

# STATE OF CONNECTICUT

## DEPARTMENT OF PUBLIC HEALTH



Raul Pino, M.D., M.P.H.  
Commissioner

Dannel P. Malloy  
Governor  
Nancy Wyman  
Lt. Governor

Drinking Water Section

### DWS Circular Letter 2018-08

**TO:** Community Water Systems  
**FROM:** Lori Mathieu, Public Health Section Chief, Drinking Water Section  
**DATE:** March 6, 2018  
**SUBJECT:** Interruption of Water Service

If an interruption in public water service resulting in a water outage to any consumer occurs, the public water system (PWS) should follow the procedures in the attached guidance document. Further, if any of the customers affected are health care facilities or food service establishments then the PWS must notify the Department of Public Health-Drinking Water Section (DWS) at 860.509.7333 during normal business hours or at 860.509.8000 after hours, and all applicable local health departments. Along with this direct phone contact you should then complete & submit the attached notification form to the DWS and the Local Health Departments (LHD) by the following business day after learning of the event.

Emails, voice mails without discussion with a representative, faxes, written notices, etc. are not acceptable substitute to the direct phone contact with a representative of the agency. These other mechanisms will only be considered acceptable if phone service is not available. Further when consultation with the Department is required, it must be completed with direct contact and interaction with technical staff from the DWS.

Once again, the DWS can be reached at 860-509-7333 during normal business hours (8:00AM- 4:30PM) or 860-509-8000 after-hours. Please note that if the Governor closes state offices the after-hours phone number should be used.

Cc: Deputy Commissioner Yvonne  
Addo, MBA Local Health Directors  
Certified Operators

Attachments



Phone: (860) 509-7333 • Fax: (860) 509-7359  
410 Capitol Avenue, P.O. Box 340308, MS#12DWS  
Hartford, Connecticut 06134-0308  
[www.ct.gov/dph/publicdrinkingwater](http://www.ct.gov/dph/publicdrinkingwater)  
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## Connecticut Department of Public Health Drinking Water Section

### Recommended Sanitary Procedures when Making Unscheduled and Emergency Repairs of Water Mains

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If an interruption in public water service resulting in a water outage to any consumer occurs, the public water supply should notify the Department of Public Health and all applicable local health departments by calling the Departments and then submitting the notification form that can be accessible at [www.ct.gov/dph/publicdrinkingwater](http://www.ct.gov/dph/publicdrinkingwater) as soon as possible. The notification to Health Officials is necessary to assess & determine the likelihood, if any, of an imminent and substantial danger to public health. Every effort to re-establish service with the shortest possible delay consistent with the safety of the consumers and the general public should be made. Discretion in the application of these recommendations is allowable except as required by regulation.

Whenever an unplanned interruption in water service occurs (i.e., source failures, power outages, main breaks, etc.), a set of circumstances is created that poses a threat to water quality. Atmospheric and negative pressures created in the distribution system can permit ground and surface water to enter the system via joints, cracks, and holes in the piping network and set the stage for cross connections to contaminate the system. Despite a public water supply's best efforts to ensure a tight distribution network free of cross connections, no system can be totally immune from the threat of a water quality problem in the event of water service interruption. Every effort to avoid outages should be implemented as the best safeguard against this threat. However, should an unplanned outage occur, the following procedures are recommended:

#### **PUBLIC NOTIFICATION:**

- Notify affected customers about schedule, procedures, concerns, and when necessary advise the affected public of drinking water locations that can be accessed and used during the water outage.
- Suggest customers flush their home plumbing after repairs are completed, and instruct customers of ***systems that do not routinely chlorinate the water*** to boil available tap water prior to consumption until further notice.

#### **EXCAVATION AND TRENCH WORK:**

- Install temporary diversion devices to control surface water runoff into trench.
- Apply liberal amounts of hypochlorite (tablets preferable) to the flooded open trench especially if sewers are present nearby.
- Provide for dewatering of excavation to below the level of pipe invert.
- Flush the water main while the standing water is being pumped out of the trench.
- Keep pipe, fittings, and valves away from excavated soil or backfill materials.
- Clean interior of pipe materials which contact soil or backfill.
- Maintain flow or positive pressure to prevent backflow into pipe.

#### **REPAIR ACTIVITIES:**

- Maintain protective coverings on equipment until ready for installation.
- Clean visible debris from exposed existing pipes.
- Protect existing mains and service connections with caps or covers.
- Ensure that all cables, pipes, and hoses drawn through mains are clean.
- Swab or spray the interior of all pipe, fittings, and repair clamps used in making the repair with a minimum 1% hypochlorite solution before they are installed.
- Swab or spray the interior joint surfaces with a minimum 1% hypochlorite solution just prior to making connections (unless in sub-freezing conditions).
- Minimize soil contamination of working equipment.
- Disinfect hand tools, saws, and tapping machines used for installing pipe and fittings. Use chlorine dips and rinses (unless in sub-freezing conditions).
- Conduct hydrostatic test on repaired water main to ensure integrity of repair.

