

Executive Summary

Boil Water Notices in the U.S., 2012-2014

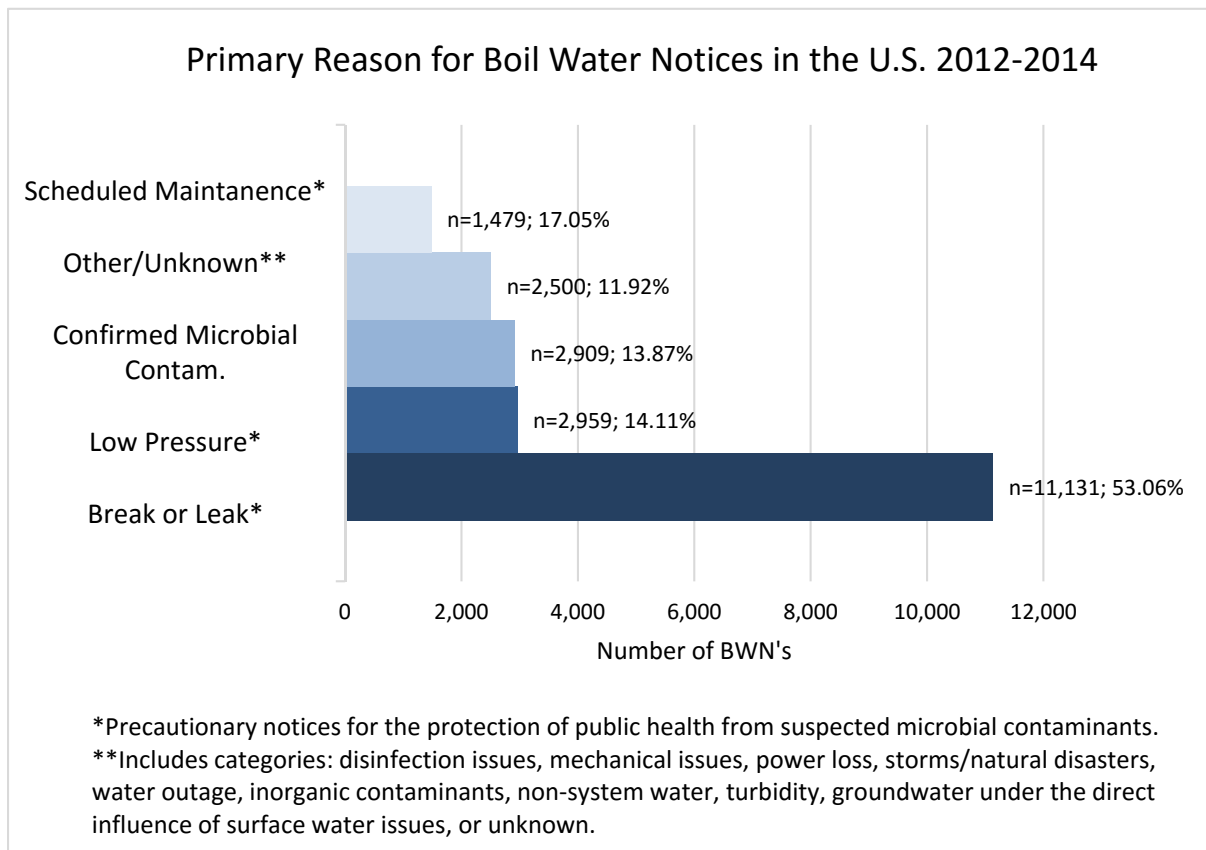
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Beginning in January 2015, a service agreement between the Water Quality Agency Research Foundation and researchers at The University of Arizona was initiated to track boil water notices (BWN) in the United States from 2012-2014. The project began in February, 2015 and interim results were presented during the WQA Research Updates session, Water Quality Association Aquatech, Las Vegas, NV on April 21, 2015 (see Appendix 1 PowerPoint presentation). The final draft results were presented during the WQA Midyear Meeting, in Tucson, AZ on September 2, 2015 (see Appendix 2 PowerPoint presentation).

