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Maine People Living Safe, Healthy and Productive Lives

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MAINE DRINKING WATER PROGRAM (DWP) POLICY FOR ISSUANCE AND REMOVAL OF DRINKING WATER ORDERS

INDEX

PURPOSE: This policy documents the issuance and removal of Drinking Water Orders. Pursuant to 22 M.R.S.A., Section 2614, a drinking water order may be issued when in the judgment of the Drinking Water Program ("DWP"), a threat to the public may exist from the presence of biological, chemical, or radiological contamination in a public water system. The following policy was developed by the DWP to administer this statutory requirement.

SCOPE: This policy applies to DWP Staff's decision-making and actions related to issuing and removing drinking water orders to Maine public water systems.

OWNER: Roger Crouse

DEFINITIONS:

ACUTE: Characterized by a rapid onset, severe, said of some diseases.

ACUTE EXPOSURE: A single exposure to a toxic substance which results in severe biological harm or death.

BWO: Boil Water Order. To protect individuals consuming water from pathogenic microorganisms, a Boil Water Order, requiring that water be heated to a rolling boil for one minute, is issued to consumers of a public water system.

CET: The DWP Compliance & Enforcement Team (Compliance Officer)

CT: The product of "residual disinfectant concentration" (C) in mg/l determined before or at the first customer, and the corresponding "disinfectant contact time" (T) in minutes, i.e., "C" x "T".

CHRONIC: A persistent and lasting condition, developing slowly with repeated exposure.

DNDO: Do Not Drink Order: To protect individuals consuming water from biological, chemical, or radiological contaminants in exceedance of their maximum contaminant level(s), a Do Not Drink Order is issued to consumers of a public water system.

DNUO: Do Not Use Order: To protect individuals consuming water from biological, chemical, or radiological contaminants that may cause immediate personal harm or injury due to respiratory, topical, or internal exposure, a Do Not Use Order is issued to consumers of a public water system.

DWP: The Maine Drinking Water Program

EC: E. coli

EPI: The Maine Epidemiology Program

FIT: The DWP Field Inspection Team (Field Inspector)

GWR: Ground Water Rule

HIP: The Maine Health Inspection Program (Health Inspector, Sanitarian)

MCL: Maximum Contaminant Level: the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

MHB: The Maine Manufactured Housing Board

PWS: Public Water System

TC: Total Coliform;

RESPONSIBILTIES: Responsibilities apply to DWP staff who determine, with input from the water system, that a drinking water order should be issued and announced (or removed and announced) to the DEH Drinking Water Orders Distribution List and/or to the general public.

POLICY:

1 . <u>BOIL WATER ORDERS</u>

See TABLE 1. below

I. DEFICIENCIES REQUIRING A BOIL WATER ORDER (TABLE 1.)

Deficiency	Immediate Action	Corrective Action
1. Acute Bacteria Violation *** "violation" = confirmed E. coli Confirmed E. Coli = Two or more samples collected within a 30 day period, both Total Coliform positive and at least one E. Coli positive** *** When rechecks are needed to confirm a single e-coli positive sample, the DWP will ask the PWS to consider a "Self-Imposed Boil Water Order" until results of the rechecks are available.**	*** Issue a Boil Water Order** *** Provide Public Notification as soon as possible and within 24 hours** *** Notification is posted until the order is lifted** *** PWS contacts DWP immediately upon the notice of an E. coli positive** *** When recheck samples are necessary, rechecks are taken "as soon as samples can be taken"**	*** For a non-chlorinating system, see this policy section 1.III.1** **a. Continuous Chlorination, or** **b. Repair and Confirm, or** **c. New Source** *** For chlorinating systems, section 1.III.2** *** Minimum three (3) Boil Water Order Removal samples collected by DWP or approved delegate (lift if negative).** *** Follow-up samples may be required by the DWP.**
2. Turbidity MCL Violation (Turbidity above 5.49 NTU) **For surface water systems**	*** Issue a Boil Water Order** *** Provide Public Notification as soon as possible and within 24 hours** *** Notification is posted until the order is lifted** *** PWS calls DWP to inform DWP of turbidity exceedance**	*** Reduce turbidity levels to less than 5.49.** *** Minimum three (3) Boil Water Order Removal samples collected by DWP or approved delegate (lift if negative).** *** Follow-up samples may be required by the DWP.**

Deficiency	Immediate Action	Corrective Action
3. Inadequately treated (lack of filtration or disinfection) surface water entering groundwater source or ground/surface water distribution system or storage e.g. flood, open storage, etc. *** See 9. for unfiltered surface water systems.**	*** Issue a Boil Water Order** *** Provide Public Notification as soon as possible and within 24 hours** *** Notification is posted until the order is lifted** *** PWS calls DWP to inform DWP of inadequate filtration or disinfection** *** When recheck samples are necessary, rechecks are taken "as soon as samples can be taken"**	*** Repair, disinfect, flush (See Appendix A for guidance on flushing measures)** *** For a non-chlorinating system, see this policy Section 1.III.1** **a. Continuous Chlorination, or** **b. Repair and Confirm, or** **c. New Source** *** For chlorinating systems, section 1.III.2** *** Minimum three (3) Boil Water Order Removal samples collected by DWP or approved delegate (lift if negative).** *** Follow-up samples may be required by the DWP.**
4. System or portions of systems that cannot be properly flushed/disinfected after an event causing zero or negative pressure e.g., a broken water main	*** See Appendix A and B** *** If Boil Water Order is issued, provide Public Notification as soon as possible and within 24 hours.** *** Notification is posted until the order is lifted.** *** PWS calls DWP when BWO conditions are met.**	*** See Appendix A and B** *** Follow-up samples may be required by the DWP.** *** When a Boil Water Order is issued, minimum three (3) Boil Water Order Removal samples collected by DWP or approved delegate (lift if negative).**

