

ADH

Drinking Water Compliance Course

General Compliance Summary Requirements

We will be covering ...

- Boil orders (Chapter 6)
- Consumer Confidence Reports (Chapter 7)
- Cross Connection Control (Chapter 8)
- Emergency Plans (Chapter 9)
- Emergency Reporting (Chapter 10)
- Lead & Copper Rule (Chapter 11)
- Capacity Development (Chapter 12)



We will be covering ...

- Monthly Operation Reports (Chapter 13)
- Service to Unsewered Areas (Chapter 14)
- Operator Requirements (Chapter 15)
- Plan Review and Approval (Chapter 16)
- Plumbing Inspections (Chapter 17)
- Public Notification (Chapter 18)
- PWS Service Fees (Chapter 19)



(Chapter 6)

• What is a Boil Order?

 A public notification that recommends that drinking water be boiled and is intended to prevent the spread of communicable diseases caused by waterborne pathogens



Boil Orders (Chapter 6)

Two Types Of Boil Orders

- Precautionary Boil Water Notice
- Contaminated Boil Water Notice



- Precautionary Boil Water Notice
- •issued when the presumption is made that the water *may be* contaminated
 - zero pressure
 - •failure in treatment processes
 - •failure to meet SWTR treatment techniques
 - microbial challenge



Contaminated Boil Water Notice

- •issued when the presumption is made that the water is contaminated
- Acute Maximum Contaminant Level (MCL) violation of the Total
 Coliform Rule
 - Persistent presence of total coliform in compliance samples



Contaminated Boil Water Notice

- Cross-connection involving microbial contaminant
 - Natural disaster: earthquake, flood, etc.
 - Positive test for pathogens



Do Not Drink Orders (Chapter 10)

•contaminates not affected by boiling but are not hazardous for uses such as flushing toilets, bathing, or washing

nitrates in the water are hazardous for young children to drink



Do Not Use Orders (Chapter 10)

•contaminates which are considered hazardous for any use of the water

•presence of propane gas in the water in a sufficient concentration to cause a fire or explosion



Notice Format

- All notices should have
 - Title
 - •Who is issuing the notice
- What areas are covered by the notice
- Reason for the notice: precautionary or contaminated
 - Corrective action taken
 - Contact number and name of the contact person



Boil Order Example

JANUARY 8, 2002

FOR FURTHER INFORMATION, CONTACT:
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NEWS ARTICLE

FOR IMMEDIATE RELEASE

THE ARKANSAS DEPARTMENT OF HEALTH HAS CONFIRMED A **BOIL WATER ORDER** ISSUED BY **BOB SMITH** FOR THE **ROLLING BROOK AREA OF THE BLACK HILLS** WATER SYSTEM IN SALINE COUNTY, ARKANSAS. THIS ORDER WAS ISSUED AS A **PRECAUTIONARY** MEASURE BECAUSE OF THE POSSIBILITY THAT CONTAMINATED WATER MAY HAVE ENTERED THE DISTRIBUTION SYSTEM AS THE RESULT OF THE **COMPLETE LOSS OF NORMAL SYSTEM PRESSURE**.

UNDER A "BOIL WATER" ORDER, CUSTOMERS ARE ADVISED THAT THE WATER MAY BE UNSAFE FOR HUMAN CONSUMPTION, AND THAT WATER USED FOR DRINKING AND FOOD PREPARATION MUST BE **BOILED** BRISKLY FOR **ONE (1) MINUTE** PRIOR TO USE.

THIS ORDER WILL BE LIFTED BY THE DEPARTMENT OF HEALTH WHEN ADEQUATE PRESSURES ARE RESTORED AND BACTERIOLOGICAL SAMPLES INDICATE THAT THE WATER IS FREE OF BACTERIOLOGICAL CONTAMINATION, AND AN ADEQUATE DISINFECT LEVEL IS ESTABLISHED THROUGHOUT THE SYSTEM.

THE LOSS WAS DUE TO BROKEN WATER MAIN.

Corrective Action

Water should be heated to a rolling boil for at least one
 (1) minute.

- All ice cubes discarded.
- Customer may want to use bottled water.



