

BEFORE THE ARKANSAS POLLUTION CONTROL AND ECOLOGY COMMISSION

IN THE MATTER OF AMENDMENTS TO)
REGULATION NO. 2, REGULATION ESTABLISHING) DOCKET NO. 13-003-R
WATER QUALITY STANDARDS FOR SURFACE)
WATERS OF THE STATE OF ARKANSAS)

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY'S
RESPONSIVE SUMMARY

Pursuant to Arkansas Pollution Control and Ecology Commission (hereinafter "APCEC" or "Commission") Minute Order 13-12 the Arkansas Department of Environmental Quality (hereinafter "ADEQ" or "Department") submits the following Responsive Summary regarding proposed changes to APCEC Regulation No. 2, Regulation Establishing Water Quality Standards for Surface Waters of the State of Arkansas.

Pursuant to the Federal Water Pollution Control Act (hereinafter "Clean Water Act"), 33 U.S.C. §1251 *et seq.*, Arkansas is authorized to establish and administer water quality standards. The Clean Water Act requires states to review their water quality standards on a triennial basis and to amend those standards as necessary. As a result of the triennial review process, ADEQ proposes to amend portions of APCEC Regulation No. 2.

On February 22, 2013, the Commission granted ADEQ's Petition to Initiate Rulemaking to amend APCEC Regulation No. 2.

Four public hearings were held as follows: Jonesboro on April 15, 2012, Fayetteville on April 18, 2013, El Dorado on April 22, 2013, and North Little Rock on April 24, 2012. The deadline for submitting written comments on the proposed changes was May 8, 2013. Twenty-seven (27) commenters submitted written comments during the public comment period. Fifteen (15) individuals provided oral comments on the record during the public hearings. A list of those individuals and organizations providing written and oral comments is attached as "Exhibit A."

The comments are grouped according to Regulation Section.

COMMENTS RELATED TO SPECIFIC REGULATIONS

Reg. 2.101, Authority

Environmental Protection Agency (hereinafter "EPA")

Comment: The last sentence strikes "*as amended.*" As this is a revision of the Regulation No. 2, would it not be appropriate to insert "as revised" or similar language?

Response: The presence of the terms "as amended" or "as revised" is unnecessary. Upon adoption by the Commission, the version of Regulation No. 2 with the latest effective date is the current regulation.

Reg. 2.104, Policy for Compliance

El Dorado Chemical Company (hereinafter “EDCC”) & Albemarle Corp.

Comment: This section has been amended to allow longer than 3 years to come into compliance with a new water quality based effluent limit if a permittee is doing a study under a plan approved by ADEQ in accordance with Sections 2.306 and 2.308. We agree with this modification due to the increasing data requirements for such studies and the extended timeframes resulting from the data requirements.

Response: The Department acknowledges this comment.

Reg. 2.104, Policy for Compliance

EPA

Comment: The second sentence refers to the use of compliance schedules during permit renewal. ADEQ may need to consider use with permit modifications as well.

Response: The second sentence will be revised to state “Consequently, compliance schedules may be included in [National Pollutant Discharge Elimination System \(NPDES\)](#) permits at the time of renewal [or permit modification initiated by the Department](#) to require compliance with new water quality standards.”

Reg. 2.104, Policy for Compliance

Arkansas Environmental Federation (hereinafter AEF)

Comment: It is our understanding that other commenters representing the cities of Springdale, Rogers, and Fayetteville will propose a methodology to address ecoregion mineral quality criteria. If adopted, the new section should be referenced here.

Response: The Department acknowledges this comment. See also Response to Comment on Reg. 2.511(B), Mineral Quality, submitted by the Cities of Fayetteville, Harrison, Jonesboro, Rogers, Springdale, and Yellville, beginning on page 42.

Reg. 2.105, Environmental Improvement Projects

EPA

Comment: Reg. 2 states “*The Commission may... grant modifications to General and Specific Standards or establish a subcategory(ies) of use(s) for completion of long term Environmental Improvement Projects.*” EPA suggests insertion of language at the end of this sentence to the effect of, “subject to review and approval by EPA.”

Response: The Department acknowledges this comment; however, the inclusion of this phrase would be redundant as the entire Regulation is subject to review and approval by EPA, including any changes to standards adopted to complete a long-term Environmental Improvement Project.

Reg. 2.106, Definitions – Aquatic Life

Beaver Water District

Comment: BWD supports the proposed addition of definitions for Aquatic life and Seasonal aquatic life and the proposed deletion of the definitions for Fishery and Seasonal Fishery. BWD also supports the proposed use of "aquatic life" to replace "fisheries" as the applicable designated use in Reg. 2.302(F). It is important that all aquatic life and not just fish be taken into consideration for the purpose of the water quality standards. This also would be in keeping with accepted scientific practice for water quality studies.

Response: The Department acknowledges this comment.