Deficiency	Immediate Action	Corrective Action
5. Malfunctioning Chlorinator (either required or not required by the DWP) *** Found randomly or through responding to an initial positive sample** *** PUC regulated systems with voluntary Chlorination are exempt from this requirement.** ****NOTE: THIS SECTION ON RESOLVING A MALFUNCTIONING CHLORINATOR SUPERSEDES DEFICIENCY 1. ACUTE BACTERIA VIOLATION (listed above)**	*** Issue a Boil Water Order** *** Provide Public Notification as soon as possible and within 24 hours** *** Notification is posted until the order is lifted** *** PWS calls DWP to inform DWP of Chlorination failure** *** When recheck samples are necessary, rechecks are taken "as soon as samples can be taken"**	*** Repair Chlorinator and return residual to all taps (within reason) to normal levels (typical of what system is reporting).** *** Lift Boil Water Order after returning chlorination to normal levels or take three (3) Boil Water Order Removal samples collected by DWP or approved delegate (lift if negative).** *** DWP retains the option to require negative BWO removal samples to lift BWO or DWP confirmation of chlorine residual levels.** *** Follow-up samples may be required by the DWP.** *** For rechecks taken after Chlorine is returned, a positive bacteria sample (Total Coliform or E. coli) may require additional investigation or action.**
6. Malfunctioning Ultra Violet (UV) light disinfection (either required or not required by the DWP) for ground water systems only. *** Found randomly or through responding to an initial positive sample** *** A bypassed UV system is required to be on a Boil Water Order**	*** Issue a Boil Water Order** *** Provide Public Notification as soon as possible and within 24 hours** *** Notification is posted until the order is lifted** *** PWS calls DWP to inform DWP of UV disinfection failure** *** When recheck samples are necessary, rechecks are taken "as soon as samples can be taken"**	*** Repair UV system and repair solenoid shut-off valve if present.** *** Shocking system with chlorine recommended** *** Flush thoroughly (See Appendix A for guidance on flushing)** *** Minimum three (3) Boil Water Order Removal samples (after chlorine residual from shocking system is zero) collected by DWP or approved delegate. (lift if negative).** *** For rechecks taken after UV disinfection is returned, a positive bacteria sample (Total Coliform or E. coli) may require additional investigation or action.** *** Follow-up samples may be required by the DWP.**

Deficiency	Immediate Action	Corrective Action
7. Dead Animals (mice, rats, birds, etc.) observed in any groundwater source or any finished water storage	*** Issue a Boil Water Order** *** Provide Public Notification as soon as possible and within 24 hours** *** Notification is posted until the order is lifted** *** PWS calls DWP to inform DWP of dead animal found** *** When recheck samples are necessary, rechecks are taken "as soon as samples can be taken"**	*** Remove the dead animal, disinfect, flush (See Appendix A guidance on flushing measures)** *** Repair/modify infrastructure so animals cannot access water system.** *** Minimum three (3) Boil Water Order Removal samples collected by DWP or approved delegate (lift if negative).** *** Follow-up samples may be required by the DWP.**
8. System failed to provide sample results or reports as required, and chronic contamination or repeat non-acute bacteria violations have occurred.	*** Issue a Boil Water Order** *** Provide Public Notification as soon as possible and within 24 hours** *** Notification is posted until the order is lifted** *** BWO issued by DWP staff**	*** Respond to an engineering order regarding repeat non-acute bacteria violations** *** Submit necessary results and/or reports** *** Resolve any outstanding violations.** *** Follow-up samples may be required by the DWP.**
9. Equipment failure resulting in inadequate CT of a filtered or unfiltered surface water supply for more than one day (24 hrs)… this includes when some disinfection is present.	*** Issue a Boil Water Order** *** Provide Public Notification as soon as possible and within 24 hours** *** Notification is posted until the order is lifted** *** PWS calls DWP to inform DWP of equipment failure.**	*** Return disinfection to required specification.** *** Minimum three (3) Boil Water Order Removal samples collected by DWP or approved delegate (lift if negative).** *** Follow-up samples may be required by the DWP.**

Deficiency	Immediate Action	Corrective Action
10. An unprotected direct cross connection with sanitary wastewater (connecting a water pipe to a sewer pipe) without an acute violation *** Also See Appendix B regarding a broken water main (pipe) in the same trench as a broken sewer main (pipe).** **** NOTE: IF CROSS CONNECTION IS FOUND AS A RESULT OF AN ACUTE VIOLATION, FOLLOW RESOLUTION FOR DEFICIENCY 1. ACUTE BACTERIA VIOLATION**	*** Issue a Boil Water Order** *** Provide Public Notification as soon as possible and within 24 hours** *** Notification is posted until the order is lifted** *** PWS calls DWP to inform DWP of cross connection** *** When recheck samples are necessary, rechecks are taken "as soon as samples can be taken"**	*** Remove cross connection or protect against cross connection with a backflow prevention device per the Maine Internal Plumbing code requirements.** *** Shocking system with chlorine recommended, flush thoroughly (See Appendix A)** *** Minimum three (3) Boil Water Order Removal samples collected by DWP or approved delegate (lift if negative).** *** Follow-up samples may be required by the DWP.**

II. PROVIDING PUBLIC NOTIFICATION

When a Public Water System meets the criteria for issuing a Boil Water Order (See Table 1.), the PWS shall appropriately notify affected consumers as soon as possible but at least within 24 hours of its issuance. Notification shall be made with the Boil Water Order notice (See Appendix D). Modifications to any/all notices must be approved by the DWP prior to distribution. Notification may be made through radio, television, daily newspaper, e-mail, other electronic media, or public address methods for systems where hand delivery is impractical. In some instances, the federal Environmental Protection Agency (EPA) may require additional public notification. With schools and daycares, the DWP strongly recommends that parents be notified. *See the Drinking Water Orders SOP (DWP0042) for further notification details.*

For known contamination, the Boil Water Order notice shall be modified to include: “Discard any uncooked food or drink (and ice) that was previously prepared with water.”