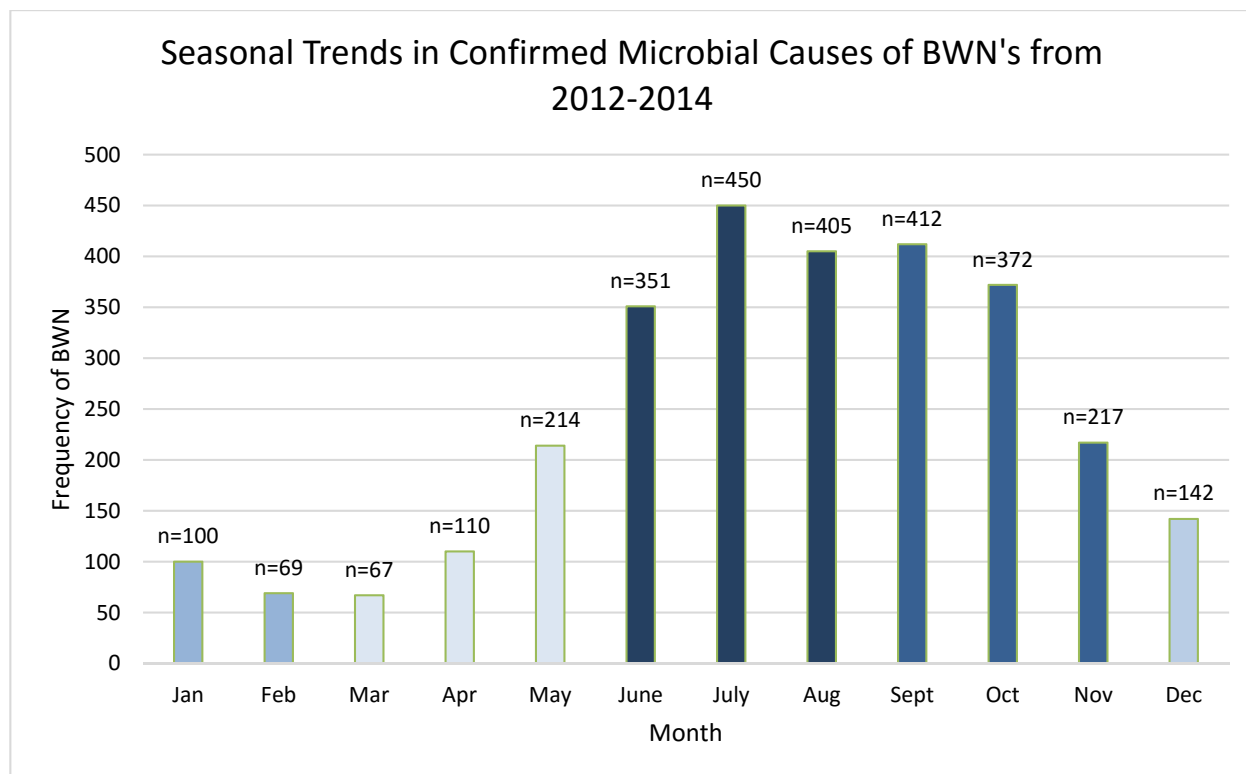
Following testing and validation of various search terms using Google News, “boil water”, “limited use of water” and “do not drink water” terms were selected for future searches. Data from state primacy agencies (33 states) and from News Bank Inc. media sources (17 states) eventually provided the most reliable results.

To date, BWN data from all 50 U.S. states have been imported into statistical software packages and analyzed by alert type, year, causation, and season. Of the 20,978 notices analyzed from 50 states, 99.5% are “boil water” notices with 0.5% “do not drink” notices and a small remaining percent reported as “do not use” notices. Notices are split approximately evenly over the survey period with 31.5% (6,579), 31.9% (6,703) and 36.5% (7,658) issued in 2012, 2013, and 2014, respectively. A slight trend of an overall increase with each successive year is noted but may not be statistically significant.



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Of the 20,978 notices from 50 states reporting, the majority (53.1%; 11,131) were presumed precautionary, due to a break or leak. The second largest category of boil water notices were caused by low pressure events (14%; 2,959). Microbial contamination resulted in 2,909 alerts or 13.9% of the total along with inorganic contamination initiating 69 (0.3%) of the alerts. A trend in increasing BWN is apparent in summer, peaking in July, possibly due to enhanced bacterial growth in warmer temperatures. An assessment of monthly trends where BWN were caused by microbial contamination showed a clear increase beginning in May, peaking in July and decreasing by November. Less of a defined trend was noted with BWN related to line breaks or leaks but notices again were highest in July.



Data limitations include potential reporting and interpretation bias. Some common biases include differences in population or utility size, monitoring and tracking frequencies and report archiving protocols.

Information produced in this report is expected to aid in the identification of predictive variables for BWN occurrences. Such information can be used to improve our understanding of human health risk, exposure, and management as well as risk communication and perception among stakeholders. Results were reviewed by additional stakeholders, including representatives from the Association of State Drinking Water Administrators (ASDWA).



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