Reg. 2.106, Definitions – Bioaccumulation

EPA

Comment: The definition refers to the uptake of a compound by an aquatic organism. This definition requires further clarification on what type of compound(s) would be included.

Response: The inclusion of a list of specific bioaccumulative compounds could be interpreted to limit the application of this regulation. Therefore, no change is being made based on this comment.

Reg. 2.106, Definitions – Bioaccumulation

Energy and Environmental Alliance of Arkansas (hereinafter “EEAA”) and AEF

Comment: The proposed addition to Regulation 2.106 to define the term Bioaccumulation should be rejected. Defining the term Bioaccumulation is not required by a standard or regulation promulgated by the United States Environmental Protection Agency (“EPA”), nor is the proposed definition of Bioaccumulation consistent with the use of that term in generally accepted scientific literature. Specifically, ADEQ proposes to define Bioaccumulation as a “process by which a compound is taken up by an aquatic organism, both from water and through food.” However, bioaccumulation itself is not a *process*, but is a result of subsequent increases in concentration of a constituent through the food chain which may occur in particular organs or tissue, depending on the constituent in question. As such, inclusion of the defined term Bioaccumulation in the proposed amendments to Regulation 2 is unnecessary, and should not be adopted. Alternatively, if the Commission intends to adopt a regulatory definition for Bioaccumulation, it should provide a written explanation of the necessity of the regulation and a demonstration that the regulatory definition is based on generally accepted scientific knowledge, with appropriate references to scientific literature or written studies, as required by Ark. Code Ann. § 8-4-202.

Response: While “defining the term “bioaccumulation” is not required by a standard or regulation promulgated by the EPA,” the term is used in Reg. 2.508. Therefore, a definition is being added.

The proposed definition of bioaccumulation is taken from page xix (Glossary) of the 1991 *Technical Support Document for Water Quality-based Toxics Control*, U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA 505/2-90-001.

Reg. 2.106, Definitions – Critical Flows

Georgia-Pacific LLC

Comment: Throughout Regulation 2, “seasonal fishery” has been changed to “seasonal aquatic life”. In the definition for “Critical Flow” in Paragraph 2.106 “Definitions” the term seasonal fishery is still used. Should this be changed to “seasonal aquatic life” as well?

Response: To maintain consistency throughout the regulation, in the definition for critical flow, “seasonal fishery” will be revised to “seasonal aquatic life.”

Reg. 2.106, Definitions – Critical Flows

EDCC & Albemarle

Comment: The proposed changes in regards to dissolved minerals should be amended pursuant to the requirements of the recently passed Act 954 which will become effective on July 1, 2013. The proposed changes are quite problematic and would have resulted in significant increases in

noncompliance with dissolved minerals and place unnecessary cost on NPDES permit holders with no improvement in water quality.

Response: Act 954, which became effective on August 16, 2013, was repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session).

EEAA

Comment: ADEQ proposes to amend the definition of Critical flows for mineral criteria to eliminate the use of 4 ft³/s as the default value to be used in calculating concentrations of pollutants from permitted discharges unless that specific flow value was used for a site specific criterion development under Reg. 2.511(A)(2). Other than this exception, the proposed amendments to the definition of Critical flows directly conflict with the requirements for development and implementation of standards and criteria for minerals under Act 954 of 2013, and should not be adopted (*see* Comment II.A., above). The proposed revisions to the Critical flows definition of are not required by a standard or regulation promulgated by EPA, and ADEQ has not provided an explanation of the necessity of the regulation and a demonstration that the proposed revisions are based on generally accepted scientific knowledge and engineering practices. Elimination of 4 ft³/s as a default value for calculating permitted discharge limits will be particularly burdensome for sources that discharge into small streams or ditches that at times of year have little or no flow and to which the ecoregion based criteria will apply, and ultimately require those sources to implement costly pollutant-reduction measures with no corresponding environmental benefit. For all these reasons, the proposed revisions to the definition of Critical flows should not be adopted. Alternatively, if the Commission adopts the proposed revisions to the Critical flows definition, it should provide justification for doing so with appropriate references to the scientific and engineering literature or written studies on which the proposed revisions are based as required by Ark. Code Ann. § 8-4-202.

AEF

Comment: The proposed amendments include significant changes which will make compliance with dissolved minerals more problematic, particularly for municipalities and industries which discharge to small streams where ecoregion based criteria apply. It eliminates the use of the 4cfs background flow as a default value (which has been in place for decades) and also places additional technical information requirements on the permittees to develop site specific data. The ADEQ is not proposing any changes to the critical flow for the Domestic Water Supply Use which continues to put Arkansas as much more restrictive than the surrounding states for no environmental purpose. This definition should be revised to reflect the provisions of Act 954 of 2013.

Tyson

Comment: The draft definition of Critical flows will cause substantial capital and operating costs for cities and industry. The removal of 4 cfs as a background flow is very troubling. ADEQ should change this definition to address legislative changes created by Act 954 of 2013.

