

ENVIRONMENTAL SAFETY AT THE WELL SITE

DID YOU KNOW?

A strong regulatory framework enables the Division of Mineral Resources Management to ensure the safety of Ohio's citizens and environment, as well as the safety of drill-site employees.

Regulatory Safeguards

ODNR's Division of Mineral Resources Management is responsible for regulating:

- Oil and gas drilling, production and reclamation operations
- Brine disposal operations
- Salt solution mining operations
- Underground injection well operations

Can well-site safety be guaranteed?

A strong regulatory framework enables the Division of Mineral Resources Management to ensure the safety of Ohio's citizens and environment, as well as the safety of drill-site employees. This framework is continuously reviewed and updated to accommodate the ever-changing technologies of oil and natural gas drilling.

New regulations, effective in 2010, further strengthened the oil and gas drilling inspection process. These rules require energy companies drilling in Ohio to notify the department at three critical phases:

- Well construction – ensure casing is properly placed as permitted
- Well control – testing of blow-out prevention devices, which controls pressure
- Fluid control – monitor the company's handling of the fluid

Division inspectors place a high priority on witnessing these critical phases.

Protection of groundwater resources

During drilling, steel casings are inserted to the well bore. The casing makes sure that the fluid to be pumped through the well, as well as the oil and gas collected, remains isolated from groundwater and never enters the water supply.

Additional groundwater protections include cementing the casing(s) in place. The casing-cement specifications and cementing process are governed by state regulations. Division inspectors place a high priority on witnessing this critical phase to make certain of proper installation.

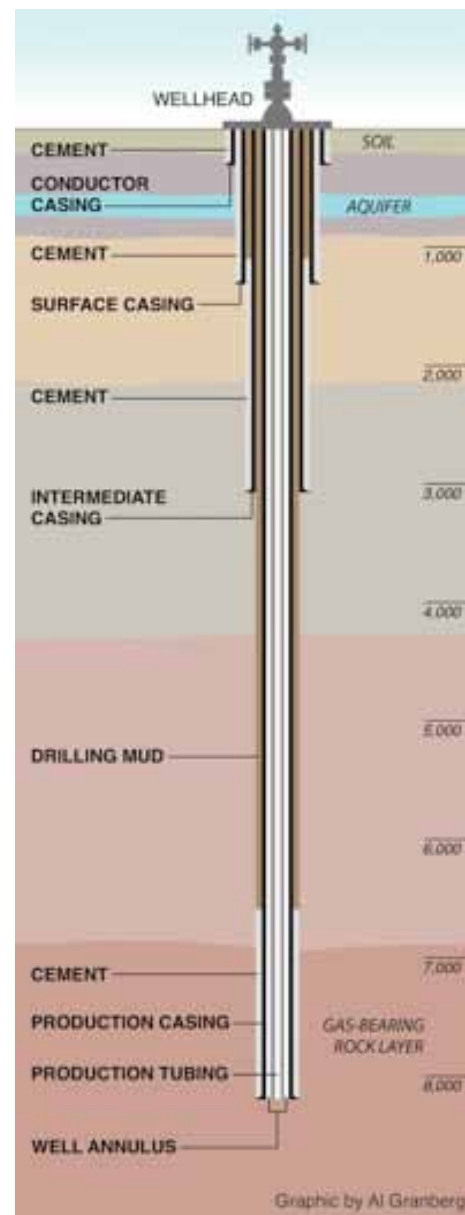
Once the cement has set, the drill hole (wellbore) is continued from the bottom of the first cemented steel casing to the next depth. This process is repeated using smaller steel casings each time until the oil and gas bearing reservoir is reached (generally 4,000 to 7,000 ft). See the illustration at right.

Casing program

Ohio's freshwater aquifers were mapped in the 1980s; the deepest are located about 1,000 feet underground. Using the mapping information, the division's permitting staff design a casing program that protects public health and groundwater resources from contamination. The steel-and-cement casing process prevents any contamination of the groundwater.

Disposal of hydraulic fracturing fluid and brine (production fluid)

Oil and gas operators must dispose of hydraulic fracturing fluid through Class II deep injection wells – the safest, most environmentally friendly method of disposal. Through a partnership with the U.S. Environmental Protection Agency, Ohio's injection wells are regulated by the Division of Mineral Resources Management.



Additional Resources

Dept. Natural Resources:
www.ohiodnr.com

Ohio EPA:
www.epa.ohio.gov

Penn State Marcellus Center:
www.marcellus.psu.edu

