Missouri Coalition for the Environment
EFFECTIVE CITIZEN ACTION SINCE 1969

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Dean Robert Kallenbach
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University of Missouri Extension
Transmitted via email to KallenbachR@missouri.edu

Dear Dean Kallenbach:

We, at Missouri Coalition for the Environment (MCE), are writing to you in response to the CAFO Central video cartoons released by the University of Missouri Extension (MU Extension) in October. We are very concerned that these videos mislead the public on the environmental and public health impacts of CAFOs, and this letter outlines six key areas where the videos fail to present accurate information regarding hog CAFOs in Missouri. The MU Extension is a trusted resource for everyone -- from farmers to gardeners, scientific researchers to the general public. As a result of the concerns we outline below, we strongly encourage MU Extension to remove these videos and issue a public statement that incorporates some of the information we present in this letter in an effort to present accurate information to the public.

There is a lack of transparency about the funding and purpose of these videos

We are concerned by the undisclosed funding of these videos by the National Pork Board.[1] Nowhere in the videos or on MU Extension's website is it explicitly stated that the National Pork Board helped fund this project. The relationship between the National Pork Board and these videos should be made explicit to viewers since they have a vested, financial interest in painting hog CAFOs in the best possible light to increase pork industry profits. Additionally, some of the videos feature a "US Pork Center of Excellence" logo at the end, demonstrating an affiliation with an organization whose goals include promoting the pork industry. We question the credibility of these videos, described as educational for farmers and the general public, as they are funded by pork marketers. At the very least we recommend that the names of the funders of these videos be included clearly on the webpage.

The videos inaccurately portray CAFOs as the best and only option for farmers

The "Introduction" video misrepresents the value of CAFOs to farmers. The video states that "currently, farmers only represent 1% of the workforce in the US. In 1910, 31% of

[1] "University rolls out website, videos about CAFOs," *Fulton Sun.* October 23, 2018. http://www.fultonsun.com/news/local/story/2018/oct/23/university-rolls-out-website-videos-about-cafos/749084/

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Americans worked on farms." It should be noted that this reduction in farmer representation in the workforce has had detrimental impacts on local communities and the environment and was ultimately caused by the increase of large, industrial farms. Since 1910, average farm size has more than doubled[2] and as small farms are replaced by large farms, farmers lose their jobs and have their labor replaced by industrial machinery. With the rising number of large, industrial operations, comes less farm labor because of the reliance on equipment instead and in the case of industrial hog production, these large industrial operations increase risks for water pollution because of the large amount of manure generated in these operations. In summary, reducing our agricultural workforce through industrialization of animal production harms Missouri rural economies and pollutes Missouri's waterways. The suggestion that decreased labor associated with CAFO operations is positive is misleading.

The video also mentions that "a modern crop harvester can cost over $400,000. Farmers need to have larger farms to make a living." Small farmers will tell you themselves that this statement is untrue. Alicia Davis of Green Finned Hippy Farm, a small-scale hog producer, states "We do not confine our animals in CAFOs, we are a small farm, and we are making a living." Alicia goes onto explain, "A farmer should be able to reach out to their community, reach out to their nearest major city and invite the people out to his/her farm to ask them, 'How can I grow food that you enjoy and feel good about?'" That connection to their customers helps create a loyal customer base and relationships that cannot be built through large, industrial agricultural practices. Apart from real farmers disputing the video's claims, there are also federal policies that incentivize certain types of practices that lead farmers to believe they must invest in large agriculture in order to benefit from the commodity payments and the crop insurance offered by the government to be profitable. These incentives have led farmers to feel the pressure to "get big or get out." The cost of large machinery is a significant long-term investment, cutting into the profits of even large farms. Farmers also only make a small amount of money off the food they produce. For example, farmers make less than 12 cents on the dollar for every pound of bacon sold.[3] Despite the implication made by the video otherwise, the shift to large, industrial farming has a number of drawbacks for farmers and any increased revenue does not necessarily make it into the farmer's wallets after equipment and other expenses.

