

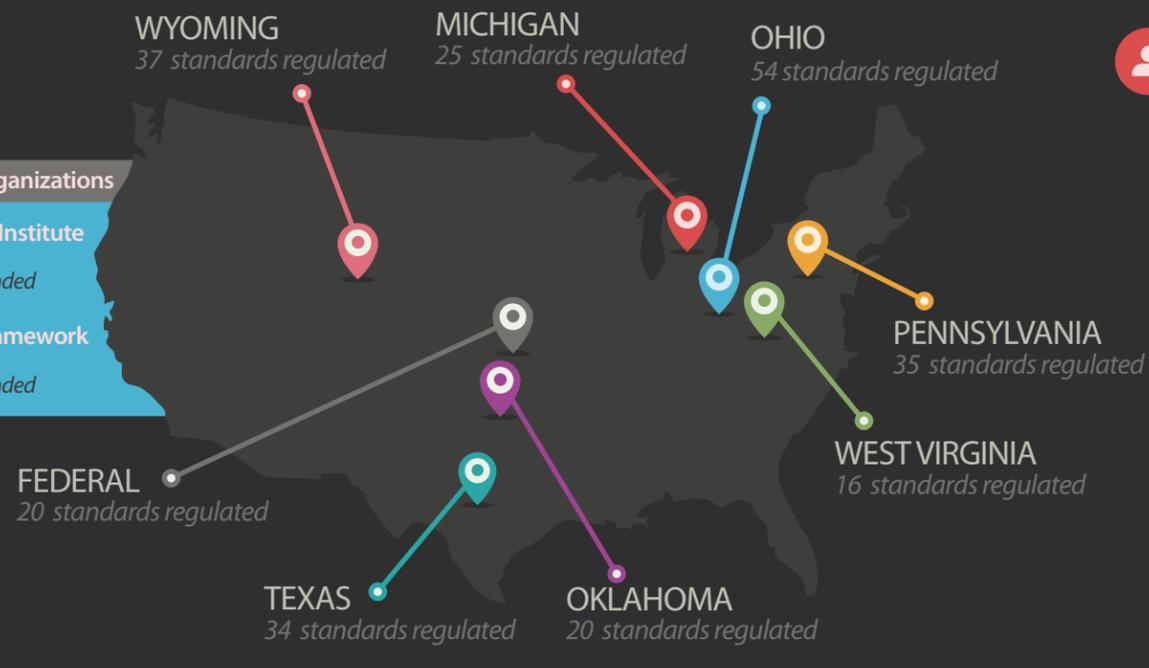
Ohio Drilling Regulations

Comparison of well construction standards

Locations

Non-governmental Organizations

- American Petroleum Institute**
Best Management Practices
30 standards recommended
- Model Regulatory Framework**
Environmental Defense Fund
50 standards recommended



Criteria

2 Independent Organizations
1 Federal Agency
7 State Agencies

8 Areas of well construction practices and objectives were evaluated.

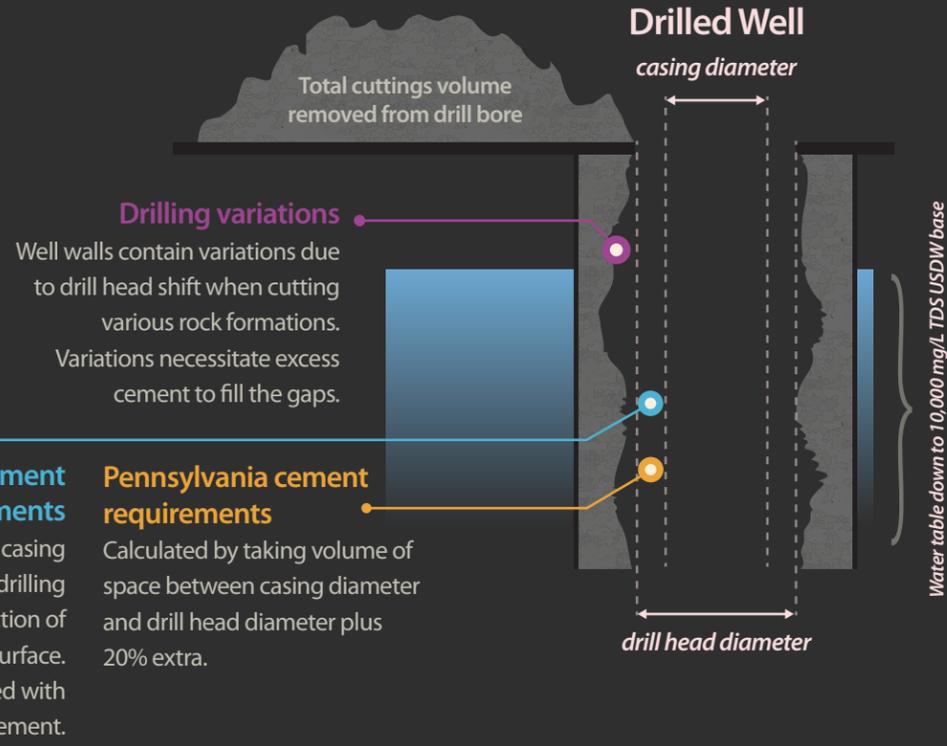
55 Standards of regulation were identified from the 8 areas of construction.

