VIA hand delivery at public hearing:
Water-Draft-Permit-Comment@adeq.state.ar.us
April 8, 2016

Director Keogh,
Katherine McWilliams,

5301 Northshore Drive
North Little Rock, AR 72118-5317

Dear Director Keogh,
Ms. McWilliams,

I am submitting these comments for the public record on the EC Farms request to ADEQ for a major modification for Permit 3540-WR-7 to convert from storage and application of swine waste from EC Farms to land only application of swine waste from C&H Hog Farms.

ADEQ must consider the outcome that EC/C&H will have a cumulatively significant impact of degradation through its major tributaries such as Big Creek's main and Left Forks and the Little Buffalo River as they contribute significantly to the waters of the Buffalo National River (BNR,) a Tier 3 Outstanding Resource Water (ORW), our nation's first National River. Therefore, ADEQ must adhere to the EPA requirement of an anti-degradation review before adding a greater number of EC/C&H swine waste spreading fields in the karst Boone formation hydrogeology of the BNR watershed. The EC Farms proposal will not mitigate, but only exacerbate the build-up of pollutants in the BNR resulting in a confirmation that ADEQ's approval of this modification will demonstrate a consistent lack of required anti-degradation planning and review of BNR outstanding waters, and the cumulative waste loading of its tributaries that impact the quality of the Buffalo River itself. This pertains because C&H is a Reg. 6 CAFO, and if this modification is approved, its waste will be spread by a Reg 5 CAFO, thus creating a rather murky mix of both types of ADEQ's swine CAFO permits.

As required by the federal anti-degradation policy at 40 CFR §131.12, ADEQ is charged by 40 CFR §131.12(a) to develop and adopt a statewide anti-degradation policy and to identify methods for implementing that policy. This applies to point and nonpoint pollution sources. It includes providing procedures for identifying and assessing less degrading or non-degrading alternatives; procedures for determining the importance of economic or social development to justify significant degradation of high quality surface waters (in the present case the BNR, our country's premium National River and a major source of tourism related economic development for the region, as well as the entire state); and information on intergovernmental coordination and public participation processes. ADEQ has not coordinated, collaborated with or even responded to the Department of the Interior's National Park System (NPS) in addressing or acknowledging

many communications of NPS concerns about degrading impacts to this outstanding resource water (ORW). This shows a lack of intergovernmental coordination by ADEQ in the extreme.
This anti-degradation review should in all cases take place prior to approval of any permit that will cumulatively further degrade the BNR. To my knowledge ADEQ has no developed statewide anti-degradation policy. Shouldn't this be the priority before rushing to permit additional fields for spreading swine waste across the BNR Boone formation karst watershed?

Dr. Todd Halihan's report, ELECTRICAL RESISTIVITY SURVEYS OF APPLIED HOG MANURE SITES, MOUNT JUDEA, AR, was funded by the U of A Agriculture Extension Service (UACES) to research land application of waste on several fields monitored by the Big Creek Research Team (BCRET). BCRET is the team charged by the governor to monitor and assess the effects of C&H's swine waste in the BNR watershed. Dr. Halihan is a geologist at Oklahoma State University specializing in Electrical Resistivity Imaging (ERI) which uses electrical waves to construct conductivity "pictures" that reveal underground formations, fractures, fissures, and flow paths that exist for water and swine waste to travel along.
I include excerpts from his report as examples of the difficulty that even highly qualified, expert professionals have in determining whether a particular field for spreading swine waste will contaminate underground waters, streams, perched aquifers or springs when investigating karst hydrogeology. (I have bolded text I find key to understanding the nature of karst.) Dr. Halihan states:

Soil analysis is a complex issue that requires an in depth investigation to determine possible correlations between constituent levels. Much of the literature points to the overarching idea that individual site testing is required for understanding the individual site's properties.

The Boone Formation is an Early Mississippian Period limestone found in the Ozark regions of Eastern Oklahoma, Southern Missouri, and Northern Arkansas where karst dissolution features including sinkholes, caves, and enlarged fissures are common (Ferguson, 1920). This formation averages 90 – 120 meters (300 – 400 feet) thick (Ferguson, 1920).