#### **DISINFECTION METHODS AFTER REPAIR IS COMPLETED:**

- Leaks or breaks that are repaired using repair clamps on fully pressurized water mains (>25 psi) do not need to be further disinfected following the swabbing or spraying of the repair area and the interior of the repair clamp with a minimum 1% hypochlorite solution. However, if at any time the water main is shut down and depressurized, a more thorough disinfection procedure should be conducted as follows.
- Thoroughly flush the water main (minimum velocity of 2.5 fps) immediately after the repair is completed to remove any contaminants that may have been introduced during repair. Flushing should be conducted towards the repair location from both directions if possible and should continue until the water is clear.
- Isolate the repaired water main and shut off service connections. Maintain a minimum chlorine residual of 300 mg/l with a minimum contact time of 15 minutes in the isolated water main.
- At the end of the hypochlorite contact time period, flush the water main until the water is clear and chlorine residuals return to normal levels found in the distribution system (if system is chlorinated). In no cases should customers be allowed to consume water with chlorine residual greater than 4.0 mg/l. *Precautions should be taken to ensure that disposal of heavily chlorinated water will not adversely impact the surrounding environment. Use dechlorination methods if necessary. Flush individual service lines to remove heavily chlorinated water.*
- Collect at least one total coliform and HPC bacteria sample from the repaired water main. If the direction of flow is not known, collect samples from each side of the main break.

#### **CONNECTION STARTUP FOR CHLORINATED SYSTEMS ONLY:**

- Sequence operation of valve openings to avoid low (or negative) pressure surges. Open valves slowly.
- Free chlorine residuals should be tested at remote areas of the system and chlorine dosages increased until at least a 0.2 mg/l residual is detected at all points in the system.
- If a free chlorine residual cannot be maintained:
  - (i) Consumers should be notified that all water used for drinking and cooking should be boiled at a rolling boil for at least one minute or water should be obtained from an alternate potable source (i.e., bottled water) until notified that the water is safe to drink.
  - (ii) Distribution water samples should be collected immediately in the areas of inadequate chlorine residual and analyzed for total coliform and HPC bacteria.
  - (iii) If all total coliform bacteria results are negative and all HPC bacteria results are less than 500/ml, consumers should be notified that the water is safe to consume; however, if the results are unsatisfactory, boiling notices should remain in effect; and the Drinking Water Section of the Department of Public Health should be notified to discuss further actions.

#### **CONNECTION STARTUP FOR UNCHLORINATED SYSTEMS ONLY:**

- Sequence operation of valve openings to avoid low (or negative) pressure surges. Open valves slowly.
- Consumers should be notified that all water used for drinking and cooking should be boiled at a rolling boil for at least one minute or water should be obtained from an alternate potable source (i.e., bottled water) until notified that the water is safe to drink.
- Distribution water samples should be collected as soon as chlorine residual has dissipated and analyzed for total coliform and HPC bacteria.
- If all total coliform bacteria results are negative and all HPC bacteria results are less than 500/ml, consumers should be notified that the water is safe to consume; however, if the results are unsatisfactory, boiling notices should remain in effect; and the Drinking Water Section of the Department of Public Health should be notified to discuss further actions.

#### **JOB COMPLETION:**

- Compile job notes that outline the type of repair, particular field conditions and problems encountered, and suggestions/recommendations for avoiding problems on similar jobs.

**State of Connecticut**

**DEPARTMENT OF PUBLIC HEALTH  
DRINKING WATER SECTION**

**PUBLIC WATER SYSTEM NOTIFICATION FORM TO  
CONFIRM COMPLIANCE WITH  
SECTIONS 19-13-B46 & 19-13-B102 OF THE  
REGULATIONS OF CONNECTICUT STATE AGENCIES (RCSA)**

Should an event occur requiring notification to the Department of Public Health (DPH) or consultation with the DPH, Public Water Systems (PWS) must immediately call the Drinking Water Section (DWS) at 860.509.7333 during normal business hours & at 860.509.8000 after hours, and should then complete & submit this notification form to the DWS and the Local Health Department (LHD) by the following business day after learning of an event that requires immediate notification.

To confirm compliance with notification requirements, this form should be submitted to the DWS either by Fax (860.509.7359) or regular mail to: Department of Public Health, Drinking Water Section, 410 Capitol Avenue, MS#51WAT, P.O. Box 340308, Hartford, CT 06134-0308; or by e-mail to [DWDCompliance@ct.gov](mailto:DWDCompliance@ct.gov); and shared with the Local Health Department using contacts available on this internet web page: <http://www.ct.gov/dph>

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**1. PWS INFORMATION:**

**Date:** \_\_\_\_\_

**PWS Name** \_\_\_\_\_

**PWSID #: CT-** \_\_\_\_\_

**Town(s) Served:** \_\_\_\_\_

**Name of Operator or Administrator of PWS:** \_\_\_\_\_

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**2. EVENT(S) THAT REQUIRE REPORTING TO DWD & LHD:**

