



KY-A-Syst for the Home
Environmental Stewardship
for Homeowners

Managing Wells for Drinking Water

Teaching Guide

Introduction:

Wells provide drinking water for more than 200,000 homes in Kentucky. If you have your own well, then the responsibility for ensuring that your family and friends are drinking safe water rests with you. Just because your water appears clear doesn't necessarily mean it is safe to drink. Drinking unsafe water can cause you and your family to become ill. How safe your well water is depends on where your well is located and on how you manage it.

It is important to consider where potential sources of pollution are located before you drill a well. Position the well so that surface water drains away from it. Take into consideration the types of soil found around the well. Shallow soils increase the risks of pollution because contaminants can quickly reach groundwater. If you are using an existing well, make sure that no potential sources of pollution are located near the well, especially uphill.

Older wells, especially those more than 50 years old, are more likely to be contaminated. They are typically more shallow and not as well constructed as more modern wells. Old wells may also have thinner casings that can crack and leak. Visually inspect your well frequently and have it inspected by a qualified well driller every 10 to 15 years.

It is important to test your well at least once a year for bacteria, nitrates, pH and total dissolved solids. The best time to do this testing is in the late spring after a good rain. Testing is often the only way to detect possible contaminants in your water. Local health departments may test well water or be able to refer you to someone who will. Testing is not mandatory but should be done to ensure your family's safety.

Focus on Children:

Children's nervous, respiratory and immune systems are not well developed when they are born. Therefore, they are at higher risk for contamination from toxins in their water. These toxins may cause vomiting and diarrhea, which are more dangerous in children because they become dehydrated more quickly than adults. In addition, children drink more liquids per pound than adults, so their exposure to chemicals in the water may be greater. Babies under the age of 6 months are most at risk from nitrates in their water and can develop blue baby syndrome, a condition that is life threatening without immediate medical treatment. Use of fertilizer, animal pens or septic systems near the well can greatly increase nitrate levels in your water.

Lesson Purpose and Objectives:

Purpose: This lesson is designed to assist families who drink water from private wells. The focus is on helping individuals to understand that it is up to them to ensure that the water coming from their well is safe to drink. Well users need to understand what they can do to keep their water safe.

Objectives: This lesson guide contains a lot of information about managing wells. It may be difficult to cover all the material in one session. Therefore, you are encouraged to select a program based on the type of audience you are serving and their needs. It is best to select and focus on *only two or three* of the following objectives.

Realize that you are responsible for how safe your water is if you have your own well.

Learn where to locate a well in relation to activities on your property.

Understand and recognize potential sources of pollution.

Become knowledgeable about well casings and how to determine if yours is adequate.

Know the three basic types of wells.

Be able to inspect your well for possible problems.

Comprehend how important annual testing of your well is for the safety of your family.

Understand how important it is to fill in old wells that are no longer in use.

Other (Please list in the space below.)

Suggested Resources & Materials:

The following items are available for your use in teaching this lesson. Select and use resources according to your program focus and needs. Resource materials are available from the ENRI Resource Center, 233 Scovell Hall, University of Kentucky unless otherwise noted. County agents should request these items in advance.

Publications & Fact Sheets

Numbered-series Extension publications available through order entry :

- *Testing Private Water Sources – IP-5*

Suggested Resources & Materials: (cont'd.)

Publications & Fact Sheets (cont'd.)

ENRI Fact Sheets – camera-ready copies available through the ENRI web site at <http://www.ca.uky.edu/enri>

- *Do's and Don'ts of Taking Care of a Well* – ENRI-200
(Basic information. Low reading level.)
- *Disinfecting Your Well* – ENRI-201
(Basic information. Low reading level.)
- *What You Need to Know about Testing Your Well Water* – ENRI-202
(Basic information. Low reading level.)

Kentucky Division of Water Fact Sheet – print copies are available by request at Regional Division of Water offices or by calling (502) 564-3410; a web version is available at <http://water.nr.state.ky.us/dow/domwell.htm>

- *Protecting Your Well and Water Supply: A Groundwater Protection Plan for Domestic Well Owners*

Videos (Available through the Ag. Communications video library.)

