Table 1. Materials used and approximate associated costs, excluding labor, for standard wellhead curbing installations.

	Drilled Well		Bored Well	
Casing diameter	6 inches		2 feet	
	Materials	Costs ($)	Materials	Costs ($)
Pre-mixed concrete	7 - 10 (cubic feet)	56 - 80	12 - 15 (cubic feet)	96 - 120
Landscape edging	15 - 20 (linear feet)	3.50	20 - 25 (linear feet)	3.50
Total cost		59.50 - 83.50		99.50 - 123.50

Studies done by the University of Georgia show that almost all contamination of rural domestic wells could be prevented through proper well construction and adequate protection of the well site and immediate vicinity surrounding the well. Proper well *curbing* is one practice that helps prevent well contamination and thus helps to ensure the safety and quality of well water.

If you have any questions about *curbing* wells, well construction, or wellhead protection contact your local County Extension Agent.

Glossary:

Bored Well: Well constructed using an earth auger, usually up to two feet in diameter. These wells are typically shallow (less than 60 feet).

Casing: Steel or plastic pipe installed while drilling a well, to prevent collapse of the well bore hole and entrance of contaminants, and to allow placement of a pump or pumping equipment.

Curbing: Watertight concrete slab poured at the ground surface surrounding a well. Curbing should be at least four inches thick and extend at least two feet in every direction from the well *casing* and slope away from the *casing*.

Drilled Well: Wells usually constructed by a combination of jetting and driving. For farm/home use these wells are usually 4-8 inches in diameter, and are typically deep.

Grout: Slurry of cement or clay used to seal the space between the outside of the well *casing* and the bore hole, or to seal abandoned wells.

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A SIMPLE METHOD FOR CURBING WELLS

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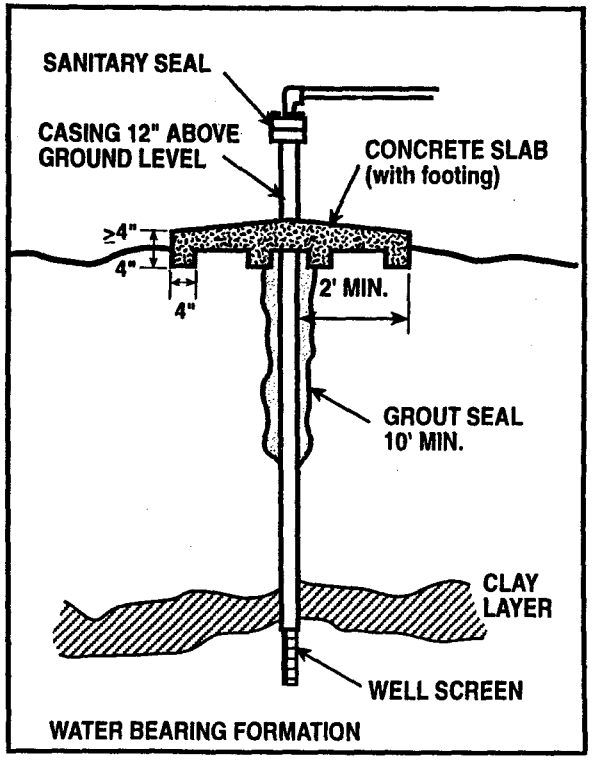

Figure 1. Cross sectional view of a typical well showing proper construction to prevent contamination

Cooperative Extension Service/ University of Georgia College of Agricultural and Environmental Sciences / Athens

A Simple Method For Curbing Wells

By: Frank Henning, Special Extension Agent, William Segars, Extension Agronomist & Tony Tyson, Extension Engineer

A well *curb* is a concrete slab poured at the ground surface so that it surrounds the well's *casing* and seals against surface water entry. According to the Georgia Water Wells Standard Act of 1985 "all individual and nonpublic wells shall be *curbed* at the surface, by the owner, with a watertight *curbing* of concrete at least four inches thick and extending at least two feet in all directions from the well *casing* and sloping away from the *casing*". **The main reason for *curbing* wells is to protect the quality of your drinking water**.

Surface water often carries contaminants like bacteria, viruses and toxic chemicals with it. Your well should already have some protection features built into its construction by your well driller. However, a properly installed, watertight *curbing* serves as an additional line of defense against surface water contamination. *Curbing* serves as a barrier that helps prevent surface water from entering wells and contaminating drinking water supples (see Figure 1).