Response: Act 954 of 2013 was repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session); therefore the Department will not be implementing the provisions of Act 954 of 2013. The critical flow definitions referenced in the existing Reg. 2 are set forth for the purpose of defining the flow volume used as background dilution flows in calculating permit limits. Flow

data is necessary for developing certain effluent limitations in NPDES permits. According to the Continuing Planning Process (CPP), which is a document required to be developed by federal and state law¹, the background flow for calculating mineral limits for permits varies depending on the size of the stream into which the effluent is discharged. At the time the CPP was last updated (2000), flow data existed for many large and medium streams, but was not widely available for small streams, i.e. those with a watershed less than ten square miles (10 mi²). The CPP contains a "Minerals Implementation Policy," that was developed for establishing mineral effluent limits for dischargers located in watersheds of 10 mi² or less.

The Minerals Implementation Policy generally determined that: (1) harmonic mean flow best represented the critical flow to be used for mineral discharge limits; (2) insufficient data existed to develop a regression model by stream size and ecoregion to predict harmonic mean flow for small watershed streams; and (3) in the absence of sufficient data to establish a harmonic mean flow in small watersheds, a critical flow of 4 cfs would be used to develop mineral permit limits.

Regulation No. 2 requires that ecoregion-specific perennial stream fisheries designated uses must be maintained and protected in waters with a watershed size equal to or greater than 10 mi². In the 1980s, a review of the limited flow data from the small watershed sizes within each ecoregion indicated that the median flow for 10 mi² watershed streams ranged from just less than 3 cfs to just over 7 cfs. Ecoregion averages were from about 3 to 5 cfs. Therefore, in the 1990s, based on this limited data set, a statewide median flow of 4 cfs was selected to be used as a "critical flow" in place of harmonic mean flows where insufficient data exists to establish such flows.

In this Triennial Review, ADEQ proposes to change the definition of "critical flow" for determining permit limits in waters with site specific mineral criteria to "harmonic mean flow," except for those waters with site specific mineral criteria as indicated in Reg. 2.511(A) with a single asterisk.

Again, the Department views harmonic mean flow as an appropriate measure of long term flow data and the 4 cfs value has only been used to develop permit limits for minerals in very small streams (less than 10 square mile watershed streams) where there was insufficient data to develop harmonic mean flow. ADEQ and the public now have access to USGS' StreamStats, which provides median flow based on stream gauge data. Using this data, a harmonic mean flow can be calculated in the absence of actual stream flow data. The Department is aware of the issues concerning small water treatment facilities and the limited options for meeting the current minerals standards. However, the revisions to the minerals section of the critical flows definition are included in this rulemaking because a more appropriate measure of critical flow is needed in all waters, including smaller streams to ensure that aquatic life uses are protected.

¹ Section 303(e)(1) of the Federal Clean Water Act provides that "[e]ach State shall have a continuing planning process approved" by EPA. Federal regulations governing the requirements for State NPDES programs provide that "State NPDES programs shall have an approved continuing planning process under 40 CFR 130.5...." 40 CFR §123.25(b). As part of ADEQ's authority to administer the NPDES permit program in lieu of EPA, ADEQ has been authorized to engage in an approved continuing planning process under Ark. Code Ann. §8-4-208(a) and is required to have an approved CPP that is consistent with the Clean Water Act by Reg. 6.104 (A) (4) (which incorporates by reference 40 CFR §123.25(b)), See also 40 C.F.R. §130.10(b)(1).

Reg. 2.106, Definitions – Critical Flows

EPA

Comment: Recently Arkansas legislature adopted HB 1929 which promotes a 4 cfs critical flow for unclassified waterbodies covered under the Ecoregion Reference Stream Minerals Values. This is not reflected in the draft and would require appropriate supporting documentation for approval.

Response: Act 954 of 2013 was repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session); therefore the Department will not be implementing the provisions of Act 954 of 2013.

Reg. 2.106, Definitions – Critical Flows

Alice Andrews

Comment: I understand that the 4 cfs was removed several reasons, in part because of the new state law, Act 954 of 2013. It seems that the Harmonic mean flow is a better way to define critical flow in large streams with greater flow than 4 cvs, but small streams are still a problem since there is apparently no suitable way to remove total dissolved minerals and many small water treatment facilities cannot meet the current standards.

Response: The flow of 4 cfs will not be removed from the definition of critical flows for those waters with site specific mineral criteria indicated in Reg. 2.511(A) with a single asterisk. The proposed revision to the minerals section of the critical flows definition in which 4 cfs is removed was not in response to Act 954 of 2013. The flow of 4 cfs is proposed for removal because it was based on a limited data set for flow in less than 10 square mile watershed streams. Harmonic mean is a more appropriate measure of flow for minerals and is required in the revised definition. See also the Response beginning on page 4, above.

