



July 1, 2014

Doug Szenher
Arkansas Department of Environmental Quality
Public Outreach and Assistance Division
5301 Northshore Drive
North Little Rock, AR 72118

Sent Via Electronic Mail Only: reg-comment@adeq.state.ar.us

Re: APCEC Proposed Amendment to Regulations 5 and 6

Dear Mr. Szenher:

The Socially Responsible Agricultural Project (“SRAP”) submits the following comment on the proposed changes to Arkansas Pollution Control and Ecology Commission (APCEC) Regulations 5 and 6.

We support the Arkansas Department of Environmental Quality (ADEQ) making the proposed changes to APCEC Reg. 5 and Reg. 6 because:

- I. ADEQ has the authority and duty to prevent water and air pollution;
- II. CAFOs threaten the environment and public health;
 - A. CAFOs generate staggering volumes of manure;
 - B. CAFO manure contains potential toxins;
 1. Contaminants are discharged, leak, or run off into surface and groundwaters;
 - a. Pollutants in water threaten public health;
 2. The Buffalo National River (“BNR”) watershed is in a karst region, where contamination seeps quickly into groundwater;
 3. Streams in the BNR Watershed are listed as impaired waterbodies;
 - C. CAFO air emissions threaten public health;
- III. CAFOs cause negative community impacts;
 - a. Economically, and
 - b. Quality of life;
- IV. CAFOs present unacceptable animal welfare conditions; and
- V. Other states have recognized the harms from CAFOs and have initiated similar bans.

SRAP is a national, grassroots organization that educates the public about the devastating effects of concentrated animal feeding operations (“CAFOs”),¹ while working directly with the communities most heavily impacted by these animal factories. Through education, advocacy, and community organizing, SRAP empowers rural communities to protect themselves from CAFOs and provides guidance and assistance to communities

¹ Since the rule amendments relate to both the state *confined* animal feeding operations as well as the federally defined *concentrated* animal feeding operations, for the purposes of this comment, “CAFO” denotes either confined or concentrated facilities or both.

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seeking to develop healthy, sustainable alternatives to industrialized livestock production. SRAP has been working with Arkansas communities to protect themselves against large industrialized animal facilities, while also promoting sustainable farming alternatives.

The proposed changes to APCEC Reg. 5 and Reg. 6 seek to prohibit the ADEQ Director from issuing Regulation No. 5 permits for Confined Animal Operations, and Regulation No. 6 permits for Concentrated Animal Feeding Operations, for facilities in the BNR watershed with either 750 or more swine weighing 55 pounds or more, or 3,000 or more swine weighing less than 55 pounds.²

The regulation changes will prohibit an increase in the number of swine at existing facilities in the BNR watershed. The numbers of large-scale swine confinement facilities in the BNR watershed must be capped to defend against the multitude harmful effects from CAFOs.

I. ADEQ has the authority, and duty, to prevent water and air pollution under both federal and state law.

The Clean Water Act ("CWA") National Pollutant Discharge Elimination System ("NPDES") permit requirements were established to protect our nation's waters from pollutants. 33 U.S.C. § 1311(a). The CWA also authorizes the U.S. Environmental Protection Agency ("EPA") to delegate NPDES permitting authority to states that have approved regulatory programs. Within the state of Arkansas, the Arkansas Department of Environmental Quality (ADEQ) was granted legal authority to issue, monitor, and enforce NPDES permits. As such, ADEQ is required by federal law to carry out the mandates of CWA in this State. 33 U.S.C. § 1342(b); 40 C.F.R. 123.

Additionally, under Arkansas law, ADEQ has the authority, and duty, to prevent discharges to waters of the state. The Arkansas Water and Air Pollution Control Act provides in part:

- (a) The Arkansas Department of Environmental Quality or its successor is given and charged with the following powers and duties:
 - (1) Enforcement of Laws. To administer and enforce all laws and regulations relating to the pollution of any waters of the state;
 - (2) Investigations and Surveys.
 - (A) To investigate the extent, character, and effect of the pollution of the waters of this state; and
 - (B) To conduct investigations, research, surveys, and studies and gather data and information necessary or desirable in the administration or enforcement of pollution laws;
 - (3) Program. To prepare a comprehensive program for the elimination or reduction of the pollution of the waters of this state, including application for and delegation of federal regulatory programs; ...

