



INDIVIDUAL WATER SUPPLY WELLS - FACT SHEET #7

Testing, Operation, and Maintenance of Residential Wells

Background

Over one million homes (and several million residents and visitors) throughout New York State are served by individual (residential) water supply (IWS) wells. While public water supplies are regularly tested for a variety of contaminants, inspected, and maintained, these same activities are left to the homeowner in the case of an IWS. To protect the safety and health of residents and visitors, it is *recommended* that IWS owners:

- Regularly test the well water for contaminants;
- Know how the well system operates and be familiar with the function of each system component; and
- Perform regular maintenance on the well, well system components, and the area surrounding the well.

To help ensure a potable and adequate water supply, this fact sheet and the [Individual Water Supply Wells – Fact Sheet #7 Checklist](#) describe when to perform recommended testing, the components of an IWS, and how an IWS should be maintained. Homeowners should keep records of all maintenance and testing performed on their wells.

This Fact Sheet focuses on testing, operation, and maintenance of a drilled well, which, when properly located and constructed, is the well type recommended for an IWS (see [Appendix 5-B "Standards for Water Wells"](#)). Other types of wells including well points, dug wells, springs and shore wells are more susceptible to drought and contamination from pathogens and chemical spills (see [Fact Sheet 5](#)). Surface water supplies (lakes, streams, etc.) should not be used for residential water use because they are more likely to be contaminated (see [Surface Water Fact Sheet](#)).

Well Water Testing

- **Homeowners should have their water tested whenever a change in color, taste, or odor occurs. Water from a public water supply or NYS certified bottler should be used until test results are obtained.**
- **Recommended testing schedule:** Test for coliform bacteria at least annually. Also test for coliform bacteria whenever a well modification or repair occurs, when any change in gastrointestinal health occurs, or when an aesthetic change in the water occurs. Test for other contaminants every three to five years (see p. 2 of the [Individual Water Supply Wells – Fact Sheet #7 Checklist](#) and [Fact Sheet 3](#) for a list of contaminants). Homeowners should contact their Local Health Department (LHD) to determine whether or not the LHD has its own required testing schedule. LHD contact information can be found at the following link: [LHD contacts](#).
 - **Steps to take when contaminants are found:** If test results confirm the presence of a contaminant above the applicable standard, homeowners should contact their [LHD](#) for further guidance. Corrective actions and/or treatment may be necessary.
 - **How to collect and test samples:** Testing of well water should be conducted at a laboratory certified for testing potable water by the Environmental Laboratory Approval Program (ELAP). A list of labs can be found at: www.wadsworth.org/labcert/elap/comm.html or by contacting your [LHD](#). Sample collection procedures will be outlined by the laboratory. It is recommended not to rely on in-home tests performed by water treatment vendors or test kits purchased at stores because these tests do not meet ELAP standards.

Well Operation

How a well system operates: Typical well systems consist of a well, pump, pressure tank, pressure switch, piping, and sometimes a storage tank containing a few hundred gallons of water. When a water fixture is opened, compressed air in the pressure tank forces water from the tank into the piping to the fixture. When the pressure in the tank drops due to the lowered water level, the pressure switch (located on or near the pressure tank) turns the pump on. The pump forces water from the well through the piping to the pressure tank. When the water level in the tank reaches a pre-set level, the pressure switch shuts the pump off.

Well Maintenance

Do not exceed your experience or knowledge when performing well maintenance tasks. If you are unsure about how to perform a task, contact a well driller, plumber, or electrician.

- **Maintenance of well:** Homeowners should inspect the well casing, well cap, and well area at least annually to make sure that the well is protected from potential sources of contamination (see Figures 1 and 2 and the [Individual Water Supply Wells – Fact Sheet #7 Checklist](#) for descriptions of which items to inspect). Unacceptable well caps should be replaced with an acceptable cap (see Figure 2 below).
- **Maintenance of wellhead area:** Homeowners should avoid mixing, using, storing and disposing of pesticides, fertilizers, manure, herbicides, cleaners, degreasers, fuels and other pollutants near the well. These substances should be stored at least 100 feet from the well casing in original, sealed, labeled containers on an impervious surface such as concrete. Dispose of these substances properly and NEVER dispose of them down a well, or into a sink or toilet leading to the septic system.
- **Maintenance of Well Components:**
 - **Well pump** - submersible pumps require very little maintenance. Jet pumps and suction pumps should be kept in a dry area free from flooding. They also may occasionally have to be primed.
 - **Pressure tank** – pressure tanks maintain pressure inside the household plumbing and prevent the well pump from running every time water is needed. This leads to prolonged pump life. Symptoms of an improperly operating pressure tank include the water pump running more frequently, surging water pressure, and taste and odor issues. If you suspect pressure tank problems contact a plumber or well driller. Keep the area around the tank clear for maintenance.
 - **Pressure switch** – pressure switches ensure that the pressure in the tank remains in a specified range, typically 30 – 50 psi or 40 - 60 psi. Pressure switches normally operate on higher than normal electrical voltage. Contact a well driller or electrician for switch maintenance to avoid the risk of electrical shock.
 - **Pressure gauge** - check to make sure the gauge is operating properly and replace if needed. Normal operating pressure should be between 30 and 60 psi.
 - **Electric shutoff box** – keep dry and keep the surrounding area clear for maintenance.
 - **Additional Treatment Devices** – maintenance should be performed according to the manufacturer.
 - **Shock chlorination of well** - If the well has been flooded or well maintenance has been performed, follow the instructions found at: www.health.ny.gov/environmental/water/drinking/boilwater/. Select the tab, “Disinfecting Water at Home,” and then follow all instructions under “Well Contamination”.



