Boil Water Advisories

Tia Skerbeck REHS
Drinking Water Services
October 18, 2018
Overview of Presentation

1. Types of Boil Water
2. Examples:
   1. E. coli MCL in distribution
   2. Loss of positive pressure
3. Questions and Answers?
Types of Advisories – Boil Water

- *E. coli* MCL in distribution
- Loss of Positive Pressure (zero pressure)
- *E. coli* confirmed in groundwater source without 4-log inactivation of viruses
  - Or loss of chlorination as above
E. coli MCL in distribution

Coliform Resources

The information on this page is designed for and intended for use by Drinking Water Services County and Department of Agriculture partners who have specialized training and are registered as environmental health specialists. If you have questions regarding this material please contact Drinking Water Services at (971) 673-0405.

On this page:

- Coliform Monitoring Resources
- Groundwater Rule procedures following a positive routine coliform sample
- Resources for addressing confirmed E. coli-positive sources under the Groundwater Rule
- Representative and combined source monitoring

The Groundwater Rule (GWR), which took effect December 1st, 2009, applies to all public water systems that use groundwater sources or purchase groundwater. The primary purpose of the rule is to protect the public from fecal-related bacterial and viral pathogens in public groundwater systems. E. coli is used as the indicator of fecal contamination. If a groundwater source (well or spring) is found to be fecally contaminated, or a significant deficiency or rule violation is identified during a water system survey, the public water system must take corrective action to assure that their consumers are adequately protected. See the following resources for more information on implementing the rule.

Coliform Monitoring Resources

As of April 1, 2016 a detailed investigation is required after the MCL for E. coli is exceeded or a second level 1 coliform investigation is triggered in a 12 month period. The individual responsible for conducting sanitary surveys at the water system where the investigation was triggered must complete the investigation within 30 days and submit the completed investigation form to DWS.

- Coliform Investigation Procedure
- Level 2 Coliform Investigation Form (Fitable MS Word)
- Coliform Alert Response Procedure: General procedure for responding to routine sample coliform alerts for all groundwater systems.
- Coliform Response Chart - For groundwater systems serving up to 1,000 persons
Coliform Response Chart for Groundwater Systems
Serving up to 1,000 Persons

Sample according to coliform sampling plan.

Was routine sample total coliform positive (TC+) or E. coli positive (EC+)?

**Yes**

Source Water Sampling
Collect source sample(s) if not treating for virus inactivation (4-log).

**No**

Any source samples EC+?

**Yes**

Collect 5 confirmation source samples within 24 hours.

**No**

Any confirmation samples EC+?

**Yes**

Corrective Action Required
Boil notice if applicable. Consult with regulator. Notify purchasing systems.

**No**

Proceed with Level 2 Coliform Investigation & corrective action (Completed within 30 days).

Distribution System Sampling
Collect 3 repeat samples for each coliform positive sample within 24 hours.

**Yes**

Was routine sample EC+?

**No**

Any repeat samples TC+ or EC+?

**Yes**

E. coli MCL Consult with regulator. Boil notice within 24 hours. Notify wholesale & purchasing systems.

**No**

Any repeat samples EC+?

**Yes**

Systems sampling quarterly collect 3 routine samples in month following TC+.

**No**

Any repeat samples TC+?

**Yes**

Has system completed a Level 1 Coliform Investigation within previous 12 months?

**No**

Proceed with Level 1 Coliform Investigation & corrective action (Completed by water supplier within 30 days).

**Yes**

Systems sampling quarterly collect 3 routine samples in month following TC+.
E. coli MCL in distribution

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**Coliform Monitoring Resources**

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E. coli MCL in distribution

<table>
<thead>
<tr>
<th>Coliform Alert Response Procedure</th>
<th>Date: 2/14/05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit: Technical Services - lk</td>
<td>Revised: 1/24/17</td>
</tr>
<tr>
<td>Purpose &amp; Scope: How to follow up on all coliform water quality alerts in public water systems. Determining if an investigation is triggered.</td>
<td></td>
</tr>
</tbody>
</table>

Procedure/Process:

An alert is generated every time a sample is reported with total coliform or E. coli present. The alert creates a record in SDWIS and notifies personnel in the data management unit (DMCE) and regulators about the sample results by email. For every alert, DMCE personnel will review the last 12 months of sampling results reported for the water system and determine if any of the coliform investigation triggers were exceeded.