² These animal numbers and weights define large and medium CAFOs per current federal regulations. 40 C.F.R. § 122.23(b)(4)(iv-v) and (b)(6)(i)(D-E).

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A.C.A. § 8-4-201; APCEC Reg. 6 and Reg. 5.

ADEQ is also charged with “safeguard[ing] the air resources of the State by controlling or abating air pollution ... and preventing new air pollution...” A.C.A. § 8-4-302. The same mandates relating to ADEQ and water pollution also apply to air pollution. A.C.A. § 8-4-304. The legislative intent and declared public policy of the State is:

... to maintain such a reasonable degree of purity of the air resources of the state to the end that the least possible injury should be done to human, plant, or animal life or to property and to maintain public enjoyment of the state's natural resources, consistent with the economic and industrial well-being of the state.

A.C.A. § 8-4-301(a).

Furthermore, federal law explicitly states: “Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.” 40 C.F.R. 131.12(a)(3).

As will be discussed below, CAFOs pose widespread dangers to the quality and health of the State’s water and air. It is incumbent upon ADEQ to exercise its authority and fulfill its duties under federal and state law to protect these resources.

II. CAFOs threaten public health and our environment.

A. CAFOs generate massive amounts of manure.

The EPA estimates the annual production of manure produced by animal confinement facilities exceeds that produced by humans by at least three times.³ A single hog produces two to four times the amount of waste as a human produces.⁴ It is not uncommon for swine CAFOs to have tens of thousands of pigs. Waste from these facilities, unlike human waste, is untreated.

National manure totals compiled using 1997 Census of Agriculture data on hog CAFOs show the tremendous amount of waste is generated yearly:

Animal Type	Number of Head	Waste Amount Tons/Year	Waste Volume Gallons/Year	Amount of Pounds/Year	Nitrogen Lost to Atmosphere Pounds/Year
Hogs	57.5 million	110 million	27 billion	1.3 billion	960 million

From Marks, Robbin. *Cesspools of Shame, How Factory Farm Lagoons and Sprayfields Threaten Environmental and Public Health*. National Resources Defense Council and Clean Water Network. July 2001, p. 4, Table 1-1.

³ Pew Commission, *Putting Meat on the Table: Industrial Farm Animal Production in America*, 2008, 23; citing U.S. EPA 2008 *Compliance and Enforcement: Clean Water Act*. 1-3.

⁴ Marks, Robbin. *Cesspools of Shame, How Factory Farm Lagoons and Sprayfields Threaten Environmental and Public Health*. National Resources Defense Council and Clean Water Network. July 2001, 3.

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Note that the above figures using agricultural census data from 1997 estimated the total number of hogs in the country was 57.5 million, which produced an estimated 110 million tons of manure per year. However, more recent waste calculations estimate even larger amounts. In 2008 the Government Accountability Office (“GAO”) reported that some *7.5 million hogs in just five eastern counties in North Carolina alone*, produced an estimated *15.5 million tons of waste per year*.⁵ These figures are astounding – from the GAO’s estimates, a single hog produces more than two tons of manure yearly. In fact, in one year a single 80,000-head hog facility could create 1.5 times the waste of the city of Philadelphia.⁶

The sheer amount of manure generated by CAFOs creates a myriad of negative effects on the environment, human health, economic viability and quality of life for communities, and animal welfare.

B. CAFO manure contains toxins that threaten water, air, and soil quality and put public health risk.

1. Liquid manure from CAFOs threatens water quality.

Whereas human sewage is treated with chemical and mechanical filtration before being released into the environment, CAFOs liquefy and channel waste from hog houses into pits or lagoons, where it is stored untreated until it is applied to land.⁷ CAFO manure contains many potentially harmful contaminants such as nitrogen and phosphorus, pathogens such as *E. coli*, growth hormones, antibiotics, chemicals used as additives to the manure or to clean equipment, animal blood, and silage leachate from corn feed.⁸

Numerous studies have documented the public health and environmental risks associated with the use of the “lagoon” and sprayfield system, which is commonly used by hog CAFOs to dispose of animal waste. The science is clear, “*All lagoons leach to some degree*,”⁹ and during hurricanes and storms they can overflow or burst, spilling raw sewage onto the landscape and into waterways.”¹⁰

⁵ GAO. Concentrated Animal Feeding Operations. EPA Needs More Information and a Clearly Defined Strategy to Protect Air and Water Quality from Pollutants of Concern. GAO-08-944. Washington, DC: U.S. Government Accountability Office (Sep 2008).

