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VIA EMAIL ONLY

July 1, 2014

Dough Szenher
Arkansas Department of Environmental Quality
5301 Northshore Dr.
North Little Rock, AR 72118

Re: Public Comment-Reg. 5 and Reg. 6 Rulemakings

Mr. Szenher:

Thank you for accepting this comment in regards to APCEC rulemaking dockets 14-002-R and 14-003-R. I support both rulemakings. Large, concentrated, swine operations create a variety of public health risks. Many people in the Buffalo's watershed rely on groundwater, which is susceptible to surface pollutants, for drinking water supplies. Land applying hog waste in a watershed used for primary contact recreation, such as swimming, boating, and fishing, increases the public's exposure to water borne pathogens. Storing hog waste in lagoons near people's homes results in harmful exposure to airborne contaminants and creates a threat of a catastrophic release of waste. Limiting the size and location of medium and large swine operations benefits public and environmental health.

Drinking Water Supplies

The Buffalo River Watershed is home to many rural communities which rely on groundwater for their drinking water supplies. Large animal agricultural operations produce pathogens and other pollutants which reach surface and groundwater.¹ Case studies show that problems with CAFO pollution are exacerbated when, like the Buffalo River's watershed, karst topography is present. Researches in Wisconsin found that CAFOs above karst topography result in increased nitrate and bacterial counts in drinking water wells.² Nitrates and bacteria are both harmful pollutants which negatively impact drinking water wells in a region where residents may have few or no alternatives to their private wells. Limiting the size of swine operations in the Buffalo's watershed will protect drinking water supplies.

¹ EPA, *Detecting and mitigating the environmental impact of fecal pathogens originating from confined animal feeding operations*, 2005.

² Erb, K, and Stieglitz, R., *Final Report of the Northeast Wisconsin Karst Task Force*, 2007.

Noxious Air Emissions and Large Swine Operations

Large swine operations emit particulate matter in the form of dust, and noxious gases as a result of the decomposition of swine wastes. Air pollutants produced by such operations include ammonia, volatile organic compounds, and hydrogen sulfide. Studies show that regular exposure to CAFO emissions results in an increased risk of asthma in children³ and farm workers. A 2011 review of EPA data on emissions from multiple studies found that ammonia concentrations in exhaust from swine barns exceeded National Institute for Occupational Safety and Health exposure recommendations for entire days, resulting in hazardous conditions after only a few minutes of worker exposure.⁴ A group of researchers in Iowa conducted a review of literature regarding the impacts of CAFO air emissions on communities, concluding that:

While limited in number and scope, the currently published, peer reviewed, community-based studies of adverse health affects associated with CAFO exposures find an increased prevalence of similar symptom patterns, especially respiratory symptoms, and similar indicators of reduced quality of life. Taken together with other experimental and epidemiological observations of adverse health effects observed with low levels of exposures to chemical components (ammonia, hydrogen sulfide) of CAFO emissions, these findings support a conclusion that CAFO air emissions constitute a public health hazard, deserving of public health precautions as well as larger, well controlled, population-based studies to more fully ascertain adverse health outcomes and their impact on community health services.⁵

Particulate matter and air pollutants are harmful to public and environmental health. The Buffalo River watershed is home to people who are susceptible to such pollutants, and a tourism industry which relies on a high quality environment to sustain itself. The proposed regulations will protect air quality near the Buffalo River.

Public Exposure to Pathogens

Human contact with waters of the Buffalo is a regular occurrence. Recreational users of the Buffalo River swim, fish, and boat on the river. Water-borne pollutants from swine CAFOs can reach surface waters due to over application of manure, proximity to surface waters, high rainfall events, or misapplication of manure to steep, saturated, barren, or frozen fields.⁶ EPA has attempted to categorize all known contaminants resulting from CAFO runoff, including bacteria, parasites, and viruses,⁷ but the full array of pollutants, including endocrine disruptors

³ Sigurdarson, S.T. & Kline, J.N., *School proximity to concentrated animal feeding operations and prevalence of asthma in students*, 2006, Retrieved from <http://journal.publications.chestnet.org/article.aspx?articleid=1084481>.

⁴ Environmental Integrity Project, *Hazardous Pollution From Factor Farms: An Analysis of EPA's National Air Emissions Monitoring Study Data*, 2011.

⁵ Iowa State University and the University of Iowa Study Group, *Iowa Concentrated Animal Feeding Operations Air Quality Study, Final Report*, p. 138, 2002.

⁶ Hodne, C., *Concentrating on Clean Water: The Challenge of Concentrated Animal Feeding Operations, Executive Summary*, p. 3, 2005.

⁷ EPA, *Literature Review of Contaminants in Livestock and Poultry Manure Implications for Water Quality*, 2013.

and carcinogens, contained in swine runoff is not known, and additional categorization is needed.⁸ A spill, or concentrated runoff, in the Buffalo River watershed could expose thousands of recreation users to bacteria and other harmful pollutants, including parasites.⁹ The resulting recreational contact bans on the Buffalo would wreak economic devastation in the area, and result in a lasting stigmatization of currently high quality water.

CAFO pathogens can also spread by air from land application sites. Many bacteria in large CAFO operations are antibiotic resistant due to the practice of feeding animals antibiotics as a growth promoter.¹⁰ A recently published study found that Iowa residents who lived within one mile of a farm housing 2,500 or more pigs were nearly three times more likely than the general population to carry methicillin-resistant *Staphylococcus aureus* (MRSA).¹¹ Exposure to MRSA is a public health issue that must be taken seriously. Young and old populations are particularly susceptible to such infections.

I have attached several of the articles cited herein. Please accept these reports as part of this comment. As shown by those reports, the public environmental health impacts of large swine operations are greater than what a single public comment can encompass. However, the rulemakings at hand will establish protections necessary to prevent adverse environmental impacts to recreational users and residents of the Buffalo River Watershed.

Sincerely,

/s Ross Noland

Ross Noland

Att.

⁸ Burkholder, J. *et al.*, *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality*, (2007).

⁹ Hribar, C., *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities*, p. 9, 2010.

¹⁰ West, B. *et al.*, *Antibiotic Resistance, Gene Transfer, and Water Quality Patterns Observed in Waterways near CAFO Farms and Wastewater Treatment Facilities*, (2009).

¹¹ Carrel, M. *et al.*, *Residential Proximity to Large Numbers of Swine in Feeding Operations Is Associated with Increased Risk of Methicillin-Resistant *Staphylococcus aureus* Colonization at Time of Hospital Admission in Rural Iowa Veterans*, 2014.