Boil Water Orders may be issued to a localized section of a water system (not the whole water system) if the contamination is clearly isolated to that localized section of the water system. The DWP must approve of the use of a localized drinking water order.

When a Boil Water Order is issued by a Public Water System (PWS), the PWS shall notify the Drinking Water Program of the order and related information such as the affected area and plan for resolution of the order.

To announce the end of a Boil Water Order (“lifting” the order), public notification shall be accomplished using the same method the order was announced with.

III. REMOVING A BOIL WATER ORDER

A Boil Water Order can be removed from a public water system when both of the following conditions are met:
(1) The correction of a deficiency occurs; and
(2) Satisfactory Total Coliform samples are collected, analyzed and reported. In the case of a malfunctioning chlorinator, chlorine residual in the distribution system is returned to normal levels at all taps (within reason). However, the DWP retains the option to require satisfactory Total Coliform samples to lift a BWO, or DWP confirmation of chlorine residual levels.

1. Resolving a Boil Water Order due to Acute Contamination at a Non-Chlorinated Water System.

a) When a Boil Water Order is issued due to acute contamination at a PWS with a non-chlorinated water system, the PWS has three options to remove the Boil Water Order:

I. Repair the well or distribution system. If a PWS decides to make a repair to their system to resolve a BWO, the following applies:

Note 1: A BWO due to acute contamination cannot be removed by simply shocking a well or system and getting negative BWO removal samples; the cause of the contamination must be identified and resolved. To this end, the following policy is written.

Note 2: The Ground Water Rule now requires distribution system rechecks and a raw water sample, potentially enabling a differentiation between bacterial contamination of the source vs. the distribution system. Resolution of a BWO for contamination of either section of the water system by using a "repair" requires the following:

i) Before a plan for a repair is accepted as a potential method of resolving a BWO, the DWP must agree that the problem being repaired is a likely cause of the system's bacterial contamination. If the DWP does not agree, then the repair proposed will not be accepted as a method for resolving the BWO.

ii) The DWP may require a licensed water professional be hired to evaluate a water system as part of an effort to identify a physical system defect that could have caused the acute contamination and could potentially be repaired.

iii) The DWP may require that a licensed water professional complete a repair to potentially resolve a BWO.

iv) **If a PWS chooses to repair a part of their water system to remove a BWO, after the repair the system must remain on a BWO for three (3) weeks and take a weekly bacteria sample for each of the three weeks to verify the effectiveness of the repair. Three weeks of weekly samples must be taken in consecutive weeks unless approved by the Compliance Supervisor. This applies to all situations in this policy requiring weekly samples.** If all three weekly samples come back negative for bacteria, then the necessary number of BWO removal samples may then be taken. If all BWO removal samples come back negative, then the BWO may be lifted. If any of the BWO removal samples come back positive, a successive repair will require that the three weeks of weekly sampling be started again in order to verify the effectiveness of the new repair (a positive BWO sample after a repair indicates that the repair did not solve the problem and the resolution process shall resume at step (a.) above, or install continuous chlorination)

Example: For rechecks that confirm acute contamination of the well (raw water recheck is positive), a repair such as a jazzwell seal installed in the well requires three (3) weeks of weekly sampling (in three consecutive weeks) while on a BWO to confirm that the jazzwell seal solved the contamination problem.

v) **When a contaminated water source is repaired,** weekly samples are taken from the source.

vi) **When a contaminated distribution system is repaired,** weekly samples are taken from the distribution system, downstream of the repair.

vii) Boil Water Order removal samples shall come from the distribution system.

viii) Three clean “weekly samples” taken from the distribution system, used to verify the effectiveness of a repair may be used as Boil Water Order removal samples. (See vii) In contrast, three weekly samples from the source may not be used as BWO removal samples.

ix) DWP Staff shall take the three (3) weeks of weekly samples, each after confirming the chlorine residual is zero (0), unless delegated to another approved individual. The chlorine residual must be checked before each weekly sample.

x) For rechecks that confirm contamination of the distribution system (raw water sample clean and positive rechecks from the distribution system), continuous chlorination can be used to resolve the BWO, but UV cannot be used (UV disinfection does not address contamination in the distribution system). To use a “repair” of the distribution system to resolve the BWO, the DWP must agree that the distribution system defect that was repaired was the probable cause of the acute contamination. The program may require additional sampling to identify the source of the contamination including samples from the water source. (See the DWP Total Coliform Recheck Sample Policy and Procedure [DWP0092] for guidance on what to look for at a PWS; see section describing the components of a standard recheck inspection). A distribution system repair must be followed by three (3) weeks of weekly bacteria samples, taken down stream of the repair. If these three weekly samples are all negative, then these samples can be used as BWO removal samples.

xi) Any positive weekly samples must have three (3) rechecks taken (together, at one time). A confirmed positive Total Coliform or E. coli sample verifies that the system repair was not effective.

xii) The department reserves the right to waive the three (3) weeks of weekly samples while under a BWO. Waivers must be approved by a DWP Supervisor. Waivers to this requirement may be considered when (for example):

