The state of Oklahoma could gain approval from the Environmental Protection Agency to issue permits that would allow oil producers to dispose of oil field production water in above-ground waterways. But it shouldnâ€™t be a reality for years to come. The technology just isnâ€™t there yet, according to Kerry Sublette, an industry consultant and professor emeritus in chemical engineering at the University of Tulsa. The desire to do so isnâ€™t there yet, either, according to Shellie Chard, director of the water quality division of the Oklahoma Department of Environmental Quality. While the state may soon gain the authority from the EPA, the expectation that authority will be put to use is a complete unknown. â€œNothing is preventing companies from applying directly to the EPA now for those permits. Theyâ€™ve been able to do that since 1972,â€• Chard said. â€œWhat we are doing now is trying to get our ducks in a row so we are ready if and when the industry is ready to treat and discharge produced water.â€• No time frame for review of the stateâ€™s application has been given, she said. Oklahomans should make themselves familiar with the idea, however, as this is only the beginning of discussions, she said. â€œThe technology is advancing quickly,â€• she said. Johnson Bridgwater, director of the Oklahoma Chapter of the Sierra Club characterized the issue as â€œa coming nightmareâ€• and said his group will fight to protect public waters. â€œThe issue of the disposal of wastewater is far more complicated than simply the problem of toxicity, including the fact that the water in question is known to be radioactive, as has been proven in a similar situation in Pennsylvania,â€• he said. The process underway now is the transference of authority to grant permission and regulate the practice from the EPA to Oklahomaâ€™s DEQ, which started with a statutory change in 2017 that granted the agency power to regulate discharges of produced water. Previously no state agency had the authority to regulate the discharge of wastewater generated by the production of oil and gas, she said. In December 2018, the DEQ applied to the EPA to take over the process. In November, it re-submitted the application after

an initial EPA review, Chard said. Oklahoma is leading the way ahead of Texas and New Mexico in seeking the authority in the Southwest region. Some permits regarding re-use of production water are in service on native lands in other parts of the country and the state of Wyoming already issues permits for use of production water for agriculture and wildlife uses, Chard said. Outside Wyoming, most operations with such permits re-use the production water in other oil field or industrial operations, Sublette said.

At the heart of the issue is the chemical makeup of Oklahomaâ€™s production water, which comes from underground formations in both standard and hydraulic fracking operations for oil and gas production. Chard said, at least in the foreseeable future, any state authority would follow federal rules that allow the practice of discharge of production water to the surface only west of the 98th meridian â€" which means it could apply only in about the western third of Oklahoma. â€œWest of El Reno, roughly,â€• she said. She said that restriction does not mean a centralized facility to treat water from a broad region could not be built east of that line, however. Chard said the processes to allow releases of production water at ground level would be similar to any other individual industrial wastewater permits, where hundreds of chemicals would have to be analyzed and the permits to release would go through public notice periods.

â€œIt would be a complex permitting process similar to other major industrial permits. It would be very different from the general permits (DEQ) issues for stormwater construction activities typically in less than a month and commonly within seven days,â€• she said. Waters allowed to be released at the surface would have to meet already established state clean water standards on levels on par with any other industry currently in operation across the state, she said. Waters used for irrigation or industrial uses would, likewise, have to meet standards set in any given industry. Produced water in the Rocky Mountains region might be treated for above-ground uses as its chemical makeup is much less saline and complicated; but that state has had its environmental issues with using

produced waters along the way, Sublette said. He said he is skeptical that treatment processes for large volumes of produced water are anywhere near being capable of handling the high saline content, mineral contents and unknown or undisclosed chemical components in millions of gallons of produced water used in Oklahoma. Most of what heâ€™s seen in other areas is use of treated produced water as a water-saving measure allowing for re-use in fracking operations, he said. â€œThe attempt there is to simply use less fresh water,â€• he said. Itâ€™s a different story for disposal of produced water. At this point, that is done by re-injecting water into the areas where it was extracted and separated from petroleum resources. It also can be injected into other underground sites where it is allowed under Oklahoma Corporation Commission oversight. â€œFor discharge at the surface, the technology is not there at all, not that can be done economically on that scale. I donâ€™t see it,â€• Sublette said. â€œThat doesnâ€™t mean it canâ€™t happen some time in the future; but right now, I just donâ€™t see it. Iâ€™m skeptical.â€• Another issue is that additives used in fracking operations are proprietary information, so the treatment puzzle becomes even more complicated, Sublette said. â€œHow do you treat with variable compositions with elements you donâ€™t know exist unless you test for them? Thatâ€™s very expensive,â€• he said. Even if the water is purified, there are byproducts to be handled, including what could be tons of salt. Chard said companies have explored creating markets to make processes more economically viable, such as sale of the salt or extracted iodine or boron. But Oklahoma has issues with re-injection of produced water underground that could force a look at other methods. A mysterious flow at ground level is underway in Kingfisher County, where several wells have been shut down or ordered to drop pressures in their re-injection operations. And, of course, there are the fracking-related earthquakes. â€œWe had the induced seismicity issues, earthquakes, and the Corporation Com has taken action to reduce volumes and pressures to eliminate or slow down the number and magnitude of those earthquakes,â€• Chard said. At the same time, Oklahoma experiences

periods of high rainfall and years of drought. And if a company is faced
with the prospect of having to pump and truck millions of gallons of water,
then the possibility of using some advanced technology could come into play, especially if
a company can develop a secondary market for the extracted salts or other minerals,
she said. Chard quoted former state Secretary of Energy and Environment Michael Teague on
the process of moving forward even with an unknown time frame or possibility. â€œHe
would frequently say we have a 10-year problem that we need to solve; and
if we donâ€™t start working on it now, in 10 years, we will still
have a 10-year problem,â€• Chard said. â€œWe canâ€™t wait until we know all the
answers to start working to solve the problem.â€• Featured video Kelly Bostian 918-581-8357 kelly.bostian
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