



United States Department of the Interior
NATIONAL PARK SERVICE
Buffalo National River
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Harrison, AR 72601

IN REPLY REFER TO
1.A.2

April 14, 2016

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

Dear Director Keogh:

My staff has reviewed the draft permit ARG590000. The proposed changes will make the permit less protective of water quality. We feel that the importance of making this permit as protective of water quality as possible is highly important to the health of the Buffalo River, our neighbors, and our 1.3 million annual visitors.

Our specific comments follow below. Where we have used italics, it is to make a point about the reason for the proposed changes. We appreciate the opportunity to comment on the draft permit.

COMMENTS REGARDING DRAFT PERMIT ARG590000

General Comments:

- The Clean Water Act requires ADEQ to establish and implement an Antidegradation Policy. This policy applies to all streams listed as ERW, ESW, and NSW (Tier 3 streams). The draft permit does not appear to be protective of these Tier 3 streams. The Antidegradation requirements set out in 40 CFR require the State to “Protect and Maintain” the quality of water within these streams. In the 2008 303(d) Assessment Methodology, a Tier 3 stream was considered impaired if its water quality dropped from conditions present when it was designated a Tier 3 stream. The 2008 Assessment Methodology (AM) was the last Arkansas AM accepted by EPA, and as such, should be the guiding policy on Antidegradation. The 300-foot buffer for Tier 3 streams in this draft permit cannot be expected to be protective of the water quality within the stream.
- The Fact Sheet for this draft permit indicates that Big Creek Research and Extension Team data is the only source which will be used to determine if the current moratorium on swine CAFOs will be continued. NPS staff have been sampling 32 stations on the

Buffalo River and its tributaries since 1985. This body of data also must be considered, particularly since BCRET is not sampling in the Buffalo River. In addition to NPS data, USGS data on Big Creek at Carver is another source of high quality data. Additional biological data on fish and macro-invertebrates are being collected by NPS, USGS, AGFC, and other researchers using standard collection methods. Finally, bat sampling and roosting data is being collected throughout the watershed by NPS, USFS, USFWS, The Nature Conservancy, Arkansas State University, Arkansas Tech University, and the Cave Research Foundation, among others. This data also should be considered in the decision.

- We believe that in order to better protect the health of citizens and our natural environment, Large and Medium CAFOs are more properly permitted with individual permits, so that the public has adequate opportunity to address their concerns to ADEQ.

Specific Comments:

1.2: The revised language in the permit indicates that it covers construction of facilities. This was not covered in the original permit. ADEQ has always insisted that C&H did not require a construction permit. The addition of construction of facilities in this version of the permit seems to imply that a storm water discharge permit and construction permit are not required. Further, it opens the door to the CAFO operator to expand his facility and increase his operation without having to open the permit up for public review.

1.2: There is no mention of the design being required to handle the accumulation of rainfall throughout the year in addition to the waste and process waste water and 25-year, 24-hour rainfall event. The rainfall/evaporation data must be made part of the design.

1.2: There is no mention of how many days of waste accumulation, rainfall, etc. the facility waste handling system will be required to absorb. This is an important consideration in the design of such a facility.

1.4.5.3(b): Replace “constitutes” with “constituents.” The first paragraph is difficult to read and interpret. It needs to be broken down into discrete sentences which are easier to read and understand. There should be a specified timeframe for the waterbody to attain water quality standards. Otherwise, the waterbody will never attain its standards.

1.4.8: We suggest adding a new sentence: “New CAFOs, or CAFOs adding additional waste application sites within the karst areas of Arkansas must conduct extensive hydrogeological, geophysical, and other studies to ensure that effluent from these facilities will not adversely impact ground and surface waters.”

1.4.9: Add a new section: “Fault Areas - New CAFOs and expansions of CAFO production areas shall not be located within two-hundred (200) feet (60 meters) of a fault that has had

displacement in Holocene time unless the owner or operator demonstrates to the Director that an alternative setback distance of less than two-hundred (200) feet (60 meters) will prevent damage to the structural integrity of the facility and will be protective of human health and the environment.”

1.4.10: Add a new section: “Seismic Impact Zones - New CAFOs and expansions of CAFO production areas shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Director that all containment structures, including liners and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site. The owner or operator must place the demonstration in the operating record, and notify the Director that it has been placed in the operating record, and provide the demonstration to the Director for approval.”

