**Frac-Out Well**

**"Frac Out Well”** into an orphaned well" describes a dangerous situation where hydraulic fracturing from a productive well breaches the poorly sealed or unsealed casing of an abandoned, or "orphaned," well. This creates a potential pathway for fracturing fluids, oil, or gas from the productive well to contaminate the environment, including groundwater, through the orphaned well's open or damaged structure.

**What Happens When a "Frac Out" Occurs**

**Contamination:** The pressurized fluids used in hydrofracking, which contain water, sand, and chemicals, can escape the intended formation and enter the abandoned well.

 **Groundwater Pollution:** The orphaned well can become a conduit for these contaminants to move from the fractured rock into an aquifer**, leading to serious groundwater pollution.**

**Methane :** The same breach can allow natural gas (methane) to escape from the productive well or the surrounding formation and enter the orphaned well, which leads to the potential for contamination of residential water wells in the area.

**Why It's a Problem**

**Environmental Hazard:** The release of pollutants can damage ecosystems and **make drinking water unsafe.**

**Orphaned Well Condition:** Orphaned wells are particularly risky because they are no longer maintained or monitored, often have degraded casings, and are the responsibility of the state, not a specific operator.

**Difficulty in Mitigation:** Finding and properly plugging these wells is the most significant challenge.

**How to Address the Issue**

**Well Workover:** Preparation for Plug & Abandonment

**Plugging:** The process involves permanently sealing the orphaned well with materials like cement grout and bentonite chips to prevent further contamination and escape of subsurface fluids.

**Statistics**

**Pennsylvania** **is estimated to have between 300,000 and 700,000 undocumented orphaned oil and gas wells, with only about 30,000 wells located and documented so far. These unplugged wells can leak methane and other substances, posing risks of explosion, air pollution, and groundwater contamination.**

**Ohio Department of Natural Resources (ODNR) estimated in 2020 that there were between 36,000 and 66,000 orphaned oil and gas wells in Ohio, though a precise count is difficult due to outdated data.**

**New York has an estimated 34,000 to 35,000 orphaned oil and gas wells, though the exact number is uncertain as many wells remain undocumented and unlocated.**