From: Fay Knox [mailto:carolyn.fay.knox@gmail.com]
Sent: Saturday, June 28, 2014 7:06 PM
To: Reg-Comment
Subject: Comments for the proposed 3rd party rule making for Regulations 5 and 6 for the Buffalo River watershed ban on swine CAFO permits.

We support the proposed 3rd party rule making for Regulations 5 and 6 the Buffalo River watershed ban on swine CAFO permits on our nation's first National River.

A major concern is the likelihood of CAFO waste of nutrients polluting the surface and groundwater in its karst topography; therefore water/pollutant dispersal in karst must be a baseline for the ban.

Previous research about water/pollutant dispersal in karst has proven the pollution.
1. Thomas Aley's research into the region's karst topography conducted during a controversy about establishing a landfill in the Pindall Arkansas area financed by local residents and the National Park Service discovered that surface and groundwater were inextricably connected not only by vertical conduits and fractures, but also by lateral channels.

2. Ralph Ewers of Eastern KY University discovered surface /groundwater connections the distinguishing lines between point and non point pollution in karst in his report "The Response of Landfill Monitoring Wells on Limestone (Karst) Aquifers to Point Sources and Non Point Sources of Contamination."

3. Research by James F. Quinlan comprising methods and rationale for accurate water testing in Karst for EPA procedures states:

"The hydrology of karst terranes is significantly different from that of terranes characterized by granular and fractured rocks--flow velocities in karst may be several orders of magnitude higher than in other ground-water settings. For monitoring to be relevant and reliable in karst terranes, monitoring procedures must be radically different from those in non-karst terranes."

Mike Masterson, published on MikeMasterson'sMessenger.com, wrote in April 2013 that Thomas Aley explained to him, "Hydrology testing is absolutely necessary when proposing to dump potentially contaminating waste anywhere across the karst-riddled Ozarks, 'especially in the watershed of the nationally significant Buffalo National River. It becomes a matter of how the surface waters flow and interact,' he explained, adding, 'What we learned at Pindall was that the distance from the Buffalo River doesn't necessarily ensure protection....What we showed was the level of care that must be taken before waste disposal practices are put into effect within miles of the Buffalo National River,' he said."

Karst topography treats the runoff of dissoluble and/or particulate applied materials the same way, whether from human or swine sources, the effects of both are comparable and should be taken into account in approving this rule making proposal for the Buffalo River Watershed (BRW.)

ADEQ requirements for landfills in karst topography as it relates to water quality is taken seriously by our government, and regulations are enforced so as to protect the waters that flow above and under the surface due to their inextricable relationship in this formation.

ADEQ requires only a general permit for swine CAFOs, the absence of specified CAFO regulations of such operations in karst is lacking. If ADEQ used the landfill water quality karst regulations noted below to determine the appropriate placement and structure of waste ponds or lagoons for CAFOs, the Buffalo River Watershed would be clearly unsuitable.

Very real hazards are present in this karst topography area. Our nation's first national river is used for drinking, recreation, and small farming. Use the above research about dissolvable and/or particulate applied materials and approve these third-party rulemaking proposals for changing Regulations No. 5 and 6.

Please review with great care the definitions in AEDQ Landfill regulation 22 SOLID WASTE MANAGEMENT RULES which are very relevant to the karst topography of the Buffalo National River concerning the following
disposal
disease vectors
disposal sites
endangered or threatended species
ground water
industrial solid waste.
Karst topography
land application unit
monofill
putrescible wastes
solid wastes (point sources subject to permit under 33 U.S.C.1342) underground drinking water source.

In section 4-3 present dangers include:
unstable areas
structural components
poor foundations
areas likely to cause mass movement by gravitational influence
and once again existing karst terrain.

Also relevant are parts of Regulation 22 pertaining to Class 1 units that are unstable areas that must be closed by October 9, 1996: 402, 407, and 1301.

Of particular interest are parts:
414 on disease vector control

420 on liquids restrictions
424 on minimum design criteria and their relationship to 1301 listed above

425 addresses landfills in Boone and St. Joe formation and because of the existing karst terrain are very relevant also concerning CAFO's

After review of section 425 notice difference between the holding pond liner for a CAFO in the Notice of Intent (NOI) developed by DeHaan, Grabbs and Associates, LLC, of North Dakota and Kansas, for the first CAFO in Arkansas that follows the NPDES general permit requirements. In the NOI the conforming pond liner must be placed above 18 inches of compacted, low permeable soil. It shall not contain rocks > 4 inches in diameter (compare to 1 inch in landfill liner systems in karst.) It is identified as an "earthen lagoon type of storage" and allowed to leak up to 5,000 gallons per acre. (Compare to extensive double liners with built-in leak detectors for landfills in the same Boone and St. Joe formations.) No cover is required for the waste ponds, no venting system of gases, and overflow in times of excessive rainfall is acceptable. Deep explorations to detect possible pockets, caves or hidden sinkholes are expensive and problematic. However, without knowing the true extent of these features in karst, the sheer weight of a CAFO combined with its earthen lined storage ponds and their permitted leakage could shift the unstable underground limestone formations beneath them to collapse or fracture in unanticipated ways.

A swine CAFO is not a landfill, however there are many similarities, and a comparison presents an opportunity to prevent damages from the unpredictable movement of water through karst; therefore the comparison is relevant.

Water quality in karst terrain must be protected, and I ask that the commission approve the approve the third-party rulemaking proposals for Regulations No. 5 and 6, and the Buffalo National River watershed, or nation's first National River for the future.

We am extremely thankful for all of the courageous people in the 1960's who spoke out and fought the fight to keep the Buffalo free flowing and a treasure for all of the world, and would appreciate a response to my comments.

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