1) If notified by a coliform water quality alert, call the water system contact person and find out what happened and when.

2) All activities must be documented in a contact report referencing the alert ID and submitted by the appropriate DWS staff assigned to that water system. boil water advisories must be immediately passed on to DWS management and PHD Communication Staff.

3) If this is the first positive sample (TC+ or EC+) they have had in the month, advise the operator to collect 3 repeat samples within 24 hours of notification from the lab, if possible. No corrective action should be completed prior to collecting repeats. The samples should be collected according to their coliform sampling plan. Repeat samples are to be collected at these locations, at a minimum:
   a) One at the site of the original positive routine sample,
   b) One within five (5) connections upstream.
   c) One within five (5) connections downstream.

Sample can be collected at sites other than b and c above (such as a reservoir outlet) if approved by the regulating agency and incorporated into the sampling plan.

For routine EC+ samples, DMCE will send a letter to the system reminding them to collect repeats and report them within 10 days.

Repeat results must be submitted to DWS within 10 days of the detection.
**E. coli MCL in distribution**

- It begins on a Thursday afternoon in July
  - Call
    - Lab
    - Portland DWS phone duty
  - Email

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6/14/18

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**Water Quality ALERT**

**Contaminant**: COLIFORM, E. COI

**Sample Result**: Positive

**Sample Type**: RT

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**Laboratory**: ALEXIN ANALYTICAL LABORATORIES INC

**Sample ID**: 816400301

**Sample Date**: 6/12/2018

**Data Received**: 6/14/2018

**Data Batch ID**: 33084
E. coli MCL in distribution
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Coliform Monitoring Resources

As of April 1, 2016 a detailed investigation must be conducted if the MCL for E. coli is exceeded or a second level 1 coliform investigation is triggered in a 12 month period. The individual responsible for conducting sanitary surveys at the water system where the investigation was triggered must complete the investigation surveys and submit the completed investigation form to DWS.

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E. coli MCL in distribution
E. coli MCL in distribution

- Regulator contact the system to direct them to take 3 repeat samples and 1 source sample.

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Repeat, Temporary Routine, and Prior Coliform Sample Schedules

(Schedules in bold reflect current schedules.)

GWR: 1 Triggered sample(s) to be taken and reported 06/12/2018 - 06/23/2018
   1 at SRC-AA - IG FOR DUNCAN & NONAME CREEKS

TCR: 3 Repeat sample(s) within 24 hours of a TC+ Routine Sample to be reported 06/13/2018 - 06/23/2018 at DIST-A

6/14/18
E. coli MCL in distribution

- DMCE auto generated letter

6/14/18
E. coli MCL in distribution

- The weekend . . . .
E. coli MCL in distribution

- Monday

Hi Amy and Tia,

We had an e-coli hit 🍀 late last week. The lab informed us on Saturday of the confirm on doors to deliver the attached notice. Door hangers with the attached notice were left for any door. We also put up a notice on our blog. We are in the process of disinfection and flushing as i let you know when we resolve the issue and have clean samples back.

---

**Sample Result:** Positive

**Sample Type:** RP

**Sample Point:** 1130 Riverbend hose

---

**Table:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Code</th>
<th>Total Result</th>
<th>Sample ID</th>
<th>Batch ID</th>
<th>Date of Result</th>
</tr>
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<tbody>
<tr>
<td>Jun 15, 2018</td>
<td>TG</td>
<td>POSITIVE--816602004</td>
<td>816400301</td>
<td></td>
<td>Jun 18, 2018</td>
</tr>
<tr>
<td>Jun 15, 2018</td>
<td>TG</td>
<td>Absent--816602004</td>
<td>816400301</td>
<td></td>
<td>Jun 18, 2018</td>
</tr>
<tr>
<td>Jun 15, 2018</td>
<td>RP</td>
<td>POSITIVE--816602003</td>
<td>816400301</td>
<td></td>
<td>Jun 18, 2018</td>
</tr>
<tr>
<td>Jun 15, 2018</td>
<td>RP</td>
<td>POSITIVE--816602003</td>
<td>816400301</td>
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<td>RP</td>
<td>POSITIVE--816602002</td>
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<td>RP</td>
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<td>POSITIVE--816602001</td>
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E. coli MCL in distribution

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6/18/18
E. coli MCL in distribution

Coliform Response Chart for Groundwater Systems
Serving up to 1,000 Persons

Sample according to coliform sampling plan.