1.4.11: Add a new section: “Unstable Areas – 1.4.11(a) – Applicability: Owners or operators of new CAFOs, and expansions of CAFO production areas located in an unstable area must demonstrate that engineering measures have been incorporated into the unit's design to ensure that the integrity of the structural components of the unit will not be disrupted. The owner or operator must place the demonstration in the operating record, notify the Director that it has been placed in the operating record, and provide the demonstration to the Director for approval. The owner or operator must consider the following factors, at a minimum, when determining whether an area is unstable:

- (1) On-site or local soil conditions that may result in significant differential settling;
- (2) On-site or local geologic or geomorphologic features; and
- (3) On-site or local human-made features or events (both surface and subsurface).

1.4.11(b) “For purposes of this section:

- (1) Unstable area means a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the CAFO structural components responsible for preventing releases from a manure storage structure. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrain.
- (2) Structural components means liners, waste collection systems, pond covers, and any other component used in the construction and operation of the facility that is necessary for protection of human health and the environment.
- (3) Poor foundation conditions means those areas where features exist which indicate that a natural or man-induced event may result in inadequate foundation support for the structural components of a liquid animal waste collection and storage unit.
- (4) Areas susceptible to mass movement means those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the CAFO, because of natural or

man-induced events, results in the down slope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, solifluction, block sliding, and rock fall.

(5) Karst terrain means areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terrain include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys. These features need not be visible on a 7.5' geologic or topographic map for an area to be considered a karst terrain

1.4.12: Add a new section: Endangered Species

(a) Prohibition Against Taking - Solid waste facilities and practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.

(b) Destruction of Habitat - The facility or practice shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17.

1.5.1: Change “continued” to “continue”.

1.5.1.5: Add “, and waste handling systems” at the end of the sentence.

1.6.1: Insert this sentence as the second sentence: “The Director may at any time require any facility authorized by this permit to apply for, and obtain an individual NPDES permit.”

1.6.1: Insert this sentence as the last sentence in this section: “The Director will notify the operator, in writing, that an application for an individual permit is required and will set a time limit for submission of the application.”

1.6.2: It does not seem likely that a Regulation 6 NPDES permit, which by definition is a “discharge permit” can be changed to a Regulation 5 permit, which according to the regulations is a “no-discharge permit” without making some substantial changes to the operation of the facility.

1.7.1: Change “replacement of this” with “new” in the first sentence.

1.7.5: Why is the annual permit fee being taken out of this section?

1.9.3: Add this section: “CAFOs shall not begin operation until authorization to operate is issued by the Department. Certification that the CAFO was built to ensure that all requirements related to karst areas, faults, landslides, or other geologic features, threats, or limitations are considered in the design, and stamped by a Professional Geologist registered in the State of Arkansas.” *This will be more protective of the Waters of the State, and reduce the probability of a major catastrophe.*

2.1.1.2: Need to change first sentence to: “Whenever rainfall events cause an overflow of process wastewater from a facility designed, constructed, operated, and maintained to contain all process-generated wastewaters plus the runoff from mean annual rainfall and the runoff from a 25-year, 24-hour rainfall event at the location of the point source, any process wastewater pollutants in the overflow may be discharged into Waters of the State.”

2.2.1.2(a): Need to change this to: “The production area is designed, constructed, operated and maintained to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a mean annual amount of rainfall plus the runoff and direct precipitation from a 25-year, 24hour rainfall event;”

2.2.2.3: This section says there shall be no discharge of manure, litter, or process wastewater to a water of the State from a CAFO as a result of the application of manure, litter, or process wastewater to land areas under the control of the CAFO, except where it is an agricultural storm water discharge.

