

*“Protecting the public health and natural resources of the
White River watershed through advocacy, education, and research”*

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10 September 2018

Ms. Sarah Clem
Planning Branch Manager, Office of Water Quality
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118
Sent via email to clem@adeq.state.ar.us, WaterbodyComments@adeq.state.ar.us

Re: 2018 Draft 303(d) Public Comments

Dear Ms. Clem,

Thank you for the opportunity to comment on Arkansas’s 2018 draft list of impaired waterbodies (hereinafter, the list).¹ Accompanying EPA’s delegated authority to the state is “the primary responsibility and right to prevent, reduce and eliminate pollution rests with the State, provided that the State’s program for these purposes shall also promote and fulfill federal objectives and requirements.”² Carrying out sections 303(d) and 305(b) of the Clean Water Act are integral to the permitting framework³ and Arkansas’s delegated authority to administer the NPDES program. Among many requirements, is that which ensures permits can be terminated or modified for “change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.”^{4, 5} The due-diligence to properly carry out each component of the CWA’s framework is necessary “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”⁶

¹ Prepared pursuant to CWA Section 303(d); 40 CFR 130.7

² See p. 7, MOA between EPA and AR, <https://www.epa.gov/sites/production/files/2013-08/documents/ar-moa-npdes.pdf>

³ <https://www.epa.gov/tmdl/program-overview-impaired-waters-and-tmdls>

⁴ CWA § 402(b)(1), emphasis on 402(b)(1)(C)(iii),

⁵ AR Code 8-4-208(a) - Arkansas Department of Environment Quality is vested with the authority and power to meet the requirements of § 402(b) of the CWA. This includes the ability to provide a weight-of-evidence and best professional judgement approach when making attainment decisions not encompassed in the Assessment Methodology (AM).

⁶ CWA § 101(a)



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In addition to informing proper discharge controls, the list identifies where funding and control measures are needed to address nonpoint source pollution.^{7, 8} The list accounting for 35% of variable funding through Section 106 grants, for which funding for pollution control programs is contingent on the state's ability to properly monitor, compile, and analyze data for determining the quality of waters throughout the state (including classification according to eutrophic condition).⁹

The responsibility placed on ADEQ's Water Quality Planning Branch is undoubtedly tremendous. However, as impaired waterbodies factor significantly into federal funding provided to the states to carry out water pollution control programs, perhaps ADEQ will take the opportunity to be more inclusive when reporting waterbodies not attaining water quality standards. Aside from the funding aspect, it's impossible to formulate an effective plan to address pollution concerns without first identifying and understanding problems. Thank you for the efforts on behalf of the Planning Branch to carry out such an immense and significant undertaking for the state.

White River Waterkeeper (WRW) reserves the right to rely on all public comments submitted and requests written response to all comments.

SPECIFIC COMMENTS

I. ADEQ has failed to provide adequate justification for placing impaired waters in Category 4b.

Category 5 refers identifies and sets priority-ranking of water quality-limited segments still requiring a TMDL, essentially making up "the list."¹⁰ 40 C.F.R. § 130.7(b)(1) requires state to identify those water quality-limited segments still requiring TMDLs within its boundaries for which:

technology-based effluent limitations required by sections 301(b), 306, 307, or other sections of the Act; more stringent effluent limitations (including prohibitions) required by either State or local authority preserved by section 510 of the Act, or Federal authority (law, regulation, or treaty); and other pollution control requirements (e.g., best management practices) required by local, State, or Federal authority are not stringent enough to implement any water quality standards (WQS) applicable to such waters.¹¹ Category 4b is reserved for situations where controls are already in place that are demonstrably sufficient to achieve water quality standards. It requires that the alternative

⁷ CWA § 319

⁸ The Integrated 303(d) and 305(b) Report serves as the nonpoint source assessment report. See p. II-17, Assessment, Arkansas 2016 Integrated Water Quality Monitoring Assessment Report, <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2016/final-2016-305b-report.pdf>

⁹ CWA § 106(e)(1)

¹⁰ 40 C.F.R. § 130.7(b)

¹¹ 40 C.F.R. § 130.7(b)(1)(i)-(iii)



control measures be "expected to result in attainment of designated uses." EPA guidance provides further clarification: "EPA would like to reiterate that States have the opportunity to assign impaired waters to Category 4b where controls sufficient to achieve water quality standards in a reasonable period of time are already in place."¹² EPA requires states to demonstrate how the alternative pollution controls will achieve the water quality standards, that the controls are actual requirements, estimate the time it will take for the controls to achieve the water quality standard, and provide a schedule for implementing the controls. But a "goal" is not a "schedule."

Additionally, states are expected to provide EPA with a "linkage analysis (i.e., cause-and-effect relationship between a water quality target and sources)" evaluating **point** and nonpoint source loadings that when implemented will achieve water quality standards.¹³

a. ADEQ has failed to demonstrate that TMDL alternatives are stringent enough to implement water quality standards.¹⁴

Furthermore, "The Section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d)."¹⁵ Information provided on ADEQ's website regarding Category 4b Determinations are limited to alternative [voluntary] management plans for non-attainment decisions for assessment units in the Illinois River, Buffalo River, and Beaver Lake watersheds.^{16, 17, 18, 19} [Emphasis added].

i. Technology-based effluent limitations (TBELs) required by the CWA are NOT stringent enough to implement applicable standards in the Buffalo River watershed.²⁰

Regarding Confined Animal Feeding Operations (CAFOs), point sources,²¹ TBELs refer to "best practicable control technology currently available as defined

¹² October 12, 2006, EPA, Information Concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions (hereinafter "2006 IRG") at 5-6.

¹³ See p. 8, *Id.*

¹⁴ *Id.*

¹⁵ 19 July 2017, EPA Action on Arkansas's 2010, 2012, 2014, and 2016 § 303(d) Lists, Enclosure 2, p. 2. <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/epa-decision-2017.pdf>

¹⁶ ADEQ Category 4b Determinations, <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/category-4b-determinations.pdf>

¹⁷ Beaver Lake Watershed Protection Strategy <http://www.beaverwatershedalliance.org/pdf/Beaver-Lake-Watershed-Protection-Strategy.pdf>

¹⁸ Buffalo River Watershed Management Plan <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/2018-05-22-final-buffalo-river-wmp.pdf>

¹⁹ Watershed-Based Management Plan for the Upper Illinois River Watershed <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/uirw-watershed-based-plan-2012-11-30-final.pdf>

²⁰ 40 C.F.R. § 130.7(b)(1)(i) and (ii)

²¹ CWA § 502(14)



by the Administrator pursuant to section 304(b).”^{22, 23} CAFO TBELs focus on adequate lagoon design and adequate land application to avoid “discharge of process wastewater pollutants into U.S. waters.”²⁴ Many of the following arguments apply to other watersheds, including the Illinois River, especially those within karst landscapes. These considerations should be given to all watersheds where CAFOs generate and land apply waste. Site-specific examples provided below with focus solely on the Buffalo River watershed.