The Boone Formation is a gray, fine to coarse-grained fossiliferous limestone with interbedded dark and light chert. The basal unit of the Boone Formation in the area is the St. Joe Limestone (Ferguson, 1920). The St. Joe is a fine-grained, crinoidal limestone containing some smoothly bedded chert and displaying coarse bioclastic texture. The color is generally gray but can be red, pink, purple, brown, or amber. ***Thin calcareous shales can be found in sequences throughout the St. Joe. The base of the St. Joe contains phosphate nodules within a green shale or conglomerate and is disconformable in most places.***

Precipitation enters the subsurface through the soil zone and enters the epikarst area. ***Fluids move through the epikarst area and enter the unweathered competent bedrock***

through fractures and other openings. Understanding the storage and transmission properties of these three zones is essential to understanding the migration of nutrients from applied hog manure in the area.

In geologic settings like northern Arkansas, the epikarst zone is a significant source of water storage and transmission and many springs have been tapped to support local communities *(Galloway, 2004).* ***These types of groundwater systems can include perched water tables, which exist above regional water tables. These are called perched because they are places where low permeability soil or bedrock layers hold water above an unsaturated zone and often produce springs on the side of a bluff or sometimes in an open field if the relief is high enough to expose this feature....*** *This zone is expected to have wide variability in flow rates and a high amount of storage (Williams, 2008).* ***There can be slow seepage through weathered pores and pieces of less weathered bedrock, to relatively rapid flow through fractures and karst features.*** *The electrical features measured at these sites generally indicate high porosity zones and the extent of weathering in these locations (Williams, 2008; Halihan et al, 2009).*

Another preeminent professor, Dr. Van Brahana, director of the Karst Hydrogeology of the Buffalo National River (KHBNR) research project, corroborates this assessment in his description of the hydrogeology of Big Creek and its Left Fork:

"The younger layers above the Boone Formation are dominated by shale and some sandstone, and these are common in the higher elevations of Big Creek and Left Fork of Big Creek. The shale has low permeability, and rain that falls on it runs off (like an umbrella) rather than soaking into the ground and the underlying karst rock (like a sponge) in the karstified Boone Limestone. That is why the hog farms on the shale had "dead zones" down gradient from their lagoons. The feces and urine from 300 hogs killed all the plants beside the streams, until there was enough water to dilute them below a toxic level."

I added Dr. Brahana's comment because many of the EC CAFO proposed fields for swine waste application are located in this Left fork location. The 300 hog reference is to the former C&C Hog Farm which has now been renamed EC Hog Farm.

The elephant in the room of this modification request is whether spreading C&H hog waste across a greater area in this karst landscape will dilute the effects of its degradation of the drinking water for C&H and EC neighbors, as well as the other often cited concerns of swine waste pollutants in the Buffalo National River watershed. For instance, tourism businesses such as cafes, cabins, local shops, and outfitters depend on the high water quality of the BNR to attract their customers. Is the business of one (or two) hog CAFOs more important than these hundreds of local tourism related jobs? An anti-degradation review would have to take such concerns seriously.

C&H/EC believe they are doing a favor for the "Litigious Greens" (a label ADEQ director Keogh coined) or "Extreme Environmentalists" (a term Farm Bureau encourages its letter writers to use), or "Concerned Neighbors and Citizens" (as many others perceive these people working to protect the Buffalo River and its tributaries in the watershed.) By spreading swine slurry on more fields, C&H/EC and ADEQ believe they can mitigate the effects of ever-increasing phosphorus saturation, and that additional acreage will solve this problem. Although it would seem to make sense, this is flawed logic when the qualities of soils, the epikarst, and bedrock dissolution features in the BNR Ozarks watershed are considered. There just isn't a favorable place for this excessive amount of waste to be absorbed by the Boone formation that lies beneath our pastures and hay fields here. No one objects to farming and conserving farmland for family farms, but responsible farming takes into account its imprint on neighbors and their water.

As described by Todd Halihan in the excerpts above, we know, and ADEQ must acknowledge, that in karst hydrogeology when heavy rains wash through the fields, nitrates will flow into neighbors' wells or springs, often their source for drinking water. Phosphorus will move along with the stirred up mud and clay into wells, or springs, or fishing holes. Like tentacles of an octopus, brown sewage algae and long strands of bright green algal slime stretch through the once sweet water. Low dissolved oxygen interferes with breathing for blue ribbon Smallmouth Bass and other key species that live in the streams.