Was routine sample total coliform positive (TC+) or E. coli positive (EC+)?

Yes

Source Water Sampling
Collect source sample(s) if not treating for virus inactivation (4-log).

No

Any source samples EC+?

Yes

Collect 5 confirmation source samples within 24 hours.

No

Any confirmation samples EC+?

Yes

Systems sampling quarterly collect 3 routine samples in

No

Any confirmation samples EC+?

E. coli MCL
Consult with regulator. boil notice within 24 hours. Notify wholesale & purchasing systems.

Distribution System Sampling
Collect 3 repeat samples for each coliform positive sample within 24 hours.

Was routine sample EC+?

Yes

No

Any repeat samples TC+ or EC+?

Yes

Any repeat samples EC+?

Yes

Any repeat samples TC+?

No

Systems sampling quarterly collect 3 routine samples in month following TC+.
**E. coli MCL in distribution**

Boil water advisory at [redacted] Company. [redacted], is a community water system serving approximately 170 people through 80 connections and provides residual maintenance for water from an infiltration gallery source. The operators must issue a boil water advisory due to *E. coli*-positive routine and repeat samples collected on June 12 and 15 respectively. The advisory will remain in effect until samples indicate coliform absent results.
**E. coli MCL in distribution**

- Post advisory online
*E. coli* MCL in distribution
E. coli MCL in distribution
E. coli MCL in distribution
### E. coli MCL in distribution

- Post advisory online

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**OHA Drinking Water Services**

**Water Advisory Details**

<table>
<thead>
<tr>
<th>PWS ID:</th>
<th>[Redacted]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWS Name:</td>
<td>[Redacted]</td>
</tr>
<tr>
<td>Advisory Type:</td>
<td>Boil Water</td>
</tr>
<tr>
<td>Reason:</td>
<td>E. coli, Confirmed in Distribution</td>
</tr>
<tr>
<td>Area Affected:</td>
<td>System-wide</td>
</tr>
<tr>
<td>Affected Populations:</td>
<td>All</td>
</tr>
<tr>
<td>Begin Date:</td>
<td>Jun 16, 2018</td>
</tr>
<tr>
<td>Date Lifted:</td>
<td>Jun 21, 2018</td>
</tr>
<tr>
<td>Contacted By:</td>
<td>CHAPMAN, AMY (LINCOLN COUNTY)</td>
</tr>
<tr>
<td>Who Was Contacted:</td>
<td>[Redacted]</td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>[Redacted]</td>
</tr>
<tr>
<td>Details:</td>
<td>Routine Sample taken 6/12/2018 positive for E. coli. 6/15/2018 took 1 source water sample positive for total coliform only. 6/15/2018 took 3 repeat samples and all were positive for E. coli. Storage tank was chlorinated. Chlorination system is being installed. Will be re-sampling to be sure there is no coliform bacteria. Lifted 06/21/2018: Chlorination has been added and subsequent samples are clean. OK to lift the Boil Water Advisory.</td>
</tr>
</tbody>
</table>

**Associated Alerts:**

- COL17879 - 06/14/2018 - COLIFORM, E. COLI, COLIFORM, TOTAL (TCR)  
- COL17888 - 06/18/2018 - COLIFORM, E. COLI, COLIFORM, TOTAL (TCR)
E. coli MCL in distribution

- Public Notice

DRINKING WATER WARNING:

All water is contaminated with E. coli bacteria
BOIL YOUR WATER BEFORE USING

What happened?