- A system is small (making the system more easily evaluated for compromised equipment/piping)
- When pressure testing is used to verify the integrity of the system
- When it is determined that the system fully meets the Maine Internal Plumbing Code

- When review of the system by a licensed water professional shows that thorough system evaluation supports the integrity of the water system
- A well-video camera verifies the effectiveness of a well repair, to the satisfaction of DWP personnel.
- When a main break is suspected to be the cause of an acute bacteria BWO that is issued after the break is repaired (samples show up later that are positive for E. coli), the BWO may be lifted by verifying that chlorine levels have been returned to normal or by taking BWO removal samples after the main is disinfected per AWWA C651-92 or later standards. After lifting a BWO in this case, three (3) weeks of weekly sampling under a BWO may be waived, but three weeks of weekly sampling (off the BWO) may be required by the DWP to verify that the main break was the cause of the original EC positive sample, and that another source of bacterial contamination is not present.
- Other information and data is provided to the DWP that would support a waiver.

* Note: Appropriate BWO removal samples must be taken and be negative before issuing a waiver of the three (3) weeks of weekly samples under a BWO.

II. Install disinfection. Continuous chlorination facilities must be designed and built to provide 4- log virus inactivation but, unless required by the Ground Water Rule or otherwise by the DWP, the system does not have to meet 4-log inactivation during normal operation.

UV disinfection may not be installed to resolve a BWO due to acute contamination (E. coli).

III. Drill a new well or find a new well source and bring it on-line using the new well approval process. Upon abandoning (physically disconnecting) the old source and activating the new source (after final well approval if not already an active PWS well), negative BWO removal samples are required to lift the BWO.

2. Resolving a Boil Water Order due to Acute Contamination at a Chlorinated Water System.

a) Repair compromised portions of the water system infrastructure as needed (well, source water intake, treatment equipment, distribution system, etc.)

b) If chlorination system is not operating properly, return chlorination system to acceptable operations as shown by an acceptable free chlorine residual measured in the distribution system. (See BWO Deficiency #5 in Table 1).

c) Flush system thoroughly

d) Lift Boil Water Order after returning chlorination to all taps (within reason) to normal levels (typical of what the system is reporting) or take the necessary number of Boil Water Order Removal Samples (lift if negative).

3. Resolving a Boil Water Order due to Acute Contamination at a System with Ultraviolet Disinfection.

A public water system using ultraviolet disinfection that experiences a confirmed E.-coli sample has the following options for removing a Boil Water Order:

a) Repair of water system defect (source of the E. coli).

a. For repairs of the water system follow 1.III.1 for resolving a boil water order due to acute contamination at a non-chlorinated water system. **Note that when a confirmed e-coli occurs due to a failed UV unit, a repair of the UV unit will not resolve the boil water order; The source of the E. coli must be repaired or the system can use options b) or c).**

b) Install continuous chlorination disinfection

c) Find and obtain approval for a new source of water (drill a new well).

IV. BOIL WATER ORDER REMOVAL SAMPLES

Boil Water Order removal samples must be analyzed by a Maine certified laboratory.

Boil Water Order removal samples may be collected only after approved treatment is installed for acute coliform MCL violations or significant deficiencies are corrected for identifiable operational problems, or the source of contamination is eliminated (e.g., new source or intentional contamination ceased).

The required number of Boil Water Order Removal Samples must be taken on the same day, at separate locations, when possible. The samples taken must be representative of the distribution system affected by the Boil Water Order and must all be negative for total coliform bacteria in order to remove the Boil Water Order.

When repairing a system where weekly samples are required to verify the effectiveness of the repair, weekly samples taken from the distribution system, downstream of a repair, can count as Boil Water Order removal samples.

The required number of samples taken to lift a Boil Water Order shall correspond to the population requirement of the Total Coliform Rule (TCR), but in no case shall be less that three. Population determination for the Boil Water Order shall be based upon the affected area of the Boil Water Order.

Systems must have their Boil Water Order removal samples collected by the DWP Field Inspector or other designee approved by the DWP. The DWP may require or allow variations to this sampling protocol on a case-by-case basis.

2. DO NOT DRINK ORDER

I. DEFICIENCIES REQUIRING A DO NOT DRINK ORDER

A Do Not Drink Order is issued to consumers when biological, chemical, or radiological contaminants are present in drinking water that exceed established MCLs and/or present an "acute" risk to consumers via ingestion. If topical or respiratory contact with the contaminated water presents an acute risk to consumers, the issuance of a Do Not Use Order shall be considered and issued as necessary (See Do Not Use Order below).

II. PROVIDING PUBLIC NOTIFICATION

When a Public Water System is issued a Do Not Drink Order, the PWS shall appropriately notify affected consumers as soon as possible but at least within 24 hours of its issuance. Notification shall be made with the Do Not Drink Order Notice (See Appendix D). Modifications to the notice must be approved by the DWP prior to distribution. Notification may be made through radio, television, daily newspaper, e-mail, other electronic media, or public address methods for systems where hand delivery is impractical. In some instances, the federal Environmental Protection Agency (EPA) may require additional public notification. With schools and daycares, the DWP strongly recommends that parents be notified. *See the Drinking Water Orders SOP (DWP0042) for further notification details.*

For known contamination, the Do Not Drink Order notice shall include: "Discard any food or drink (and ice) that was previously prepared with water."

Do Not Drink Orders may be issued to a localized section of a water system (not the whole water system) if the contamination is clearly isolated to that localized section of the water system. The DWP must approve of the use of a localized drinking water order.

When a Do Not Drink Order is issued by a Public Water System (PWS), the PWS shall notify the Drinking Water Program of the order and related information such as the affected area and plan for resolution of the order.