Reg. 2.106, Definitions – Critical Flows

Central Arkansas Water

Comment: There is confusion regarding appropriate critical flows applicable to minerals criteria and permitting - the wording in this definition of critical flows for minerals criteria needs to be clarified to plainly state that either the harmonic mean flow or a flow of 4 cfs are the two options that are to be used for applying minerals criteria.

Response: The definition is being revised to state:

Critical flows: The flow volume used as background dilution flows in calculating concentrations of pollutants from permitted discharges. These flows may be adjusted for mixing zones. The following critical flows are applicable:

For a seasonal ~~fishery~~ aquatic life - 1 ~~cubic foot per second~~ ~~efs~~ minus the design flow of any point source discharge (may not be less than zero);

For human health ~~criteria~~ - harmonic mean flow or long term average flow;

For minerals ~~criteria~~ - harmonic mean flow ~~or 4 cfs, except in those waters listed in Reg. 2.511. Those waters in Reg. 2.511 which are noted with an asterisk will have a critical flow of 4 cfs. (Also see minerals implementation procedure in CPP), except as follows:~~

- o Reg. 2.511(A) Site Specific Mineral Criteria listed with an asterisk- 4 cubic feet per second.

- o Reg. 2.511 (C) Domestic Water Supply: Q7-10; and

For ~~all others~~ metals and conventional pollutants - ~~the critical flow will be~~ Q7-10.

See also the Response beginning on page 4, above, for an explanation of why 4 cfs is no longer included in the definition of critical flows for minerals for those waters without site specific mineral criteria with a single asterisk.

Reg. 2.106, Definitions – Critical Flows

Beaver Water District

Comment: This language pertains to "background dilution flows" to be used in calculating NPDES permit limits. *BWD supports the proposed changes to the critical flow language regarding minerals criteria.* The language regarding critical flows for the purposes of the minerals criteria should, as proposed, be based on actual flows as represented by the harmonic mean flow (for the purposes of the Reg. 2.511(B) Ecoregion Reference Stream Minerals Values) or the Q7-10 value (for the purposes of the Reg. 2.511(C) Domestic Water Supply Criteria), and not on arbitrary, scientifically indefensible numbers such as the automatic four (4) cubic feet per second (cfs) in the current regulation or in the recently enacted Act 954 of 2013.

In addition to being scientifically indefensible, the streamflow provisions in the new A.C.A. §§ 8-4-202(b)(3)(B) are unclear and void for vagueness. To the extent that Act 594 of 2013 may be interpreted as adding a dilution factor when establishing numeric minerals water quality criteria as well as when assessing in-stream minerals concentrations, it is contrary to the federal Clean Water Act and its implementing regulations at 40 C.F.R. § 131.11. *See also* EPA Water Quality Standards Handbook, Second Edition, Chapter 3 (1994), a copy of which was submitted to ADEQ via electronic mail on May 8, 2013. Another possible interpretation of Act 594 (and another example of why Act 594 is void for vagueness) is that the stream flow provisions are limited to setting wastewater discharge (NPDES) permit limits, which also would be contrary to the federal Clean Water Act and its implementing regulations at 40 C.F.R. § 131.11. It would mean that the higher the stream flow used as background dilution, the higher or less stringent the permit limit. The use of a *minimum* dilution factor of 4 cfs for minerals, even where actual stream flow measurements show a lower number to be representative of the real stream conditions, is scientifically indefensible. A flow of 4 cfs equals 1,800 gallons per minute. This is a lot of water for streams that are often dry or reduced to a trickle during the critical season. Another possible interpretation of Act 594 would allow an even higher dilution factor: the use of the *average* flow in a stream if that is higher than 4 cfs. Average flows will over-represent storm flows and will not be reflective of actual stream conditions most of the time. Average stream flows often are tens to hundreds of times higher than the harmonic mean stream flow, which is a much better representation of the normal conditions in a stream.

What is scientifically defensible and legally supportable is, as proposed by ADEQ, the use of the harmonic mean flow (which, among other things, accounts for flood events and evens out their impact) for the purposes of the Reg. 2.511(B) Ecoregion Reference Stream Minerals Values and the use of the more-protective Q7-10 value for the purposes of the Reg. 2.511(C) Domestic Water Supply Criteria.

