

# DRINKING WATER RESOURCES

[Revised 10/18/2023 (new information **highlighted**)

**INTRODUCTION & BACKGROUND:** We intend to provide information on the status of our water supply, both public & private (i.e., wells). The safety & adequacy of our drinking water is greatly important. We continue to learn about impurities that may impact our health. Public water systems are strictly regulated by the Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP). Private water systems, e.g., private wells, are less strictly regulated. The Adams Board of Health recommends that private well owners keep abreast of current guidelines and issues. **We have revised the 2000 Private Well Regulations to conform with current information & practices (see below).**

**ADAMS FIRE DISTRICT (AFD):** Our public water supply is provided by the semi-autonomous Water Department, part of the [AFD](#). The quality & safety of our public water supply is chronicled annually in the mandated [Consumer Confidence Report](#).

**GROUND WATER AND DRINKING WATER:** The EPA [Ground Water & Drinking Water](#) site is a comprehensive source of information on water topics, including basic guidelines, regulations, quality and testing options, and updates on PFAS (per- and polyfluoroalkyl substances, otherwise known as “forever chemicals”).

**PFAS (EPA):** <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>. This is an evolving issue. Please keep abreast of current regulations, advisories, & guidance.

**SOURCE WATER PROTECTION (SWP):** Information is provided at both the [DEP SWP](#) & the [EPA SWP](#) sites. Topics include basic information, assessment/protection tools, funding resources, etc.

**PRIVATE WELL GUIDELINES (DEP):** The Massachusetts [Private Well Guidelines](#) site includes a link to a 137-p PDF! However, it does provide a lot of useful information.

**PRIVATE WELL WATER QUALITY TESTING FREQUENCY (DEP):** This site provides a testing schedule for various solutes, toxic contaminants, & bacteria in well water: [Guide to Water Quality Testing](#). The site links to the instructions on using the [Be Well Informed website](#) as well as the [Be Well Informed tool](#).

**PRIVATE WELL REGULATIONS, REVISED 2023:** On September 13<sup>th</sup>, the Adams Board of Health revised its 2000 Private Well Regulations to conform with current state regulations (310 CMR 46, Certification of Well Drillers and Well Completion Reports, and 105 CMR 410, Minimum Standards of Fitness for Human Habitation). The revised regulations include increased permit fees and more detailed requirements for well drillers; well siting, discharge capacity, testing, and quality; and for well decommissioning. Notably, 6 PFAS (per- and polyfluoroalkyl substances) are among the contaminants to be tested. The revised regulations became effective on 18 October 2023 with the publication of a public notice in the *Berkshire Eagle*. They can be found under “Well Regulations” on the Board of Health website: <https://www.town.adams.ma.us/board-health>.

**PRIVATE WELL WATER CAPACITY EXAMPLES:** Please see next page (taken from DEP model regulations).

**CERTIFIED WELL DRILLERS (DEP):** Massachusetts code of regulations 310 CMR 46.00 requires that drillers are certified by DEP; the list can be found at the Mass.gov “[Find a Certified Well-Driller](#)” site.

**ADDITIONAL RESOURCES (pending):** Please let us know if you have questions or wish to see other resources made available here.

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## PRIVATE WELL WATER CAPACITY EXAMPLES

The following are examples of assessing pumping capacity of a private well, intended to accompany the revised private well regulations under consideration in 2023. They were excerpted from the DEP model private well regulations available on the DEP website as of 7 August 2023 (URL below).

Example 1: The Well Completion Report indicates that a 6-inch diameter domestic well was installed that has a pump intake set at a depth of 300 feet, with a measured static water level of 15 feet and an estimated well yield of 2 gallons/minute (gpm).

1. For a 2-bedroom, 2-bathroom house, a peak demand rate of 8 gpm for one hour or 480 gallons is estimated from Table 3 as being required to meet the household peak demand ( $8 \text{ gpm} \times 60 \text{ minutes} = 480 \text{ gallons}$ )
2. The well report indicates that the well is only capable of producing 2 gpm or 120 gallons during the 1-hour period ( $2 \text{ gpm} \times 60 \text{ mins.} = 120 \text{ gallons}$ )
3. Borehole storage is calculated to be 419 gallons [ $(300\text{-foot depth to pump intake} - 15 \text{ foot static water level}) \times 1.469 \text{ gallons/foot of 6 inch diameter casing} = 419 \text{ gallons}$ ]
4.  $480 \text{ gallons required to meet peak demand} - 120 \text{ gallons (well yield over 1 hour)} = 419 \text{ gallons (borehole storage)} = - 59 \text{ gallons (surplus)}$

In this example the well installation can meet the daily peak demand with a surplus of 239 gallons daily.

Example 2: Assume same well completion information as Example 1 above

1. For a 3-bedroom, 3-bathroom house, a peak demand rate of 10 gpm for one hour or 600 gallons is estimated from Table 3 as being required to meet the household peak demand ( $10 \text{ gpm} \times 60 \text{ minutes} = 600 \text{ gallons}$ )
2. The well report indicates that the well is only capable of producing 2 gpm or 120 gallons during the 1-hour period ( $2 \text{ gpm} \times 60 \text{ mins.} = 120 \text{ gallons}$ )
3. Borehole storage is calculated to be 419 gallons ( $300\text{-foot depth to pump intake} - 15 \text{ foot static level} \times 1.469 \text{ gallons/foot of 6 inch diameter casing} = 419 \text{ gallons}$ )
4.  $600 \text{ gallons required to meet peak demand} - 120 \text{ gallons (well yield over 2 hours)} = 419 \text{ gallons (borehole storage)} = + 61 \text{ gallons (deficit)}$

In this example the well installation does not meet the daily peak demand and an additional 61 gallons will be required daily in the form of tank storage.

*In instances where the above methodology indicates that peak demand can be met by a combination of well yield and borehole storage, the well yield alone should also be able to refill the borehole storage volume over a 12-hour period. Minimum well yields of between 0.5 gpm to 1.5 gpm would be needed to accomplish this for the 1-hour peak demand volumes calculated using the recommended peak flow rates provided in Table 3. These minimum well yields would be necessary in order to sufficiently replenish the borehole storage between peak demands events.*

DEP Model Well Regulations (2/7/2023):

<https://www.mass.gov/doc/model-board-of-health-regulations-for-private-wells/download>