- *This ties to 40 CFR 122.42(e)(1)(viii) which requires the permit to “establish protocols to land apply manure, litter or process wastewater in accordance with specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater.”*
- *In area of karst, the soils are often thin, and may be quite porous allowing water applied to the surface to quickly flow down into the epikarst and to karst aquifers below, which by definition are Waters of the State.*
- *This can and does occur in cases which are not covered by the agricultural storm water discharge exemption in the CWA.*
- *The NMP requirements as they are currently designed do not consider the intimate integration of surface water, soil water, and ground water in karst terrain.*
- *Nitrates remain soluble and can quickly be mobilized through soil into epikarst and from there to the groundwater.*
- *Bacterial contaminants, because of their tiny diameter, can easily pass through soil horizons to the groundwater.*
- *Soils in karst areas develop preferential flow paths to the karst features which can carry the soil waters down into the groundwater. This action confounds the retention of these nutrients in the soil profile for agronomic utilization.*
- To meet the requirements of this section, it seems reasonable to do one or more of the following:
 1. Prohibit land application of raw liquid sewage on areas underlain by karst.
 2. Pre-treat the waste in order to remove, or reduce by two orders of magnitude, the levels of *E. coli* as an indicator organism and reduce nitrates similarly.
 3. Compost the waste to eliminate *E. coli* and slow the release of nitrogen and phosphorus compounds into the soil horizons.

2.3.1: It seems reasonable to require testing for *E. coli* bacteria as well as total coliform bacteria in lieu of fecal coliform bacteria. It also seems reasonable to collect specific conductance of waste to provide some idea of the reactivity of the effluent with the underlying geology.

2.3.2: The sample should be collected immediately. This section of the permit does not specify a timeframe.

2.3.3: Change the first sentence to: “If conditions are not immediately safe for sampling, the permittee must provide documentation of why samples could not be immediately collected and analyzed.”

2.3.4: Change this sentence to: “Analytical results of monitoring must be submitted to ADEQ Water Enforcement Division, within fourteen (14) days of the discharge event at the address listed in Part 8.4 of this permit.” *Thirty days sounds too long, and not protective of the environment.*

2.4.1.1: We suggest requiring “stabilized emergency overflow spillways which drain into an emergency collection basin or some other storage structure.” There should also be a statement about “technical standards that prohibit or otherwise limit land application to fields underlain by karst.”

2.4.1.4: There should be a timeframe of design for these structures that is never for storage of less than 6 months.

Please add the following in some form or fashion to permits for New NPDES General permits. This is designed based on Regulation 22:

2.4.1.9 Waste Collection and Storage Structures In Karst Forming Geologic Units

(a) Applicability - The following are minimum design standards for CAFO waste collection and storage structures which are located within the outcrop area of karst forming geologic units. The design phase of a project must neutralize all limitations noted in the site characterization study through engineering modification or operating methods. The design of the containment structure must meet or exceed the minimum standards listed in these regulations.

(b) Separation Requirements --

(1) A minimum separation of ten (10) feet must be maintained between the bottom of the bottom liner system and the seasonal high water table surface.

(2) A minimum vertical separation of ten (10) feet must be maintained between the bottom liner and the highest point of the bedrock or pinnacles.

(3) All fill structures and operations must be above the one hundred (100) year flood elevation.

(c) Liner System -

(1) The minimum slope on the bottom liner must insure positive drainage of sludge after maximum loading and maximum expected strain.

(2) All bottom liner systems must consist of a double composite separated by a leak detection system. Each composite liner shall consist of an upper geomembrane liner (60 mil minimum thickness) directly overlying a low permeability soil layer, as described in Reg. 22.424(b).

(3) The soil and synthetic components of the composite liner must meet the requirements of Reg. 22.428.

(d) Leak Detection System - The double composite liner system must have a leak detection system located between the upper composite and the lower composite liners. The leak detection system must conform to the following standards:

(1) The minimum thickness of the coarse grained material must be 1 foot;

(2) Leak detection system materials shall have a minimum hydraulic conductivity of 1×10^{-3} cm/sec.

(3) An action leakage rate must be developed for the design and approved by the Department. If leakage rates exceed the action leakage rate, fill operations must cease and the Department must be notified. A written contingency plan must be developed for the facility which outlines steps and measures to be taken if the action leakage rate is exceeded.

(4) Daily records of fluid accumulation in the leak detection system must be maintained by the owner or operator.

Add item 3.2.1.10

3.2.1.0: If any of the waste disposal sites are underlain by karst forming geologic units, specific protocols for land application of waste will be developed to ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater without allowing nitrates, bacteria, and other pollutants from reaching the groundwater.

3.2.3: Change "Large CAFOs" in this section to "All CAFOs".