- Distribution
- door hangers
- phone calls
- posted notices
- Radio and/or television
 - Newspapers
- If the event demonstrates evidence of disease outbreak, any notice should be coordinated with the ADH.



Repeal

- Principal incident or reason for the issuance of the notice must have been corrected.
- Bacti samples on two (2) consecutive days are coliform absent. (except pressure loss)
- Number of samples required in each set of samples is determined by the number of services/population served.



Format for Notice Repeal/Release

- Title of the repeal
- Who is issuing the repeal
- What areas were affected
- Action (boiling) no longer needed
 - Reason for notice being lifted
 - Contact number and name



MARCH 25, 2001

FOR FURTHER INFORMATION, CONTACT: BEN WISNER ENVIRONMENTAL SPECIALIST DIVISION OF ENGINEERING (501) 661-2623

NEWS ARTICLE

FOR IMMEDIATE RELEASE

THE ARKANSAS DEPARTMENT OF HEALTH HAS RELEASED THE GOULD WATER SYSTEM, IN LINCOLN COUNTY FROM THE "BOIL WATER" ORDER IT HAS BEEN UNDER SINCE 03/21/02. THIS ORDER WAS ISSUED AS A PRECAUTIONARY MEASURE BECAUSE OF THE COMPLETE LOSS OF NORMAL SYSTEM PRESSURE.

BACTERIOLOGICAL SAMPLES TAKEN ON 03/22/01 WERE FOUND TO BE 'SAFE', AND A SATISFACTORY DISINFECTANT LEVEL HAS BEEN ESTABLISHED THROUGHOUT THE DISTRIBUTION SYSTEM. THE WATER IS THEREFORE CONSIDERED 'SAFE' FOR HUMAN CONSUPTION AND THE 'BOIL WATER' ORDER IS HEREBY LIFTED.

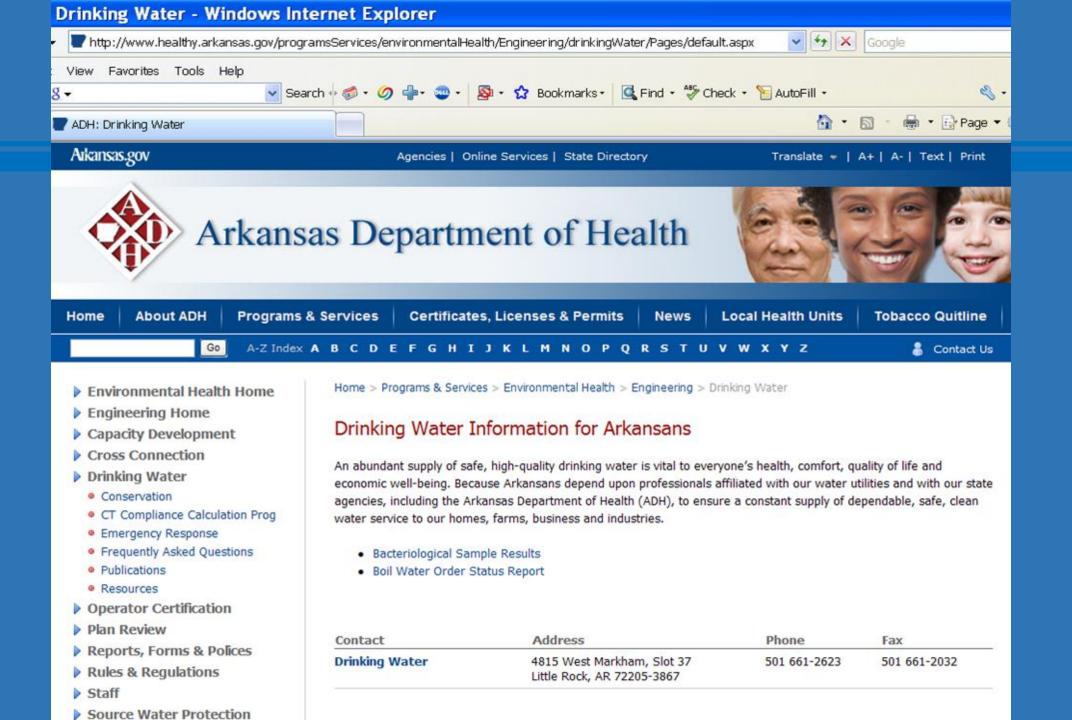
BWO LIFT REL.DOC



Boil Water Order Policy

- For more details ...
- Number of required samples
 - Exemptions
 - Reporting requirements
 - Policy Web Address
- http://www.healthy.arkansas.gov/eng
- Click on Reports and Forms then navigate to Downloads for policy