ADEQ identified four waterbody/pollutant pairs in the Buffalo River watershed as not attaining water quality standards (**Table 1**).

Within the Big Creek watershed, the only facilities with water related permits are CAFOs. This includes C&H Hog Farm, the only large swine CAFO in the Buffalo River watershed. The public comment record related to the draft permit decision for 5264-W²⁵ includes an extensive review of TBELs insufficient to support water quality standards. WRW’s comments highlighted data collected by Big Creek Research and Extension Team providing further evidence that current TBELs are not enough, as data indicate significantly higher nitrate and total nitrogen concentrations in Big Creek attributed to C&H Hog Farms.²⁶

Despite violations of C&H’s holding pond pointed out through a slurry of public comments,²⁷ ADEQ has maintained that no violations have been found.²⁸ Therefore, one must infer the construction, design, and integrity of the holding ponds are in accordance with TBELs required by the CWA. Considering anecdotal evidence that waste from cattle, poultry, or humans does not compare to the amount of waste generated and spread in the watershed than that by C&H, it is apparent that C&H is a major pollution source.²⁹ Therefore, special consideration should be given to this factor, regarding Category 4b or Category 5 placements, when determining if all requirements have been met to demonstrate TBELs **are**

²² CWA 301(b)(1)(A)

²³ 40 C.F.R. § 412.31

²⁴ Noting exception of overflow attributed to 10-year, 24-hour rainfall runoff events; 40 C.F.R. 412.

²⁵ Public comments received on Permit No. 5264-W,

https://www.adeg.state.ar.us/home/pdssql/p_permits_online_npdes_additional.aspx?PmtNbr=5264-W&Category=PermitInformation&Title=Permit%20Information; emphasis given to comments submitted by Buffalo River Watershed Alliance,

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/5264-W_G%20Watkins%20BRWA%20Public%20Comments_20170405.pdf

²⁶ See p. 3-6, 6 April 2017, WRW Comments Re: Permit 5264-W; AFIN 51-00164; C&H Hog Farms, Inc.,

https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/PermitInformation/5264-W_J%20Green%20Public%20Comments_20170406.pdf

²⁷ See also, *Id.* Table 1.

²⁸ See Response to Comment No. 329, p. 290, Response to Comments Final Permitting Decision Permit No: 5264-W, <https://www.adeg.state.ar.us/water/bbri/c-and-h/pdfs/5264-w-response-to-comments-final-20180110.pdf>

²⁹ See p. 3-6, 6 April 2017, WRW Comments Re: Permit 5264-W



stringent enough. In the case of Big Creek and the Buffalo River, this demonstration has not been met.³⁰

1. The current Arkansas Phosphorous Index (API) is not sufficient for use on karst terrain.

Nutrient Management Plans (NMP) required by animal waste discharge permits must develop a method that considers potential P loss from agricultural fields and that P applications are based on soil-test P levels (agronomic soil-test interpretation), soil-test P threshold (environmental interpretation of soil-test P), or a P index (site-specific assessment of potential P delivery).³¹ Arkansas makes use of the API in NMPs required by animal waste discharge permits.³²

As stated in University of Arkansas Division of Agriculture publications, consideration of karst topography in development of NMPs in Northern Arkansas is a major concern.³³ Moreover, studies in locations comparable to the Big Creek and Buffalo River watersheds³⁴ have noted the significant concern of Phosphorous (P) retention and remobilization within the karst, causing a lag-time. This not only makes cause-effect studies difficult, but also provides for legacy P concerns.³⁵

All P application rates approved in C&H's NMP are above agronomic rates, as is the intent and design of phosphorus indices. As such, excess phosphorous either runs off horizontally to surface water, leaches vertically to groundwater and karst conduits, or accumulates in soil. The long-term accumulation of P in soil, however, can be released slowly to soil water.^{36, 37}

³⁰ See Response to Comment No. 273, p. 290, Response to Comments Final Permitting Decision Permit No: 5264-W. ADEQ has continuously refused to consider site specific considerations when permitting and requiring various P management options.

³¹ Nutrient Management (590) standard

³² See Section 1.5.1.2, ARG590000

<https://www.adeg.state.ar.us/downloads/WebDatabases/PermitsOnline/NPDES/Permits/ARG590000.pdf>

³³ Nutrients and Water Quality Concerns, Publication 9517-PD-9-05N, U of A, Division of Agriculture, <https://www.uaex.edu/publications/PDF/FSA-9517.pdf>

³⁴ Cite bcret publications comparing Illinois river and buffalo river, savoy farm or whatever

³⁵ Jarvie, Helen P., et al. "Phosphorus retention and remobilization along hydrological pathways in karst terrain." *Environmental science & technology* 48.9 (2014): 4860-4868, (**Attachment 1**); noting "the potential for contaminant retention in the subsurface karst drainage system, where contaminant storage and gradual rerelease may occur over time scales of at least a decade."

³⁶ Jarvie et al.

³⁷ Sharpley, Andrew N., et al. "Evaluating the success of phosphorus management from field to watershed." *Journal of Environmental Quality* 38.5 (2009): 1981-1988,

<https://pubag.nal.usda.gov/pubag/downloadPDF.xhtml?id=43156&content=PDF>



A considerable failing of the API in karst is the disregard for leaching and vertical movement of P to the subsurface.³⁸ In a recent deposition, the author of the API was recently asked and answered the following regarding the API in karst:³⁹

Q. Can infiltration be the dominant pathway of nutrient losses in karst areas that have soils with high infiltration rates?

A. Probably.

In the interim of Arkansas adapting the API to accommodate for karst and subsurface loss of P,⁴⁰ **ADEQ must provide a rationale justifying why subsurface leaching is not a concern in Arkansas**, and specifically the Buffalo River watershed. The API is handicapped to predicting edge-of-field P loads; however, Alabama, Florida, Kentucky, North Carolina,⁴¹ South Carolina, and Pennsylvania,⁴² factor subsurface leaching into their P index equations.^{43 44}

As recommended by the author of the API, “Ideally for water quality protection, the interpretation of different levels of risk would not be uniform across all watersheds. Rather, the risk categories and the limits should be assigned based on water quality targets and the assimilative capacity of the receiving water body.”⁴⁵ Arkansas may consider a P application rate in karst incorporating a changepoint in soil test phosphorus and dissolved P.⁴⁶

³⁸ Osmond, D. L., et al. "Comparing ratings of the southern phosphorus indices." *Journal of Soil and Water Conservation* 61.6 (2006): 325-337; <http://srwqis.tamu.edu/media/11740/pindexpub.pdf>

³⁹ 25 May 2018, Oral Deposition of Andrew Sharpley, Before the APC&EC in the Matter of C&H Hog Farms, Inc., Docket No. 18-001-P, p. 89-90. (Record retained on file, not attached due to ongoing appeal. Not currently publicly available.)