3.2.4.4: Change this sentence to read: "Total number of acres available for land application, after all buffers, setbacks, and exclusions are subtracted, covered by the nutrient management plan developed in accordance with Part 3 of the permit;"

3.2.4.5: Change this sentence to read: “Total number of acres under direct and/or indirect control of the CAFO that were used for land application of manure, litter and process wastewater in the previous 12 months;” *This is important as the CAFO may not have direct control of the property it uses to apply waste. The actual landowner can manage his fields as he sees fit. The land use contracts are not leases, simply a form which allows the CAFO to apply waste.*

Add 3.2.4.9 and 3.2.4.10

3.2.4.9 The daily record of fluid accumulation in the leak detection system as applicable in accordance with Part 2.4.1.9(d)(4).

3.2.4.10 Inspection of equipment used to land apply manure and process wastewater will be conducted before beginning each land application day. These inspection logs will be turned in with the annual report.

3.2.6.3(d): This section seems to indicate that changing field management from hay to pasture to rotational grazing, or any combination of these would be a substantial change to the terms of an NMP as they have the potential to increase the risk of nitrogen and phosphorus transport to Waters of the State. This is particularly true when going from hay field to pasture as a much lower portion of the nutrients added to the field are removed in biomass, and the soil in the field is more impacted, resulting in a higher likelihood of runoff of soil particles. We feel this section needs to be retained, but explicitly define a major modification.

4.1: Setbacks should include many other karst features than sinkholes. It could include fractures in the underlying rock which allow fluids to move through, but do not express themselves as sinkholes or depressions. *This is why the permit needs to have specific measures to deal with waste disposal sites underlain by karst forming geologic formations.*

4.1: *It does not seem that C&H is authorized to conduct multi-year phosphorus applications. If they are not, why have the Soil Test Phosphorus (STP) numbers risen to levels above optimum for so many of their fields?*

4.2: Change to: “**Nutrient Management Plan.** The CAFO must develop and implement a nutrient management plan that incorporates the requirements of this section based on a field-specific assessment of the potential for nitrogen and phosphorus transport from the field and that addresses the form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals, while minimizing to the greatest extent practicable nitrogen and phosphorus movement to ground and surface waters. “

4.2.1.1: Change to: “Include a field-specific assessment of the potential for nitrogen and phosphorus transport from the field to ground and surface waters, and address the form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals, while minimizing to the greatest extent practicable nitrogen and phosphorus movement to ground and surface waters; and...”

4.2.2.2: Change to: “Include appropriate flexibilities for any CAFO to implement nutrient management practices to comply with the technical standards, including consideration of multi-year phosphorus application on fields that do not have a high potential for phosphorus runoff to surface water or infiltration into ground water, phased implementation of phosphorus-based nutrient management, and other components, as determined appropriate by the Director.”

4.2.1.3: The soil sampling should occur each year, rather than every 3 years. *With animal manure, phosphorus can build up very quickly. Annual sampling allows the operator to modify the amount of waste applied to each field to minimize pollution of surface and groundwater with phosphorus and other contaminants.*

4.2.1.1: Change to: “**Inspect land application equipment for leaks.** The operator must inspect equipment used for land application of manure, litter, or process wastewater at the beginning of each land application day. These inspections must be documented and reported in the annual report as specified in Part 3.2.4.1. Any needed repairs to said equipment will be completed prior to land application and recorded in the inspection logs.”

4.2.1.5: Change to: “**Setback requirements.** Unless the CAFO exercises one of the compliance alternatives provided for in Part a or d of this section, manure, litter, and process wastewater may not be applied closer than 100 feet to any down-gradient surface waters, open tile line intake structures, areas underlain by karst forming carbonate rocks such as, but not limited to, the Boone and St. Joe formations, sinkholes, agricultural well heads, or other conduits to surface waters; 300 feet of Extraordinary Resource Waters (ERWs), Natural and Scenic Waterways (NSWs), or Ecologically Sensitive Waterbodies (ESWs) as defined by the APC&EC Regulations No. 2 and No. 12; 50 feet of property lines; or 500 feet of neighboring occupied buildings.”