E. coli bacteria were confirmed in our water system on June 16, 2018. These bacteria can make you sick, and are a particular concern for people with weakened immune systems. As our customers, you have a right to know what happened and what we are doing to prevent this situation. E. coli was discovered during routine water testing.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by: [Redacted] distributed: June 16, 2018 Sista Water System
E. coli MCL in distribution

- Public notice
E. coli MCL in distribution

• Lift boil advisory
  – In order to lift a boil water advisory, all defects found must be corrected, and samples must show an absence of coliform bacteria. Consider the system size and circumstances when evaluating an adequate number of samples to collect.
E. coli MCL in distribution

• Lift advisory
  – Clean samples
  – Residual install complete (now matches data online)
**E. coli** MCL in distribution

- Lift advisory
E. coli MCL in distribution

- Lift advisory
**E. coli** MCL in distribution

- Lift advisory
### E. coli MCL in distribution

<table>
<thead>
<tr>
<th>OHA Drinking Water Services</th>
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</tr>
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<tr>
<td><strong>PWS ID:</strong></td>
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**Associated Alerts:**
- COLI17679 - 06/14/2018 - COLIFORM, E. COLI, COLIFORM, TOTAL (TCR) See also 06/14/2018
- COLI17889 - 06/13/2018 - COLIFORM, E. COLI, COLIFORM, TOTAL (TCR)
**E. coli MCL in distribution**

- Level 2 investigation?

- Triggered by:
  - ✓ Exceeding the MCL for *E. coli* (either EC+ repeat following a TC+ routine, TC+ repeat following a EC+ routine, or all repeats not collected following a EC+ routine); or
  - ❏ A second Level 1 trigger within a rolling 12-month period
If a Level 2 investigation is triggered by an \textit{E. coli} MCL:

- Boil water advisory is issued
- Public notice using mandatory language is required within 24 hours, delivered in a manner approved by the Regulating Agency.
- This is an MCL (10 point) violation.

- A Level 2 investigation must be scheduled as soon as possible and conducted by the Regulating Agency on-site within 30 days.
- If there is a time lag to when the Investigation can be scheduled, suggest that the operator conduct their own Level 1 investigation. If defects are found and corrected, and coliform is absent, the Regulating Agency could evaluate whether to lift the boil advisory prior to conducting the Level 2 investigation.
**E. coli MCL in distribution**

<table>
<thead>
<tr>
<th>Investigation</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Level 2 Investigation</td>
<td>Jun 18, 2018</td>
<td>Jul 30, 2018</td>
<td>Jul 23, 2018</td>
</tr>
<tr>
<td>Install Disinfection</td>
<td></td>
<td>Dec 22, 2018</td>
<td>Jul 24, 2018</td>
</tr>
</tbody>
</table>
E. coli MCL in distribution

- Violation
  - 10 points
    - acute MCL for E. coli
### E. coli MCL in distribution

<table>
<thead>
<tr>
<th>Violation Number</th>
<th>Auto-RTC?</th>
<th>Monitoring Period</th>
<th>Facility ID</th>
<th>Analyte Group</th>
<th>Violation Type - Analyte Count</th>
<th>Enforcement Action - Date</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>903360279</td>
<td>N</td>
<td>Jun 01, 2018 - Jun 30, 2018</td>
<td>TCR</td>
<td>Acute MCL for E. coli - 1</td>
<td>Returned To Compliance - Sep 21, 2018</td>
<td>10</td>
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<tr>
<td>903360276</td>
<td>Y</td>
<td>Dec 01, 2015 - Dec 31, 2015</td>
<td>TCR</td>
<td>Routine Coliform - Did Not Report Enough - 1</td>
<td>Returned To Compliance - Feb 02, 2016</td>
<td>1</td>
<td></td>
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<tr>
<td>903360278</td>
<td>N</td>
<td>Nov 01, 2015 - Nov 30, 2015</td>
<td>TCR</td>
<td>Public Notice Late/Nonreporting (Viol # 903360275) - 1</td>
<td>Returned To Compliance - Feb 12, 2016</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>903360275</td>
<td>Y</td>
<td>Nov 01, 2015 - Nov 30, 2015</td>
<td>TCR</td>
<td>Total Coliform MCL - 1</td>
<td>Returned To Compliance - Feb 22, 2016</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**SYSTEM SCORE SUMMARY**