Response: The minerals portion of the Critical flow definition is being revised to state:

~~For minerals criteria– harmonic mean flow–or 4 cfs, except in those waters listed in Reg. 2.511. Those waters in Reg. 2.511 which are noted with an asterisk will have a critical flow of 4 cfs. (Also see minerals implementation procedure in CPP), except as follows:~~

- Reg. 2.511(A) Site Specific Mineral Criteria listed with an asterisk- 4 cubic feet per second.
- Reg. 2.511 (C) Domestic Water Supply: Q7-10; and

EEAA

Comment: Regulation 2 Should Conform with Act 954 of 2013

The proposed revisions to Regulation 2 should be amended to be consistent with Act 954 of 2013. Act 954 of 2013 amends the Arkansas Water and Air Pollution Control Act (“AWAPCA”) to provide that the development and implementation of standards and criteria for minerals, including total dissolved solids, chlorides and sulfates, and the assessment of a stream’s or a stream segment’s conformity with attainment of a standard or criteria for minerals must be based on the greater of the average flow in the stream or stream segment or four cubic feet per second (“4 ft³/s”). Many of the proposed revisions to Regulation 2, including the proposed revisions to the definition of Critical flows for mineral criteria in Regulation 2.106, conflict with both the spirit and substance of Act 954, and should not be adopted. The Commission’s authority to promulgate regulations prescribing water quality standards and criteria for minerals is limited to that authority granted by the legislature under AWAPCA, and any attempt to adopt regulations outside the scope of the Commission’s authority is *ultra vires*, and is arbitrary and capricious. Further, adoption of regulations in excess of the Commission’s statutory authority only to have such regulations be unenforceable is an inefficient use of public resources and causes unnecessary confusion among the regulated community. As such, the Commission should refrain from adopting any revisions to Regulation 2 that are in conflict with Act 954 or any other provisions of AWAPCA. The proposed revisions to Regulation 2 that conflict with Act 954, including but not limited to the proposed revisions to the definition of Critical flows under Regulation 2.106, should be rejected. Additionally, the Commission should provide the public and regulated community an opportunity to review and comment on the draft of Regulation 2 after it is amended to conform with Act 954.

Response: The Department acknowledges this comment; however, Act 954 of 2013 was repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session). An additional public notice is not necessary, as the Department will not be implementing the provisions of Act 954 of 2013.

Reg. 2.106, Definitions – Harmonic Mean Flow

EDCC

Comment: In addition the harmonic mean flow definition allows the use of a limited data set of essentially once a month flow measurements over a 24 month period. This limited data requirement is not appropriate to determine a harmonic mean flow. The current definition for harmonic mean flow should be retained.

AEF

Comment: The second sentence in this definition should be stricken, ADEQ should retain the

scientifically correct definition and not attempt to add a frequency. Harmonic means are long term calculations based on daily flow measurements at USGS gauging stations, not monthly flows over a couple of years. There are other, scientifically accepted, hydrologic methods to extrapolate flows between similar size basins.

City of Springdale

Comment: Revisions in harmonic mean flow calculations as proposed in revisions to Regulation No, 2 are not accurate and should not be implemented.

Draft Regulation 2.106 defines harmonic mean flow as "The number of daily flow measurements divided by the sum of the reciprocals of the daily flows. Long-term flow data should be used for the calculation of harmonic mean flow. If long-term flow data is unavailable, a minimum of twenty-four (24) samples each collected at least thirty (30) days apart is required," Further, under the definition for Critical flows: " ...Reg.2.511 (B) Ecoregion Reference Stream Minerals Values: Harmonic mean flow: if no data is available to calculate a harmonic mean flow, permits shall contain a "monitor and report" condition (for a period of time not to exceed three years) until such time as the harmonic mean flow can be determined. "Harmonic mean flow cannot be determined using 24 samples over a 2 to 3 year period as defined with any reasonable accuracy due to extreme fluctuations in precipitation as observed in recent years. As an example, harmonic mean flows calculated using data from 2009 and 2010, with heavy rains and flooding, might not result in sufficiently protective minerals limitations for waterbodies. Conversely, harmonic mean flows calculated using data from 2011 and 2012, with extreme drought conditions, might be overly restrictive. Many other states use a minimum of 10 years data, and up to 30 years or more data for harmonic mean flows to be fairly representative and result in limitations that are neither insufficiently protective nor unnecessarily restrictive. While not ideal, we respectfully request that 4 cfs continue to be used as a default value in the absence of more accurate long-term flow data.

Tyson

Comment: The draft definition of Harmonic Mean Flow should be changed to retain the previous definition, which is scientifically more accurate. Harmonic means are long term calculations based on daily flow measurements at monitoring stations. Using the draft standard of 24 samples of 30 days is a monthly flow standard, not a long term standard. Flow within 30 days could be exaggerated based upon season.

Response: The proposed revisions for the definition of Harmonic Mean Flow will be stricken, and the previously approved definition from the 2011 version of APCEC Regulation 2 will be retained.

Reg. 2.106, Definitions – Nonpoint sources

AEF

Comment: The wording of this definition is unclear. How does it apply to Sections 2.202, 2.402, and 2.401. How exactly does this definition relate to Section 402(p) of the Act and 33 U.S.C. 1342(p)?

Response: The application of the definition to Sections 2.202, 2.402, and 2.401 is not changed by this definition clarification.

