

## Do You Have a Water Well On Your Property?

Many homeowners in the Metro area have water wells located on their property that once acted as a water supply, or are still a vital supplier of drinking, irrigating, or wash water. Even if you don't use the well at present, if the well is clogged with debris or silt, or if the well may be used again in the future, it is important to know how to care for the well properly, and how to prevent contamination of the groundwater through the well opening or well casing. Taking care of a water well not only protects your health and property values, it protects your neighbor's health and well-being.

Old wells may be covered with undergrowth, located in basements and crawl-spaces, and may have no visible power supply. Some wells are covered with soils, because the well was constructed with an underground adaptor. If you are unsure if your home has a well, you can contact the previous owner, who may know if a well was installed when the home was built. Another way to check if your home has a well is to ask your neighbors when "city" water was made available to the neighborhood, and compare that date with the date the home was built. However, even newer homes may have had a water well drilled on the property; LWC increases the service area yearly. It is also important to know if the home was once equipped with a cistern. If the cistern is abandoned, it represents an area more prone to collapse that may be dangerous.

Domestic water wells are usually from 2 to 6 inches in diameter, (although some are larger), and are constructed of steel, iron, or PVC pipe. If the well is equipped with a hand pump, the wells are usually very easy to locate. Other wells may have some form of conduit pipe up the side of the main casing. The pipe contains the electrical wires needed to operate a pump. The well should have a cap installed, so as to prevent leakage of materials from the surface from entering the well. Other ways to find older wells include:

- ◆ Look for a circular ring in cement, or a patch on the floor of a basement or sidewalk;
- ◆ Look for a basement off-set, look under porches, steps, and decks, or look in old out buildings;
- ◆ You may find a low spot in the yard or a circular depression that is damp; or
- ◆ Look for water system components, such as pressure tanks, softeners, pump control boxes or electrical wiring, or shadow lines on basement floors or walls, showing where these components may have rested.

Examples of wells may be seen below in Figure 1:



Hand pump well.



Well pit in den of home.