⁶ *Id.*

⁷ Environmental Health Perspectives Vol. 6, Issue 21, *CAFOs and Environmental Justice, the Case of North Carolina*, June 2013.

⁸ Hribar, Carrie, *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities*, National Association of Local Boards of Health 2010, 2.

⁹ Environmental Health Perspectives Vol. 6, Issue 21, *CAFOs and Environmental Justice, the Case of North Carolina*, June 2013. Citing: Huffman RL, Westerman PW. Estimated seepage losses from established swine waste lagoons in the lower coastal plain of North Carolina. *Trans ASAE* 38(2):449–453 (1995); Westerman PW, et al. Swine-lagoon seepage in sandy soils. *Trans ASAE* 38(6):1749–1760 (1995). Huffman RL. Seepage evaluation of older swine lagoons in North Carolina. *Trans ASAE* 47(5):1507–1512 (2004), A 186.

¹⁰ Environmental Health Perspectives Vol. 6, Issue 21, *CAFOs and Environmental Justice, the Case of North Carolina*, June 2013. (emphasis added).

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EPA has estimated that CAFO lagoons leak between 3,330,000 and 39,600,000 gallons of liquid lagoon waste per year into the underlying soils.¹¹

Additionally, manure is typically sprayed onto surrounding cropland as fertilizer. However, this practice causes problems as well because the amount of manure applied to the land is often more than the soil can absorb. For example:

When looking at the environmental externalities, the Tufts researchers found that the numbers of animals on the *typical industrial farm produced far more manure than the agronomic capacity of the land to absorb the nutrients* contained in the manure. *The result is that land application of the manure often results in surface and groundwater contamination, placing the burden of cleanup on the adjacent communities.* Waste treatment, beyond lagoon storage, would add costs ranging from \$2.55 to \$4 per hundred weight on a typical industrial hog farm (Starmer and Wise, 2007b). Those environmental costs are currently born by society as a whole.¹²

Additionally, application of manure during winter months or rainy weather leads to significant runoff into surface waters.¹³ Surrounding communities not only bear the costs to clean up surface and groundwater contamination, community members are also threatened with harmful health effects from polluted water.

In addition to the manure-related impacts of CAFOs on water quality at local levels, there are potential broader effects on water quality, including heavy water usage and impacts beyond the region, such as the Dead Zone of low oxygen waters in the Gulf of Mexico and elsewhere. Large amounts of water are needed for animal consumption and lagoon management (i.e., cleaning, flushing, filling, recharging). In addition, the processes used in siting CAFOs inadequately consider water quality issues at regional and water-shed levels.¹⁴

a. Poor water quality caused by CAFOs threatens public health.

Human health risks from CAFO-related environmental health hazards are well documented. Nitrates from CAFO manure can contaminate groundwater and drinking water.¹⁵ Nitrate, the most common agricultural contaminant in drinking water wells,

¹¹ US EPA, *Relation Between Nitrate in Water Wells and Potential Sources in the Lower Yakima Valley*, September 2012, ES-6.

¹² *Id.* at 47.

¹³ Pew Commission, *Putting Meat on the Table: Industrial Farm Animal Production in America*, 2008, 25; citing Starmer E, Wise TA (2007b). Living High on the Hog: Factory Farms, Federal Policy, and the Structural Transformation of Swine Production. In: *Working Paper 07-04*. Institute GDAE (ed). Tufts University: Medford, Massachusetts, pp. 30.

¹⁴ Hodne, Carol J., *Concentrating on Clean Water: The Challenge of Concentrated Animal Feeding Operations*, April 2005.

¹⁵ *Id.* at 26.