For further clarification, this definition will be revised as follows:

Nonpoint source: A contributing factor to water pollution that is not confined to an end-of-the-pipe discharge, i.e., stormwater runoff not regulated under Clean Water Act § 402(p)(1), 33 U.S.C. § 1342(p)(1), agricultural or silvicultural runoff, irrigation return flows, etc.

Reg. 2.106, Definitions – Primary Season Critical Flow

Beaver Water District

Comment: It is unclear how this definition would operate in conjunction with the Reg. 2.106 definition for Critical Flow. BWD also questions whether the automatic one (1) cfs allowed for watersheds less than ten (10) square miles is scientifically sound and legally supportable.

Response: The definition of “primary season critical flow” will be deleted. The phrase “primary season critical flow” is not used anywhere in the regulation outside of this definition, therefore it is unnecessary. The concept captured by the definition is maintained in the regulation within the “critical flows” definition and the supporting definition of “seasonal aquatic life.”

Reg. 2.106, Definitions – Q7-10

EPA

Comment: 7Q-10 flow has been changed to Q7-10 flow. Regulation No. 6 and the Continuing Planning Process (CPP) interchangeably use 7Q-10 flow. EPA recommends review for consistency upon revision of these documents.

Response: Revisions were made to both APCEC Regulation 2 and the draft revisions to the CPP in order to consistently use Q7-10.

Reg. 2.106, Definitions – State of Arkansas Continuing Planning Process

AEF

Comment: the revisions to the definition appear to be an attempt to give the CPP some regulatory basis. The CPP is not a regulation in Arkansas, it receives no public notice or input and it remains an implementation document negotiated by and between ADEQ and EPA. Neither the regulated community nor the general public have any formal input. At the behest of EPA, ADEQ is seeking to remove implementation phrases from Reg#2. However, we believe that implementation phrases clarify the intent of the regulation. By removing the implementation language and replacing it with references to the CPP in fact serves to incorporate the CPP into Reg # 2 by reference. We believe that all references to the CPP should be removed, or that the CPP should be adopted by rule or regulation as a stand - alone document that follows the full public participation and rule making processes.

Tyson

Comment: Including a definition of State of Arkansas Continuing Planning Process seems to be an attempt to make a guidance document into a binding regulation. The Continuing Planning Process (CPP) document has not been subject to the legally required public notice and comment procedures that are necessary for developing a regulation. Therefore, Tyson recommends that all references to the CPP document be removed from Regulation #2.

EEAA

Comment: The proposed revisions to the definition of CPP in Regulation 2.106 are unnecessary and will create confusion and uncertainty for the public and the regulated community. ADEQ

proposes to delete the language of the definition clarifying that the CPP is not a regulation, and in doing so appears to be attempting to elevate the status of the CPP to a binding regulation. However, the CPP has not been adopted as a regulation and subjected to the public participation process required by Arkansas statute (see Comment II.B., above). Under Arkansas law, the authority to promulgate rules and regulations for water quality standards is vested with the Commission. The proposed revisions would impermissibly delegate the authority to adopt and enforce the CPP as a binding regulation to ADEQ in excess of ADEQ's and the Commission's statutory authority. Accordingly, the proposed revisions to the definition of CPP should not be adopted.

EEAA

Comment: Regulation 2 Should Not Incorporate Requirements Not Subject to Public Notice and Comment

The proposed revisions to Regulation 2 should not incorporate by reference ADEQ policies as enforceable regulations without subjecting those policies to the public participation process required for a regulatory rulemaking. For example, many of the proposed revisions to Regulation 2 appear to incorporate the State of Arkansas Continuing Planning Process ("CPP") as a *de facto* regulation binding on the regulated community. The CPP is a document developed by ADEQ outside a formal public notice and comment process which sets forth the general procedures and requirements of ADEQ's water quality management programs. Although development of a CPP is required under the federal Clean Water Act ("CWA") and AWAPCA², neither the CWA nor AWAPCA exempt the CPP from the public participation process required for promulgation of an agency regulation. The CPP bears all the hallmarks of a regulation, as opposed to a policy, under prevailing judicial interpretations of the term. In particular, the CPP has a binding effect on permittees, in that it establishes standards with which ADEQ requires compliance in order to secure a permit, and it does not allow ADEQ staff to exercise discretion to deviate from its prescriptions, but rather, is treated as controlling by the agency.

Further, despite the impression conveyed by a plain reading of the proposed revisions to Regulation 2, the CPP is not a centralized document easily referenced by the public or regulated community. The CPP was originally developed in 1983, and revisions and modifications have been made to the CPP in 1991, 1993, 1995, 1999 and 2009. Where EPA has not approved a provision of a modification to the CPP, ADEQ treats the provisions of an earlier version of the CPP as binding regulation. This ad-hoc implementation and enforcement of the CPP results in a hodge-podge of *de facto* regulations that are applied inconsistently by ADEQ and fail to give the public and regulated community adequate notice of what is being regulated, ultimately causing confusion and uncertainty for businesses and communities. These problems are confounded by adoption by reference of the CPP as part of the proposed revisions to Regulation 2. Accordingly, the Commission should avoid incorporating the requirements of the CPP by reference into Regulation 2. Alternatively, if the Commission incorporates the requirements of the CPP into Regulation 2, the CPP should simultaneously undergo the public participation process for promulgation of a rule as required by AWAPCA.