Consumer Confidence Report (CCR) (Chapter 7)

- Consumer Confidence Rule:
- Every community water system must prepare and make available to all customers an *annual report* describing the source of the water and the water quality, including information on any contaminant detection or violation.



CCR

- Must contain:
- Info on water source(s)
- Levels of detected contaminants
- Info on Cryptosporidium, radon, and other contaminants, if monitored.
 - Health effects language.
 - Info on violations of National Primary Drinking Water Standards. Delivery and Record keeping requirements.
 - Violations.



CCR

• How long must you keep the CCR on file?

• must be maintained for three (3) years.



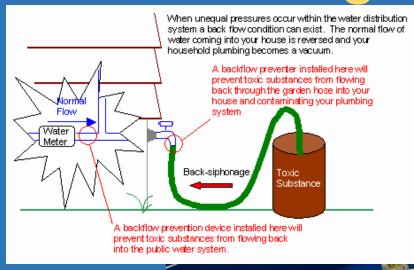
Cross Connection Control Program (CCCP)

(Chapter 8)

- •Cross Connection is a physical connection between a Public Water supply and either an unsafe or a questionable water supply or any toxic or objectionable material.
 - •All PWSs shall have a Cross Connection Control Program (CCCP)



Why Cross Connection Control Program (CCCP)







Cross Connection Control Program (CCCP)

- •What does the program do?
- ID locations of backflow preventers
- Requires annual testing of backflow preventers
- It is the responsibility of the PWS to maintain the program.



- •All public water systems are required to have a cross connection control program (CCCP) which addresses commercial and industrial customers.
 - •The CCCP must comply with "minimum standards for a cross connection control program."
 - Connections to fire sprinkler systems must comply with "policy for cross connection control on fire protection system."













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Cross Connection

Consumer / Public Overview of Cross Connection Control

This article is intended to give the reader a basic understanding of what backflow is all about and why backflow of water combined with the presence of cross-connections can be a source of contamination to the public water systems.

Q: What is Backflow?

Answer: Backflow, within the context of the drinking water industry, means the reversal of water flow from its normal or intended direction of flow. Whenever a water utility connects a customer to its water distribution system, the intention is for the water to flow from the distribution system to the customer. However, it is possible, and quite common, for the flow to be reversed and flow from the customer's plumbing system back into the public water distribution system. If cross-connections exist within the user's plumbing system when backflow occurs then it is possible to contaminate the public water system.



• Where cross connections are found or potential for CC, PWS must be protected by:

DCVA - Double Check Valve Assembly: used for low (non-health) hazards

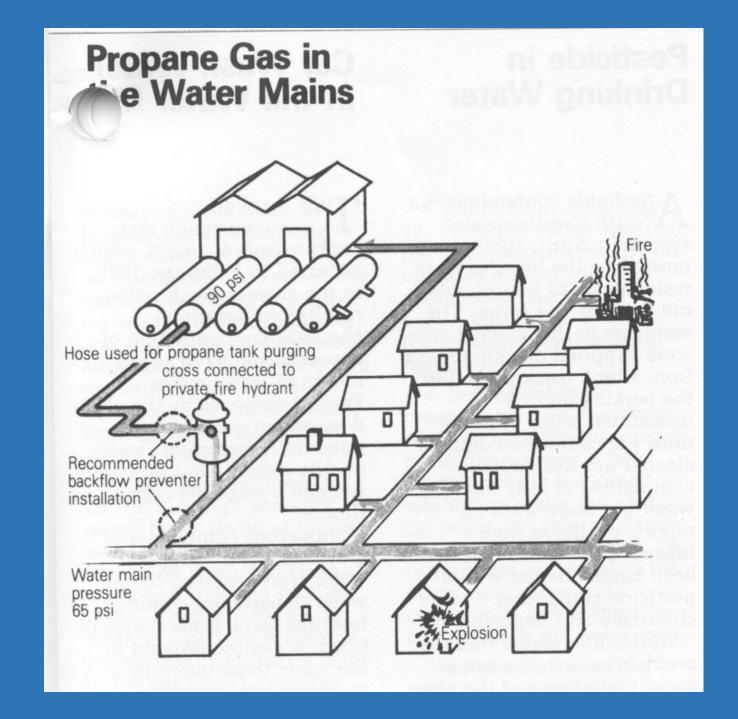
 RPZA - Reduced Pressure Zone Assembly: used for high (health) hazards.