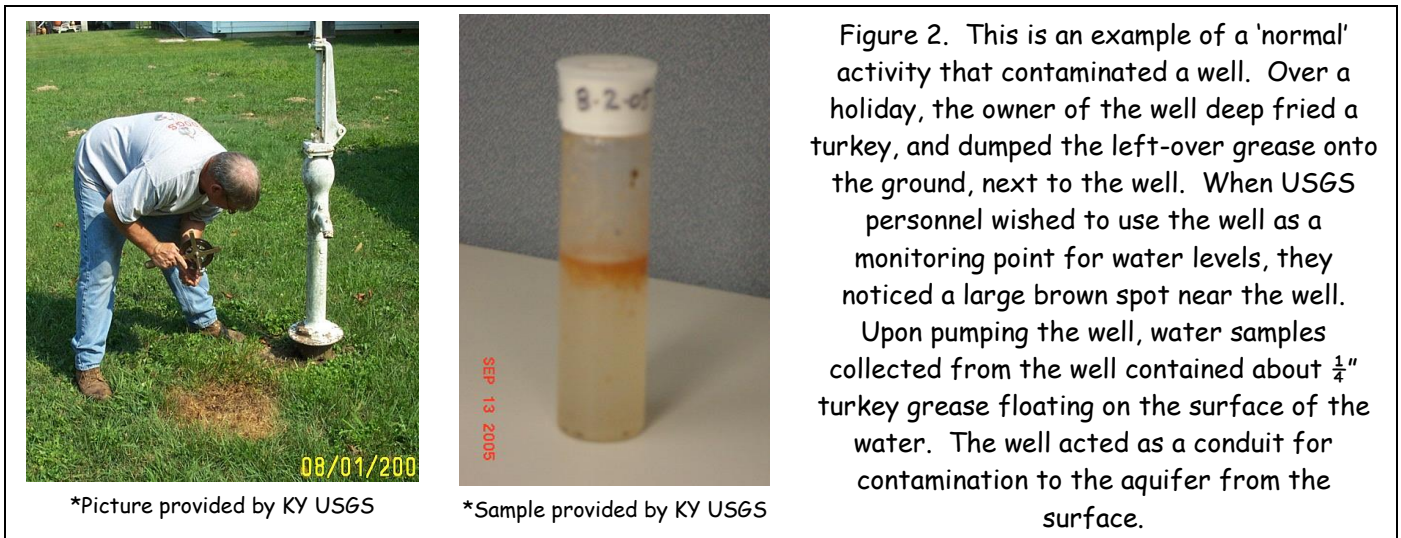


Abandoned well with no cap.

## What can you do to protect your well from contamination?

Use these simple Best Management Practices to protect your water supply:

- ◆ Inspect exposed parts of the well. Look for:
  - Cracked or corroded well casing
  - Broken or missing well cap
  - Damage to protective casing
  - Settling and cracking of surface seals
- ◆ Slope the area around the well so that surface water drains away from the well;
- ◆ Provide a well cap or a sanitary seal to prevent unauthorized use or entry of the well;
- ◆ Avoid mixing pesticides, fertilizers, herbicides, degreasers, fuels, and other pollutants near the well;
- ◆ Do not locate any potential pollutant activity up slope, or near the well;
- ◆ Do not cut off well casing below the ground surface, as this leaves the well more vulnerable to contamination.
- ◆ Keep accurate records of any well maintenance, such as disinfection or sediment removal, that might require use of chemicals in the well;
- ◆ Use a Kentucky Certified Water Well Driller for any new well construction or modification and proper well abandonment.
- ◆ Do not use wells for disposal of any chemicals, wash water, etc.



Wells should be located a safe distance from potential sources of contamination. The State of Kentucky uses several specified distances, and recommends certain distances, for specific activities:

Recommended Minimum* and Specific Distances from Potential Pollutants Required by KY Law			
Animal pens and feedlots	50'	Manure storage areas	75'
Septic tanks	50'	Lateral fields	70'
Cesspools	150'	Pit privies	75'
Chemical storage areas	75'*	Machinery maintenance areas	75'*
Waste Piles	75'*	Lagoons	150'*
Sewers	15-20'	Underground storage tanks	75'*
Aboveground storage tanks	75'*		

If your well is used as a source of drinking water, you should disinfect the well once a year, using bleach or hypochlorite granules. (This information is listed on the next table.) You should also have the well tested once a year for fecal coliform. The Louisville Metro Health Department can perform this yearly test at no

cost to the homeowner. If your drinking water well is located closer than the required or recommended distance to the specific contaminants listed above, your well will need to be treated and tested more often.

**How much bleach is required to disinfect a drinking water well?**

It depends on how much water is in the well. Most wells drilled in the sand and gravel formations near the Ohio River are not very deep—usually from 40' to 60' in depth. Most wells drilled in the rock formations are deeper wells, 100'-150'.

You can find your well depth by looking for an opening in the well, and using a long string with a weight tied to the end. (Fishing line weights work well, and are usually small to fit down the well opening.) Mark the string with permanent ink every five feet. Drop the string down to the bottom of the well, and pull it up and out of the well. Measure from the bottom of the string (the top of the weight) up to where the string is dry. This gives you both the well depth and the depth of the water in the well.

Then, using the chart to the right, calculate how much bleach you will need to pour into the well. When disinfecting, pour the bleach into the well, and wait at least 10 minutes. Then pump the well until the smell of chlorine is gone. You can make your well pump operate by turning on the garden hose and pumping the water to waste.