The videos mislead viewers on the environmental impact of CAFOs

Confining animals in CAFOs produces many environmental problems, which include degrading water and air quality and releasing greenhouse gases, all of which negatively impact

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[2] CNBC. Land in farms chart from USDA, National Agriculture Statistics Service, and Census of Agriculture data. https://sc.cnbcfm.com/applications/cnbc.com/resources/files/2014/04/07/farms-land-in-farms-average-acres.png

[3] "The Farmer's Share." National Farmers Union. October 31, 2018. https://1yd7z7koz052nb8r33cfxyw5-wpengine.netdna-ssl.com/wp-content/uploads/2018/11/103118-FarmerShare.pdf

human health.[4] The “Introduction” video claims that the “CAFO Environmental Impact” video contains “research data showing modern pork production reduces environmental problems by confining animals in a barn.” The video does not provide any proof that animal confinement reduces environmental problems; it ignores significant environmental impacts. It looks primarily at the environmental inputs (e.g. land) into CAFOs and ignores the many detrimental outputs from CAFOs. The video also does not provide sources for this research data and frequently presents the data in the form of vague, unlabeled charts and graphs. The video further misleads the public about environmental issues surrounding CAFOs, including manure application and water pollution, the use of natural resources, and environmental regulations.

The description of hog manure as having a low impact on the environment throughout the videos is extremely deceptive. The “Introduction” video asks “is there a concern for water pollution?” The answer should be, unequivocally, “yes.” Runoff manure from fields can contaminate waterways. CAFOs have a demonstrable impact on water quality, with animal waste and various contaminants (e.g. antibiotics) polluting waterways and posing a threat to human health and wildlife.[5] The “Introduction” video tries to assuage concern about manure management and water pollution by stating “all new farms are required to have long-term appropriate manure storage before land application.” However, this ignores critical context. Missouri regulations do not ensure that all manure is appropriately managed. Missouri CAFOs can self-identify as “export-only” to indicate that they send all of their manure to other farms. Export-only CAFOs do not have to fill out a Nutrient Management Plan[6] with their operating permit applications and facilities that receive the waste are also not required to apply for a permit. As a result of this export-only option for CAFOs, there is insufficient oversight on appropriate manure storage and management in Missouri.

Furthermore, as explained by the National Association of Local Boards of Health, even with permits that limit the levels of manure discharge, handling “large amounts of manure inevitably causes accidental releases which have the ability to potentially impact humans.”[7] The “CAFO Environmental Impact” video goes on to suggest that the pork industry has “become more environmentally friendly” through modern systems that “capture, store, and recycle manure to replace chemical fertilizers in nearby crop fields.” However, manure from CAFOs is not a completely safe or environmentally-friendly fertilizer. Manure can contain “nitrogen and phosphorus, pathogens such as E. coli, growth hormones, antibiotics, chemicals used as

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[4] “Understanding Concentrated Animal Feeding Operations and Their Impact on Communities.” National Association of Local Boards of Health. CDC. pp. 2-11. https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf

[5] JoAnn Burkholder. “Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality.” https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/

[6] MDNR. “Animal Feeding Operation Permits and Regulations in Missouri.” https://dnr.mo.gov/pubs/pub2351.htm

[7] “Understanding Concentrated Animal Feeding Operations and Their Impact on Communities.” National Association of Local Boards of Health. CDC. pp. 3. https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf

additives to the manure or to clean equipment, animal blood, silage leachate from corn feed, or copper sulfate used in footbaths for cows."[8] While nitrogen and phosphorus are desired macronutrients for crops, overapplication of manure can overload the soil with these nutrients, as well as heavy metals, which are added to animal feed as micronutrients. Additionally, both appropriately-applied and overapplied manure can "cause contaminants to move into receiving waters through runoff and to leach through permeable soils to vulnerable aquifers."[9] This water pollution can detrimentally impact human health and wildlife. The application of CAFO manure to fields poses a threat to the safety of our waterways. The video also suggests that "due to reduced phosphorus content in the manure, less land is needed for proper manure application." However, some CAFOs still apply manure beyond recommended phosphorus levels.[10] Overall, the video misleads the public by failing to address the significant environmental impacts of manure from CAFOs.