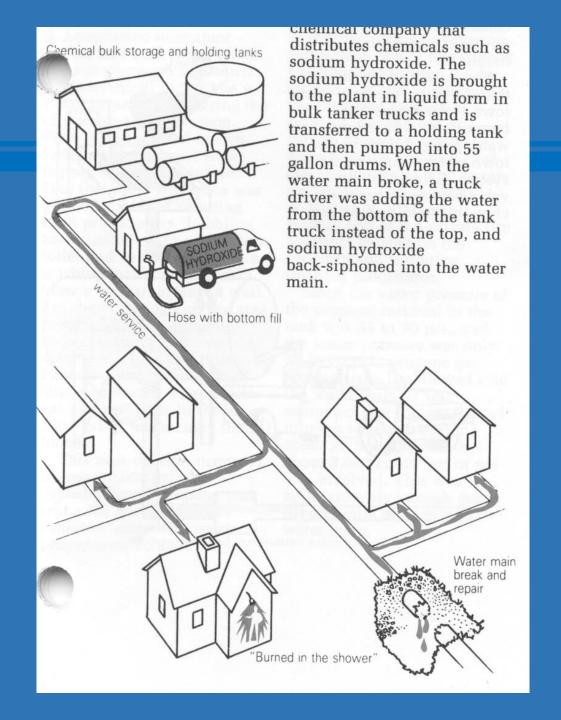


•All records for locations of/and annual testing of CCC hardware must be available to ADH staff members during sanitary surveys.

•Failure to implement a CCCP may eventually result in assessment of penalties.









Emergency Plan (Chapter 9)

• What type of water system(s) is required to have an emergency plan?

Each Community Public Water System and each Non-Transient Non-Community Public Water System shall have a written emergency plan.



Emergency Plan (Chapter 9)

• The Plan should include:

- Names and phone numbers of responsible utility personnel.
 - Procedures to be followed in the event of loss of source, treatment, storage, or distribution facilities.



Emergency Plan (Chapter 9)

• The Plan should include:

 Procedures to be followed in the event of a loss of distribution pressure or a known or suspected introduction of contaminants into the distribution system.



Emergency Plan

- Things to remember
 - Plan Ahead
 - Include responses for
 - Fire Department
 - Police
 - EMS Service
 - System Employees
- Review and update at least annually



Emergency Plan

 Appendix A of the Compliance Summary provides examples of information needed to have an effective emergency plan.





Emergency Situation Reporting(Chapter 10)

•The owner must report within 4 hours of the discovery and evaluation of any emergency condition located in the water system which affects the ability of the water system to deliver adequate quantities of safe water to its customers.



Emergency Situation Reporting(Chapter 10)

- Examples of situations to report:
- loss of pressure in the distribution system
- failure of the source or treatment facility or parts thereof
 - voluntary or mandatory water conservation efforts
- the known or suspected introduction of any contaminant into the water system



Emergency Situation Reporting

- Other Emergency Situations
 - Boil Orders
 - Do Not Drink Orders
 - Do Not Use Orders
- Public notification required by best available means.