To announce the end of a Do Not Drink Order ("lifting" the order), public notification shall be accomplished using the same method the order was announced with.

III. REMOVING A DO NOT DRINK ORDER

A Do Not Drink Order can be removed from a public water system when the following conditions are met:
(1) the correction of a deficiency occurs; or
(2) contamination source is eliminated; or
(3) an approved new source of water (not bottled water) is provided; or
(4) DWP approved treatment is installed; and
(5) the entire system is flushed thoroughly (in some cases the system may need specialized cleaning), and
(6) satisfactory samples are collected, analyzed and reported.

A. PROCEDURE

(1) Identify the source of the contamination
(2) Remove the source of contamination, correct system deficiencies, install DWP approved treatment, or provide an approved new source of water
(3) Flush the system thoroughly (in some cases the system may need specialized cleaning)
(4) If deemed necessary by the DWP, disinfect the system thoroughly
(5) Develop and implement a sampling plan that will adequately ensure safe drinking water upon gaining satisfactory sample results, per this policy.

B. DO NOT DRINK ORDER REMOVAL SAMPLES

Do Not Drink Order removal samples must be analyzed by a Maine certified laboratory.

Do Not Drink Order removal samples may be collected only after approved treatment is installed for MCL violations or significant deficiencies are corrected for identifiable operational problems, or the source of contamination is eliminated (e.g., new source or intentional contamination ceased).

The type and required number of samples taken to lift a Do Not Drink Order shall be determined by the DWP. Policy for determining the number of samples to lift a BWO may be considered in this decision making process.

The required number of Do Not Drink Order Removal Samples must be taken on the same day, at separate locations, when possible. The samples taken must be representative of the distribution system affected by the Do Not Drink Order and must all be at acceptable levels for the contaminant identified in order to remove the Do Not Drink Water Order.

Systems must have their Do Not Drink Order removal samples collected by the DWP Field Inspector or other designee approved by the DWP. The DWP may require or allow variations to this sampling protocol on a case-by-case basis.

3. DO NOT USE ORDER

I. DEFICIENCIES REQUIRING A DO NOT USE ORDER

A Do Not Use Order is issued to consumers when biological, chemical, or radiological contaminants are present in drinking water that exceed established MCLs and/or present an "acute" topical, respiratory, or ingestion risk to consumers.

II. PROVIDING PUBLIC NOTIFICATION

When a Public Water System is issued a Do Not Use Order, the PWS shall appropriately notify affected consumers as soon as possible but at least within 24 hours of its issuance. Notification shall be made with the Do Not Use Order Notice (See Appendix D). Modifications to the notice must be approved by the DWP prior to distribution. Notification may be made through radio, television, daily newspaper, e-mail, other electronic media, or public address methods for systems where hand delivery is impractical. In some instances, the federal Environmental Protection Agency (EPA) may require additional public notification. With schools and daycares, the DWP strongly recommends that parents be notified. *See the Drinking Water Orders SOP (DWP0042) for further notification details.*

For known contamination, the Do Not Use Order notice shall be modified to include: "Discard any food or drink (and ice) that was previously prepared with water."

Do Not Use Orders may be issued to a localized section of a water system (not the whole water system) if the contamination is clearly isolated to that localized section of the water system. The DWP must approve of the use of a localized drinking water order.

When a Do Not Use Order is issued by a Public Water System (PWS), the PWS shall notify the Drinking Water Program of the order and related information such as the affected area and plan for resolution of the order.

To announce the end of a Do Not Use Order ("lifting" the order), public notification shall be accomplished using the same method the order was announced with.

III. REMOVING A DO NOT USE ORDER

A Do Not Use Order can be removed from a public water system when the following conditions are met:
(1) the correction of a deficiency occurs; or
(2) contamination source is eliminated; or
(3) an approved new source of water (not bottled water) is provided; or
(4) DWP approved treatment is installed; and
(5) The entire system is flushed thoroughly (in some cases the system may need specialized cleaning), and
(6) satisfactory samples are collected, analyzed and reported.

A. PROCEDURE

(1) Identify the source of the contamination

(2) Remove the source of contamination, correct system deficiencies, install DWP approved treatment, or provide an approved new source of water
(3) Flush the system thoroughly (in some cases the system may need specialized cleaning)
(4) If deemed necessary by the DWP, disinfect the system thoroughly
(5) Develop and implement a sampling plan that will adequately ensure safe drinking water upon gaining satisfactory sample results, per this policy.

B. DO NOT USE ORDER REMOVAL SAMPLES

Do Not Use Order removal samples must be analyzed by a Maine certified laboratory.

Do Not Use Order removal samples may be collected only after approved treatment is installed for MCL violations or significant deficiencies are corrected for identifiable operational problems, or the source of contamination is eliminated (e.g., new source or intentional contamination ceased).

The type and required number of samples taken to lift a Do Not Use Order shall be determined by the DWP. Policy for determining the number of samples to lift a BWO may be considered in this decision making process.

The required number of Do Not Use Order Removal Samples must be taken on the same day, at separate locations, when possible. The samples taken must be representative of the distribution system affected by the Do Not Use Order and must all be at acceptable levels for the contaminant identified in order to remove the Do Not Use Order.

Systems must have their Do Not Use Order removal samples collected by the DWP Field Inspector or other designee approved by the DWP. The DWP may require or allow variations to this sampling protocol on a case-by-case basis.