As previously discussed, the videos focus only on environmental inputs (natural resources such as land, water, and feed for hogs) into CAFO operations, ignoring the many environmental outputs, such as water and air pollution and its impacts on public health. While the "CAFO Environmental Impact" video covers the topic of natural resources, it does so in an incomplete, and therefore misleading, way. The video suggests CAFOs use "fewer natural resources to grow safer, more wholesome food" and require "fewer total inputs such as feed and water, resulting in a lower carbon footprint." It is important to recognize that CAFOs still use an extraordinary amount of natural resources and have a significant carbon footprint. Livestock in the United States requires a substantial amount of feed and water. Sixty-six percent of the grain produced in the United States is fed to livestock[11] and it takes 718 gallons of water to produce one pound of pork.[12] The footprint of pork production should not be downplayed. CAFOs also emit methane and nitrous oxides, potent greenhouse gases, but the video ignores these CAFO impacts. More than 7 percent of greenhouse gas emissions in the United States come from the livestock industry.[13] CAFOs have a detrimental effect on the environment. Please

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[8] "Understanding Concentrated Animal Feeding Operations and Their Impact on Communities." National Association of Local Boards of Health. CDC. pp. 2. https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf

[9] JoAnn Burkholder. "Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality." https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817674/

[10] Colleen M. Long et al. "Use of manure nutrients from concentrated animal feeding operations." http://scavia.seas.umich.edu/wp-content/uploads/2018/02/Long-et-al.-2018.pdf

[11] Leo Horrigan et al. "How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture." https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1240832/pdf/ehp0110-000445.pdf

[12] Water Footprint Network. "Water footprint of crop and animal products: a comparison." https://waterfootprint.org/en/water-footprint/product-water-footprint/water-footprint-crop-and-animal-products/

[13] "Understanding Concentrated Animal Feeding Operations and Their Impact on Communities." National Association of Local Boards of Health. CDC. pp. 2. https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf

see the attached Chapter 6 of MCE's St. Louis Regional Food Study for a detailed discussion of the impacts of CAFOs and animal production generally on the environment.

The "CAFO Environmental Impact" video also greatly overstates the degree to which regulations sufficiently protect against the negative impacts of CAFOs. Missouri's regulations are not strong enough to protect the environment and human health, and they are not properly enforced. This letter previously discussed the failure of Missouri laws to sufficiently monitor the management of manure. Additionally, the lack of agricultural air pollution regulations exposes Missourians to health problems, such as increased rates of asthma in children who live near CAFOs.[14] Regulations *should* protect our communities from the negative environmental and public health impacts of hog CAFOs, and CAFOs should be held accountable for pollution.

Lawmakers in Missouri are making it easier, not harder, for CAFOs to pollute our communities. In 2016, the Missouri Clean Water Commission (CWC) denied a permit for a CAFO in a 100-year floodplain. That same year, the state legislature passed a bill removing the mandatory public majority on the seven-member commission, allowing the public representatives to be replaced with industrial agriculture representatives. Governor Greitens took advantage of this new power in 2017, appointing industrial agriculture representatives in place of public representatives and the newly-appointed CWC reversed the 2016 decision and allowed a CAFO to build in a 100-year floodplain. Just this year, the General Assembly eroded the effectiveness of Missouri's Clean Water Law with support from industrial agriculture, including the pork industry that helped finance these videos. What is more, the Department of Natural Resources Director, Carol Comer, removed staff from satellite offices, leading to reduced physical inspections of pollution permit holders, including CAFOs, due to increased travel time and no new additional inspection staff. The St. Louis Post-Dispatch reported recently the DNR's enforcement record has significantly decreased since the new DNR administrator was appointed.[15]

The videos inappropriately describe CAFOs as being good for the health of hogs

The "CAFO Environmental Impact" video inaccurately and unethically presents CAFOs as good for the health and well-being of hogs. The video claims that "modern confined pork production has changed markedly from growing pigs in the outdoors to extensive control of temperature and humidity that allows for risk mitigation of animal illness and disease" so "pigs are not exposed to extreme temperatures, predators, or parasites." Confined agriculture is unnecessary to protect hogs from extreme temperatures or predators. Non-CAFO farms still

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[14] Morgan Niezing, Payton Liming and Jiwon Choi. "Missouri communities fight air pollution from large animal farms." https://www.stltoday.com/news/local/state-and-regional/missouri-communities-fight-air-pollution-from-large-animal-farms/article_ff270f94-5663-5a8b-a6b3-196f7bdea015.html