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poses the greatest threat to rural communities that rely mostly on private wells.¹⁶ Water-borne pathogens such as *E. coli* bacteria can contaminate drinking-water systems and recreational waters, causing diarrheal illnesses and gastroenteritis. The risks and consequences of such problems are particularly serious for vulnerable populations such as infants, the elderly, pregnant women and people with compromised immune systems.¹⁷

The current system of industrial farming is broken and does not protect the environment or public health. A 2007 study concluded:

Based on available data, generally accepted livestock waste management practices do not adequately or effectively protect water resources from contamination with excessive nutrients, microbial pathogens, and pharmaceuticals present in the waste. Impacts on surface water sources and wildlife have been documented in many agricultural areas in the United States. Potential impacts on human and environmental health from long-term inadvertent exposure to water contaminated with pharmaceuticals and other compounds are a growing public concern.¹⁸

2. The BNR watershed is located in a karst region and is thus particularly susceptible to groundwater and surface water contamination.

In karst areas, the bedrock is fractured and porous, allowing waste water to slip through deeply cracked karst bedrock quickly. Thus, contaminated water does not get filtered on its way to the aquifer.

Residents can easily get sick from polluted drinking water in karst regions. In March 2004, Kewaunee County, Wisconsin resident, Judy Treml's six-month-old daughter, was rushed to the emergency room after manure polluted their drinking water. The farm that spread the manure in a karst area was fined \$50,000 and paid the Treml family \$80,000.¹⁹

¹⁶ *Id.* citing (Hamilton & Helsel, 1995; U.S.EPA; 2002).

¹⁷ *Id.* citing Krapac, I. G., Dey, W. S., Smyth, C. A., & Roy, W. R. (1998). Impacts of bacteria, metals, and nutrients on groundwater at two hog confinement facilities. In Proceedings from Animal Feeding Operations and Ground Water: Issues, Impacts, and Solutions – A Conference for the Future (p. 29-50). St. Louis, Missouri. November 4-5, 1998. National Ground Water Association. Krapac, I. G., Dey, W. S., Roy, W. R., Smyth, C. A., Storment, E., Sargent, S. L., & Steele, J. D. (2002). Impacts of swine manure pits on groundwater quality. Environmental Pollution, 120(2), 475-492.

Kross, B. C., Hallberg, G. R., Bruner, D. R., Cherryholmes, K., & Johnson, J. K. (1993). The nitrate contamination of private well water in Iowa. American Journal of Public Health, 83(2), 270-272.

¹⁸ Burkeholder, JoAnn, *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality*, Environ Health Perspect. Feb 2007; 115(2): 308–312.

¹⁹ <http://wisconsinwatch.org/2013/12/hormonal-wells-found-in-states-karst-region-dairy-farms-possible-source/>

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Groundwater aquifer systems in karst areas are, more often than not, hydrologically connected to surface waters in those regions. Therefore, contamination of groundwater in karst areas inevitably reaches surface waters.

The National River designation protects natural rivers from industrial uses, impoundments and other obstructions that may change the natural character of the river or disrupt the natural habitat for the flora and fauna that live in or near the river.

Also, the BNR watershed is a sensitive ecological environment. According to the National Park Service, the Buffalo River is home to more than 300 species of fish, insects, freshwater mussels, and aquatic plants.²⁰ Allowing proliferation of CAFOs to continue building in the BNR jeopardizes the entire BNR ecosystem.

3. Certain streams in the BNR watershed are currently impaired.

Under the Clean Water Act §303, states are required to establish water quality standards, subject to EPA approval. 33 U.S.C. § 1313. States are also required to develop reports on their water quality and identify water areas with insufficient controls to implement water quality standards. 33 U.S.C. § 1315(b); 33 U.S.C. § 1313(d). Under APCEC Regulation 2, ADEQ assesses water quality from around the state and determines which waters are not meeting their designated uses or water quality standards as listed in the Arkansas Water Quality Standards. Waters not meeting the standards are identified in biannual integrated reports (also called the 303(d) list or the impaired waterbodies list).

Certain creeks in the BNR watershed, which are connected to the Buffalo River are on the State's proposed 2014 impaired waters list. For example, portions of Bear Creek and Big Creek are currently listed as Category 5 on ADEQ's proposed 2014 303(d) List of Impaired Waterbodies. The designated uses of Domestic Water Supply and Protection and Propagation of Fish, Shellfish, and Wildlife are not supported respectively. The water quality standard non-attainment was total dissolved solids for Bear Creek and dissolved oxygen for Big Creek. While the 2014 list has not been approved by EPA, the same relevant creeks were on the previously approved 2012 303(d) list.²¹

The listing of these streams in the BNR watershed as impaired waters is even more concerning considering the heightened protection of the Buffalo River as a national resource. The Buffalo River is the nation's first national river and has the highest designated use as an "Extraordinary Resource Water." APCEC Reg. 2, Appendix D-2. It is also a Tier III, "Outstanding Resource Water" for antidegradation purposes. APCEC Reg. 2.203.