Well diameter in inches	Amount of bleach required to disinfect a well, per 50 feet of water in the well.
3	$\frac{1}{2}$ cup
4	1 cup
5	1.5 cups
6	$2 \frac{1}{4}$ cups
8	4 cups
10	6 cups
12	9 cups

**Am I required to have a Groundwater Protection Plan (GWPP)?**

The Natural Resources and Environmental Protection Cabinet administrative regulation 401 KAR 5:037, requires anyone participating in certain activities to develop and implement a GWPP. Construction, operation, closure, and capping of water wells are some of the activities that require a GWPP. The cabinet has developed a generic plan for these activities. To find the generic plans, you may go to the KY DOW website:

<http://water.ky.gov/groundwater/Pages/GroundwaterProtectionPlans.aspx>

You may also contact the Groundwater Section of the Kentucky Division of Water (KDOW). Please contact:

David Jackson ([davida.jackson@ky.gov](mailto:davida.jackson@ky.gov))  
 Groundwater Section, KDOW  
 300 Sower Boulevard, 3<sup>rd</sup> Floor  
 Frankfort, KY 40601  
 (502) 564-3410

**How does the GWPP protect my groundwater supply?**

The GWPP outlines operation and maintenance practices to protect your well from contamination. It includes an area for simple record keeping of operation and maintenance practices. The plan also outlines activities and practices to be avoided in the operation and maintenance of your well, including procedures for well disinfection, and polluting activities to be avoided near your well.

**What if my well is out of service and I am unlikely to use it again?**

If you plan to use your well again in future, even if it is currently not operating, the well should be capped, to prevent contamination from the surface from entering your well. If you do not plan to use your well in the future, and your well is out of service, the well should be properly closed and sealed. Otherwise, it poses a threat to the groundwater quality and is a potential safety hazard.

the pipe if the well is not sealed properly at the surface. (Please see Figure 2.) The casing pipe may not be extended far enough above ground to prevent runoff from washing into the old pipe, or may be below water levels in times of flood. Abandoned, large diameter open wells also pose a threat to children and animals that may fall into the well. There have been numerous reports of small children being trapped or even drowned in these types of old wells. Also, the well cap could be broken, or in poor condition, or the well could be improperly sealed at the surface.

### Option #1 -- Check Operating Wells for Safety

You may have a well on your property that was drilled when the home was built, and is still used as a water source for irrigation or other purposes. Even if the well is not in current use, the well should be constructed so as to minimize the potential for contamination. Follow the checklist below to make sure that your well is safe from contamination.

- ◆ Is the well located in a pit? If so, consider having a professional raise the wellhead above ground level.
- ◆ Does the well have a cap? If not, consider having a professional weld a screw cap with a positive seal to prevent leakage.
- ◆ Is the casing sealed around the well? A good well seal prevents contaminated water from flowing around the well casing to the aquifer below. Wells should be sealed with a concrete pad at the surface. Hire a professional to dig out around the well and install at least a 2' thick concrete pad around the well to prevent contamination from traveling down the sides of the well casing.
- ◆ How far is the well from the septic system? If the well is within 50 feet of a septic drainage field, there is a good chance the well could be contaminated. Please, consider closing the well. If you wish, you can contact the Louisville Metro Health Department and request that a fecal coliform test be performed on the well to check for contamination from a septic system. This test is run at no cost to homeowners.



### Option #2 -- Seal the Well Completely

If your well is not currently in use, and you have no plans to use the well in the future, the well should be completely sealed with an approved material, and by a certified Kentucky Water Well Driller. The Technical Services staff of the Groundwater Section coordinates the Well Drillers Certification Program at KDOW and can give you more information about closing or capping your well (phone 502-564-3410).

---

For more information about the LWC Wellhead Protection Plan, please contact:

Robert Newman, Wellhead Protection Specialist

[rnewman@lwcky.com](mailto:rnewman@lwcky.com)

(502) 564-3600, ext. 1809



Louisville Water Company  
550 S. 3<sup>rd</sup> Street ◆ Louisville, KY 40202 ◆ 502-569-3600  
A publication of the Local Planning Team, Public Education