[15] Bryce Gray. "Data show drop of enforcement actions at Missouri Department of Natural Resources." https://www.stltoday.com/business/local/data-show-drop-of-enforcement-actions-at-missouri-department-of/article_7a614fd0-27ee-5052-ab06-6acf781ce406.html

provide shelter for animals. Animal illness and disease can also be exacerbated by the conditions in CAFOs. Animals in close proximity increase the risk for the spread of diseases. Additionally, the non-therapeutic use of antibiotics, common in CAFOs to promote growth and improve feed conversion, increases the risk of the spread of disease. Low-level, long-term use of antibiotics on animals in CAFOs increases the risk of persistent and increasingly antibiotic-resistant bacteria populations.[16] This has the potential to significantly decrease the effectiveness of antibiotics used to treat illnesses in humans. Also, disturbingly, the video suggests "hogs raised in modern confined barns can help produce healthy hogs" and smiling cartoon hogs are seen throughout the video. CAFO conditions are detrimental to the health and well-being of hogs. Their tails are docked, they can suffer physical injuries from the cramped conditions, and they can develop potentially fatal porcine stress syndrome or self-mutilate.[17] Being confined to the point of being unable to move freely does not produce healthy or, as the smiling cartoon hogs throughout the video would have viewers believe, happy animals.

The videos ignore the negative effects of CAFOs on human health

In addition to the numerous detrimental public health impacts already discussed throughout this letter, CAFOs cause a number of additional health problems that are ignored or presented inaccurately in the "CAFO Environmental Impact" video. The video claims that CAFOs produce "safer, more wholesome food." It's unclear what "more wholesome" food means in this context, but pasture-raised meats have health benefits compared to CAFO meats. Grass-fed meat is leaner, with higher levels of healthy omega-3 fatty acids. The strong influence of CAFOs have significantly altered land use patterns in the U.S. We now grow grains for livestock (despite the fact that grains are not a part of livestock animal's natural diet) instead of using land to grow nutritious crops for direct human consumption. As mentioned previously, animals in close proximity coupled with non-therapeutic use of antibiotics increases the risk of spreading diseases among animals and humans alike. Workers and consumers can spread bacteria-resistant genes, and formerly treatable diseases can become resistant to existing antibiotic treatment.[18]

The videos mislead viewers regarding the impacts of CAFOs on local communities and home values

The "Introduction" video states "another video shows that housing values close to a large hog farm can decrease, but real estate values within the region can rise due to increased

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[16] Mary J. Gilchrist et al. "The Potential Role of Concentrated Animal Feeding Operations in Infectious Disease Epidemics and Antibiotic Resistance." https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817683/
[17] Animal Legal and Historical Center. "Detailed Discussion of Concentrated Animal Feeding Operations: Concerns and Current Legislation Affecting Animal Welfare." https://www.animallaw.info/article/detailed-discussion-concentrated-animal-feeding-operations#id-7
[18] Mary J. Gilchrist et al. "The Potential Role of Concentrated Animal Feeding Operations in Infectious Disease Epidemics and Antibiotic Resistance." https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817683/

economic activity." However, studies have found that industrialized farms frequently have an overall negative impact on the socio-economic wellbeing of local communities.[19] Additionally, the referenced video, "CAFOs and Real Estate Values" states that "research studies have shown that houses within three miles of a swine farm may lose value." It should be noted that this three-mile radius can encompass and affect a significant number of homes. For example, in Daviess County which has 13 Class 1 hog CAFOs, the cities of Coffey, Gallatin, Jamesport, and Pattonsburg all fall within the three-mile radius of one or more CAFOs (see attached Map 1). A three-mile radius is a large area and in covering the population centers of Daviess County, the majority of people could be affected by decreased home values.

While MCE has only provided feedback on three of MU Extension's CAFO cartoon videos, we would be happy to provide feedback on the remaining videos. We hope from this letter MU Extension recognizes its CAFO cartoon videos fail to provide an accurate view of CAFOs, misleading viewers about the impacts of CAFOs on farmers, consumers, animals, and the environment. At MCE, we aim to educate and advocate for Missourians and it is important to us to correct misleading information that puts Missourians at risk. Due to the concerns outlined above, we strongly encourage MU Extension to remove these videos and issue a public response. We welcome the opportunity to discuss these concerns with you further through an in-person meeting.

Sincerely,

Missouri Coalition for the Environment

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[19] Lobao, Linda and Curtis W. Stofferahn. "The community effects of industrialized farming: Social science research and challenges to corporate farming laws." http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.474.3414&rep=rep1&type=pdf