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Part 4 of 14

Next Topic: Food Safety for Backyard BBQs

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Drink It Up!

Tips for Keeping your Well Water Safe

Yakima, WA –It could probably be said that most Americans take the safety of their drinking water for granted. The majority of Americans – 85 percent – get their drinking water from public water systems. In Washington, public water systems are defined as any system with more than one connection. Approval, design, operation, sampling and maintenance of public wells are regulated by the State Department of Health. Water rights and well drilling are regulated by the Department of Ecology (DOE). However, there is no local, state or federal oversight for private wells after they are placed into service. The responsibility for routine operation, maintenance, and testing of private wells falls solely to the well’s owner. As a follow-up to Drinking Water Week, the Yakima Health District is stressing the importance of well water safety by highlighting proper construction, common contaminants, problem recognition, and maintenance of private wells.

The first and most important aspect of well construction is hiring a licensed, experienced well driller with knowledge of the ground and aquifers in your area. Aquifers are layers in the ground where water is stored in the spaces between rocks and/or particles making up the soil. To prevent possible contamination, wells should be drilled at least 100 feet away from any existing or planned sources of possible contamination such as irrigation canals, septic system drain fields, houses, garages, barns, livestock, and pesticide/fertilizer/manure storage. The well should be drilled to a depth where the aquifer is not affected by waters or contaminants absorbed from the ground’s surface. A licensed well driller will be able to suggest the proper location and depth for your well, based on geographic area, where buildings will be placed and how your land will be used.

The permitting agency for wells in Washington State is DOE. Well owners should confirm that their well is built to the state standards outlined by DOE. Four important steps in well construction can dramatically reduce the risk of contamination:

1. Locate well in safe location, drilling deep enough to prevent surface contamination;
2. Slope the ground around the wellhead so surface runoff drains away from the well area;
3. Install backflow prevention devices, especially for connections to irrigation water;
4. Properly seal and vent the well.

“One of the most important things is to listen to the recommendations of your well driller,” comments Ted Silvestri, YHD Environmental Health Specialist. “Generally, deeper wells cost more upfront but are likely to be more reliable and better protected from contamination, year after year.”

Well water contaminants seen most often in Yakima County are germs (bacteria, viruses, parasites) as well as nitrates. These contaminants occur naturally but can also be caused or made worse by human activities. Some

contaminants cause illness or adverse health conditions if ingested at high levels. Common sources of well water contamination from germs are human and animal feces. Common sources of nitrates are fertilizers, as well as the natural breakdown of compounds in soils.

Irrigation, rain, snow melt, and flooding collect contaminants as water flows over the ground's surface. That water then transports those contaminants through different layers of soil as it's absorbed into the ground. Tightly packed layers of fine-particulate soil such as clay can serve as a barrier to contaminants as water moves through soil. Because shallow wells are often drilled into aquifers where the water has not passed through any "barrier" layers, they are more susceptible to surface contaminants than wells drilled into aquifers below "barrier" layers.

Even if a well is located in the proper place and drilled to the proper depth, there is still a possibility of contamination. Signs that water may be contaminated include: recurring illness; foul, soapy, chemical, or salty tastes or smells; changes in water clarity; and corrosion of plumbing fixtures.

"Any sudden change in the taste, smell or appearance of your water is a sign of possible contamination," explains Art McEwen, Environmental Health Specialist with YHD. "But, keep in mind that some contaminants cannot be seen, tasted, or smelled. That's why regular water testing is an important part of well maintenance."

Keeping wells operating safely year after year requires knowledge and regular maintenance. Regular well maintenance should include the following:

- Test well water regularly for coliform bacteria, nitrates, and other contaminants.
 - Once every three months for the first year, then once per year for the life of the well.
- Ensure that sources of contaminants are stored as far from well heads as possible
- Perform visual inspection of the well monthly, checking for:
 - Cracking or corrosion,
 - Broken or missing well cap,
 - Settling and cracking of surface seals, including at entry of electrical lines.
- Fix problems quickly when they arise.
 - If broken lines are found or repairs needed, well water may require chlorine disinfection.
- Keep all records associated with construction, maintenance, name and use of disinfectants or other chemicals, and water testing results in a safe place.

Environmental testing laboratories will include bottles and sampling instructions as part of their well water testing fees. There are three state-certified water testing laboratories in Yakima County: Cascade Analytical (Union Gap; 509-452-7707), Valley Environmental (Yakima; 509-575-3999), and Ag Health Laboratories (Sunnyside; 509-836-2020). There are additional state-certified water testing labs in others counties.

For more on drinking water safety, visit <http://www.yakimahealthdistrict.org/eh/dwoverview.htm> or call (509) 249-6508. To inquire about well permitting, construction and records contact DOE at 509-575-2490 or visit <http://www.ecy.wa.gov/>. To read about additional topics in the YHD's *Spring & Summer Safety Series*, visit www.yakimapublichealth.org.

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