²⁰ National Park Service Website, Buffalo National River, Nature & Science. Accessible at: <http://www.nps.gov/buff/naturescience/index.htm>. Last visited July 1, 2014.

²¹ The proposed 2014 303(d) list is attached and is also available here:

http://www.adeg.state.ar.us/water/branch_planning/303d/pdfs/draft_impaired_waterbodies_list.pdf

The 2012 303(d) list is attached and is also available here:

[http://www.adeg.state.ar.us/water/branch_planning/303d/pdfs/draft_2012_303\(d\)_list.pdf](http://www.adeg.state.ar.us/water/branch_planning/303d/pdfs/draft_2012_303(d)_list.pdf)

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Moreover, federal law mandates: "Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected." 40 C.F.R. § 131.12(a)(3).

Not only are existing waterbodies within the BNR watershed already listed as impaired, waterbodies in the entire watershed face further contamination if new CAFOs are allowed in the area. Under federal law, the BNR must be protected and therefore no additional pollution sources should be allowed in the watershed.

C. CAFO emissions threaten surrounding air quality.

Toxic gases such as hydrogen sulfide, ammonia, dust, and other respiratory irritants are propelled into the air around hog confinement houses. Swine CAFOs confine thousands, tens of thousands, and even hundreds of thousands of hogs in concentrated barns 24 hours a day, seven days a week. The fans in CAFO barns must constantly run to pull out noxious gases created by the pigs or the animals suffocate. Some studies have found that swine buildings have the potential of generating more odor than manure storage facilities such as lagoons and tanks and thus could be the major odor sources causing downwind odor nuisance.²² Additionally, CAFOs emit air pollutants from the millions of tons of spraying manure that are applied to nearby fields, not to mention the toxic irritants from open manure lagoons and dead pig compost piles.

1. CAFO air emissions threaten public health.

In February 2002, The University of Iowa released a joint air quality report from a team of scientists at the University of Iowa and Iowa State. The report concluded that "emissions may constitute a public health hazard and that precautions should be taken to minimize exposures arising from CAFOs." The report stated that hydrogen sulfide and ammonia measurements near livestock operations have been high enough to be harmful to humans. The report recommended air quality standards be enacted for CAFOs.²³

Hydrogen sulfide ("H₂S"), a prominent component of odorants released from CAFOs, smells like rotten eggs and is recognized as both an irritant and asphyxiant.²⁴ Hydrogen sulfide "is considered to be an insidious poison because our sense of smell rapidly fatigues, and therefore, fails to provide a good warning of gas concentration." Symptoms include eye and upper respiratory irritation headaches, and dizziness. Higher concentrations can cause "severe eye and respiratory tract irritation, acute conjunctivitis, lacrimation, and difficulty breathing, as well as a sudden loss of consciousness."²⁵

²² TI: A field study on downwind odor transport from swine facilities. AU ZhuJ.;Li X.

²³ The University of Iowa, Feb 8, 2002 Debra Venzke. UI College of Public Health.

²⁴ Hydrogen Sulfide is an extremely toxic gas to humans and animals. Handbook of Hazardous Materials, 1993.

²⁵ Safety Net, UC Davis Environmental Health and Safety, 2-1993.

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Symptoms of exposure to hog gases such as hydrogen sulfide, include, "more tension, more depression, more anger, less vigor, more fatigue, and more confusion."²⁶ Other symptoms reported from exposure to gases emitted by hog facilities, "may elicit nausea, vomiting and headache, cause shallow breathing and coughing; upset stomach and loss of appetite; irritated eyes, nose and throat; disturbance, annoyance and depression..."²⁷

In fact, public health scientists now recognize that hydrogen sulfide is a potent neurotoxin, and that chronic exposure to even low ambient levels causes irreversible damage to the brain and central nervous system. Children are among the most susceptible to this poison gas. It is unacceptable for communities to have to continue suffering the ill effects of H₂S when the technology to control H₂S emissions is available and affordable.²⁸ Children living or going to school near CAFOs also face higher asthma risks.²⁹

