

**3745-83-02 Water distribution system disruption of service.**

(A) Definitions for this rule.

For the purpose of this rule, the following terms are defined as follows:

- (1) "Affected area" means the portion of a distribution system where the pressure of the system has dropped below twenty pounds per square inch (psig) at ground level.
- (2) "Contamination intrusion" includes, but is not limited to sewage, unintended chemical waste or other waste in the pit or pipe, or muddy water or other unintended material entering the pipe.
- (3) "Disruption of service" means an event during which minimum pressure at any point in the distribution system of a public water system falls below twenty psig at ground level.
- (4) "Impacted service area" means any service line that has been moved, replaced, or reconnected to the main during a main replacement.
- (5) "Major disruption event" means any disruption of service that is not a "Type 1" or "Type 2" event.
- (6) "Positive pressure" means the water pressure is above zero psig at ground level in the distribution system and positive flow is maintained.
- (7) "Special purpose total coliform samples" or "special purpose samples," means those samples taken to determine whether disinfection practices are sufficient following a disruption of service event.
- (8) "Type 1" event means a disruption of service where positive pressure is continuously maintained in the affected area, and there are no signs of contamination intrusion.
- (9) "Type 2" event means a disruption of service where positive pressure is maintained in the affected area until the affected area has been isolated from the rest of the distribution system, and there are no signs of contamination intrusion.
- (10) "Water use advisory" means a notification issued to alert affected persons of potential water quality issues within the potable water.

(B) Nontransient noncommunity systems with a population less than one thousand people and all transient noncommunity systems that experience a disruption of service shall comply with the following:

- (1) Close, provide bottled water, or implement a remedy acceptable to the director or authorized representative within twenty-four hours of the beginning of the disruption of service.
- (2) Collect special purpose total coliform samples at locations representative of the affected area in accordance with table 1 of this rule after repairs are made and pressure has been restored to twenty psig or above.
  - (a) If any special purpose sample is total coliform positive, consult with the Ohio environmental protection agency (Ohio EPA) and continue to monitor with an additional set of special purpose total coliform samples in accordance with table 1 of this rule until total coliforms are not detected in one complete set of samples.
  - (b) If all special purpose samples in the current set are negative for E. coli, the public water system may cease the activity required in paragraph (B)(1) of this rule.

(c) If any special purpose sample in the current set is positive for E. coli, there is an acute risk to human health. The public water system shall issue a water use advisory that will remain in effect until the public water system meets the requirements for removing the water use advisory established in paragraph (B)(2)(b) of rule 3745-81-32 of the Administrative Code. Consult with Ohio EPA to withdraw the water use advisory.

(3) Nontransient noncommunity systems serving less than one thousand people shall comply with the applicable requirements in paragraph (C)(6) of this rule if the system experiences a disruption of service event which results in an emergency main replacement in an area known or likely to contain lead service lines.

(C) Nontransient noncommunity systems serving a population of at least one thousand people and all community water systems shall comply with the following:

(1) Monitoring.

During a water line repair or other incident, monitor and record pressure upstream and downstream of the area to determine if a disruption of service has occurred and the extent of the affected area. Methods of monitoring can be in-line pressure monitors, hydrant pressure recorders, storage tank or tower water level, or any other method approved by the director. Public water systems which maintain functioning and accurate hydraulic models may utilize these models to identify the affected area from a line break in lieu of using pressure gauges, storage tank water levels, or pump station records. Public water systems that use a hydraulic model for a particular event shall ensure personnel knowledgeable in running the model are available during all times of the particular event to ensure timely use of the models. In the event a water system chooses not to monitor pressure in accordance with this rule, the system shall treat the event as a major disruption event and follow the response requirements in paragraph (C)(4) of this rule.

(2) "Type 1" event response. During this type of event, a water use advisory, sampling for total coliform, and notification to the Ohio EPA are not required if the public water system completes the following actions:

(a) Excavate the pit to below the area to be repaired.

(b) Maintain the water level in the pit below the area to be repaired.

(c) Disinfect the line in accordance with American water works association (AWWA) standard C651-14, section 4.11.3.1.

(d) Complete the repair under positive pressure.

(e) After completion of repair, test or verify disinfectant presence by either conducting a chlorine residual analysis or comparing a 0.5 milligrams per liter (mg/L) free chlorine standard to an appropriately sized sample with free chlorine reagent added.

(f) Document all activities and events using a form or method acceptable to the director to demonstrate the public water system followed the "Type 1" event response as established in this rule.

(g) If the public water system does not complete the "Type 1" event response in accordance with this rule, the incident is elevated to a "Type 2" event and the public water system shall comply with the requirements of paragraph (C)(3) of this rule.

(3) "Type 2" event response. During this type of event, a water use advisory, sampling for total coliform and notification to the Ohio EPA are not required if the public water system completes the following actions:

(a) In addition to complying with the requirements of paragraphs (C)(3)(b) to (C)(3)(g) of this rule, public water systems conducting waterline or appurtenance repairs or replacements shall complete the following:

(i) Excavate the pit to below the area to be repaired.

(ii) Maintain the water level in the pit below the area to be repaired.

(iii) Disinfect, repair, and flush the waterline in accordance with AWWA standard C651-14 section 4.11.3.2.

(iv) For emergency water main replacements in areas known or likely to contain lead service lines, follow the applicable requirements in paragraph (C)(6) of this rule.

(b) Notify critical users, as established in the contingency plan in accordance with rule 3745-85-01 of the Administrative Code, within the affected area as soon as possible, but within twenty-four hours. Efforts should be made to notify critical users in advance of beginning the repair.

If the public water system does not have a contingency plan, the system shall notify customers who have a critical need of water as soon as possible, but within twenty-four hours.