Emergency Situation Reporting

- Engineering Section:
 - 501-661-2623
- Emergency reporting outside normal business hours:
 - Emergency Communications Center:
 - **•**501-661-2136
 - For emergency use only:
 - **800-554-5738**



Lead & Copper Rule (Chapter 11)

• What Water Systems are required to test for Lead & Copper?

 All community and non-transient non-community public water systems are required to test for lead & copper at the customer's tap.



Lead & Copper Rule (Chapter 11)

- Sampling is based on population served
- •All sampling sites must be high risk (Tier 1) homes, if possible
 - A sampling site plan must be submitted to and approved by the Engineering Section



•TIER 1:

 single family houses with internal lead pipes, lead service lines, or copper pipe with lead solder installed or built after 1982



•The corrosiveness of the water will affect the amount of copper and lead found in the water.

•A system may have to propose an optimal corrosion control plan.



Sampling

- Lead & Copper Sample Bottles will be provided to each system by the ADH
- The same protocol for dropping off Bacti Samples at the Local Health Unit should be followed for Lead & Copper Sampling



Sampling

 A water system may be able to move to reduced monitoring after two monitoring periods if they do not exceed action levels.

•

If the system has 3 more years of low lead and copper levels, they may be reduced even further.



- •Public education is required by the system if action level for lead is exceeded.
 - •This will explain what the customer can do to protect themselves from adverse effects.

•Public education can include pamphlets, bill stuffers, etc.



- Recordkeeping
- Systems are required to maintain Lead & Copper results for twelve (12) years.
- Optimal Corrosion Control Records are kept indefinitely.



New Lead Content Restrictions Effective *JANUARY 4, 2014*

- All components utilized in water systems after January 4, 2014, must comply with the new "no lead" limitations. This includes piping joints, valves, meter settings, etc.
- Water managers and operators must make sure that prior to the deadline their inventory of older type components are utilized and/or replaced with components that comply with the new lead limitations, especially brass and bronze components, to components that meet the new lead free definition by Jan. 4, 2014. The products that meet this new lead free definition will be certified to either NSF 61, Annex G or NSF 61 and NSF 372.
- A water operator or manager can confirm if a product complies with the new lead content limitations by reviewing the NSF 61 listing typically via the internet listing pages.



Capacity Development (Chapter 12)

- Long Range Plan
- Should cover the next 10 years
- Should be updated every 5 years
- Should include the financial needs of the PWS



Capacity Development (Chapter 12)

- Should contain the projected needs for
 - source
 - treatment
 - storage
 - distribution
 - Plan should demonstrate
 - technical, financial, & managerial capacity.



Monthly Operation Report (Chapter 13)

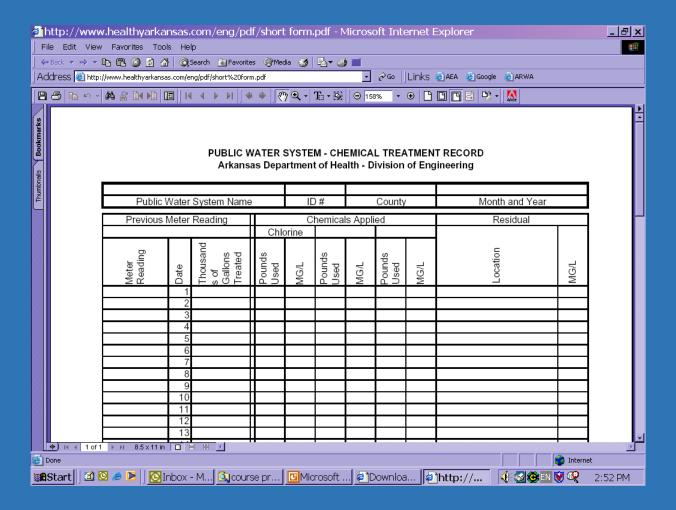
Contains complete information on:

water treated

- amounts and concentrations of chemicals added
 - other treatment plant operating measurements



Monthly Operation Report





Monthly Operation Report

Website Ops Report

PUBLIC WATER SYSTEM - CHEMICAL TREATMENT RECORD										
Arkansas Department of Health - Division of Engineering										
Public Water System Name				ID#		County			Month and Year	
Previous Meter Reading				Chemicals Applied					Residual	
			Chlo	rine						
Meter Reading	Date	Thousands of Gallons Treated	Pounds Used	MG/L	Pounds Used	MG/L	Pounds Used	MG/L	Location	MG/L
	1	0								
	2	0								
	3	0								
	4	0								
	-5	Ω								

 The Operations Reports, short and long, can be found on the Engineering web site.

