ENERGYINDEPTH® TEXAS

Setting the Record Straight on "Aquifer Exemptions" And Injection Wells in Texas

Although underground injection has been safely used for decades, activists have been pushing the claim that these injection wells pose a risk of contaminating "potential drinking water sources", even arguing that the U.S. Environmental Protection Agency (EPA) and Railroad Commission of Texas (RRC) "allow" it through "aquifer exemptions." These claims are no more than scare tactics used to mislead the public about the safety of injection wells. Let's separate fact from fiction:

MYTH: The federal Aquifer Exemption program allows companies to pollute drinking water

FACT: Rock layers that contain oil or natural gas also typically contain water, often resulting in large amounts of brine being produced during oil and gas development. This brine is generally too salty for reuse or treatment, with a total dissolved solid (TDS) concentration over 3,000. That's why this brine is reinjected back into the formation from which it was produced or a similar formation.

In making these claims, activists are taking advantage of EPA's very broad definition of an "underground source of drinking water," which applies only to public water supply systems and aquifers that potentially could be treatable using future technologies. This is only theoretical because, simply put, aquifers that also contain oil and gas are not used as drinking water. According to the EPA's Underground Injection Control (UIC) program, exemptions can only be applied to aquifers "that **do not currently serve as a source of drinking water and will not serve as a source of drinking water in the future**, based on certain criteria." [emphasis added]

MYTH: Oil and gas companies in Texas are not complying with Aquifer Exemption requirement, putting water at risk without the public's knowledge.

FACT: Activists have shown zero evidence of illegal injection into potential drinking water sources in Texas. States have very strict regulations governing Class II injection wells that typically go above and beyond EPA's baseline requirements. Injection and disposal wells are tightly regulated in Texas. In order to receive a permit for injection or disposal, operators must give the public notice and allow for a possible public hearing, a geological review of the disposal area is conducted as well as the area near proposed wells.

MYTH: Drought prone areas such as Texas need all the water they can get, but oil and gas companies are destroying possible water sources through the exemption.

FACT: No, they are not. Citing the existence of desalination techniques, activists argue that currently exempt aquifers with high total dissolved solid (TDS) concentrations could potentially be used as future drinking water. The Safe Drinking Water Act (SDWA) states that water above a TDS concentration of 500 needs to be treated for human consumption. Additionally, under Texas groundwater protection guidelines, an underground base of usable quality water is generally defined as having a less than 3,000 TDS concentration, as that level is feasibly treatable. But activists point to the maximum salinity limit under the SDWA of 10,000 TDS as being possibly usable for drinking water. Such a high concentration however, would require intense treatment to even make usable for livestock or irrigation purposes, let alone human consumption. Of course, this also ignores that fact that water from oil and gas bearing formations cannot be used for drinking water.

Besides salinity, other criteria can also determine if an aquifer cannot be used for drinking water. This includes if the aquifer is mineral, hydrocarbon or geothermal energy producing, is at a depth which makes recovery economically impractical, is contaminated with naturally occurring contaminants such as arsenic or radioactive materials, and if the TDS concentration is between 3,000 and 10,000 but is not reasonably expected to supply a public water system, under 40 CFR § 146.4. Since activists like to make it seem like the SDWA applies to all water supply, this last point is especially important as aquifers are sometimes too small to be considered for public supply.