(c) Perform a controlled shutdown of the affected area.

(d) Complete the repair.

(e) After completion of the repair, test or verify disinfectant presence by either conducting a chlorine residual analysis or comparing a 0.5 mg/L free chlorine standard to an appropriately sized sample with free chlorine reagent added.

(f) Document all activities and events using a form or method acceptable to the director to demonstrate that the public water system followed the "Type 2" event response as established in this rule.

(g) If the public water system does not complete the "Type 2" event response in accordance with this rule, the incident is elevated to a major disruption event and the system shall comply with the requirements of paragraph (C)(4) of this rule.

(4) Major disruption event response. A public water system that experiences a major disruption event shall comply with the following, as applicable:

(a) Notify the appropriate Ohio EPA district representative or the Ohio EPA's environmental response hotline in accordance with rule 3745-85-01 of the Administrative Code as soon as possible, but within twenty-four hours of the beginning of the disruption of service if all of the following criteria are met:

(i) Repairs will not be complete within twenty-four hours of the beginning of the disruption of service.

(ii) The public water system anticipates the affected area will be without water provided through the distribution system for more than twenty-four hours.

(iii) The affected area includes more than two hundred fifty service connections, or more than twenty-five per cent of the public water system's customers, whichever is least.

(b) Ensure that the public water system speaks with a person when notifying as required in paragraph

(C)(4)(a) of this rule. The use of email or voicemail does not satisfy this notification requirement.

- (c) Activate the notification procedures in the public water system's contingency plan as required in paragraph (D)(12) of rule 3745-85-01 of the Administrative Code.
  - (d) Document any potential contamination.
  - (e) Issue a precautionary water use advisory to all potentially affected consumers as soon as possible but no later than twenty-four hours after the beginning of the event.
  - (f) For emergency water main replacements in areas known or likely to contain lead service lines, follow the applicable requirements in paragraph (C)(6) of this rule.
  - (g) In the case of water main repairs or replacements, disinfect, repair, and flush in accordance with AWWA standard C651-14 section 4.11.3.3.
  - (h) Test for chlorine residual and comply with the minimum chlorine residual established in paragraph (C)(1) of rule 3745-83-01 of the Administrative Code and the maximum residual disinfectant level established in paragraph (C) of rule 3745-81-10 of the Administrative Code.
  - (i) Collect special purpose total coliform samples at locations representative of the affected area in accordance with table 1 of this rule after repairs are made, pressure has been restored to twenty psig or above and the chlorine residual is within acceptable limits.
    - (i) If any special purpose sample is total coliform positive, consult with Ohio EPA and continue to monitor with an additional set of special purpose total coliform samples in accordance with table 1 of this rule until total coliforms are not detected in one complete set of samples.
    - (ii) If any special purpose sample is E. coli positive, there is an acute risk to human health and the water use advisory shall remain in effect until the public water system meets the requirements for removing the water use advisory established in paragraph (B)(2)(b) of rule 3745-81-32 of the Administrative Code. The public water system shall consult with Ohio EPA to withdraw the water use advisory.
  - (j) Document activities and events on a form approved by the director to demonstrate the major disruption event response was followed. The form shall be submitted to Ohio EPA within forty-eight hours or the next business day, whichever is later, of the disruption of service being corrected.
- (5) A community water system that experiences a "Type 2" or a major disruption event shall provide water from an alternate source to customers in the affected area, as required in paragraph (D)(8) of rule 3745-85-01 of the Administrative Code, if the public water system is not capable of providing water through the distribution system within twenty-four hours of the start of the disruption of service.
- (6) Public water systems that move, replace, or reconnect any service line to a main that is being replaced or repaired associated with a "Type 2" event or a major disruption event in areas that are known or likely to contain lead service lines shall complete the following:
- (a) Issue a water use advisory to service connections in the affected area in accordance with paragraph (B)(1) of rule 3745-81-84 of the Administrative Code, including the lead language.
  - (b) If service lines in the impacted service area are known or likely to contain lead:

- (i) Issue a water use advisory to all service connections in the impacted service area in accordance with paragraph (B)(1) of rule 3745-81-84 of the Administrative Code, including the lead language and the filter language.
- (ii) Offer to provide drinking water treatment unit filters to all service connections in the impacted service area in accordance with paragraph (D) of rule 3745-81-84 of the Administrative Code.
- (c) Follow the requirements in rule 3745-81-84 of the Administrative Code if any lead service lines will be replaced in the impacted service area.

Table 1

Service Connections Affected	Minimum Number of Total Coliform Samples Required
0 - 15	1
16 - 1,000	2
1,001 - 2,000	4
2,001 - 3,000	6
3,001 - 4,000	8
4,001 - 5,000	10
5,001 - 6,000	12
6,001 - 7,000	14
7,001 - 8,000	16
8,001 - 9,000	18
9,001 - 10,000 *	20

\*After ten thousand service connections, an additional two samples shall be added for every one thousand service connections up to the maximum one hundred samples. Public water systems that have multiple treatment plants may use a proportional sampling method if established in the contingency plan or in the initial distribution system evaluation.

[Comment: "AWWA Standard C651-14, Disinfecting Water Mains," effective date Feb. 1, 2015. This rule incorporates this standard or specification by reference. A copy may be obtained from "AWWA Bookstore 6666 W. Quincy Avenue, Denver, CO 80235," (303) 794-7711, [www.awwa.org](http://www.awwa.org). This standard is available for review at "Ohio EPA, Lazarus Government Center, 50 West Town Street, Suite 700, Columbus, OH 43215."]

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CERTIFIED ELECTRONICALLY

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Certification

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Date

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