Additionally, children living on swine farms where antibiotics are added to feed have a significantly higher prevalence of the respiratory disease.³⁰

III. CAFOs cause negative community impacts.

A. Economic impacts

Despite promises of increased economic growth in local communities, large hog CAFOs tend to hinder rural economic growth.³¹

A study by Palmquist, Roka and Vulkina (1998) shows that large hog operations tend to depress the sales value of nearby homes and real estate.³² These findings were confirmed by a second study at the University of Missouri-Columbia by Hamed, Johnson, and Miller that found that proximity to a hog CAFO does have an impact on property values. Based on the averages of collected data, loss of land values within three miles of a hog CAFO would be approximately \$2.68 million (US) and the average loss of land value

²⁶ Susan Schiffman, Duke University.

²⁷ Overcash, et al. 1984, Understanding the Impacts of Large-Scale Swine Production, June 1996.

²⁸ J Environ Sci Health B, 200003, 35: 2, 245-58.

²⁹ Concentrated Animal Feeding Operations Near Schools May Pose Asthma Risk Children who attend school near large-scale livestock farms known as concentrated animal feeding operations (CAFOs) may be at a higher risk for asthma, according to a new study by University of Iowa researchers. The study, led by Joel Kline, M.D., professor of internal medicine in the UI Roy J. and Lucille A. Carver College of Medicine, appears in the June issue of Chest, the peer-reviewed journal of the American College of Chest Physicians (www.chestjournal.org).

³⁰ University of Iowa News Release, Increased Asthma Found Among Iowa Children Living On Hog Farms-New research conducted by investigators in the University of Iowa College of Public Health has found that the prevalence of asthma is elevated among children living on farms where swine are raised, Dec. 9 2004.

³¹ A study of 1,106 rural communities by Gómez and Zhang of Illinois State University found that large hog farms tend to hinder rural economic growth at the local level. Weida, Bill, Nutrient Management Issues, April 2001, 3.

³² Id. citing Palmquist, R.B., F.M Roka, and T. Vukina. 1997. Hog operations, environmental effects, and residential property values, Land Economics, 73, 114-124.

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within the 3-mile area was approximately \$112 (US) per acre.³³ More recent studies confirm the conclusion, CAFOs depress surround property values.³⁴ For example, economist John Kilpatrick studied properties near CAFOs and concluded, "... it is clear from the above case studies that diminished marketability, loss of use and enjoyment, and loss of exclusivity can result in a diminishment ranging from 50% to nearly 90% of otherwise un-impaired value."³⁵

B. Quality of life

Residents that live near CAFOs complain of incessant flies, odor, dust, and rodents. Air pollution and odors from hog operations are emitted by barns, lagoons, pits, slurries and land application. Noxious gases have been detected four miles downwind that are as intense as at a lagoon. Even small levels of odors and gas molecules can produce strong reactions in humans. Roof shingles, siding, fabrics and other material can trap odors and release them when conditions are right Workers can become desensitized because the molecules tie up their olfactory nerves.³⁶

Research suggests exposure to odor has an effect on secretory immune function and is particularly important in that it documents a physiologic effect among neighbors of industrial hog operations.³⁷

New research indicates that short-term exposure in an environmental chamber to malodorous emissions from a swine house at levels expected downwind can induce clinically important symptoms in healthy human volunteers.³⁸

Evidence suggests that bioaerosols (dander, feed, excreta and bedding) are associated with microbial pathogens of swine. These "can be carried and spread on dust." "Contrary to odors, many gases are odorless and tasteless, making them benign since they are

³³ *Id.* citing Mubarak, Hamed, Johnson, Thomas G., and Miller, Kathleen K., *The Impacts of Animal Feeding Operations on Rural Land Values*, Report R-99-02, College of Agriculture, Food and Natural Resources, Social Sciences Unit, University of Missouri – Columbia, May 1999, <http://www.cpac.missouri.edu>.