ASSOCIATED DOCUMENTS:

DWO SOP (DWP0042)
DWP Rechecks Policy (DWP0092)
DWP UV Policy (DWP0047)
CET Requirement Letters, including the 3-Option Letter
New System or Well Approval Policy and Procedure (DWP0068)

SUPERCEDED DOCUMENTS: Original BWO Policy

RETENTION:

1. This document is retained per the DWP Documentation Control Procedure.

REVISION LOG

Section	Page	Rev.	Date	Description Of Change	Approved by:
All	All	Original	4/25/01		Roger Crouse
All	All	A	12/28/05		Roger Crouse

All	All	B	10/28/08	Updated format & terms, based on new 2008 SOP	Roger Crouse
Appendix A & AWWA Standard	4 and 5	C	1/08/09	Added Appendix A Flowchart & AWWA Standard	Tera Pare
Section	**Page**	**Rev.**	**Date**	**Description Of Change**	**Approved by:**
All	All	D	4/8/2010	Updated Doc. Format – Modified Footer. Corrected this Revision Log to reflect finding an earlier "Original" – Note that previous document revision labels are incorrect. Earlier revisions can be identified by the policy date as shown here.	Roger Crouse
All	All	E	8/17/2011	Name and scope change to include all drinking water orders: BWO, DNDO, DNUO. Added BWO policy for non-chlorinated and chlorinated system. Added Appdx A on Reducing Risk and Appdx D: Drinking Water Order Notices	Roger Crouse
1.I. Table 1 1.III.1 1.III.1 1.III.2 1.III.3 Assoc Doc Apndx B	7, #7 10 iv) 11 x) 12 d) 13 3) 18 22	F	9-14-2011	Add… repair infrastructure Use "consecutive weeks" Changed reference document Clarification Detail provided Added an Associated Document Removed... lift BWO by returning CL2 residual only… not applicable here.	Roger Crouse
APPDX D Sec 1. Sec 2. Sec 3.	25 9 14 16	G	5-22-2013	Added "rolling boil" language to the BWO posting in Appendix D. Replaced Do Not Use posting in Appendix D. Added info on contacting DWP and "lifting" orders to each of three order's Public Notification section.	Roger Crouse
1.IV 2.III.B 3.II.B Appndx B	13 15 17 22	H	5-22-2-15	DWO removal samples must be analyzed by a Maine certified lab. Samples used to evaluate the safety of water after a low pressure event (main break) do not have to be analyzed by a certified lab and are not compliance samples, but do have to use an EPA approved presence/absence test.	Nathan Saunders

Appndx D	25-28	J	5-26-2015	BWO, DNDO, DNU Orders replaced with versions that have both pictorial messages and translated phrases	Nathan Saunders

Appendix A

Guidance on Reducing the Risk of the Public Consuming Contaminated Water during an Event Causing the Loss of Water Pressure

"Are you confident all your customers will receive safe water after the loss of pressure event?"

Positive pressure in the distribution system is a protective barrier to keep contamination out. Zero or negative pressure in a water system may allow contamination to enter the water system. When a public water system loses pressure because of a main break or other event, the operator must consider the possible risks to all consumers. The operator is responsible for all water served and for communicating appropriate notifications when the safety of the water is in question.

During a water main break, loss of system pressure, or other event (including backflow) that may create water that is unsafe for consumption, the operator is responsible for managing (minimizing) the risks to consumers.

The Table below highlights areas of consideration during a loss of pressure event. Operators must consider these factors when deciding whether or not the water is safe. If you are unsure of the safety of the water, you must appropriately communicate the risk to your customers. **If you feel that the risk to customers is high, then place a Boil Water Order on the affected areas of the water system. If you feel the risk to customers is low, please proceed to Appendix B.**

Little, no, or unknown backflow protection Increased Risk	**Adequate backflow protection Decreased Risk**
Description: When a water main breaks or is opened for a repair, water that is elevated above the break will naturally flow towards the break. When water systems serve hilly areas and/or multistory buildings, without backflow protection (valves) in place, water will run down toward the break and will also create suction at service connections and water taps. In this situation, any direct connections to non-potable water or other substances enable these substances to be drawn into the potable water system, contaminating it. If the potential for backflow of hazardous substances is present during an event causing loss of pressure, there is a high risk that the water system will be contaminated. For example, if a water system serves an industrial facility that experiences loss of water pressure during an event, unless that facility is protected by proper backflow protection valves, a high risk of water system contamination is present.	
Inadequate Flushing Increased Risk	**Adequate Flushing Decreased Risk**
Description: When a loss of pressure event occurs unexpectedly in a complex distribution system with inadequate or inoperable isolation valves, and hundreds of homes are dewatered, the ability to properly flush the water system is compromised. When a mobile home park with 1" diameter pipe is dewatered and flushing can only occur through half inch services and outside spigots, the ability to properly flush the system is compromised. Inadequate flushing presents a high risk to consumers. After a repair, thoroughly flush water pipe/mains affected, preferably toward the repair from both directions if possible, with a minimum velocity of 2.5 feet per sec. [flowrate in gal/min x	

.0022 = cubic feet per sec] and [flow rate (cubic feet per sec) divided by the pipe's cross-sectional area (square feet) = velocity (feet per sec)] For small pipe diameters (1-2 in. dia.), flush by opening as many taps as possible. Do not flush into septic systems; use outside spigots. If piping or well is shock chlorinated, flush until the smell of chlorine is not noticeable.

Limited Distribution System Knowledge **Increased Risk**	**Well Known Distribution System** **Decreased Risk**

Description: When the layout of water system piping/equipment is not well known and the type and number of connections to the water system is not thoroughly known, the risk of providing contaminated water to the consumer is high.

Thorough knowledge of a water system (knowledge of the piping layout, where operational isolation valves are located, where the risk of cross connections are higher [industrial operations or residential practices of concern]), helps when making decisions on the amount of risk present to consumers. When water system operators thoroughly understand their water system, a knowledgeable evaluation of the whole-system condition enables better decisions on issuing, or not issuing, a drinking water order.