⁴⁰ Sharpley et al., 2010, Arkansas Phosphorus Index, FSA9531, <https://www.uaex.edu/publications/PDF/FSA-9531.pdf>

⁴¹ The N.C. PLAT Committee. 2005. North Carolina Phosphorus Loss Assessment: I. Model Description and II. Scientific Basis and Supporting Literature, North Carolina Agricultural Research Service Technical Bulletin 323, North Carolina State University, Raleigh, N.C., http://nutrients.soil.ncsu.edu/software/ncanat/plat/PLAT_Science_behind_the_tool.pdf

⁴² Weld, Jennifer L., et al. "Evaluation of phosphorus-based nutrient management strategies in Pennsylvania." *Journal of Soil and Water Conservation* 57.6 (2002): 448-454.

<https://pubag.nal.usda.gov/pubag/downloadPDF.xhtml?id=23632&content=PDF>

⁴³ Osmond, D. L., et al. "Comparing ratings of the southern phosphorus indices." *Journal of Soil and Water Conservation* 61.6 (2006): 325-337. <http://srwqis.tamu.edu/media/11740/pindexpub.pdf>

⁴⁴ Bolster, C. H. (2011). A critical evaluation of the Kentucky phosphorus index. *Journal of the Kentucky Academy of Science*, 72(1), 46-58. <https://naldc.nal.usda.gov/download/55055/PDF>

⁴⁵ Sharpley, A. N., et al. "Revision of the 590 nutrient management standard: SERA-17 recommendations." *Southern Cooperative Series Bulletin* 412 (2011). <https://sera17dotorg.files.wordpress.com/2015/02/590-sera-17-recommendations.pdf> (**Attachment 2**)

⁴⁶ McDowell, R. W., and A. N. Sharpley. "Approximating phosphorus release from soils to surface runoff and subsurface drainage." *Journal of environmental quality* 30.2 (2001): 508-520.

<https://pubag.nal.usda.gov/pubag/downloadPDF.xhtml?id=14882&content=PDF>



ii. Implementation of voluntary Watershed Management Plans (WMP) are not pollution control *requirements*.⁴⁷

In the case of Big Creek and the Buffalo River impairment decisions, the Beautiful Buffalo River Action Committee (BBRAC), with a non-regulatory driven mission, is proposed as sufficient 4b demonstrations for their commitment to carry out the Buffalo WMP, a non-regulatory, voluntary document.^{48, 49}

ADEQ must demonstrate how pollution control *requirements* already in place will achieve attainment of water quality standards.

b. The BBRAC has not demonstrated how water quality standards will be achieved through the Buffalo River WMP.

Public notice documents providing rationale for Category 4b Determinations states, “The Buffalo River WMP outlines voluntary measures to reduce nonpoint source runoff as well as makes recommendations for water quality monitoring and studies within the watershed. ADEQ believes stakeholders and BBRAC partners are necessary for successful strategy and milestone development. ADEQ and BBRAC are committed to revising the strategy as necessary to achieve ultimate attainment of water-quality standards in the Buffalo River.”⁵⁰

i. The BBRAC does not foster relevant and necessary stakeholder involvement needed to implement pollution controls that would achieve water quality standards in Big Creek and the Buffalo River.

The BBRAC Charter states it provides support for coordinating the actions of Arkansas state agencies **and interested partners**. Nothing could be further from reality. The BBRAC is comprised of Arkansas Department of Environmental Quality, Arkansas Natural Resource Commission, Arkansas Game and Fish Commission, Arkansas Geographic Information Systems, Arkansas Department of Health, and Arkansas Department of Parks and Tourism. However, Arkansas state agencies are insignificant land holders in the Buffalo River watershed (**Table 2**). Regardless of the National Park Service being significant stakeholders and land managers, Buffalo National River staff have yet to be invited to participate as a member of the BBRAC.

⁴⁷ 40 C.F.R. § 130.7(b)(1)(iii)

⁴⁸ Arkansas’s 2018 List of Impaired Waterbodies, Executive Summary, <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/executive-summary.pdf>

⁴⁹ Category 4b Determinations, <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/category-4b-determinations.pdf>

⁵⁰ <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/category-4b-determinations.pdf>

Table 2. Public lands in the Buffalo River watershed.

| Land Holder | % of Watershed Held |
|-----------------------------------|---------------------|
| National Park Service | 11% |
| National Forest Service | 26% |
| Arkansas Game and Fish Commission | 3% |

In addition, the public is barred from participating in BBRAC meetings. Public engagement during the development of the Buffalo River WMP was deemed a sufficient means of involving the public. The last meeting of the WMP was held 12 October 2017. Although Director Keogh (ADEQ), BBRAC co-chair, decided the public’s ability to attempt to talk to directors and staff informally before or after meetings is sufficient⁵¹ – in no way does it suffice. The BBRAC has maintained that submission of comments to the BBRAC members, agency directors, is an adequate means of fulfilling their commitment to public involvement. However, WRW has not had success engaging BBRAC members to discuss harmful algal bloom (HAB) related illnesses, algae monitoring, confirmation of *Microsciera wollei* in the Buffalo River, and cyanotoxin testing.⁵² Despite significant public interest and health related concerns surrounding these topics, the BBRAC meeting held one month after receipt of this letter failed to address any of the concerns detailed in WRW’s 20 July 2018 letter. In fact, besides vague mention to toxin levels and HABs across the nation, there was no mention of HABs at all, and certainly not in relation to the Buffalo River.

Due to the lack of opportunity for public participation, and lack of meaningful information or actions coming out of the BBRAC meetings, public attendance is negligible, at best.⁵³ Coupled with the added hinderance of quarterly BBRAC meetings held three hours from the Buffalo River watershed, it is not surprising that the public has lost interest. Since the formation of BBRAC in September 2016, at least a dozen interested stakeholders (e.g., watershed organizations, land owners) have expressed interest in actively participating with BBRAC members to develop and carry out actionable items. At least so far as WRW, Buffalo River Watershed Alliance, Ozark River Stewards, Ozark Society, and Friends of the

⁵¹ See Public Engagement, p. 5-6, 17 January 2017, Beautiful Buffalo River Action Committee minutes, <https://bbrac.arkansas.gov/pdfs/20170117-bbrac-minutes.pdf>

⁵² 20 July 2018, WRW Letter to BNR, ADEQ, ADH Re: Harmful Algae in the Buffalo National River, (**Attachment 3**); As of 10 September 2018, the only response received to this letter was from Nathaniel Smith, Director, ADH (23 July 2018) with a phone number to the communicable disease nurse and mention that ADH has “collected specimens for clinical testing but are still working with the CDC and other partners to determine the best strategy for testing.”

