

Comments on Rule 8 Proposal on Authorized Pits

10/10/2023

- The Oil & Gas Industry has a shared goal with the Texas Railroad Commission of preventing water contamination.
- There are multiple ways to achieve that goal regarding temporary drilling, completion and workover pits with very little risk. My review of the Proposed Rule 8 concerned the specific sections on authorized pits (Division 3 – Operations Authorized by Rule 4.111 through 4.115).
- Regulations should recognize the difference between long-term and temporary pits regarding the potential for groundwater contamination.
- Meaningful regulations should begin with recognizing an existing problem and finding a proper solution. In the case of temporary drilling, completion and workover pits, there would have to be the clear existence of water contamination that has occurred from temporary pits. Since there is not an existing problem with water contamination, the proposed Rule 8 changes seem to address the perception of a problem. Therefore, an assessment of risk versus cost must be accomplished. To determine the risk associated with temporary drilling, completion and workover pits, water contamination potential must be quantified. From industry experience and TCEQ's GIS Groundwater Contamination website, water contamination has not occurred from temporary drilling, completion, and workover pits during the 40 years that the original Rule 8 has been in effect in Texas. The Texas Railroad Commission attested to this in a 2014 NPR State-Impact article entitled "*Are Drilling Waste Pits a Threat to Texas Groundwater?*". Because of the lack of historical groundwater contamination after the drilling of tens of thousands of wells over decades in the state, it appears that there is no risk associated with these temporary pits. Why has this been the case? This is primarily due to small volumes of fluids associated with the temporary pits over a brief period of time and, especially in the area of West Texas, because of the nature of the geology and hydrology. Because of the caprock and the resulting caliche layers in much of West Texas, there is a natural barrier which helps to protect the water table. This was discussed in the article "Water Properties of Caliche" by J.T. Hennessy, Etal, for the publication *Journal of Range Management* – November 1983. In other areas east of the caprock geology, the pits are dug into clays, which have no permeability.
- It has been well documented that the risk of water contamination in West Texas mainly occurs from long-term exposure to large fluid volumes, typically via irrigation wells with a pathway down the wellbore annulus, surface casing leaks in oilfield wellbores, or underground storage tanks with leaks that result in the release of large volumes of fluids over extended periods of time, allowing direct communication to the water table.
- The Proposed Rule 8 draft references Federal guidelines (40 CFR 279 & 280) regarding permanent underground storage tanks (UST). These do not directly apply to temporary underground pits. However, the proposed Rule 8 equates temporary pits to UST's, which seems to be overkill in light of the above risk assessment.

- **The Proposed Rule 8 pit rules are a very high cost solution to a perceived problem that has been proven to have no risk.** An example of this high-cost regulatory solution is the New Mexico Pit Rule, which mirrors the proposed Rule 8 in Texas. The New Mexico pit rule has resulted in Operators using Closed Loop Systems exclusively and hauling cuttings to commercial disposal facilities. The use of this system adds an additional \$250,000 to \$300,000 on a \$1,100,000 drilling project. Because of mandatory soil sampling if an inground pit is used, operators are unwilling to assume the risk of having expensive cleanups if a liner leak occurs. Any liner leak, no matter the size, will result in additional soil sampling, excavation and replacement of the soil at very high cost (risk-adjusted average cost of a liner leak is about \$590,000 in New Mexico). This additional cost has greatly decreased development by independent operators because of the unfavorable economics. An additional consideration with Closed Loop Systems is the limited availability of equipment. Because the proposed Rule 8 results in a major change in operations within the state, there will be an increase in demand for cuttings control equipment, haul trucks, roll-off bins, fluids storage tanks, commercial waste disposal facilities, environmental services and lab resources. This will increase costs for all of these services and could result in project delays due to availability. Additionally, as experienced in New Mexico, real damage has been caused by the wear and tear of increased truck traffic on roads and highways while hauling cuttings. Noise, dust and fuel usage have increased as well. When drilling in areas close to or in towns or cities occurs, this can lead to nuisance issues and road repairs.
- Lastly, with regard to Closed Loop Systems, the increased costs to drill and complete wells will be devastating to conventional project economics at a time when Federal regulations on GHG (OOOOa, b and c), the Methane Tax, and the ESA will be hitting Texas operators with large expenses. As experienced by operators in New Mexico, overregulation causes a decrease in development of oilfield properties by independent operators. This will have a dramatic negative effect on revenues to the state of Texas through decreased severance and ad valorem taxes, as well as the need for more regulatory staff.
- **There is a better 0% risk solution without the high cost.** Because there has been no historical evidence of groundwater contamination from temporary drilling, completion and workover pits, the way to minimize the risk of water contamination without the high cost is to utilize the original Rule 8 guidelines to line all temporary pits, maintain good housekeeping of the liner and dewater the pits quickly after drilling, completing or working over a well. The original Rule 8 guidelines for temporary pits have proven over a 40 year period to be effective in preventing groundwater contamination. Otherwise, modifications to the rule would have occurred during that time if there were cases of groundwater contamination. Since exposure time and volume, along with hydrostatic head, are the problem with long-term UST's, quickly dewatering and drying temporary pits is effective. There is too little volume in the pits over a short period of time to be a material threat to the water table. The cuttings bed has very little pore volume to pose a groundwater contamination problem. As outlined in contemporary literature on Ogallala recharge, the arid conditions and annual rainfall in West Texas (which is less than the

evaporation rate) means that the fluid migration which could lead to water contamination is not occurring.

Recommendations

- Based on current experience, knowledge, and a proven track record over the last 40 years, the current Rule 8 guidelines in Chapter 3.8 on temporary drilling, completion and workover pits should be followed for most of the state. The RRC Districts should modify the pit rules in the event that there is a clear, demonstrable risk to the water table.
- Pit registration for temporary drilling, completion and workover pits should be eliminated. Pit registration again mimics 40 CFR 280 and should not apply to temporary pits unless there is a clear, demonstrable risk. Pit registration can easily lead to litigation. This was clearly demonstrated In New Mexico.

Authored by Greg Mendenhall
Sr Vice President – Operations
Texland Petroleum LP
Fort Worth, TX

Experience:

- 35 years total in industry as an operations, drilling and completion engineer
 - o 5 years with Mobil E&P US Inc
 - o 13 years direct supervision of drilling and workover rigs while interfacing with landowners and contractors
 - o 17 years managing producing properties, drilling projects and regulatory issues