Large areas of the distribution system affected **Increased Risk**	**Minimal area of the distribution system affected** **Decreased Risk**

Description: The larger the area affected by the low or negative pressure, the greater risk of encountering unprotected cross-connections, and the less likely the operator will be able to properly flush in a timely manner

Poor Trench Control **Increased Risk**	**Adequate Trench Control** **Decreased Risk**

Description: When repairing an underground water pipe/main, certain practices will help reduce the risk of contaminating the potable water supply.

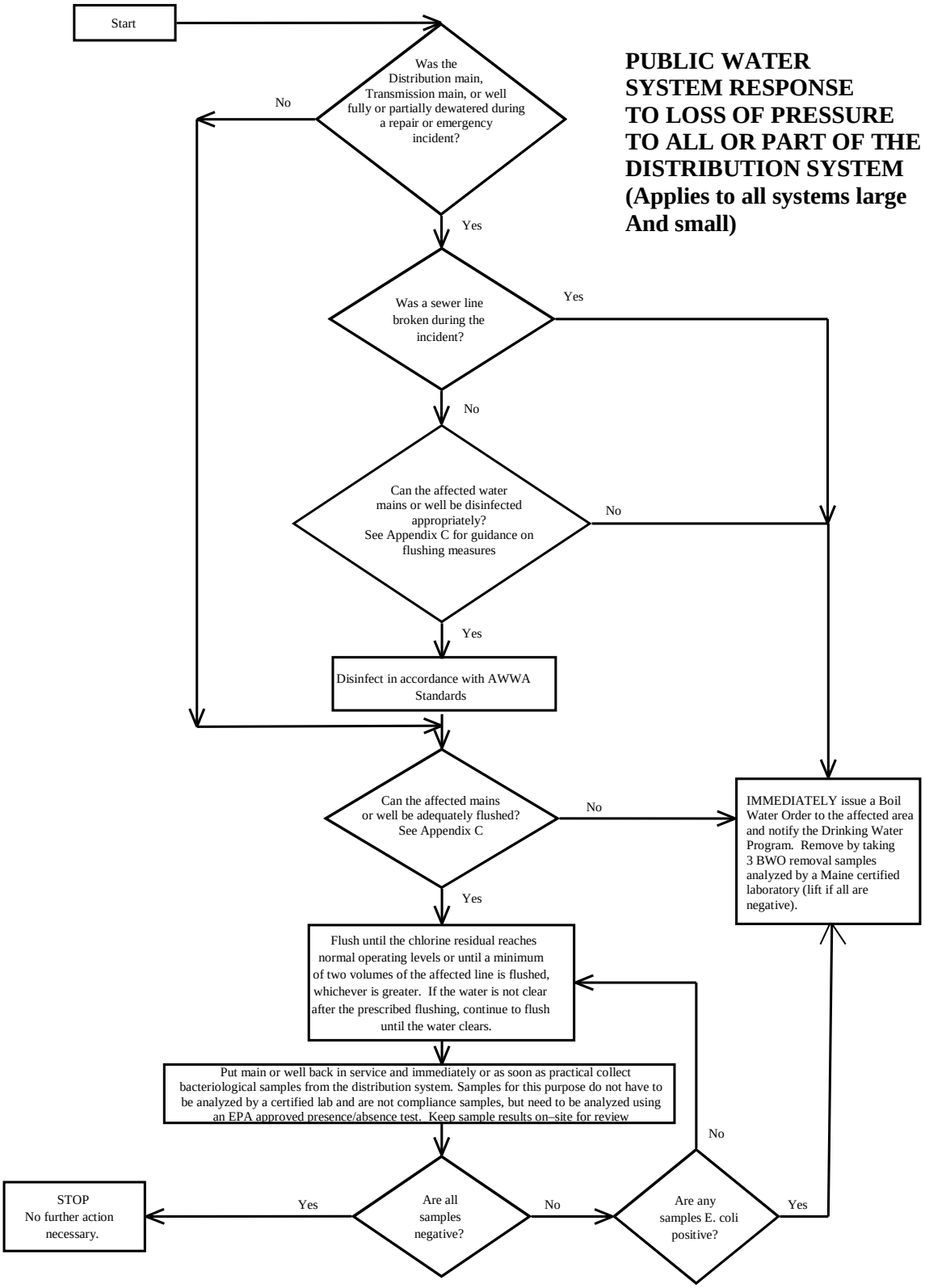
- Divert surface water from entering the trench
- Liberally apply hypochlorite (tablets preferred) to the standing water in the trench
- Continuously dewater (pump) the trench to a level below the pipe
- Keep pipe, fittings, and valves clean and spray with 1% hypochlorite
- Shut down pipe/main for repair after trench controls are in place

No Chlorine Residual **Increased Risk**	**Chlorine Residual** **Decreased Risk**

Description: Systems that do not continuously chlorinate present a higher risk of consuming contaminated water to the public than systems that chlorinate. Chlorine disinfection is used along with flushing practices to reduce the risk to the public after a low pressure event.