⁵³ Less than six members of the general public in attendance of the 21 August 2018 BBRAC quarterly meeting, North Little Rock, AR. *Personal observation.*



North Fork and White Rivers – none have been invited to participate in active discussions related to water quality concerns and means of resolving them. This is noteworthy, as our organizations are actively involved in the watershed, conduct water quality monitoring, organize citizen science volunteers, have large memberships with vested interests in the Buffalo River, and have continuously expressed interest in working with state (and federal) agencies to address water quality problems.

- ii. **At present, the Buffalo River WMP does not address targets, schedules for compliance, monitoring plans, or pollution controls to achieve water quality standards in water quality limited segments in the Buffalo River watershed.**

Pollution reduction targets identified in the Buffalo WMP⁵⁴ are limited to priority watersheds, which do not overlap with impaired stream segments identified by ADEQ (**Figure 1**). Regardless of limited faith in BBRAC's ability to carry out the suggestions of the Buffalo River WMP, the WMP does not address subwatersheds for segments ADEQ is proposing to place in Category 4b.

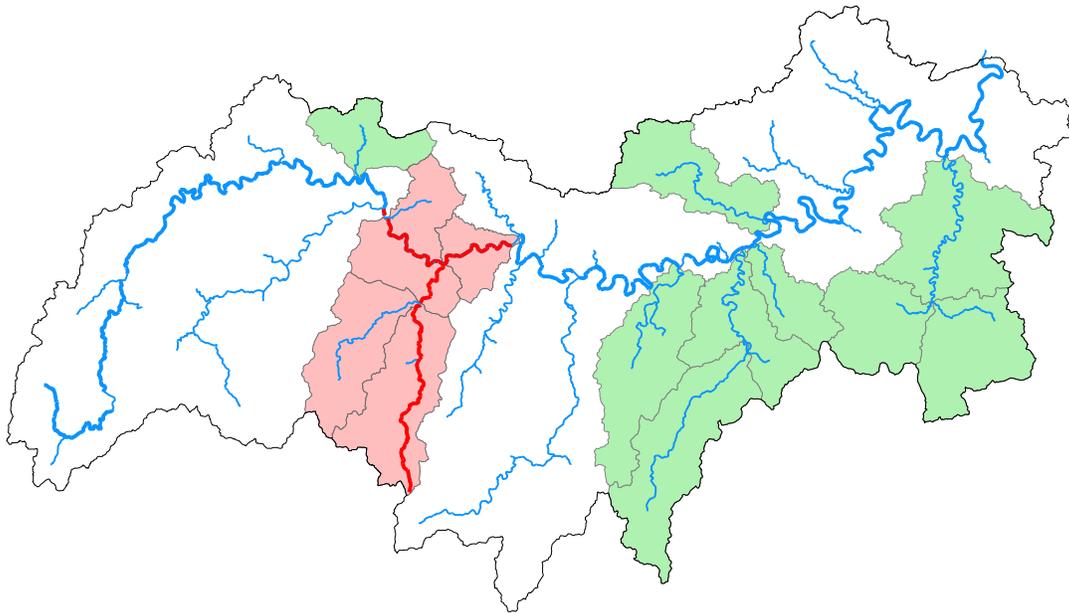


Figure 1. Buffalo River Watershed with priority subwatersheds identified by the Buffalo River WMP (green). Impaired stream segments on Big Creek and Buffalo River (red), and corresponding subwatersheds (pink), do not overlap with WMP targets (priority subwatersheds) identified for initial management practices and activities.

⁵⁴ 22 May 2018, Buffalo River Watershed-based Management Plan, <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/2018-05-22-final-buffalo-river-wmp.pdf>

II. ADEQ Fails to Account for all Water Quality Standards (i.e., numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements) when Developing the 303(d) List.⁵⁵

a. ADEQ’s tiered AM for listing waterbodies as impaired for nutrients⁵⁶ is not adequate for determining attainment of the narrative nutrient criteria.

i. At the very least, ADEQ should adopt a 25% screening threshold for the first tier of nutrient attainment decisions.

Please address the comments posed by JoAnne Burkholder during the 2016 303(d) cycle for why ADEQ deems it is appropriate to “sets thresholds for excess TN and TP at a much higher, much less protective level than would be set from use of U.S. EPA’s recommended protocols,”⁵⁷ with a clear explanation related to scientific justification of how ADEQ’s methodology assures attainment of Arkansas’s narrative nutrient criteria.

ii. ADEQ does not collect, or assess, sufficient data to determine whether most waterbodies are attaining the narrative nutrient criteria.

In addition to the many failings of Arkansas’s nutrient AM, is the glaring problem that the three-tiered attainment decision approach was designed as an obstacle for making **any** non-attainment decisions for nutrients. In 2018,⁵⁸ 2016,⁵⁹ and 2014,⁶⁰ there were no waterbody/pollutant pairs listed for failure to meet Arkansas’s nutrient criteria.⁶¹ There are two listings on the 2018 draft for nitrates (NO₃; Elcc Tributary – 8040201-606, Sager Creek – 11110103-932), both carried over from 2008. No Cat. 5 listing decisions for any form of phosphorus have been proposed by ADEQ in the last ten years. This is not a true reflection of water quality-limited segments, those failing to meet applicable water quality standards (i.e., narrative nutrient criteria, as defined by Reg. 2.509) across the state of Arkansas.

⁵⁵ 40 C.F.R. § 130.7(b)(3)

⁵⁶ Figure 3, p. 67, 25 July 2018, 2018 AM,

<https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/final-2018-assessment-methodology.pdf>

⁵⁷ See p. 11-12, Comments on the Draft: Assessment Methodology for the Preparation of The 2014 Integrated Water Quality Monitoring and Assessment Report, and The 2016 Water Quality Monitoring and Assessment Report, authored by the Arkansas Department of Environmental Quality (ADEQ) JoAnn M. Burkholder, Ph.D., 15 March 2016, <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2016/comments/anna-weeks.pdf>

⁵⁸ Draft 2018 New Listings, <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/2018-draft-list-public-notice-new-listings.pdf>

⁵⁹ Draft 2016 New Listings, <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2016/new-listings-county.pdf>

⁶⁰ New Listings for 2014, <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2014/new-listings.pdf>

⁶¹ There are no New Listing documents on ADEQ’s website for 2012, 2010, or 2008.

<https://www.adeq.state.ar.us/water/planning/integrated/303d/list.aspx>



The lack of numeric nutrient criteria is not an excuse for failing to assess attainment of the narrative nutrient criteria in Reg. 2.509(a):

Material stimulating algal growth shall not be present in concentrations sufficient to cause objectionable algal densities or other nuisance aquatic vegetation or otherwise impair any designated use of the waterbody.