Figure 1: Photo of a properly constructed well.



Figure 2: Photos of acceptable and unacceptable well caps

Copies of this Fact Sheet, Appendix 5-B, and other Fact Sheets can be found at:

<http://www.health.ny.gov/environmental/water/drinking/regulations/>. A list of DEC registered well drillers can be found at: <http://www.dec.ny.gov/lands/33317.html>. For questions contact:

Your Local Health Department
(http://www.health.ny.gov/environmental/water/drinking/doh_pub_contacts_map.htm)

or

Residential Sanitation Section
Bureau of Water Supply Protection
New York State Department of Health
(518) 402-7650
E-mail: bpwsp@health.state.ny.us



INDIVIDUAL WATER SUPPLY WELLS - FACT SHEET #7: CHECKLIST

Checklist for Testing, Operation, and Maintenance of Residential Wells

Click on the following link to open Fact Sheet 7: [Fact Sheet 7](#)

The following are *recommended* items that should be checked regularly to ensure that your private well is adequately protected against contamination and is operating properly. Completed checklists should be kept with other well maintenance and testing records. **Do not exceed your experience or knowledge when performing well maintenance tasks. If you are unsure about how to perform a task, contact a well driller, plumber, or electrician.** Please note that the checklist is continued on the reverse side of this sheet.

Item to Check	Check <u>Annually</u>	Date Checked/By Whom	Notes
Water Quality	Test water sample for coliform bacteria; sample sent to ELAP certified lab: www.wadsworth.org/labcert/elap/comm.html (or contact your LHD)		
Well Casing	Well casing is free of holes and cracks		
	Well casing extends at least 12" above the surrounding land surface		
Well Cap	Well cap is free of holes and cracks		
	Well cap is securely attached, is bolted on top of the cap, and the vent is screened (use a mirror to check for screened vent under the cap)		
	The next time the well cap is removed or replaced, check to ensure the cap is sealed with an O-ring or gasket. Do NOT remove the well cap unless performing maintenance activities (such as shock chlorination of well)		
Pressure Tanks	Pressure gauges checked to ensure they are operating properly, showing pressure in the tank remains in a specified range (typically between 30 – 60 psi)		
	Pressure tank has been flushed (if necessary)		
	Valves have been exercised to ensure they are operating properly and can be fully opened and closed		
Surrounding Ground	Ground surrounding well casing slopes away from the casing		
	Ground surrounding well casing is free of pooled water and debris (leaves, branches, etc.)		
Property	No household hazardous materials or animal wastes located/stored within 100 feet of well casing		
	Any household hazardous materials present on property are stored in original, sealed, labeled containers and on an impervious surface (not on the lawn)		
	Aboveground oil tanks on property are in good condition and at low risk for leakage. When refilling oil tanks, someone watches to ensure overflow does not occur		
Septic	Septic system visually inspected to check for breakouts, failures, etc.		

Checklist Continued on Other Side



Item to Check	Check – <u>Every Three to Five Years</u>	Date Checked/By Whom	Notes
Water Quality	Well water tested for lead, nitrates/nitrites, turbidity, arsenic, iron, manganese, iron plus manganese, hardness, alkalinity, pH, and sodium (see Fact Sheet 3)		
Septic	Septic tank pumped out/inspected every 2-3 years by a NYSDEC permitted Waste Transporter to avoid failure of septic system and potential contamination of well		
Item to Check	Check - As Specified for Your Equipment	Date Checked/By Whom	Notes
Water Softener	If water softener present, exhausted resin has been replaced or regenerated (if needed)		
Filter	Cartridge filter (if present) checked and replaced if necessary		
Tank	Aeration system storage tank (if present) has been flushed and cleaned		
UV	Lamp in the UV disinfection system (if present) has been replaced (if needed)		
	Housing and lamp in the UV disinfection system (if present) have been cleaned		
Other	Other treatment units maintained on schedule		