Monthly Operation Report

- Forms supplied by ADH
 (customized forms by PWS must be approved)
 - Completed each day
 - Signed by certified operator
- •Submitted to ADH by the 10th of the following month



New Service to Unsewered Areas (Chapter 14)

- •The customer must obtain an Individual Sewage Disposal System Permit from the Local Environmental Health Specialist and submit a copy to the Water Operator.
 - •If the Local EHS determines that a permit is not required for the septic system, supporting documentation from the EHS must be provided.



Licensed Operator Requirements (Chapter 15)

•Licensing requirements are contained in the "Water Operator Licensing Law" ACT 333 of 1957 and its Rules and Regulations.

•Purpose:

•In order to protect the public health, operators are required to be licensed.



Licensed Operator Requirements (Chapter 15)

- •What Operators must be licensed?
- •All operators of community public water systems, non-transient non-community public water systems, or any other non-community public water systems (surface water or GWUDI) shall be licensed and certified as competent.



- •What is an operator?
- •Any person who, during the performance of their regular duties at a PWS, exercises individual judgment, by which, whether directly or indirectly, the safety, quality, and quantity of water delivered from the water system might be affected.



- Determination of which treatment grade license is required is based upon:
 - complexity of treatment processes
 - chemicals added
 - total population served



- Determination of which distribution grade license is required is based upon:
 - Number of pressure planes
 - Population served



- Maintaining the license
- To renew a license an operator must obtain 24 contact hours (12 directly applicable) of approved renewal training during each two (2) year renewal period.



- Maintaining the license
- To remain valid the license must be renewed within 90 days after it expires
- A license may be reinstated within one (1) year of its expiration date without retesting.



- Suspension/Revocation
 - care is not demonstrated
 - judgment not used
- knowledge or ability are not used
 - practiced fraud or deception



•Failure to comply with Water Operator licensing requirements can result in the Water system, its owner and the operator receiving an Administrative Penalty, fines and /or imprisonment.



Plan Review and Approval (Chapter 16)

- •Written approval of the ADH must be acquired before constructing or entering into contract to construct:
 - a water supply system
 - source of supply
 - distribution system
 - alterations



Plan Review and Approval

- Examples
- distribution system extensions
- changes in equipment or chemicals
 - treatment plant modifications
 - painting tanks
 - new water source
 - new treatment plant
 - new storage tanks



Plumbing Inspection Requirements (Chapter 17)

•For new service to be provided to a new or existing building, the customer must provide documentation that the plumbing has been inspected by a certified inspector and found to be in substantial compliance with the State Plumbing Code.



Public Notification (Chapter 18)

- Required by Safe Drinking Water Act
- Must provide notice of violations of the National Primary Drinking Water Standards
 - one copy to ADH
 - must reach every resident user of the system



Public Notification (Chapter 18)

- Public Notification Violation Categories
- National Primary Drinking Water Regulation Violations
 - Variance and Exemptions
 - Special Public Notice



Public Notification

Public Notification is divided into 3 Tiers

• Tier 1

National Primary Drinking Water Violations with "significant potential to have serious adverse effects in human health as a result of short-term exposure"

Emergency Situation



•Tier 2

•National Public Drinking Water Regulation violations with "potential to have serious adverse effects in human health"

- •<u>Tier 3</u>
- All others



- Examples of Tier 1 Violations
- Total Coliform MCL violation where fecal coliform or E. coli are present
- Occurrence of a water borne disease or other water emergency
 - Turbidity MCL violation of 1 NTU or more



- Examples of Tier 2 Violations
- Monitoring and testing procedure violations
 - Other MCL's not listed before
 - Example of a Tier 3 Violation
 - Operation under variance or exemption



- Methods of Delivery
 - Tier 1
- Use one or more of the following
 - Broadcast media
 - Posting
 - Hand delivery



- Methods of Delivery
 - Tier 2 and Tier 3
- Use both of the following
- Mail to each customer receiving a bill
- Other method reasonably calculated to reach others regularly served



PWS Service Fees (Chapter 19)

- •40 cents per service connection per month
- •Minimum fee of \$250 for community and non-transient non-community water systems.
- •Minimum fee of \$125 for transient non-community systems.