The AM for nutrients, in theory, is designed *only* to assess impairments to the aquatic life designated use.⁶² And while ADEQ's AM doesn't even adequately determine if aquatic life designated uses are impaired, it completely ignores impairment of other, more sensitive designated uses (i.e., Extraordinary Resource Waters) for which scenic beauty, aesthetics, and recreation potential are major attributes.⁶³ ADEQ's notation in Table 4 of the AM designated uses and regulations used for assessment, in relation to Tier III waters and Reg 2.509, is inaccurate and should be revised. There is no scientifically viable explanation as to how this could be the case when the screening threshold is based on the 75th ecoregion percentile.

iii. ADEQ should take a more literal, and direct, approach to determine water-quality limited segments that fail to meet Arkansas's narrative nutrient criteria.

ADEQ has the discretion, and obligation, to consider all existing and readily available data. Failings of ADEQ's AM to provide methodologies for determining attainment of **all** water quality standards is not an excuse to ignore considerations of other types of data and information missing from the AM.

1. ADEQ should consider feedback from the general public and waterbody users about the condition of the waterbody such as photographs or testimonials of abundant algal mats that impede recreation or create unsightly aesthetics in the waterbody.⁶⁴

The 2014 IRG details other states utilizing such data and information to identify nutrient-related impaired waters for the 303(d) list based on narrative nutrient water quality criteria and/or direct evidence of failure to support designated uses, include, but are not limited to:

⁶² See Section 6.9, 2018 AM

⁶³ Reg. 2.302(a) defines the Extraordinary Resource Water designate use as "a combination of the chemical, physical, and biological characteristics of a waterbody and its watershed which is characterized by **scenic beauty**, **aesthetics**, scientific values, broad scope **recreation potential** and intangible social values."

⁶⁴ As recommended in the 2014 IRG, see p. 8., https://www.epa.gov/sites/production/files/2015-10/documents/final_2014_memo_document.pdf

- **Vermont** – waters are considered impaired if an ongoing record of public complaint concerning the algal conditions in the water has been established.⁶⁵
- **Montana** – photo documentation is adequate to make an impairment determination for aquatic life use.⁶⁶

iv. ADEQ must provide a scientifically defensible rationale supporting the sensitivity of biological community indices in relation to nutrient enrichment.

Biological endpoints must be sensitive to pollutants (i.e., nitrogen, phosphorus) of concern. In addition to lacking documentation to support ADEQ’s macroinvertebrate community analysis and fish community structure index, ADEQ has provided no information as to how “reference” is determined.

Metric values from each study site are compared to metric values from a reference site for five of the seven metrics to calculate a Percent Comparison to Reference value.⁶⁷

Please provide responses to questions and concerns related to 5.0 Biological Integrity and 6.9 Nutrients that were submitted to ADEQ by WRW in response to the public comments solicited on the revised 2018 AM.⁶⁸

v. ADEQ currently has sufficient data to support segments of the Buffalo National River are not meeting the state’s narrative nutrient criteria and should therefore include on the 2018 303(d) List.

Despite ADEQ developing nuisance and harmful algae bloom complaint forms, these submissions are not uploaded to ADEQ’s online complaint database.⁶⁹ However, ADEQ has a compilation of these data and information readily available, as Planning Branch staff have presented a summary of complaints received in the Buffalo River

⁶⁵ See Assessment Use Support Determinations for Swimming/Contact Recreation Use (p. 23), Secondary Contact/Non-Contact Recreation Use (p. 25), and Aesthetics Use (p. 26). Vermont Surface Water Assessment and Listing Methodology (2016),

http://dec.vermont.gov/sites/dec/files/wsm/mapp/docs/WSMD_assessmethod_2016.pdf

⁶⁶ See Section 3.2.5 (p. 3-11), Assessment Methodology for Determining Wadeable Stream Impairment Due to Excess Nitrogen and Phosphorus, Montana Department of Environmental Quality, 2016,

http://deq.mt.gov/Portals/112/Water/WQP/B/QAProgram/Documents/PDF/SOPs/NtrntAssessMethod_May2016_FI_NAL.pdf

⁶⁷ See Section 5.0, p.28, 2018 AM

⁶⁸ 13 November 2017, 2018 Assessment Methodology, (**Attachment 4**)

⁶⁹ Accessed 9 September 2018, <https://www.adeq.state.ar.us/complaints/searches/>



watershed in 2016, 2017, and 2018.^{70, 71, 72} WRW has compiled an online story map for ease of reference for ADEQ, although ADEQ likely has many complaint submissions not reflected in this map. Visit: www.whiteriverwaterkeeper.org/algaemap.

ADEQ failed to provide a rationale for public review and comment addressing their decision not to use submissions through the algae complaint forms to list waters not meeting the state's narrative nutrient criteria.⁷³ As such, ADEQ blatantly ignored their obligation to “assemble and evaluate all existing and readily available water quality-related data **and information**”. At minimum, this includes “waters for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions.”⁷⁴

1. ADEQ should work with local citizen monitoring groups to determine meaningful and discrete ways in which they can assist with algae efforts.

WRW is still awaiting a reply to our 20 July 2018 letter re: Harmful Algae in the Buffalo National River.⁷⁵

vi. To date, ADEQ has continued to ignore their obligation to assess and list waters based on attainment of antidegradation requirements.

40 C.F.R. 130.7(b)(3) - For the purposes of listing waters under § 130.7(b), the term “water quality standard applicable to such waters” and “applicable water quality standards” refer to those water quality standards established under section 303 of the Act, including numeric criteria, narrative criteria, waterbody uses, and **antidegradation requirements**.

Besides specific criteria for bacteria related to Tier III waters, ADEQ does not evaluate whether waterbodies are *maintaining* the level of water quality for which their designation was granted. This is a serious problem and concern across the entire state. Trend data, information from responsible agencies (i.e., USFWS regarding threatened and endangered species; Arkansas Natural Heritage Commission regarding status of endemic aquatic and semi-aquatic species), and academic literature should not only be utilized in attainment decisions, but should be actively solicited by ADEQ.

⁷⁰ 18 October 2017, ADEQ Memo Re: 2017 Buffalo River Nuisance Algae Report, (**Attachment 5**).

⁷¹ History of Filamentous Algae in the Buffalo River, Nathan Wentz, Arkansas Department of Environmental Quality, Arkansas Water Resource Conference, Fayetteville, AR, 24 July 2018.

⁷² History of Filamentous Algae in the Buffalo River, Nathan Wentz, Arkansas Department of Environmental Quality, Beautiful Buffalo River Action Committee, North Little Rock, AR, 21 August 2018.

⁷³ Information specifically required, pursuant to 40 CFR 130.7(b)(6)(iii).

⁷⁴ 40 CFR 130.7(b)(5)

⁷⁵ Attachment 3



1. ADEQ should list the Eleven Point River for failure to attain Ecologically Sensitive Waterbody (ESW) designated use, and failure to attain antidegradation requirements.