- *Water Quality Basics* (VEI-1385)
(Segment 1 – Drinking Water Well Care and Maintenance – 3 minutes, 41 seconds)
- *Groundwater and Well Testing Series* (VAE-0348)
- *A Guide to Safe Water* (VAG-1154)

Display

- *Using a Drinking Water Well* - This exhibit shares basic information about drinking water wells, offering both “Do’s and Don’ts” for well care. The exhibit is a companion to the “Taking Care of Your Well” lesson packet, but could be used independently. *Designed to fit a small exhibit board – approximate size 26” tall x 80” wide.*

Teaching Portfolio

- *Taking Care of Your Well* – Flip chart visual designed for one-on-one use or with very small groups. Consists of dialogue and illustrations. Excellent for low-literacy groups, EFNEP and FDM clientele, and family settings.)

Other: (Please specify below.)

Suggested Teaching Techniques and Activities:

Select only those activities that will help you teach the lesson. Limit selection according to your program focus, audience, and length of lesson.

- Use the transparencies to give an overview of management of wells for drinking water. Encourage discussion as you present the information.
- Have the participants read the Ky-A-Syst for the Home publication *Management of Wells for Drinking Water*. Ask them to go back through the publication and answer the questions in the boxes. Suggest participants record all B and C responses and list changes they plan to make from information in the publication or from other sources. They can do this on the Action Checklist on Page 6. Encourage them to set target dates for taking action. Suggest that they review the checklist from time to time to see if any responses have changed.
- Show the drinking water well segment of the video *Water Quality Basics*. Use the fact sheets *Do's and Don'ts of Taking Care of Your Well* and *Disinfecting Your Well*. Have the audience brainstorm possible pollution problems that they might encounter.
- In a small group setting, use the flip chart visual *How to Care for Your Well*. Emphasize the importance of having the well tested every spring.
- Ask someone from the local Health Department to talk about well water testing and the proper procedure to use when obtaining a water sample.
- Show the video *A Guide to Safe Water*. Ask the audience about their experiences with having their wells tested and how frequently they do so.
- Other: (Please specify below.)

Suggested Evaluation Techniques:

Select the technique(s) best suited to the information you would like to obtain from your audience. Immediate evaluation will provide reaction to the presenter and program materials. Delayed evaluation will give a better indication of changed behavior and attitudes.

- ◆ At the close of the program, ask each participant to name *one* thing they learned from the lesson.
- ◆ At the end of the program, ask each participant to list something they will go home and do as a result of the lesson. Have them write the item on a piece of paper with their name and the date of the lesson. Save the papers and several weeks/months later survey the group to see if they actually did it.

Suggested Evaluation Techniques: (cont'd.)

- ◆ Hand out a copy of the *Help Us Serve You Better* evaluation form. Ask participants to complete the form and leave it in a specific place as they leave.

- ◆ Return to the group several weeks later and ask them to fill out the Follow-up Feedback Form and leave it in a specific place as they leave. If you cannot return to the group in person, contact a representative number of the participants by phone and collect the data requested on the Follow-Up Feedback Form from each.

- ◆ Other: (Please specify below.)

Reporting Impacts (*Information for County Extension Agents*):

Use the following priority indicators and program accomplishment (PAC) codes when reporting impacts as a result of this program. Information taken from the FY01 PAC and priority indicators lists.

PAC Code 610 - Indicator:

- Number of individuals adopting practices that insure safe water.

PAC Code 430 – Indicators:

- Number of individuals who make lifestyle changes for the purpose of improving their health.
- Number of individuals implementing personal health protection practices appropriate for their life cycle stage.

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This material was developed through funding provided by the U.S. Department of Agriculture, Cooperative State Research, Education and Extension Service, Healthy Homes Project, and the U.S. Environmental Protection Agency, Region IV, Children's Environmental Health Project.

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May 2001