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Carney Bates & Pulliam PLLC

June 3, 2013

Teresa Marks, Director
ARKANSAS DEPARTMENT OF ENVIRONMENTAL
QUALITY
5301 Northshore Drive
North Little Rock, AR 72118-5317

RE: C&H Hog Farms

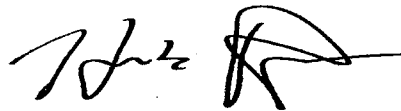
Dear Director Marks:

I am writing on behalf of the Ozark Society, Buffalo River Watershed Alliance, National Parks Conservation Association and the Arkansas Canoe Club.

Enclosed please find a letter from John Van Brahana related to C&H Hog Farms. In this letter, Dr. Brahana opines that the CAFO permit application for C&H Hog Farms was insufficient because it failed to include any analysis of the karst geology. As Dr. Brahana explains, based on the general knowledge and past research of this area, no karst geologist would recommend a CAFO to be located at this site. Dr. Brahana recommends and requests that you suspend the permit until these significant geological issues can be properly assessed and addressed. In the interim, Dr. Brahana is working to develop a proper assessment program for the site and area.

I provide this as a supplement to my May 6th letter. We look forward to meeting with you on June 7th.

Sincerely,



Hank Bates

HB/jcg
Enclosure



Department of Geosciences
F-08 Stone House South
Fayetteville, Arkansas 72701

June 1, 2013

Teresa Marks, Director
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Dear Director Marks:

At the request of numerous farmers, landowners, citizens of Newton County, and stakeholders of the State, and after careful examination of Permit Number ARG5900001 [NPDES Notice of Intent (NOI) Concentrated Animal Feeding Operations (CAFO) ARG590000 C & H Farms, Mt. Judea, Arkansas], I am writing to describe what I have found to be significant omissions and potential problems in the permit application. I encourage suspension of the permit until such time as these questions can be properly addressed. My questions deal with 1) groundwater beneath and downgradient from the hog farm site to the Buffalo National River; 2) the karst hydrogeology of the site, and downgradient from the site to the Buffalo National River; and 3) the degree of interaction of surface water and groundwater from the site downgradient from the site to the Buffalo National River. All of these factors are directly relevant to groundwater quality and nutrient transport from the site of the C & H Hog Farm, yet none of these were discussed in the initial NOI. I realize that the timing of this letter falls well beyond the 30-day public-response time limit, but having read the eloquent letter to the editor in the Arkansas Democrat Gazette by Mr. Jason Henson, the owner of the C & H facility, and of his sincere desire to be a good neighbor and follow the rules, I am optimistic that we share some common points to initiate negotiation to completely address the risks to groundwater quality by the C & H Farms operation. Your involvement is essential to facilitate the permit suspension.

I would like to briefly introduce myself so that you have a sense of my background, my work experience, and the motives for my involvement in an Arkansas Department of Environmental Quality (ADEQ) matter. I have worked continuously in Arkansas as a Research Hydrologist with the U.S. Geological Survey (1990-1999), as a Professor of Geology in the Department of Geosciences at the University of Arkansas (1990-2013), as a Registered Professional Geologist (Arkansas Registration #1884; American Institute of Professional Geologists #2275). I just retired from the University at the end of last semester. I have directed student research and theses in the area, I have conducted funded projects, and I have published numerous reports describing groundwater flow, transport of contaminants, and factors affecting these. I have worked closely with members of your agency, striving to help address water-quality issues in the karst terrane of northern Arkansas. I have worked closely with the University of Arkansas Division of Agriculture, Department of Animal Science, to conduct meaningful research to determine animal-waste loading on karst lands, optimum levels of animals that can be raised without doing environmental damage, and tracing and "fingerprinting" of underground waters. I have long sought to introduce good science into decision-making, and have volunteered to share research, field-work, and my time with your staff. From classes that I have developed and taught [Karst Hydrogeology;

Hydrogeology; Environmental Justice; and Geology of Our National Parks], I feel it is essential to provide a fair and just framework for all stakeholders involved in conflict resolution surrounding issues of environmental and groundwater quality, one in which respect and full communication between all parties is demanded by all.

My perceptions of the significant shortcomings of the NOI report deal with its lack of study or assessment regarding the groundwater on and near the site, the complete lack of discussion of karst hydrogeology present in the Boone Formation, which is the outcropping formation on the site (Chandler and Ausbrooks, 2003), the lack of background groundwater quality of wells and springs in the area, the lack of dye-tracing studies to determine rates of groundwater flow, and documentation of downgradient springs and resurgences. Equally important is the overall lack of communication between C & H Farms and the local community, all but the required permitting and loan agencies, and most of the stakeholders. I strongly believe the fear that many of the farmers, landowners, and community members have is based on poor communication in combination with the historic record of CAFOs elsewhere; uncertainty regarding the impact of the farm on the local environment. A CAFO this size is not a small family-farm operation, no matter what is claimed by the operator. The concentration of the waste, the volume of the waste, and the risk associated with the waste moving into groundwater and surface water can be supported by numerous case histories of problems, not only in Newton County, but throughout the United States. These cases studies reflect the difficulties and challenges that face many CAFOs, primarily avoiding leakage through clay liners, and especially, avoiding leakage through shallow karst conduits.