40 C.F.R. 131.12(a)(3) 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.**”

In 2016, USFWS provided comments supporting the need for listing the Eleven Point River (11010011-001) as impaired, due to significant habitat and population declines of the Ozark Hellbender.⁷⁶ Wheeler et al. (2003) noted a 77% population decline during the last two decades.⁷⁷ Reasons for population declines are further supported in Solis et al (2007).⁷⁸ The ESW designated use “identifies segments know to provide habitat within the existing range of threatened, endangered or endemic species of aquatic or semi-aquatic life forms.”⁷⁹ Arkansas WQS specifically notes the Eleven Point River’s ESW designation is specifically given due to the “location of the Ozark Hellbender.”⁸⁰

ADEQ failed to add this impairment listing on the basis turbidity criteria attainment.⁸¹ However, the supporting information provided by USFWS clearly indicates that the ESW designated use is **not** attained. Please update the 2018 303(d) list to reflect this revision **or** provide a comprehensive response as to how these data and information provided by USFWS are lacking to support a non-attainment decision of the ESW designated use. Does ADEQ choose to ignore WQS that are not addressed in their most current AM when making decisions?

2. Failure to list water quality limited segments identified in the Buffalo River watershed for failure to meet antidegradation requirements, is not only against federal requirements, but also jeopardizes the first national river.

⁷⁶ 7 March 2016, USFW 2016 303(d) public comments,

<https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2016/comments/us-fws.pdf>

⁷⁷ Wheeler, Benjamin A., et al. "Population declines of a long-lived salamander: a 20+-year study of hellbenders, *Cryptobranchus alleganiensis*." *Biological Conservation* 109.1 (2003): 151-156,

https://ag.purdue.edu/fnr/discover/HerpetologyLab/Documents/Wheeler_PopulationDeclines.pdf

⁷⁸ Solis, Mauricio E., et al. "Occurrence of organic chemicals in two rivers inhabited by Ozark hellbenders (*Cryptobranchus alleganiensis bishopi*)." *Archives of environmental contamination and toxicology* 53.3 (2007): 426-434, https://www.researchgate.net/profile/Dev_Niyogi/publication/6111457_Occurrence_of_Organic_Chemicals_in_Two_Rivers_Inhabited_by_Ozark_Hellbenders_Cryptobranchus_alleganiensis_bishopi/links/0f31752fbb30de3f07000000/Occurrence-of-Organic-Chemicals-in-Two-Rivers-Inhabited-by-Ozark-Hellbenders-Cryptobranchus-alleganiensis-bishopi.pdf

⁷⁹ Reg. 2.302(b)

⁸⁰ Arkansas Regulation No. 2, Appendix A, Designated Uses: Ozark Highland Ecoregion.

⁸¹ ADEQ 2016 303(d) Response to Comments,

<https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2016/response-to-comments-summary.pdf>



Models generated by the preparers of the Buffalo River WMP were “used to accomplish the main objective of this study, which is the prioritization of HUC12 sub-watersheds, so that investment strategies can be developed that will have the greatest impact on water quality objectives.”⁸² Not only are proper attainment decisions integral in the ability to pursue limited funding opportunities to implement pollution controls, but also for the achievement of antidegradation requirements.

The Buffalo River is designated as an Extraordinary Resource Water in Reg. 2, the definition of which clearly extends to the watershed of the Buffalo River.⁸³

Table 1 denotes additional Category 5 determinations that should be added to the 2018 303(d) list. Waterbody-pollutant pairs were identified from the Buffalo River WMP, accepted by EPA, and commissioned by ADEQ and ANRC.

Proposed segments for addition are based on trends of statistically significant water quality declines (i.e., where water quality has not been *maintained*).⁸⁴ The fact that ADEQ has not developed numeric **criteria** for total nitrogen, inorganic nitrogen, total phosphorus, or sediment does not negate ADEQ’s responsibility to properly assess applicable **designated uses** and **antidegradation requirements**.

Furthermore, if a TMDL is warranted for impaired segments on the mainstem of the Buffalo River, and over half the work has already been compiled and analyzed through an EPA funded and accepted WMP, then it would be preposterous not to develop a TMDL for the entire Buffalo River watershed. If ADEQ is able to provide adequate supporting documentation to fulfill 4b justifications, and shift pollutant pairs to the 4b designation, appropriate non-attainment determinations are still needed. As reminded above, it’s vital to consider attainment of **all** WQS to properly plan and to open the door to limited, available funding to implement pollution controls.

⁸² Buffalo WMP, Appendix E, Buffalo River SWAT Model Report, p. 5-1

⁸³ Reg. 2.302(a) – “This beneficial use is a combination of the chemical, physical and biological characteristics of a waterbody **and its watershed** which is characterized by scenic beauty, aesthetics, scientific values, broad scope recreation potential and intangible social values.”

⁸⁴ See specifically Section 6.2 (p. 6-5) and Table 3.7 (p. 3-35), Buffalo River WMP

Table 1. Proposed Category 5, 303(d), additions within the Buffalo River watershed. Segments in **bold** are currently proposed for placement under Category 4b. Segments denoted in *italics* are priority watersheds identified by the Buffalo River WMP. Reference reaches underlined below refer to the HUC 12 code, where ADEQ designated reaches could not be found.

| Waterbody Name | HUC | RR | WQParameter | Current Listing | Proposed Listing |
|---------------------------|-----------------|------------|--|-----------------|------------------|
| | | | Dissolved | | |
| Big Creek | 11010005 | 020 | Oxygen | 4b | Cat. 5 - High |
| Big Creek | 11010005 | 022 | Pathogens | 4b | Cat. 5 - High |
| Buffalo River | 11010005 | 011 | Pathogens | 4b | Cat. 5 - High |
| Buffalo River | 11010005 | 010 | Pathogens | 4b | Cat. 5 - High |
| <i>Mill Creek</i> | <i>11010005</i> | <i>913</i> | Pathogens, Inorganic N | 3? | Cat. 5 - High |
| <i>Calf Creek</i> | <i>11010005</i> | <i>025</i> | TN, TP, Sediment* | 3? | Cat. 5 - High |
| <i>Bear Creek</i> | <i>11010005</i> | <i>026</i> | Inorganic N* | 3? | Cat. 5 - High |
| <i>Brush Creek</i> | <i>11010005</i> | <u>405</u> | Inorganic N | 3? | Cat. 5 - High |
| <i>Tomahawk Creek</i> | <i>11010005</i> | <i>904</i> | Inorganic N | 3? | Cat. 5 - High |
| <i>Big Creek</i> | <i>11010005</i> | <u>505</u> | Pathogens, Inorganic N, Turbidity* | 3? | Cat. 5 - High |
| <i>Big Creek</i> | <i>11010005</i> | <i>029</i> | Pathogens, Inorganic N, Turbidity* | 3? | Cat. 5 - High |
| <i>Big Creek</i> | <i>11010005</i> | <i>028</i> | Inorganic N, Turbidity* | 3? | Cat. 5 - High |
| Buffalo @ Wilderness Area | 11010005 | 014 | Inorganic N | 3? | Cat. 5 - High |
| Buffalo at Ponca | 11010005 | 012 | Inorganic N | 3? | Cat. 5 - High |
| Buffalo River at Pruitt | 11010005 | 012 | Pathogens | 3? | Cat. 5 - High |
| Buffalo River at Woolum | 11010005 | 007 | Inorganic N | 3? | Cat. 5 - High |
| Buffalo River at Hwy. 65 | 11010005 | 004 | Inorganic N | 3? | Cat. 5 - High |
| Buffalo at Mouth | 11010005 | 001 | Pathogens | 3? | Cat. 5 - High |
| Ponca Creek | 11010005 | <u>205</u> | Inorganic N | 3? | Cat. 5 - High |
| Cecil Creek | 11010005 | <u>204</u> | Pathogens | 3? | Cat. 5 - High |
| Mill Creek (upper) | 11010005 | 912 | Pathogens, Inorganic N | 3? | Cat. 5 - High |
| Little Buffalo River | 11010005 | 015 | Pathogens | 3? | Cat. 5 - High |
| Davis Creek | 11010005 | 009 | Inorganic N | 3? | Cat. 5 - High |
| Cave Creek | 11010005 | 023 | Pathogens | 3? | Cat. 5 - High |
| Bear Creek at mouth | 11010005 | 026 | Inorganic N | 3? | Cat. 5 - High |
| Water Creek | 11010005 | <u>408</u> | Pathogens, Inorganic N | 3? | Cat. 5 - High |
| Rush Creek | 11010005 | <u>501</u> | Inorganic N | 3? | Cat. 5 - High |