PWS Service Fees

- What Does The Fee Pay For?
 - ADH partners with PWS to
- Collect most SDWA required samples
- Within required sampling time frames
- Following proper sampling procedures & sites
 - Analyze the Samples
 - Using proper lab procedures
 - In EPA certified Laboratories



PWS Service Fees

- What Does The Fee Pay For?
 - ADH partners with PWS to
 - Provide PWS proper documentation
 - Monitoring was performed correctly
 - Proper procedures were followed
 - Sanitary Survey
 - CPEs



PWS Service Fees

- Sampling Categories provided by PWS
 Fees
 - Microorganisms
 - Disinfectants/Disinfection By-Products
 - Inorganic Contaminants
 - Organic Contaminants
 - Radionuclides Contaminants



Questions?



A boil water notice is intended to prevent the spread of?

- a. foul tasting water
- b. hard water
- •c. communicable diseases
- •d. unseasonably cool water
- communicable diseases



What are the two types of boil water notices?

- •a. positive and negative
- b. mandatory and required
- •c. precautionary and contaminated
- •d. yellow alert and red alert
- precautionary and contaminated



A precautionary notice is issued when the water contaminated.

- •a. may be
- •b. is
- •c. is not
- •d. cannot be
- •may be



Which of the following would warrant a contaminated boil order?

- •a. zero distribution pressure resulting from a main break
- b. lake turnover in source or supply
- c. partial failure of chlorination equipment
- •d. cross connection of a microbial contaminant
- cross connection of a microbial contaminant



Under a boil water order, water used for cooking and drinking should be heated to a rolling boil for how many minutes?

- •a. 0, if precautionary
- •b. 1 minute
- •c. 3 minutes
- •d. 5 minutes

•1 minute



The number of samples required to clear a boil order is based on?

- •a. license grade
- b. treatment plant complexity
- •c. population/# of services
- •d. operator's discretion
- •population/# of services



How often must a Consumer Confidence Report be submitted?

- a. monthly
- •b. annually
- •c. bi-annually
- •d. after each violation
- annually



All ____ water systems must issue Consumer Confidence Reports?

- •a. Non-community
- •b. Community
- •c. Non-transient non-community
- •d. Transient non-community
- Community



How long must a CCR be kept on file?

- •a. 3 years
- •b. 5 years
- •c. 10 year
- •d. indefinitely
- •3 years



Which water systems must have an emergency plan?

- •a. systems over 3300
- •b. surface water systems
- •c. GWUDI Systems
- •d. all water systems
- •all water systems



How soon should the ADH be contacted after an emergency situation has been discovered?

- •a. within four hours
- •b. when the newspaper is notified
- •c. before the weekend
- •d. within 48 hours
- within four hours



Where does a water system get bottles used for Lead and Copper testing?

- •a. hardware store
- b. Hach supply catalog
- •c. AWWA
- •d. ADH

•ADH



How many years is a license renewal period?

- •a. 1 year
- •b. 2 years
- •c. 3 years
- •d. 5 years

•2 years



How many credit hours are required over a two year period to maintain a license?

- •a. 16 hours
- •b. depends on grade
- •c. 24 hours
- d. depends on population/# of services

•24 hours



A water operator's license may be suspended and/or revoked when it is found that an operator has?

- a. gotten married
- •b. lived outside the water system
- •c. practiced fraud
- •d. quit

practiced fraud



Which water systems must have a Cross Connection Control Program?

- •a. surface
- •b. ground
- •c. systems over 10,000
- •d. all

•all



Backflow prevention devices must be inspected _____?

- a. weekly
- •b. monthly
- •c. annually
- •d. never

annually



Thank you.

