

Enviro FACTSHEET

PLUGGING OIL & GAS WELLS

Properly plugged wells can eliminate environmental liabilities

Nationwide, improperly plugged wells pose a significant environmental risk. Official surveys estimate that 200,000 of the 1.2 million plugged wells across the United States may be leaking. In West Virginia, this would equate to about 4,400 wells. Since 1993 more than \$3.1 million has been spent to plug wells in the state. About 90 percent of this amount was spent to re-plug improperly plugged wells.

The passage of the Abandoned Well Act, along with the public's and industry's increased environmental awareness, has caused operators to maintain active well plugging programs. (While each individual well offers numerous variables, a cutaway of a typical properly plugged well is shown at right).

Increased activity due to changes in West Virginia's Ground Water Protection Act has raised questions about plugging procedures and regulations. A few are highlighted here:

- Each well operator must make reasonable attempts to cut and pull all recoverable casing to ensure that plugs completely seal the wellbore.

- The bottomhole plug, or plugs across coal and gas bearing zones, are essential. Proper procedures should be exercised when placing these plugs. The hole must be conditioned and cleaned to shut off any pressure that can cause dilution or contamination in the cement used for the plug.

- All cement plugs must be at least 100 feet long, except those specified differently in the law or in cases where a variance is granted.

- Plugs that cross coal seams must use expanding cement. In hydrogen sulfide areas the plug must be of latex cement.

- Non-porous filler placed between plugs must contain at least six percent bentonite gel.

West Virginia's long history of properly plugged wells has helped to protect our oil and gas reservoirs, other minerals such as coal, and preserved the environment.

MONUMENT
pipe must be at least 6-inches in diameter, extending 30-inches above ground and 10 feet below ground.

SURFACE CASING
(cemented to surface)

FRESH WATER AQUIFER

CUTAWAY OF A PROPERLY PLUGGED WELL

How unplugged or improperly plugged wells pollute

Surface leakage of oil or natural gas can contaminate nearby soils as well as local fresh water supplies.

COAL SEAM

Cement plugs

All plugs must be Class A Ordinary Portland cement that contains no more than three percent calcium chloride and no other additives.

SALT WATER AQUIFER

BOTTOMHOLE

(Drawing is not to scale)

OIL OR GAS

WELLBORE

A Each "monument" must include a nameplate with the API well number.

B Cement plugs

C Non-porous filler.

100-foot minimum

For more information contact:
WVDEP- Office of Oil and Gas
Abandoned Well Program
(304) 558-6075