Construction

One of the simplest ways to *curb* a well is to use flexible landscape edging as a form for the concrete slab (see Figure 2).

Step 1. Carefully remove soil from around the well's *casing* to expose the top of the *grout* seal. If your well has an existing *grout* seal, then simply dig a shallow, four inch deep by four inch wide, circular trench around the outside of the *grouting*. However, If the *grout* seal is missing, you will need to use a post-hole digger to dig a hole around the *casing* that is 3 - 4 feet deep and as wide as the post-hole digger (4 - 6 inches).

** Words in italics are defined in the glossary & illustrated in Fig. 1.*

Step 2. Stake flexible landscape edging into the ground so that it circles the *casing* at least 2 feet from the outside of the *casing*.

Step 3. Dig a shallow, 4 inch deep by four inch wide, circular trench just inside of the landscape edging. Note: it may be necessary to pile the soil excavated from this trench around the outside the form to help insure that the form will hold the weight of the concrete.

Step 4. Pour ready mix concrete to fill the hole around the *casing* or the trench around the *grouting*, the outer trench, and the form. The concrete should be around eight inches thick where it fills both a trench and the form, and at least four inches thick at its thinnest point. Before it sets, lightly trowel or brush the concrete towards the well *casing*, so that when it dries the *curbing* will have enough slope to carry water away from the *casing*.

Step 5. After the concrete slab hardens, remove the landscape edging.

Materials and Installation Costs

For wells with an existing *grout* seal: a *bored well* with a *casing* that is two feet in diameter will require about 20 linear feet of landscape edging and 12 - 15 cubic feet of cement, a *drilled well* with a *casing* that is six inches in diameter will only require roughly 15 feet of edging and 7 - 10 cubic feet of cement. See Table 1. for materials needed and costs associated with *curbing* wells.

Curbing wells that lack a *grout* seal requires considerably more labor and expense However, it is imperative that these wells be *curbed*. Otherwise, they will not be protected from potential surface water contamination.

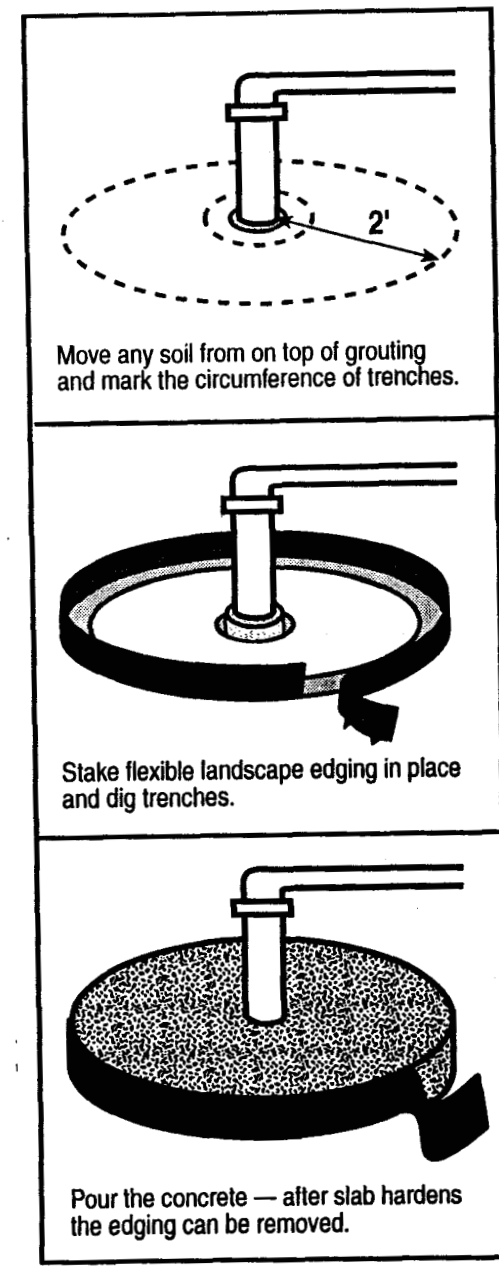

Figure 2. Side view of a typical well showing how flexible landscape edging can be used as a form for curbing.