



## ENVIRONMENTAL EDUCATION SERIES

# TIMELY INFORMATION

### Agriculture & Natural Resources

EXTENSION ENVIRONMENTAL EDUCATION, AUBURN UNIVERSITY, AL 36849-5647

## IS YOUR WELL WATER SAFE TO DRINK?

**Jesse C. LaPrade**, *Extension Environmental Specialist*  
**James Hairston**, *Extension Water Quality Specialist*

The Alabama Department of Environmental Management reported that approximately 20% of the population of Alabama use private drinking water wells. A private well is one that supplies drinking water to a single household or no more than two households. The purity or lack of pollution of these drinking water wells is strictly and solely the responsibility of the owner of the land on which the well is constructed. If the well is properly constructed, i.e. proper casing, cement slab intact (not cracked), proper size, properly grouted bore hole, tight fitting cap, then you should have minimum threat from contamination if you follow these guidelines. To correct well construction problems see publication (by Charles Ogburn).

### **What is Contamination and How Can It Be Prevented From Entering My Well?**

Contamination is anything in water that is not water. There are no drinking water sources in nature that are completely pure and without some amount of contamination; however, there are some contaminants that are more harmful to human consumption than others. Concentration or the amount of contamination present is the primary consideration. Most drinking water in Alabama will contain one or more minerals since Alabama soils are rich in minerals that are at least partially soluble in water. Rain water percolates through the soil dissolving minerals before becoming drinking water for your well. Minerals in low concentrations have little or no ill health effects. Bacteria on the other hand can indicate a potential health risk to consumers and is the most prevalent contaminant in private drinking water wells throughout Alabama.

A survey of drinking water by the Alabama Department of Public Health from private well owners submitted voluntarily in 1989 showed 50.2% of the samples were unsatisfactory for human consumption with 41.8% unsatisfactory because of high bacterial counts. Similar data in 1990 showed 47.5% of the total number of

Reprinted December, 1997

ALABAMA A&M AND AUBURN UNIVERSITIES, AND TUSKEGEE UNIVERSITY, COUNTY GOVERNING BODIES AND USDA COOPERATING

The Alabama Cooperative Extension System offers educational programs, materials, and equal opportunity employment to all people without regard to race, color, national origin, religion, sex, age, veteran status, or disability.

samples submitted for analysis showed high bacterial numbers and were labeled unsatisfactory for human consumption.

### **How Bacteria Gets Into a Drinking Water Well**

Significant levels of bacterial contamination are usually associated with animal and or human waste. Cattle feed lots, poultry houses, dog lots or septic tanks in close proximity to drinking water wells could be the source of bacterial contamination of a drinking water well. Animal waste that can gain access to a sink hole that feeds water into the aquifer that your well is drawing from can also supply bacterial contamination to your well. The sink hole need not be in extremely close proximity with your well head to supply a bacterial contamination source.

### **Other Health Related Contaminants in Well Water**

Other health threatening contaminants would include organic chemicals such as pesticides and inorganic chemicals such as nitrates and phosphates. These contaminants could gain access to your well water from applications to crops and or soils. Both mineral fertilizers and manure can introduce nitrates and/or phosphates to your drinking water well. Do not apply pesticides, fill, or wash spray tanks in close proximity with your drinking water well. Do not apply fertilizers, either mineral or organic, in close proximity with your well.

### **How Can I Know if My Well Water is Safe to Drink?**

You can follow guidelines supplied by the county agent's office in your county or those supplied by your local Health Department to obtain a sample and have your water tested for bacterial and other contaminants.