Response:

The CPP is a component of a State's NPDES program required by federal law and federal regulation. Section 303(e)(1) of the Federal Clean Water Act provides that "[e]ach State shall have a continuing planning process approved" by the United States Environmental Protection

² See 33 U.S.C. 1313(e) and Ark. Code Ann. § 8-4-208(a).

Agency (hereinafter “EPA”). Federal regulations governing the requirements for State NPDES programs provide that “State NPDES programs shall have an approved continuing planning process under 40 CFR 130.5...” 40 CFR §123.25(b).

ADEQ is authorized by state law to administer the NPDES program in Arkansas. Ark. Code Ann. §§8-4-206(a) and 8-4-208(a). ADEQ is authorized to engage in an approved continuing planning process under state law. Ark. Code Ann. § 8-4-208(a). Additionally, the Commission has incorporated by reference the federal regulation that requires state NPDES programs to have a CPP that is consistent with the Clean Water Act. (40 CFR §123.25(b) incorporated by reference at Reg. 6.104 (A) (4).) Arkansas’ current CPP was approved by EPA in 1999.

The Department is aware that the CPP is not a regulation. The intent of the revision of the definition was not to alter the authority of the CPP, and the phrase “The CPP is not a regulation” will be retained.

Although not required by federal regulations governing the CPP, the Department intends to provide public notice and receive public comments on the next revisions to the CPP.

Reg. 2.302, Designated Uses

EDCC & Albemarle

Comment: This section references Appendices A and D. In those appendices some of the species listed are not Federal Threatened and Endangered Species. Has the ADEQ performed an analysis of the regulatory issues related to the inclusion of those additional species? For instance, does the presence of these species in an "inventory" require the presence of those species in the listed waterbodies? If that regulatory analysis has not been completed by ADEQ we request that the additional species be omitted from the final version of this regulation.

Response: According to the current definition of Ecologically Sensitive Waterbody in Reg. 2.302, this designated use “...identifies segments known to provide habitat within the existing range of threatened, endangered or endemic species...” (emphasis added). This definition is not limited to federally listed Threatened and Endangered Species. The ESW designation protects habitat of threatened, endangered, or endemic species. The proposal to add a table in Appendix C and the proposal to add species to existing ESW-designated streams for informational purposes only have been stricken.

Reg. 2.302, Domestic Water Supply Designated Uses

Beaver Water District

Comment: *BWD requests that the last sentence in this provision be changed to read as follows: Conditioning or conventional treatment consisting of no more than flocculation, coagulation, sedimentation, filtration, and disinfection may be necessary prior to use. (Words added are underlined).*

Response: No change to this definition was proposed in the initial rulemaking. Further, specific water treatment processes required for public water supplies is not necessary in the description of the Domestic Water Supply designated use. The specifics of water treatment required for drinking water supplies are regulated by the Arkansas Department of Health.

Reg. 2.304, Physical Alteration of Habitat and Appendix D

Central Arkansas Water

Comment: The current language is the result of 3rd party rulemaking in 2006 which, under administrative procedures, had to be reviewed and approved by the Pollution Control & Ecology Commission. That rulemaking had been initiated in response to ADEQ's staff interpretation and application of the 2004 and previous years' language to mean that no alteration of any kind could be made. This was in spite of the specific language of Reg.2.304 which stated that only "significant physical alterations" are not allowed." ADEQ staff's previous interpretation and application had meant that absolutely no consideration of the possibility of a drinking water application could be considered regardless of the economic, societal, or public health need.

Given that the PC&E Commission has previously recognized the need to consider the possibility of a drinking water application on an ERW, ESW or NSW and that the current Reg. 2.304 and Appendix D were intended as guidance on how the ADEQ Director was to review such an application, ADEQ staff need to now define and provide guidance on what constitutes "significant physical alteration" in regards to ERW, ESW and NSW.

Response: In a January 24, 2008 Record of Decision on Arkansas Triennial ("Phase 1") Revisions to Regulation No. 2, EPA disapproved the revisions to Reg. 2.304 and Appendix D approved by the Commission (Minute Order No. 07-35). EPA stated:

"As revised, Regulation 2.304(A) provides no more antidegradation protection to ONRW water quality than Regulation 2.304(B) provides other Arkansas waters. The revisions to Regulation 2.304 are inconsistent with federal requirements and EPA accordingly disapproves them, including referenced Appendix D. Under 40 C.F.R. § 131.21(c), new and revised standards do not go into effect for CWA purposes until approved by EPA. Therefore, the previously approved Regulation 2.304 remains in effect for CWA purposes."