III. ADEQ Fails to Follow Appropriate Federal Regulations and EPA Guidance.

The 2018 Assessment Methodology states “ADEQ follows the specific requirements of 40 C.F.R. § 130.7-130.8 and EPA’s most current 305(b) reporting and 303(d) listing requirements and guidance when developing this assessment methodology.”⁸⁵ Furthermore, it is stated that the 2018 report “is prepared using the Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act (EPA 2005) which is supplemented by memoranda regarding development of the 2008, 2010, 2012, 2014, and 2016 305(b) Reports (EPA 2006, 2009, 2011, 2013, and 2015 respectively). Arkansas’s waters are evaluated in terms of whether their assigned water quality standards and designated uses, as delineated in the Arkansas Pollution Control and Ecology Commission’s (APC&EC) Regulation No. 2 Water Quality Standards for Surface Waters of the State of Arkansas (Reg. 2) (APC&EC 2017), are being attained.”⁸⁶

- a. ADEQ should explain why it chose procedures for preparing the Integrated Report that differed from the procedures outlined in the guidance and how the procedures they developed are appropriate for safeguarding the quality of the waters in Arkansas.**

The procedures ADEQ uses often do not follow that guidance. Moreover, ADEQ's variations from EPA's guidance consistently lessens protection for water quality and the environment.

- b. ADEQ has arbitrarily removed five pollutant pairs from the 303(d) list without providing this information for public participation.**

40 C.F.R. § 130.7(b)(6) requires that “[e]ach State shall provide documentation to the Regional Administrator to support the State's determination to list or not to list its waters as required by §§ 130.7(b)(1) and 130.7(b)(2). This documentation shall be submitted to the Regional Administrator together with the list required by §§ 130.7(b)(1) and 130.7(b)(2) and shall include...a description of the methodology used to develop the list and a description of the data and information used to identify the waters.”⁸⁷ Additionally, where EPA requests it, states must “demonstrate good cause for not including a water or waters on the list.”⁸⁸

⁸⁵ Section 1.0., p. 6, <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/final-2018-assessment-methodology.pdf>

⁸⁶ *Id.*

⁸⁷ 40 C.F.R. §130.7(b)(6)(i) and (ii)

⁸⁸ *Id.* at 40 C.F.R. §130.7(b)(6)(iv)



EPA guidance on good cause states:

Good cause includes, but is not limited to, more recent and accurate data, more sophisticated water quality modeling, flaws in the original analysis that led to the waterbody being listed, or changes in conditions, e.g. new control equipment, or elimination of discharges. Where a waterbody was previously listed based on certain data or information, and the state or territory removes the waterbody without developing or obtaining any new information, EPA will carefully evaluate the state's or territory's re-evaluation of the available information, and will not approve such removals unless the state's or territory's submission describes why it is appropriate under the current regulations to remove each affected waterbody. EPA has the authority to disapprove the list if EPA identifies existing and readily available information, available at the time the state or territory submitted the list, that shows a waterbody does not attain water quality standards.⁸⁹

The Record of Decision (ROD) for EPA Action on Arkansas' 2008 303(d) List added the following waterbodies for total phosphorous:^{90, 91}

- Muddy Fork (11110103-027)
- Osage Creek (11110103-030, 11110103-930)
- Spring Creek (11110103-931)
- Town Branch (11110103-901)

Although ADEQ left these off all subsequent 303(d) lists, EPA recommended Category 4b designations for these pollutant pairs on the 2018 list.⁹² However, these pollutant pairs are not included on the 2018 draft 303(d) list,⁹³ formally delisted,⁹⁴ or included in Category 4b determinations.⁹⁵ ADEQ cannot choose to delist waters simply on a whim. WRW has requested any supporting information to justify these delistings from ADEQ

⁸⁹ November 19, 2001, EPA, 2002 Integrated Water Quality Monitoring and Assessment Report Guidance at Introduction.

⁹⁰ 18 June 2008, EPA 2008 303(d) ROD,

<https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2008/epa-rod.pdf>

⁹¹ Arkansas Final Impaired Waterbodies List 2008,

<https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2008/303d-list.pdf>

⁹² 19 July 2017 Letter from William Honker Re: EPA Action on Arkansas's 2010, 2012, 2014, and 2016 § 303(d)

Lists, <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2017/epa-decision-7192017.pdf>

⁹³ Draft 2018 Category 5, <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/2018-draft-list-public-notice.pdf>

⁹⁴ Draft 2018 Waters Delisted from Final Category 5 2016 303(d) List,

<https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/2018-draft-list-public-notice-delistings-listings.pdf>

⁹⁵ ADEQ Category 4b Determinations,

<https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/category-4b-determinations.pdf>



and has yet to receive a reply.⁹⁶ As such, the public has not been provided an opportunity for meaningful comment and review.

c. ADEQ should add whole sediment toxicity tests and data interpretation of results consistent with EPA IRG to its monitoring program.

IRG states that contaminated sediments may be directly toxic to aquatic life or can be a source of bioaccumulation and that protecting sediment quality is an important part of restoring and maintaining the biological integrity of water bodies. The ADEQ sampling program, includes no sediment sampling for making use attainability determinations.

d. ADEQ has failed to develop the 303(d) list pursuant to applicable water quality standards.