- Unaddressed Points: 0
- Number of years the oldest violation has been unaddressed (n): 0
- System Score: 0
- Points under formal enforcement: 0
- Points RTC'd: 17
## E. coli MCL in distribution

<table>
<thead>
<tr>
<th>SS points</th>
<th>Violation Text</th>
<th>PN Tier</th>
<th>RTC</th>
<th>Rule</th>
<th>Info</th>
<th>RTC criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Chemical MCL based on 1 sample</td>
<td>1</td>
<td>N</td>
<td>Nitrate</td>
<td></td>
<td>Resolve contamination problem or install treatment &amp; 1 quarterly chem report below MCL</td>
</tr>
<tr>
<td>10</td>
<td>Chemical MCL based on average of samples</td>
<td>1</td>
<td>N</td>
<td>Nitrate</td>
<td></td>
<td>Resolve contamination problem or install treatment &amp; Quarterly RAA below MCL (with sample)</td>
</tr>
<tr>
<td>5</td>
<td>Chemical MCL based on 1 sample</td>
<td>2</td>
<td>N</td>
<td>Chems not</td>
<td>Nitrate</td>
<td>Resolve contamination problem or install treatment &amp; Quarterly RAA below MCL (with sample)</td>
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<tr>
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<td>2</td>
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<td>10</td>
<td>Acute MCL for E. coli</td>
<td>1</td>
<td>N</td>
<td>Coliform</td>
<td></td>
<td>Resolve contamination problem or install treatment &amp; 2 monthly coliform reports without TC+</td>
</tr>
</tbody>
</table>
Localized versus System-Wide Boil Water Notices

OAR 333-061-0042(1)(b) requires Public Notice

(1) The owner or operator of a public water system must provide public notice to persons served by the water system for all violations and situations established by these rules.

(b) If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the Authority may, in writing, allow the system to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance.
Localized versus System-Wide Boil Water Notices

“No possible way for water with *E. coli* to physically travel to section to be exempt from boil water notice for *E. coli*

- Need positive pressure readings or continuous water service in a section to be exempt
- Consider hydraulics of system: reservoir, pumps, pressure zones
- Master plan or other existing documentation required to limit the extent of a system wide boil water notice
Loss of Positive Pressure

- NO PRESSURE
Loss of Positive Pressure

- Pump Station Failure
- Water Storage Outage
- Source Water Outage
- Main Transmission Pipeline or Intertie Failure (see water main BMPs)
- Electrical Malfunction
- Service Interruption Thresholds
Loss of Positive Pressure

- Leaky pipes can allow contamination to enter pipes during pressure changes
- Study: Microbial contamination found in 56% of soil and water surrounding pipes
Loss of Positive Pressure

Oregon’s Drinking Water Program
by David Emme

After living and working for many years in northern Nevada, I joined Drinking Water Services as manager in February 2017. It’s been an interesting 11 months and I’d like to share some observations so far.

Public concern is high.

In many respects, public water supplies have never been safer. Yet, the failures in Flint, Michigan, and issues with lead in school drinking water have shaken the public trust on a national level. In a 2016 Kaiser Family Foundation poll, Americans ranked the top health issues facing the nation as cancer, heroin abuse and contaminated drinking water, which ranked higher than diabetes or heart disease! Only 36% of those polled think the federal government is doing a good job protecting the water supply. Confidence in state government is higher, with 54% thinking the state is doing a good job protecting water. Still, nearly half have a negative view.

We can only uphold the public trust if we

Loss of water system pressure requires a boil water advisory
by Michelle Byrd

A loss of water system pressure from a waterline break, power outage or equipment failure can happen at any time. When waterlines are no longer pressurized, contaminants in the soil can enter the water supply through leaky pipes, valves or other components. If the water system experiences any loss of pressure, contact your regulating agency to discuss the extent of pressure loss, outage duration, customer notification process and when normal operation will resume.