- Security of PWS is threatened (Per Sec. 19-13-B46 of the RCSA); Refer to the DWS Security/Emergency Information Sections of DWS Webpage at [www.ct.gov/dph](http://www.ct.gov/dph) (DWS) to view the Public Water System Guide for Reporting a Water Security Incident flow chart.
- Suspicious activities are observed on or near water company land (per Sec. 19-13-B46 of the RCSA); Refer to the DWS Security/Emergency Information Sections of DWS Webpage at [www.ct.gov/dph](http://www.ct.gov/dph) DWS to view the Public Water System Guide for Reporting a Water Security Incident flow chart.
- Treatment of public water supply is interrupted (per Sec. 19-13-B46 of the RCSA).
- Source of water supply is damaged so as to impair the quality or the sufficiency of the supply (per Sec.19-13-B46 of the RCSA).
- E. coli or fecal coliforms are present in a total coliform-positive sample (per Sec. 19-13-B102(e)(7)(i) of the RCSA).
- Chlorine residual is below 0.2mg/l in water entering the distribution system that uses a surface water source of supply (per Sec. 19-13-B102(j)(B)(iii) of the RCSA).
- Violation of the Maximum Contaminant Level (MCL) for total coliform (per Sec.19-13-B102(h)(1) of the RCSA).
- Violations of any established MCL, other than total coliform (per Sec.19-13-B102(h)(3) of the RCSA).
- A monitoring violation (per Sec. 19-13-B102(h)(2) of the RCSA) of: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Other (notice by PWS for non-listed event): \_\_\_\_\_

3. **EVENTS THAT REQUIRE NOTIFICATION AND IN ADDITION CONSULTATION WITH DWS (per Sections 19-13-B102(a) & 19-13-B102(i) of the RCSA):**

- Violation of the MCL for total coliforms when fecal coliform or E. coli is present, or when the PWS fails to test for fecal coliforms or E. coli when any repeat sample tests positive for coliform (per Sections 19-13-B102(e)(6) and 19-13-B102 (e)(7) of the RCSA).
- Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite or when PWS fails to take a confirmation sample within twenty-four (24) hours of the system's receipt of the first sample showing an exceedance of the nitrate or nitrite MCL (per Sections 19-13-B102(e)(2) and 19-13-B102(e)(7)(P)(ii) of the RCSA).
- The maximum residual disinfectant level (MRDL) for chlorine dioxide when one or more samples taken in the distribution system the day following an exceedance of the MRDL at the entrance of the distribution exceeds the MRDL, or when the PWS does not take the required samples in the distribution system. (Per Sections 19-13-B102(a)(86) and 19-13-B102(i) of the RCSA).
- The MCL for turbidity as specified in Sections 19-13-B102(e)(7)(H)(ii) and 19-13-B102(j)(2)(D) of the RCSA, where the department determines after consultation that the violation of the MCL for turbidity combined with other site specific information indicate that potential pathogens may have passed the point of entry to the water distribution system, or where consultation does not take place within twenty-four (24) hours after the PWS learns of the violation (these are groundwater sources that are potentially under the influence of surface water).
- The MCL for turbidity as specified in Section 19-13-B102(j)(4) of the RCSA where the department determines after consultation that the violation of the MCL for turbidity combined with the other site specific information indicate that potential pathogens may have passed the point of entry to the water distribution system or where consultation does not take place within twenty-four (24) hours after the PWS learns of the violation.
- Occurrence of a waterborne disease outbreak, as defined in Section 19-13-B102(a) of the RCSA.
- Any chemical listed in Sections 19-13-B102(e)(2) to 19-13-B102(e)(4) of the RCSA is found at a level that is determined in writing by the department to have serious adverse effects on human health as a result of short term exposure based on available scientific and epidemiological findings.

4. **CONSULTATION WITH DWS RELATIVE TO THE EVENT WAS MADE ON AND WITH:**

DWS STAFF NAME	DATE	TIME
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5. **BRIEF SUMMARY OF CONSULTATION:**

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6. **BRIEF DESCRIPTION OF THE EVENT REQUIRING NOTIFICATION:**

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7. **STEPS TAKEN TO CORRECT AND RESOLVE THE EVENT:**

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8. **WHO HAS BEEN NOTIFIED OF THE EVENT:**

DWS Staff Name: \_\_\_\_\_  
LHD Staff Name (When applicable): \_\_\_\_\_  
Other(s): \_\_\_\_\_

9. **SUBMITTED BY:**

NAME: \_\_\_\_\_  
TITLE: \_\_\_\_\_  
TELEPHONE NUMBER: \_\_\_\_\_

**FOR DWS USE ONLY:**

BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
DWS STAFF NAME

1) Is there a potential health impact due to this event? Yes  No   
If Yes, list action taken to alleviate the impact: \_\_\_\_\_  
\_\_\_\_\_

2) Is technical assistance required by the DWS? Yes  No   
If Yes, what form of technical assistance was used: \_\_\_\_\_  
\_\_\_\_\_

3) Is follow up required by the PWS? Yes  No   
If Yes, list the required follow up steps: \_\_\_\_\_  
\_\_\_\_\_

4) Is the event resolved? Yes  No   
If No, comment on the status: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Connecticut Department of Public Health  
Drinking Water Section  
410 Capitol Avenue, MS#51WAT  
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www.ct.gov/dph**