

BOIL WATER NOTICE TOOLKIT

What is a Boil Water Notice (BWN)?

There are 153,530 public water systems (PWS) in the U.S. supplying drinking water to customers every day.¹ A boil water notice (BWN), also referred to as a boil water advisory, is issued by a PWS when there is a known or suspected microbial contaminant in the drinking water distribution system. The microbes could be viral, bacterial, or protozoan, any of which can cause severe health issues. The notice will instruct consumers to boil all water used for drinking, cooking, food preparation, brushing teeth, and making ice. Proper treatment will make it safe to consume. Bathing or showering is typically fine as long as no water is accidentally consumed. The most sensitive populations to microbial contaminants include children, the elderly, and those with compromised immune systems.⁴ Pets may also be at risk.

A BWN notice may be in response to a known event or is a precautionary measure to protect the public in case microbial contaminants are present. BWN's are the most common.

A "do not drink" or "do not use" notice may indicate chemical contamination and advises consumers to find alternative drinking water sources because boiling will not make the water safe for these specific contaminants. This type of notice advises consumers to avoid all contact with the water.¹

Why do they occur?

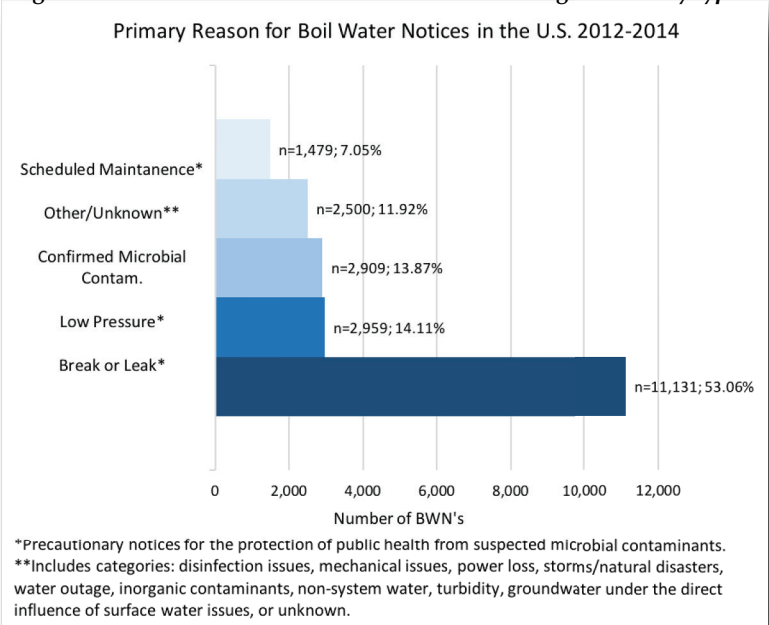
The Water Quality Research Foundation (WQRF) convened researchers at the University of Arizona to track BWN's from 2012 to 2014. The results of this study are shown in Figure 1.

Over the study's 3-year period, 20,978 notices were gathered from 50 states. 99.5% are "boil water" notices,

0.5% are "do not drink" notices, and a very small number of other events were reported as "do not use" notices.²

The majority of notices (53%; 11,131) were presumed precautionary for suspected microbial contaminants due to leaks or breaks in a pipe or water main. The second largest category of boil water notices were also presumed precautionary because of low pressure events (14%; 2,959). A low pressure event is when the water pressure falls below twenty pounds per square inch in any portion of the public supply's water distribution system. The third largest category was from confirmed microbial contaminants, which resulted in 2,909 notices or 14% of the total.

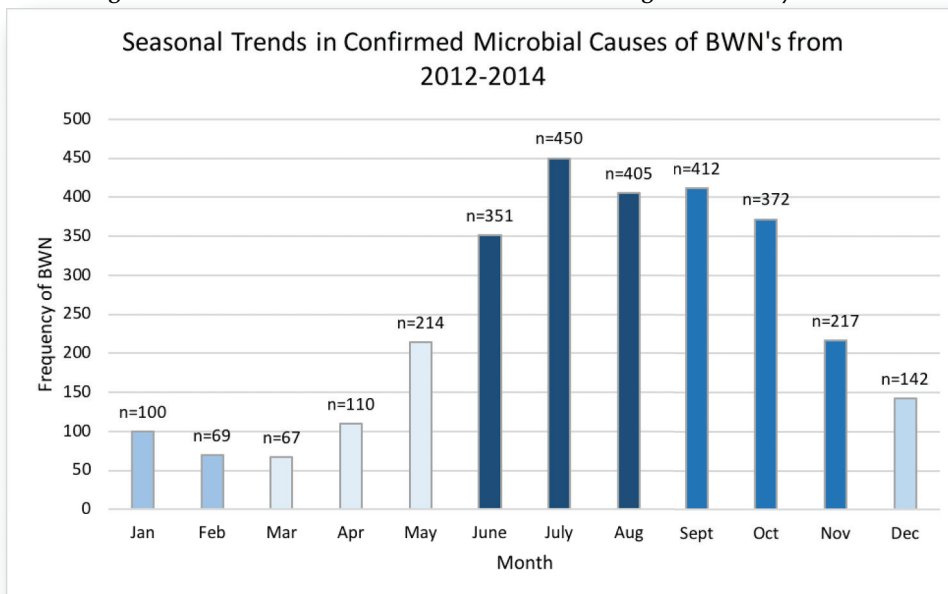
Figure 1: Results of the BWN data collection and categorization by types