If there is a water outage in a portion or the entire service area, the water supplier is required to issue a public notice instructing consumers to boil their water before use. The notice is sent to people served in the affected area as soon as practical within 24 hours of learning of the situation. You can download a template with suggested content and delivery instructions from the DWS website. Once water pressure is restored and other corrective
Loss of Positive Pressure

Fact Sheets & Best Management Practices

Best Management Practices (BMPs)

Developed and prepared by the Drinking Water Advisory Committee (DWAC), these guidelines describe best practices for water systems and water suppliers. Systems and suppliers are encouraged to incorporate these BMPs into their routine operations.

- Cutting Into or Repairing Existing Water Mains
- Service Outages Due to Reduced Pressure Events
- Draft BMPs for Harmful Algae Blooms can be found on the Algae Resources page.
Loss of Positive Pressure

Oregon Drinking Water Services
Best Management Practices for
Service Outages Due to Reduced Pressure Events

Example Service Outage Scenarios:
- Pump Station Failure
- Water Storage Outage
- Source Water Outage
- Main Transmission Pipeline or Intertie Failure (see water main BMPs)
- Electrical Malfunction

Service Interruption Thresholds:
1. Maintain normal service pressure
2. Maintain positive pressure throughout affected service area
3. Loss of positive pressure

Management Scenarios:
1. Prevent service outages with backup facilities and power, maintain normal operating pressure - best
   - Recognize service interruption immediately, either directly or through auto monitoring/alarms
   - Engage standby facilities/power or activate interties to restore service
   - Verify service pressure, and chlorine residuals if applicable

2. Recognize service outage and correct as soon as possible, maintaining positive service pressure - desirable
   - Recognize service interruption, either directly or through auto monitoring/alarms
   - Advise affected users to conserve water to maintain positive pressure, if applicable
   - Make temporary or permanent corrective actions to restore service
   - Verify service pressure, and chlorine residuals if applicable
   - Advise users to resume normal water use
   - Inform state drinking water program

3. Loss of service pressure, chlorinated systems
   a. Shut off service meters before complete loss of service pressure, and re-establish pressure - loss desirably applicable until to service outage affecting few areas
Loss of Positive Pressure

• Best Management Practices
  – Management Scenarios

  • Best Case - Prevent service outages with backup facilities and power, maintain normal operating pressure

  • Desirable - Recognize service outage and correct as soon as possible, maintaining positive service pressure

  • Loss of service pressure, chlorinated systems

  • Loss of service pressure, non-chlorinated systems
Loss of Positive Pressure

- Loss of service pressure, chlorinated systems

3. Loss of service pressure, chlorinated systems

a. Shut off service meters before complete loss of service pressure, and re-establish pressure - less desirable, applicable mainly to service outages affecting few users
   - Recognize loss of service pressure
   - Shut off customer services before positive pressure is lost
   - Notify affected water users of service outage, if practical
   - Make temporary or permanent corrective actions to restore service
   - Flush affected area to remove any infiltrated water and restore chlorine residuals
   - Restore service, verify service pressure and chlorine residuals
   - Collect a coliform bacteria sample to provide a record of corrective action effectiveness. Mark as a special sample* and retain in utility records for 2 years.
   - If the post-corrective action coliform sample result shows the presence of coliforms, resample per coliform sampling procedures. If second sample results show presence of coliforms, contact state drinking water program to consult on corrective action.

b. Complete loss of service pressure, notify users to take personal protective action, and re-establish pressure - least desirable
   - Recognize loss of service pressure
   - Notify affected users to take personal protective action (do not use water, boil water, or use bottled water). Unless all affected users can be quickly notified, conduct additional wider notification by media or other means
   - Notify and consult with state drinking water program
   - Make temporary or permanent corrective actions to restore service
   - Flush affected area to remove any infiltrated water and restore chlorine residuals
   - Restore service, verify service pressure and chlorine residuals
   - Collect coliform samples to demonstrate water safety, obtain coliform-absent results before proceeding
   - Consult with state drinking water program
   - Notify users that water is safe to use after they flush their household plumbing

Final 7/15/09
Loss of Positive Pressure

To: DWP-Tier 1 Communications;
Cc: scott.kruger@co.benton.or.us;

- This item will expire in 6 days. To keep the item longer, apply a different retention policy.

