment plant if it operates less than daily;

(ii) Identify the number of days each month that the treatment process failed to meet the disinfection treatment requirement in this subsection; and

(iii) Submit monthly water treatment reports to the department using a department-approved form by the tenth day of the following month.

(d) All analyses required in this subsection shall be conducted in accordance with an EPA approved method. A diethyl-p-phenylenediamine (DPD) colorimetric field test kit relying on a visual color comparison to a visual standard may not be used by a purveyor to comply with the requirements of this subsection.

(e) The department may require the purveyor to monitor the residual disinfectant concentration each calendar day water is supplied to the distribution system if the department considers source treatment operation unreliable.

(f) The department may require the use of continuous residual analyzers and recorders to assure adequate monitoring of residual concentrations.

(7) A purveyor that adds free chlorine, total chlorine, combined chlorine, or chlorine dioxide to the distribution system on a continuous basis shall:

(a) Monitor residual disinfectant concentration at:

(i) Representative points in the distribution system at least once per day, five days per week, unless upon written request, the department approves less frequent monitoring; and

(ii) The same time and location of routine and repeat coliform sample collection.

(b) Maintain a detectable residual disinfectant concentration in all active parts of the distribution system, unless the department approves a written request to use a lower value. At a minimum, the request to use a lower value must identify the instrument used to measure the residual disinfectant concentration and include the manufacturer's documentation of the instrument's accuracy to measure the lower value.

(c) Submit monthly water treatment reports to the department using a department-approved form by the tenth day of the following month.

(d) Conduct all analyses required in this subsection:

(i) In accordance with an EPA approved method; or

(ii) Using a diethyl-p-phenylenediamine (DPD) colorimetric field test kit unless not allowed by the department.

(e) Colorimetric test strips may not be used by a purveyor to comply with the residual disinfectant concentration monitoring requirements of this subsection.

(f) The department may require the use of continuous residual analyzers and recorders to assure adequate monitoring of residual concentrations.

(g) The department may require the purveyor to provide higher disinfectant residuals, or additional treatment to protect the health of consumers served by the water system.

(h) If a chemical disinfectant is added to the distribution system for purposes other than continuous disinfection and the treatment purposes and procedures are identified in a treatment design approved under WAC 246-290-110 and 246-290-120, the system shall be exempt from the requirements of this section.

(8) Violations.

(a) Failure to provide treatment that meets the applicable requirements of subsection (6) or (7) of this section in two or more calendar days per month in which residual disinfectant concentration monitoring was conducted is a treatment technique violation;

(b) Failure to perform monitoring that meets the applicable requirements of subsection (6) or (7) of this section is a monitoring violation; or

(c) Failure to submit a monthly water treatment plant report to the department using a department-approved form by the tenth day of the following month in accordance with the requirements of subsection (6) or (7) of this section is a reporting violation.

(9) Purveyors that add free chlorine, total chlorine, combined chlorine, or chlorine dioxide to a source or the distribution system for any reason shall, in addition to any other applicable monitoring requirements of this section, measure residual disinfectant concentrations in samples collected at the same time and location that routine or repeat coliform samples are collected, unless the department determines that more frequent monitoring is necessary to protect public health.

[Statutory Authority: RCW 43.20.050 and 70.119A.080. WSR 17-01-062, § 246-290-451, filed 12/14/16, effective 1/14/17; WSR 10-20-068, § 246-290-451, filed 9/29/10, effective 11/1/10. Statutory Authority: RCW 43.20.050 (2) and (3) and 70.119A.080. WSR 03-08-037, § 246-290-451, filed 3/27/03, effective 4/27/03. Statutory Authority: RCW 43.02.050 [43.20.050]. WSR 99-07-021, § 246-290-451, filed 3/9/99, effective 4/9/99.]