When do they occur?

Some seasonal trends were observed for BWN's collected in this study. For confirmed microbial contaminants, the seasonal trends were found to be highly statistically significant. Figure 2 depicts this seasonal trend.

Figure 2: Confirmed microbial contaminants resulting in a BWN by month.



The author of this report states:

"It is our hope that the data presented here can help to identify current- and predict future- vulnerabilities in the municipal drinking water supply so that risk management tools could be utilized to prevent exposures and improve public health. This study also provides information that could be used in risk communication efforts to minimize fears about the water supply- given that many BWN are precautionary or precursors to water improvement strategies."²

How do I protect myself?

A Tier 1 event requires customers to be alerted within 24-hours when contamination has been detected or there's an outbreak. A Tier 2 notification must transpire within 30 days of an event, such as when treatment, monitoring, or other routine actions have failed.³

- Instructions to properly prepare water safe for consumption can be found in the CDC's Fact Sheet, *What To Do During a Boil Water Advisory*.¹
- One risk management tool is microbial treatment either where the water enters the home (point of entry) or at the point where drinking water is drawn (point of use). Boil your water, or install a POU or POE system certified for total microbial reduction claims, i.e., bacteria, viruses and protozoa.
- If you have a POU or POE treatment system already in place that uses carbon, other media, or a membrane for the reduction of chemicals or particulate contaminants of concern, be sure to consult with the water treatment system's owner's manual or a local water professional to determine how the system should be safely serviced, cleaned and sanitized prior to reuse.
- Water treatment professionals, dealers, and most importantly, individual customers must be aware that many home water treatment equipment products (including reverse osmosis systems) do not provide total protection against all types of disease-causing microorganisms that may be present in contaminated drinking water. In many cases, products will be labeled with a statement such as: "Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system." However, there are some water treatment devices that are certified for total microbiological reduction health claims. BWN situations specifically involving microbiological contamination can be adequately handled by these types of microbiologically certified home water treatment devices.
- To find products certified for microbial reduction claims, visit an ANSI-accredited certification body's website, such as the Water Quality Association (www.wqa.org/Find-Products), NSF International (www.NSF.org), or CSA Group (www.csagroup.org).

Who do I contact for more information?

If there are questions concerning the reason for issuing the BWN, you should consult with the municipality or water district that issued the BWN or the regulatory agency that has oversight for the water system. In some cases, the BWN may only apply to specific portions of the distribution system. Knowing the specific circumstances of the BWN will be helpful in determining your next actions. You can search for your public water system using the Safe Drinking Water Information System (SDWIS) available on the U.S. EPA's website here: <http://www3.epa.gov/enviro/facts/sdwis/search.html>

To locate a water professional in your area, visit www.wqa.org/Find-Providers and search by zip code. To find a certified water professional to consult, visit www.wqa.org/Programs-Services/Resources/Find-Providers/Find-Certified-Professionals.

Acknowledgements

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Sources/references

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3. EPA on public notification requirements. <http://www.epa.gov/sites/production/files/documents/PNRuleQuickRefGuide.pdf>.
4. Missouri Department of Natural Resources. "Boil Water Orders and Boil Water Advisories," 2011. Available: <http://dnr.mo.gov/env/wpp/boil/>. [Accessed 12 January 2016].
5. Safe Drinking Water Hotline 1-800-426-4791 water.epa.gov/drink/hotline
6. CDC on preparedness for water emergencies. http://www.cdc.gov/healthywater/emergency/safe_water/community.html, and http://www.cdc.gov/healthywater/emergency/safe_water/wells/
7. CDC on which organisms cause the most outbreaks in public water supplies. http://www.cdc.gov/healthywater/drinking/public/water_diseases.html