A localized boil notice has been issued at the [redacted], located in Benton County, because of a main break that occurred Thursday (10/11/2018). The shutdown was isolated to 1500’ of 6-inch pipe, so only 18 homes were affected. The City is waiting on the results from 3 coliform samples to lift the notice.
## Loss of Positive Pressure

<table>
<thead>
<tr>
<th>OHA Drinking Water Services</th>
<th>Water Advisory Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWS ID:</td>
<td>[Redacted]</td>
</tr>
<tr>
<td>PWS Name:</td>
<td>[Redacted]</td>
</tr>
<tr>
<td>Advisory Type:</td>
<td>Boil Water</td>
</tr>
<tr>
<td>Reason:</td>
<td>Loss of Pressure</td>
</tr>
<tr>
<td>Area Affected:</td>
<td>Partial - 18 homes</td>
</tr>
<tr>
<td>Affected Populations:</td>
<td>All</td>
</tr>
<tr>
<td>Begin Date:</td>
<td>Oct 11, 2018</td>
</tr>
<tr>
<td>Date Lifted:</td>
<td>Oct 15, 2018</td>
</tr>
<tr>
<td>Contacted By:</td>
<td>TEMPLIN, REBECCA (DWP - SPRINGFIELD)</td>
</tr>
<tr>
<td>Who Was Contacted:</td>
<td>[Redacted]</td>
</tr>
<tr>
<td>Contact Phone:</td>
<td>[Redacted]</td>
</tr>
<tr>
<td>Details:</td>
<td>A localized boil notice has been issued at the City of Monroe (PWS#4100540), located in Benton County, because of a main break that occurred Thursday (10/11/2018). The shutdown was isolated to 1500' of 6-inch pipe, so only 18 homes were affected. The City is waiting on the results from 3 coliform samples to lift the notice. Lifted 10/15/2018: The 3 coliform samples came back absent of bacteria so the boil advisory is lifted.</td>
</tr>
</tbody>
</table>
Regulator Responsibilities

• Assess whether advisory is necessary
• Ensure system uses appropriate notification content
• Discuss plan / process / methods to notify all customers within 24 hours
• Review corrective action steps (shock, flush)
• Provide support as water system resolves situation and advisory is lifted
• Document in webform
Simple tips for Live data

• Avoid or explain acronyms
• Write only what you would feel comfortable being quoted in a newspaper
• Stick to the facts of the matter
• Be clear but concise

Details: A ten inch water main broke and they were not a will distribution door-hangers and repair the line of 6/8, with results expected 6/9. If all ne

Lifted 06/09/2017: As of this morning the four sa Linn have come back negative and WS will be lif by the loss of pressure.
Tier 1 Public Notice Templates

• Direct operators to templates
  – Explain what happened,
  – What to do
  – Mandatory health effects language
  – Importance of notifying others
  – Water system contact information

• Ensure DWS (compliance.dw@state.or.us) receives a copy of notice within 10 days of water system issuance

• Other resources: Shock chlorination procedures and calculation tools
Delivery Methods / Options

• All persons served must be notified within 24 hours

• One or more of the following forms of delivery must be used:
  – Broadcast media, such as radio or television;
  – Posting of notices throughout area served; or
  – Hand delivery; or

• Consider sensitive populations

• Addressed in ERP?
Location of Templates Online

Follow-up of Boil Advisory

- If source issue, verify adequate treatment
- If distribution issue and Ecoli MCL exceeded, Level 2 investigation needed
  - Do not lift advisory until investigation completed and defects corrected
  - OR if operator inspects, identifies a problem, fixes, other corrective measures, provides photo documentation, OK to lift first
Lifting the notice

• Review sample number, location, and results
  – Chlorine residual returned to normal
  – Marked Special
• Water systems to notify all customers when notice is lifted explaining:
  – Need to flush internal plumbing to remove any bad water
  – OK to drink water without boiling
• Update WebForm with Lift info
Loss of Positive Pressure

- Best Management Practices
- Template language available
- Door hangers with simple language also acceptable
Questions?
Tia Skerbeck REHS
Oregon Drinking Water Services
(971) 673-04 or (971) 673-0405
christia.d.skerbeck@state.or.us
www.healthoregon.org/dwp