

GUIDANCE FOR DECOMMISSIONING ABANDONED WATER WELLS

DEFINITIONS:

Abandoned well -- A well that is no longer in use or is in such a state of disrepair that groundwater can no longer be pumped from it in useable quantities.

Decommission – Remove the pump and any other obstructions and completely plug or seal an abandoned well by filling the casing or bore hole with grout from the bottom to the ground surface.

GUIDELINES:

Wells and boreholes that are less than six (6) inches in diameter and less than twenty-five (25) feet deep may be plugged with bentonite clay pellets using the following procedure:

1. Pour pellets slowly from surface to minimize bridging of pellets. Break up bridges as they occur.
2. Calculate and monitor pellet addition amounts to ensure proper hole fill by measuring the position of the top of the plug after every few pails.
3. Calculated volume should be applied to borehole. Volume needed can vary by as much as 10 to 15 percent in a rotary drilled hole.

Volume/Amount of BENTONITE PELLETS Required For Grouting and Plugging Applications					
Nominal Size (inches)	Hole Volume, ft³/ft	gal/ft	Pounds of PELLETS needed to fill 1 ft		
			1/4"	3/8"	1/2"
3	0.049	0.37	3.5	3.5	3.3
4	0.087	0.65	6.2	6.2	5.9
4½	0.110	0.83	7.8	7.8	7.4
5	0.136	1.02	9.6	9.7	9.2
5½	0.165	1.35	11.7	11.7	11.2
6	0.196	1.46	13.8	13.9	13.2

Wells and boreholes greater than six (6) inches in diameter and greater than twenty-five (25) feet deep must be plugged with one of the following grout mixtures by injecting the grout through a tremie, which is a small-diameter pipe, that carries grouting material to the bottom of the borehole or casing and allows pressure grouting of the hole from the bottom up to the ground surface without introduction of air pockets.

Neat cement grout- a mixture of cement and water, consisting of not more than seven (7) gallons of clean water per sack (94 pounds) of cement.

Cement grout - a mixture of cement, sand, and water in the proportion

of one (1) bag of cement (94 pounds) and an equal volume of dry sand to not more than seven (7) gallons of clean water.

Cement-bentonite grout - a mixture of cement, bentonite, and water consisting of five (5) to eight (8) percent bentonite by dry weight of the cement and a maximum of ten (10) gallons of clean water per sack (94 pounds) of cement.

Bentonite slurry - a mixture weighing not less than nine (9) pounds per gallon may be used as plugging material on smaller wells or holes.

Wells six (6) inches or greater in diameter and greater than one hundred (100) feet in depth must be plugged by a licensed water well contractor.

Regardless of who decommissions an abandoned well, a decommissioning form must be completed and filed with the Office of Land and Water Resources within thirty (30) days after the well is plugged.