Who do we remember as our good neighbors? Good neighbors take care of and help one another. They look out for them, their wellbeing and their health, especially in rural areas like Newton County. We depend on our neighbors here since we don't live near a hospital or a fire station. We help each other whenever we can. We can't call a cab or catch the bus to town. And everybody needs water to drink. Would we wish on our neighbors the cost of having to drill a new well, or having to buy bottled water for drinking, or the necessity of purchasing a reverse osmosis water filter to prevent blue baby syndrome, Methemoglobinemia, (caused by excess nitrates in the water that pregnant women drink), or dysentery from coliform contamination? Of course we wouldn't. The way to prevent such unintended problems is to remember that we live in the Ozarks, a region characterized by karst, with neighbors all around us. And we have to be especially careful of what we add to the ground around us. What we add shows up underground in our wells and our spring water, and we drink it.

We have been charged as stewards of the earth with caring for living creatures. When their survival becomes endangered we have laws and practices to help them recover and flourish again. In the BNR watershed because of our many caves and streams, several threatened and endangered species of bats find refuge here. At night they feed on a host of insects that plague us and our gardens and farms. White Nose Syndrome, a fungus that has decimated bats across America found its way in 2014 to the BNR watershed as a new threat to their existence. The spread of WNS, along with a reduction of their macroinvertebrate insect diet may wipe out these beneficial endangered and threatened mammals. The Gray, Long nose, and Indiana bats feed primarily on Mayflies and other highly sensitive insect species that thrive only in pristine streams such as the Big Creek

and Left Fork. There are at least thirteen known caves and innumerable pockets and crevices in the Boone formation along the Left Fork of Big Creek that serve as ideal roosts and hibernarium for these bats. Small colonies, because of their relative isolation from the bigger caves where WNS infects large populations and is so deadly, may be the rare survivors. (See Acoustic Bat Survey in attached link. James Gore on Big Creek and the Left Fork of Big Creek: http://buffaloriveralliance.org/Resources/Documents/Bat%20Survey%20Left%20Fork%20Final-2.pdf)

Lastly, I ask ADEQ to follow the path that C&H/EC used to create this juncture of requesting a modification for a CAFO (EC Farms) that rests on no actual property owned by its current permit holder, that has no useable building facilities, raises no swine, holds no ponds or lagoons, and yet has a designated physical location (the former C&C Hog Barn coordinates) still owned by the previous permit holder (who now holds another CAFO permit, C&H Hog Farm), and who acquired almost 500 new acres in land leases for the 600 hogs he had at the former C&C before launching his new 6,000 swine C&H CAFO in Mt. Judea, and then handed over the C&C permit (now renamed EC Farms with no land attached to the permit), all under the auspices of ADEQ. Besides questioning the legality of issuing a transfer of a permit that is attached to nothing but a new name, can this piece of land, the physical location of EC Farms on paper, still owned by the previous C&C CAFO permittee continue to be considered legitimate collateral for the C&H CAFO loan? Who is liable if the EC Farms permit terms are not followed? What can EC Farms lose if it faces a penalty?

When EC Farms requested its modification to this permit, ADEQ politely asked for three back years of annual reports that EC/C&C had neglected to submit to the agency. Who was minding the permit during those years? Why was there no follow up by ADEQ to find out if the facility was operating according to Reg 5 rules when the annual reports ceased to be submitted but the permit closure was left unfinished? This permit was not formally closed, so annual reports should have been submitted. Why were there no repercussions? Despite an inspection confirming that lagoons had been filled in and swine removed, ADEQ was derelict in its duty to the public when it let three annual reports go by without contacting the permit holder. If a permit holder is not taking the responsibility to fulfill ADEQ CAFO requirements, is this a permit that should be allowed to continue and to take on even greater risks than it has ever assumed before?