States are required to identify “those waters within its boundaries” where controls “are not stringent enough to implement *any water quality standard applicable to such waters.*”⁹⁷ EPA IRG specifically addresses whether Category 5 decisions should include impaired waters for which WQS are being revised to be less stringent. The answer, of course, is yes.⁹⁸ The fact that ADEQ is working to revise minerals standards, to justify the change from 10% to 25% exceedance rate for site specific criteria as “part of a negotiated solution with the regulated community”⁹⁹ is in no way conceivably allowable under the CWA.¹⁰⁰

Additionally, while ADEQ states that the minerals revision will allow for tiered aquatic life designated use “to specifically protect Outstanding Resource Waters (ORW) to limited use waterbodies,”¹⁰¹ alternately, they could continue doing this now, rather than then years from now. This can easily be accomplished by following the CWA, and utilizing applicable WQS to base attainment decisions on a 10% exceedance threshold.

ADEQ’s failure to provide the public with specific segments exceeding site specific minerals criteria (at 10% exceedance rate), that fall below ADEQ’s arbitrary 25% rate developed to placate the regulated community, is an egregious act to misinform the

⁹⁶ 5 September 2018, Re: 2018 Draft 303(d) Supplemental Materials - FOIA Request and Clarifications, (Attachment 6).

⁹⁷ Section 3039d)(1)(A) of the CWA.

⁹⁸ 2004 IRG, https://www.epa.gov/sites/production/files/2015-10/documents/2003_07_23_tmdl_tmdl0103_2004rpt_guidance.pdf

⁹⁹ See p. 7, Responsiveness Summary to Comments Concerning Arkansas’s Draft 2016 303(d) List, <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2016/response-to-comments-summary.pdf>

¹⁰⁰ ADEQ must continue to base attainment decisions on 10% exceedance threshold, see p. 10, 24 January 2008 Record of Decision for Reg. 2, <https://www.adeq.state.ar.us/water/planning/reg2/pdfs/record-of-decision/2007-epa-action-ltr-rod-ar-tr-phase-2.pdf>

¹⁰¹ See p. 3, Arkansas 2018 Draft 303(d) List Executive Summary, <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/executive-summary.pdf>



public. These data and information should be provided to the public for full review and comment.

WRW specifically requests ADEQ to:

- i. Provide the public with detailed information related to site specific minerals criteria assessments, and include, at minimum: stream name, HUC, reach, criteria, number of exceedances, number of samples assessed within period of record, and percent exceedance for all AUs under Reg. 2.511;
 - ii. Add all AUs designated as an ORW (Extraordinary Resource Waters, Ecologically Sensitive Waterbodies, and Natural and Scenic Waterways)¹⁰² to the 2018 303(d) list based on a 10% exceedance threshold. This includes, but is not limited to all segments identified in Table 2 of EPA's comments of the draft 2016 303(d) list.¹⁰³
- e. ADEQ has failed to provide appropriate justification for adoption of less stringent methodologies for assessing bacteria.**

The 2018 303(d) Executive Summary states, "The scope for evaluating *E. coli* data was expanded to allow multiple years of data within the period of record"¹⁰⁴ Multiple years of data were always *allowed*. The revised AM now states that if assessment of non-support is based on only one season of data, the AU will be placed in Category 3. Now, at least two seasons of data are required to place AUs in Category 5.¹⁰⁵ ADEQ made the decision to adopt a less stringent interpretation of the methodology during the 2016 listing cycle to avoid listing Big Creek (11010005-022) on the 303(d) list. This segment is still impaired due to exceedance of the *E. coli* criteria. All ADEQ accomplished was kicking the can down the road two years, and now we are two years behind in being able to adequately address the problem.

As was pointed out during the public comment opportunity regarding revisions to the AM, ADEQ does not have a robust enough bacteria monitoring program to justify this change.¹⁰⁶ This is an attempt to limit the number of waterbodies for which assessment determinations can be made. Furthermore, this is not in line with any listing

¹⁰² Reg. 2.302(a)-(c)

¹⁰³ 10 March 2016, EPA letter Re: Draft 2016 Impaired Waterbodies List, <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2016/comments/epa-stacey-dwyer.pdf>

¹⁰⁴ See p. 3, Arkansas 2018 Draft 303(d) List Executive Summary, <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/executive-summary.pdf>

¹⁰⁵ See p. 56 of 2018 Assessment Methodology, <https://www.adeg.state.ar.us/water/planning/integrated/303d/pdfs/2018/final-2018-assessment-methodology.pdf>

¹⁰⁶ See Section 6.6 Bacteria, p. 8-9, WRW comments re: 2018 Assessment Methodology, (**Attachment 4**)



determinations previous to 2016, as is supported by numerous bacteria TMDLs developed based on one season of data.^{107, 108, 109}

Historically all other attainment decisions have been allowable based on one season of data. ADEQ must provide a scientifically defensible rationale as to why this change was made in 2016. Evidence must support how the current listing methodology is equally as protective of designated uses, especially primary contact and extraordinary resource waters.

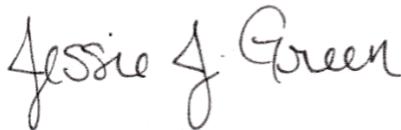
Please provide a detailed review of potential listing discrepancies between ADEQ's traditional means of assessing bacteria attainment (i.e., one contact season allowable) compared to ADEQ's newly concocted method (i.e., two contact seasons required).

IV. Limited Public Comment Documents Provide Insufficient Information for Informed Public Comment.

ADEQ should provide tables detailing designated use attainment, source, cause, and status for all monitored and evaluated segments, as well as those unevaluated.¹¹⁰ During the AM stakeholder process, multiple requests were made for ADEQ to provide the public the 305(b) report in its entirety for public review and comment alongside the 303(d) list. At the very least, ADEQ could provide information supplied traditionally in Appendix A with public comment documents available for review of the 303(d) list. These data and information are important for facilitating meaningful comments from the public.

With limited information provided, it is difficult to determine what changes have been made between this and last list. Public comment documents do not provide specific explanations for changes made. The public needs detailed information to determine what factors were used to remove waters.

Thank you for the opportunity to comment and thoroughness in your anticipated response,



Jessie J. Green
Executive Director & Waterkeeper

¹⁰⁷ Pathogen TMDLs for Selected Reaches in Planning Segment 1C

https://www.adeq.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/Mine_Creek_2008_01_07.pdf

¹⁰⁸ Pathogen TMDLs for Selected Reaches in Planning Segment 2B

https://www.adeq.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/pathogen_2b_2007_06_01.pdf

¹⁰⁹ Pathogen TMDLs for Planning Segments 4D Reaches

<https://www.adeq.state.ar.us/downloads/WebDatabases/Water/TMDL/pdfs/Seg%204D%20Pathogens.pdf>

¹¹⁰ See information provided in Appendix A of the 2016 Integrated Report.

<https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2016/integrated-report.pdf>



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