³⁴ See Weida, Bill, *Pollution Shopping in Rural America: The myth of economic development in isolated regions*, November 2001; Mubarak, Hamed, Johnson, Thomas G., and Miller, Kathleen K., *The Impacts of Animal Feeding Operations on Rural Land Values*, Report R-99-02, College of Agriculture, Food and Natural Resources, Social Sciences Unit, University of Missouri – Columbia, May 1999, <http://www.cpac.missouri.edu>; and Kilpatrick, John A., *Concentrated Animal Feeding Operations and Proximate Property Values*, *The Appraisal Journal*, July, 2001, p. 306.

³⁵ Kilpatrick, John, *Concentrated Animal Feeding Operations and Proximate Property Values*, *The Appraisal Journal*, July 2001, 301-306, at 306.

³⁶ Susan Schiffman, Duke University Swine Odor Task Force.

³⁷ Health Effects Associated with Exposure to Airborne Emissions from Industrial Hog Operations in Eastern North Carolina.

³⁸ Shiffman et al., *Environmental Health Perspectives* Vol. 1113 #5 May 2005.

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difficult to detect with the human nose." Odor and gases are different, but both contribute to decreased quality of life of neighbors.³⁹

V. Other states have taken steps to ban industries that threaten environmental and public health.

North Carolina's 2007 statute, "Performance standards for animal waste management systems that serve swine farms; lagoon and sprayfield systems prohibited" prohibits the issuance or modification of permits for construction, operation, or expansion of anaerobic swine farm lagoons as the primary method of waste disposal. N.C. Gen. Stat. § 143-215.10I.

In Nebraska, "no new [AFOs] shall be issued a [NPDES] permit or a construction and operating permit in any part of a watershed that feeds directly or indirectly into a cold water class A stream..." Nebraska Admin. Code Title 130, Ch. 9 (003). A cold water class A stream is a stream with waters determined to "provide or could provide habitat of sufficient water volume or flow, water quality, substrate composition, and water temperature capable of maintaining year-round populations of cold water biota, including reproduction of a salmonoid (trout) population ... within the previous five years." R.R.S. Neb. § 54-2421.

Prohibiting new swine waste storage facilities on 100-year floodplains are not uncommon. *See* Code of Virginia § 62.1-44.17:1(E)(6) (New waste storage facilities shall not be located on a 100-year flood plain.); S.C. Code Regs. 61-43 § 100.80(D) (New swine facility or an expansion may not be located in the 100-year floodplain.).

Conclusion

Under the Clean Water Act and Arkansas law, ADEQ has the authority, and duty, to prevent discharges to both surface and ground water. 33 U.S.C. § 1342(b); 40 C.F.R. 123 A.C.A. § 8-4-201; APCEC Reg. 6 and Reg. 5.; A.C.A. § 8-4-302.

In 2013, the ADEQ granted the state's first industrial hog confinement permit, which gave rise to concerns over the future of the Buffalo River. Industrial hog confinements can produce millions of gallons of animal waste each year. The very real threat of a hog waste pond failure -- either through leakage, leaching through the regions limestone geology, run-off or flooding -- would create irreversible damage to the Buffalo. Included would be destruction of aquatic life and the potential dumping of thousands of tons of pharmaceutical and pathogen-laden animal waste into the nation's "First National River," connected waterways, surrounding land parcels and local communities.

In short, the proposed changes are necessary to prevent further degradation of water quality in the state from medium and large CAFOs. Furthermore, the amendments do not affect existing permitted facilities. The proposed regulations do not prevent the ADEQ

³⁹ Controlling Odor and Gaseous Emission Problems from Industrial Swine Facilities, Yale Environmental Protection Clinic, Spring 1998

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Director from issuing renewal or modification CAFO permits in the BNR watershed for medium or large facilities with existing permits. The new regulations similarly do not prevent the Director from issuing new state permits under Reg. 5 if the facility has an existing federal National Pollutant Discharge Elimination System ("NPDES") permit under Reg. 6 and vice versa.

Furthermore, the amendments do not seek to ban all species of animal facilities. The rule changes are specifically limited to hog CAFOs. Even more limiting, the proposal seeks to ban hog CAFOs in the BNR watershed, which is a particularly sensitive area because the watershed is in a karst region.

The right thing to do to protect the BNR watershed is clear: ADEQ must act to prevent further degradation to waterways in the watershed by enacting the proposed Amendments to Regulations 5 and 6 .

Respectfully Submitted:

Danielle Diamond
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