What action will ADEQ take should the permit holder neglect its requirements in the future? EC Hog Farms can't lose its land. It doesn't own any. It can't lose its operation or facility since it has no functional buildings, or swine, or equipment according to county records. In fact there is no EC Farms on record at all in the courthouse. Does EC own the trucks that it plans to use for carrying liquid swine waste? These trucks will be routinely traveling to remote and isolated fields along the circuitous, narrow, country gravel roads beside and above the Left Fork of Big Creek, over the mountain to Deer and to fields at the headwaters of both Hurricane Creek, an Extraordinary Resource Water (ERW) that is already on the 2008 303(d) impaired list, and Shop Creek, a key tributary of the Little Buffalo River that flows through the town of Jasper and on to the Buffalo River. The

youth of Jasper use the swimming hole at Bradley Park all summer. Who will be liable if swine waste spills into the waters, or into a property owner's yard as the "honey wagons" drive their routes to make deliveries? Will EC insure these trucks? Newton County taxpayers will be funding the upkeep of the gravel roads for this added heavy use with county equipment, gravel, time and manpower. Will the county receive extra funding to cover the expense, or will roadwork in Newton County suffer while EC's roads are maintained? The Newton County Courthouse has no record of EC farms for tax or property records. Is EC anything but a signature on a piece of paper that ADEQ calls a Reg 5 swine CAFO permit?

If any person were to fill out an application for such a Reg 5 swine CAFO land application only permit, would he need to show that he has a legitimate business, or a true physical address where the "facility/operation" is located? What assurances would he need to provide to show he is in good standing and able to carry out the conditions of a permit besides signatures for land leases? Would paperwork guided and supervised for him by public agency employees suffice?

If C&H Hog CAFO needs almost 500 additional acres (besides its original Mt. Judea 600 acres) for waste application fields, located across a mountain and beside another fork of Big Creek upon which to dispose its hog effluent, why this convoluted means of acquiring them? Why doesn't C&H apply for a major modification to its own permit to acquire these land leases? Is this apparent circumvention to avoid tangible liability for accidents, spills and even "ownership" of the "business" of EC Farms? These are questions that require answers before ADEQ rubberstamps another paper permit modification. ADEQ must employ ethical decision making when considering whether to grant a modification to permit holders EC/C&H who have shown no means for taking responsibility should penalties or accidents occur. Approving such a permit modification has real outcomes for many people. Who will be held accountable for mistakes made in issuing a permit that has no substance? It is unacceptable that the Arkansas public, we the taxpayers, will be left holding a ruined river in a polluted landscape to clean up and endure because our state government agency, ADEQ, did not take a hard look and act responsibly when it could have made a difference for the Buffalo River watershed.

Before that can come to pass, I ask that ADEQ make the decision to deny this concocted permit modification, and void the EC Farms Swine CAFO permit, 3540-WR-7, and its precursor, Permit 3540-WR-6 and all of its land use contracts. If C&H Farms is a state of the art operation, as has been claimed over and over not only by its owners, but also by Cargill and the Farm Bureau, let them demonstrate this using the permit and application fields they already hold. If they are not functioning as they foresaw when they moved operations from the C&C/EC Hog Farms CAFO "location" to Mt. Judea four years ago, then it must be time to move out of the BNR watershed's karst hydrogeology to another site where soils are better suited for spreading the waste of such a large and intensive confined swine operation.

Sincerely,

Marti Olsen

Marti Olesen
P.O. Box 104
Ponca, AR 72670

Cc delivered via email:

• Michael Lamoureux, Chief of Staff to Governor Hutchinson.

michael.lamoureux@governor.arkansas.gov

• Arkansas Senator Missy Irvin.

Missy.Irvin@senate.ar.gov

• Arkansas Representative Kelley Linck.

kelley@kelleylinck.com

• Arkansas Representative David Branscum.

david.branscum@hotmail.com

• US Senator John Boozman c/o Phillip Moore.

• US Senator Tom Cotton.

• US Representative Steve Womack

• Arkansas Pollution Control and Ecology Commissioners.

commissioners@adeq.state.ar.us

• Becky Keogh, Director of ADEQ.

keogh@adeq.state.ar.us

• Jeff Crow, Deputy Director, Arkansas Game and Fish Commission.

Jeff.Crow@agfc.ar.gov

• Kane Webb, Director, Arkansas Department of Parks and Tourism.

Kane.Webb@arkansas.gov

• Matt McNair, Environmental Coordinator, Arkansas Department of Parks and Tourism.

Matt.McNair@arkansas.gov

• Nathaniel Smith. MD. MPH. Director and State Health Officer. Arkansas Department of Health.

Nathaniel.Smith@Arkansas.gov

• Randy Young, Director, Arkansas Natural Resource Commission.

Randy.Young@arkansas.gov

• Chris Colclasure, Director, Arkansas Natural Heritage Commission.

chrisc@arkansasheritage.org