All 10 agencies/organizations were evaluated against the 8 areas of well construction and evaluated for regulations related to the 55 identified standards. Ohio has the highest level of adoption of these standards.

Casing Safety

To Protect ground water, all agencies require casing be cemented from seat of casing to surface. Ohio's casing cement standards are among the strongest in the nation.

Not all states validate/inspect this process the same way. A seat to surface cement job could produce significantly different outcomes/cement needs based on the state the well is drilled in. The drilled well illustration examines how Ohio and Pennsylvania regulate this process.



Note:
Ohio is the first state to implement the most stringent testing of both tail and lead cements. Tests are completed at 500 psi for 30 min.

Water Protection

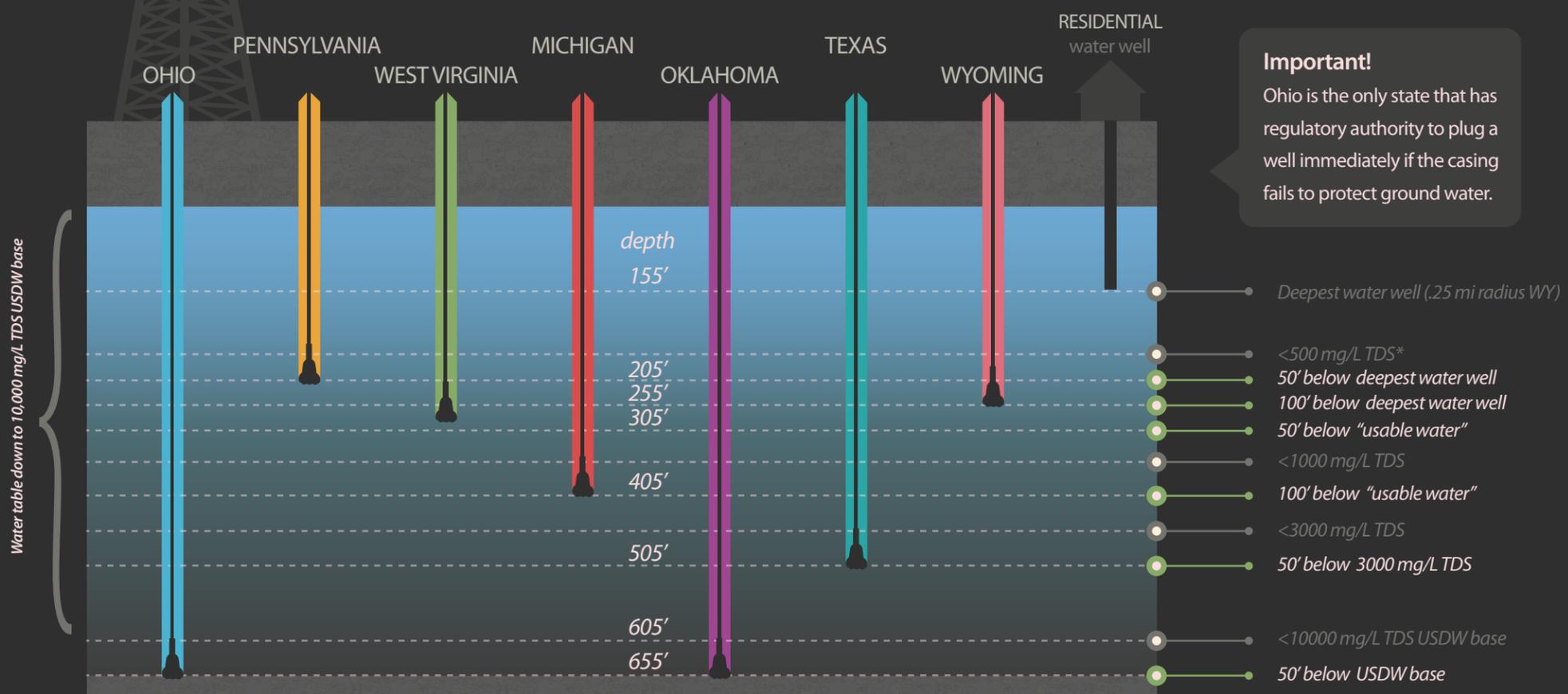
Total depth of a oil/gas well drilled

The following illustration compares the total depth of surface casing that must be set to legally meet state requirements. This illustration based on all factors/conditions being the same.*

In an effort to protect ground water Ohio's well depth requirements are among the strongest in the nation.

*geologic formations and water table depth/particulate characteristics

Note:
Ohio has incorporated the Federal Safe Drinking Water Act into state law, increasing the monitoring and protection of ground water, and holding drillers to the most stringent levels of water protection.



Important!
Ohio is the only state that has regulatory authority to plug a well immediately if the casing fails to protect ground water.