Although many of the regulations of the NOI appear to have been met (exceptions include the letter from Hank Bates of Carney Bates & Pulliam PLLC), the heart of the regulations—the questions of nutrient loading and waste leakage—are weak and incomplete and do not give confidence that the NOI plans are adequate for preserving environmental quality. My personal perception is that this document does not satisfy the requirements. Coupled with what was perceived as an air of secrecy and a less-than-obvious need for rapid or immediate action, the response of ADEQ in dealing with this project has reinforced the overall feeling that the proposed C & H Hog Farm is a highly risky water-quality endeavor in a fragile, lovely location. Subsequent actions have done little to alleviate those fears. Without addressing these omissions, I, too, have serious reservations.

Without having karst studies conducted on or downgradient from the site, we are forced to rely on extrapolation of information from similar geologic conditions elsewhere. Currently, this is what is known about the karst of the Big Creek area. It is a fragile ecosystem, with extensive interaction of surface and groundwater in a well-documented karst. In karst areas, including Newton County, groundwater flow dynamically enlarges the dimensions of the conduits through which the groundwater flows. The groundwater moves as quickly as water in a stream, except that exact location of pathways are very difficult to predict. The high velocity of the water in conduits is capable of transporting sediment, organic matter, fecal waste, and dissolved solids from the CAFO. Caves and dissolved fractures and bedding planes have been documented to carry huge contaminant loads underground to the streams and rivers within matters of several hours. The ability of the rock and soil to attenuate contamination is minimal in settings such as this, so that if a problem such as a waste-lagoon breach were introduced, there would be little opportunity for it to be naturally remediated or attenuated. If the waste were left in the ground along the flow path, the organic matter would quickly react and use dissolved oxygen, giving rise to the reducing chemical conditions such as were found in the Boone Formation downstream from Dry Creek in Carroll County (Tom Aley, written commun., 2013). This creates a dead zone in which we would find only living things that are sewage-adapted organisms. Subsequent storms ultimately flush those wastes into springs and the surface water, with potential disastrous results from the microbes that are entrained in the waste.

We know the concentration of wastes will be huge, based on the calculation of the NOI. The “extensive safeguards” to which Mr. Henson refers in his letter to the editor are neither extensive, nor

have they proved to be fail-safe in other settings that appear to be much better characterized than C & H Farms (see “dead zones” from work by previous ADEQ researcher Sandi Formica). There are suitable alternatives such as self-contained water treatment plants for CAFOs, but they are much more expensive to engineer than the plans outlined in ARG5900001. I know of no active karst consultant who recommends that a CAFO be sited on karstified limestone, particularly upgradient from so sensitive a natural resource as the Buffalo National River, with its direct-contact use by canoeists, fisherman, and swimmers.

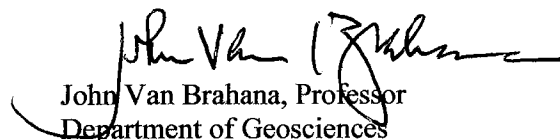
What can we do to address missing data which are essential to assessing the risk of this industry on water quality? I am aware that ADEQ needs to address the needs of all of our citizens, and be fair in the implementation of permits. We need to treat each citizen equitably, insofar as their actions are not harmful to others. I strongly agree that farmers and business owners and each in our community and State should be allowed to use their land wisely to make a living. However, as we have become aware, we all live downstream, and actions of a few that jeopardize the environmental health of our community and our neighbors are neither just, nor fair, nor legal.

To address the missing data, I plan to propose a research program to assess these unanswered questions, including conducting a background assessment of water quality in wells, springs, and surface water bodies; conducting dye-tracing studies, wherein we will inject fluorescent dyes and measure the time of travel, and document the point-to-point connections; mapping all known karst features from upstream of the farm down the valley of Big Creek to a point below the confluence with the Buffalo National River. This will enable us to fill the data gap so that we will more completely understand how water and soil and pigs and humans impact this specific area of this state. I have been in contact with agencies and consultants and students and faculty and farmers, and we currently are preparing proposals to address these questions, including accurately monitoring the water quality in Big Creek in real time.

To address the need of timely, effective alerting and communication, I propose that we develop a new means by which all stakeholders be included in plans for major projects that require environmental impact statements, NOI, or other permissions required by law. All of us should be included—agencies, bureaus, special-interest groups, non-profits, farmers, scientists, educators, landowners, politicians, bankers, lawyers, any who have an interest and a stake in the environmental considerations that affect our state. With this current C & H permit, many stakeholders who would have had meaningful input, experience, and wisdom about the project were not aware of any planned activity until it was too late, after the ADEQ decision had been reached. Let’s draw on this wealth of common sense, and minimize the chance we will make serious mistakes; mistakes that give many stakeholders great fear, mistakes that other states have made previously, and that we don’t have to make if we are aware and wise. Let’s give our decisions the best scientific underpinnings, in a fair and open forum.

We stand at a juncture where we can choose to step back and look at environmental questions fairly, as unemotionally as we can, using science and equality and respect for all stakeholders as our criteria rather than special-interest concerns. We can strive to minimize intimidation or obfuscation, or we can do nothing and simply ignore the problem, hoping it will go away. I hope you will join me in implementing the proposals I’ve put forward. I appreciate your time and attention to this matter.

Sincerely yours,


John Van Brahana, Professor
Department of Geosciences