4.2.1.5(a): Remove this section. *If a vegetative buffer is required, it should be 100’ wide. In that case, it would likely be more protective of water quality than the existing grassy buffers.*

4.4.1.2: Change this section to say: “**Depth marker.** All open surface liquid impoundments must have a depth marker which clearly indicates the “must pump level” or the elevation which corresponds to the minimum capacity necessary to contain the runoff and direct precipitation of the 25-year, 24-hour rainfall event.” *This change will clarify the reason for this marker.*

4.4.2: Change this section to say: “**Record keeping requirements.** Each CAFO must maintain on-site the following records for a period of five years from the date they are created a complete copy of the information required by 40 CFR 122.21(i)(1) and 40 CFR 122.42(e)(1)(ix) and the records specified in Parts 4.4.2.1 through 4.4.2.6 of this section. The CAFO must make these records available to the Director for review upon request.”

5.1: Change this section to read: “For ALL facilities, public notification requirements for any notice of intent filed with the Department for a general permit for a proposed Concentrated Animal Feeding Operation (CAFO) in Arkansas (ARG59000) are as follows:”

5.1.1.1: Change this section to read: “Property owners adjacent to the CAFO production site, whether they live on the property or not, and all property owners which share a common boundary with the properties which contain manure spreading sites;”

5.1.1.2: Change this section to read: “The County Judge(s) of the county(ies) where the CAFO production site and any manure spreading site is located;”

5.1.1.3: Change this section to read: “The Mayor of each incorporated municipality within ten miles of the CAFO production site and any manure spreading site; and”

5.1.1.4: Change this section to read: “The superintendent(s) of the school district(s) that serves (serve) the CAFO production site and the property associated with any manure spreading site;”

5.1.1.4: Add this section: “5.1.1.5. The county health unit(s) of the county(ies) where the CAFO production site and any manure spreading site is located.”

5.1.4.1: Change this section to read: “Notice of the proposed CAFO, including the addresses of the production site and all manure spreading sites, and the name(s) of the applicant(s) and facility;”

5.1.4.2: Change this section to read: “An explanation of the thirty-day public comment period, the right to comment, and the right to ask for a public hearing;”

5.1.5: Change this to read: “The applicant shall publish notice two times of the proposed CAFO in the paper(s) of the largest circulation in the county(ies) of the CAFO production site and any manure spreading site. ADEQ shall determine the form of that notice, and determine the proper paper(s) for publication.” *The purpose of this is to allow the public living in these areas, or with properties in these areas to be made aware of the facility and draft permit.*

5.2.2.2: This should read: “ADEQ will respond to comments received during the public comment period and, if necessary, require the CAFO operator to revise the nutrient management plan.”

5.2.2.3: Add this section: “ADEQ may deny the permit if the Director feels the facility will result in unavoidable and unnecessary degradation of water and air resources of the State.”

6.1: Please reinstate NPDES as the second to last word.

6.12: This entire section should be reinstated. *This section provides the producer with the ability to continue to operate should the general permit expire before it is renewed.*

8.2: Monitoring Procedures: Please change this paragraph as follows: “Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. The permittee shall calibrate and perform maintenance procedures on all monitoring analytical instrumentation at intervals frequent enough to insure accuracy of measurements and shall insure that both calibration and maintenance

activities will be conducted. All monitoring and calibration will be documented and these records will be made available to the Director upon request. An adequate analytical quality control program, including the analysis of sufficient standards, spikes, and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory.”

Requiring documentation of calibration and maintenance of analytical equipment is standard practice, and should be required.

9.6: Duty to Reapply. This section should be retained in its entirety. *The permits under this general permitting program should not be made perpetual. This allows the public and agency staff to regularly review the operation of the facilities in light of changes in population density and demographics as well as improvements in scientific understanding of the issues associated with CAFOs.*

10.10: Table of Regulatory Definitions of Large CAFOs, Medium CAFOs, and Small CAFOs: The description of a Medium CAFO does not seem to meet the description in 40 CFR §§ 122.23(b)(6)(ii). This citation should be used verbatim from the CFR.

This concludes the National Park Service comments on the draft permit.

Sincerely,



for Kevin G. Cheri
Superintendent

Electronic cc:

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From: [Miller, Laura](#)
To: [Water Draft Permit Comments](#)
Cc: [NPS BUFF Superintendent](#)
Subject: Comments on Draft Permit
Date: Thursday, April 14, 2016 5:59:30 PM
Attachments: [2016_04_14 ADEQ Comments Draft Permit ARG590000.pdf](#)

Attached are the comments from NPS on the Draft Permit ARG59000.

Thank you,
Laura

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