Unplanned Event **Increased Risk**	**Planned Event** **Decreased Risk**
Description: When a loss of pressure event is uncontrolled due to a water main break (not a pre-planned event), it can be difficult to determine the extent of the impact on a water system. Unless the operator has a thorough knowledge of the water system and can determine the extent of the event's impact, a higher risk of the public consuming contaminated water exists. When the shut-down of a water system is preplanned, providing controls such as valve isolation of the system/section being repaired, best practices for trench management, and a flushing strategy will reduce the risk of the public consuming contaminated water.	
Lack of Disinfection **Increased Risk**	**Adequate Disinfection** **Decreased Risk**
To reduce the risk of contaminating the potable water supply, spray all pipe and equipment with a 1% hypochlorite solution prior to use or installation. Add liquid bleach to the well to provide 50 parts per million (ppm) chlorine. Drinking Water Program staff can assist with determining how much bleach (sodium hypochlorite) to add. If possible, use a hose with chlorinated water (from the chlorinated well) to spray down the top of the well casing and well cap, before replacing the well cap. For a small system, turn on ALL taps until chlorine can be smelled in the water at each tap. Leave overnight if possible. Flush system thoroughly until chlorine cannot be smelled. Do not drink or bath with the heavily chlorinated water. For these activities, wait until the system has been flushed and chlorine cannot be smelled in the water.	

APPENDIX B
(Use Only After an Appendix A Risk Evaluation Indicates Low Risk)



APPENDIX C
AWWA Standard for
Disinfecting Water Mains

SECTION 10: DISINFECTION PROCEDURES WHEN CUTTING INTO OR REPAIRING EXISTING MAINS

The following procedures apply primarily when existing mains are wholly or partially dewatered. After the appropriate procedures have been completed, the existing main may be returned to service prior to completion of bacteriological testing in order to minimize the time customers are out of water. Leaks or breaks that are repaired with clamping devices while the mains remain full of pressurized water presents little danger of contamination and require no disinfection.

Sec. 10.1 Trench Treatment

When an existing main is opened, either by accident or by design, the excavation will likely be wet and may be badly contaminated from nearby sewers. Liberal quantities of hypochlorite applied to open trench areas will lessen the danger from such pollution. Tablets have the advantage in such a situation because they dissolve slowly and continue to release hypochlorite as water is pumped from the excavation.

Sec. 10.2 Swabbing With Hypochlorite Solution

The interior of all pipe and fittings (particularly couplings and sleeves) used in making the repair shall be swabbed or sprayed with a 1 percent hypochlorite solution before they are installed.

Sec. 10.3 Flushing

Thorough flushing is the most practical means of removing contamination introduced during repairs. If valve and hydrant locations permit, flushing toward the work location from both directions is recommended. Flushing shall be started as soon as the repairs are completed and shall be continued until discolored water is eliminated.

Sec. 10.4 Slug Chlorination

When practical, in addition to the procedures above, the section of main in which the break is located shall be isolated, all service connections shut off, and the section flushed and chlorinated as described in Sec. 5.3, except that the dose may be increased to as much as 300 mg/l and the contact time reduced to as little as 15 min. After chlorination, flushing shall be resumed and continued until discolored water is eliminated, and the water is free of noticeable chlorine odor.

Sec. 10.5 Sampling

Bacteriological samples shall be taken after repairs are completed to provide a record for determining the procedure's effectiveness. If the direction of flow is unknown, then samples shall be taken on each side of the main break. If positive bacteriological samples are recorded, then the situation shall be evaluated by the purchaser (or purchaser's representative) who can determine corrective action, and daily sampling shall be continued until two consecutive negative samples are recorded.

APPENDIX D

DRINKING WATER ORDER NOTICES:

1. **BOIL WATER ORDER NOTICE**
2. **DO NOT DRINK ORDER NOTICE**
3. **DO NOT USE ORDER NOTICE**

Boil Water Order

Due to the possibility of unsafe water, _____ consumers are directed to **Boil All Water** for one minute at a rolling boil before drinking, making ice cubes, washing foods, brushing teeth or in any other activity involving consumption of water. This Order shall remain in effect until further notice!

Questions regarding this notice should be directed to: _____ at _____

or to the
State of Maine Drinking Water Program at
287-2070 during normal business hours.
TO BE POSTED IMMEDIATELY.

Boil Water Order (English)	الماء بـ غـ لي امر (Arabic)	AVIS D'ÉBULLITION DE L'EAU (French)	Kar Kari biyah (Somali)	Orden de hervir el agua (Spanish)

This entire notice is available in the following languages at www.medwp.com: Arabic, French, Somali, and Spanish.

Do Not Drink the Water

Due to unsafe drinking water conditions, _____ consumers are directed to **Not Drink the Water.** This includes making ice cubes, food preparation, brushing teeth or any other activity involving consumption of water. This Order shall remain in effect until further notice!

Questions regarding this notice should be directed to:

_____

at _____

or to the

State of Maine Drinking Water Program at 287-2070 during normal business hours.

TO BE POSTED IMMEDIATELY.

Do Not Drink the Water (English)	عدم الرجاء الماء شرب (Arabic)	NE BUVEZ PAS L'EAU (French)	Hacabin Biyaha (Somali)	No beba el agua (Spanish)

This entire notice is available in the following languages at www.medwp.com: Arabic, French, Somali, and Spanish.

Do Not Use the Water

Due to unsafe drinking water conditions,
_____consumers are directed to **Not Use the Water.**
This includes making ice cubes, food preparation, brushing teeth, washing hands, showering, or any other activity involving the use of water for people or pets. The use and flushing of toilets is permitted. This Order shall remain in effect until further notice!

Questions regarding this notice should be directed to:

_____

at _____
or to the
State of Maine Drinking Water Program at
287-2070 during normal business hours.
TO BE POSTED IMMEDIATELY.

Do Not Use the Water (English)	مءعد الـ رجاء الـماء ا سـ تـعمال (Arabic)	N'UTILISEZ PAS L'EAU (French)	Ha isticmaalin Biyaha (Somali)	No use el agua (Spanish)

This entire notice is available in the following languages at www.medwp.com: Arabic, French, Somali, and Spanish.