"Significant physical alteration" of habitat will be determined on a case by case basis, taking into account a variety of factors, including without limitation natural flow regime, habitat, and water quality.

Reg. 2.404, Mixing Zones

EDCC & Albemarle

Comment: A proposed amendment in this section does away with the mixing zone for pH (except for municipalities under certain circumstances). There is no environmental or technical justification for eliminating a mixing zone for that specific parameter and sets a precedent for the elimination of mixing zones on an arbitrary basis at the discretion of ADEQ. We request that proposed change be omitted in the final version of the regulation.

Additionally, the proposed regulation contains language to give ADEQ the authority to prohibit or limit mixing zones in an arbitrary manner if they find it "inappropriate" for a mixing zone to exist. This wording provides no technical or scientific basis for such a decision and we are unaware of any environmental need for this broadening of authority. We request that this proposed language be omitted from the final version of Reg.2.

In addition the proposed changes contain another mixing zone restriction in regards to "public water supply wells" which we feel is inappropriate for surface water regulations. The regulation

already restricts mixing zones where there is a water supply intake, but the inclusion of "public water supply wells" is based on an assumption concerning surface water and groundwater connections. This provision could be interpreted as giving ADEQ the authority to require NPDES dischargers to conduct studies to "prove" they are not impacting groundwater. Such negative proof studies are often quite problematic and it is not appropriate for a regulatory agency to place such restrictions on dischargers without a defined environmental need. We request that this proposed language be omitted from the final version of Reg.2.

AEF

Comment: The rationale given for removing pH from mixing zones doesn't fit reality. The reference to a 2 + decade old EPA Technical Support Document concerning acute and chronic toxicity is not the reason pH should be allowed to have a mixing zone. First of all, pH is strictly controlled by NPDES permit limits and effluent monitoring. However, many small communities with oxidation ponds have no ability to control pH in hot summer days when algal blooms are persistent and naturally raise the pH above the permit limit of 6-9 SUs. The same phenomena may occur in natural waters as noted in Section 2.504.

The second sentence in the 5th paragraph of this section should be removed. It is too vague in that there is no standard for "Careful consideration" and conflicts with the rationale given for excluding pH, i.e. to 2 + decade old EPA Technical Support Document cite above. Specifically, there are acute and chronic criteria for these substances, and a mixing zone is appropriate.

The reference to "public water supply wells" is also too vague and will likely cause permit conditions that result in expensive studies to prove a negative. Regulation 2 is, by its title, a regulation establishing WQ standards for surface waters. There are no provisions under the CWA for EPA to assume authority of groundwater.

In summary, for this section, AEF recommends that what is proposed to be inserted instead be deleted, and what is proposed to be deleted be re-inserted.

EEAA

Comment: The proposed revisions to Regulation 2.404 include the addition of language which will allow ADEQ to prohibit or limit the application of mixing zones in an arbitrary manner where ADEQ deems it "appropriate" to do so. The proposed revisions to Regulation 2 do not provide a technical or legal framework for the "careful consideration" that will be required when evaluating the "appropriateness" of a mixing zone according to the proposed revisions to Regulation 2.404, and will cause uncertainty for regulated sources and be an unnecessary burden on businesses and communities. The proposed addition of the language allowing ADEQ to limit the application of mixing zones is not required by a standard or regulation promulgated by EPA, and ADEQ has not provided an explanation of the necessity of the regulation and a demonstration that the proposed revisions are based on generally accepted scientific knowledge and engineering practices.

In addition, ADEQ proposes to revise Regulation 2.404 to explicitly restrict the application of a mixing zone with respect to a "public water supply well." Regulation 2 concerns regulations establishing standards for surface waters, and the proposed revisions to Regulation 2.404 attempt to expand application of those standards to groundwater without any scientific or technical justification. The proposed revisions establishing a connection to groundwater standards could be interpreted as requiring permitted sources to conduct studies to prove their discharges are not affecting groundwater. Such negative-proof studies are prohibitively burdensome, and the

Commission should not place such burdens on the regulated community in the absence of defined environmental need. As such, the proposed revisions to Regulation 2.404 should be rejected and the existing language should be retained. Alternatively, if the Commission adopts the proposed revisions to Regulation 2.404, it should provide a written explanation of the necessity of the regulation and a demonstration that the regulation is based on generally accepted scientific knowledge and engineering practices, with appropriate references to scientific literature or written studies, as required by Ark. Code Ann. § 8-4-202.

EPA

Comment: Though EPA agrees with the intent of “*careful consideration*” in the instances of mixing zones for bioaccumulative, persistent, carcinogenic, mutagenic, and teratogenic substances, it is unclear what the process will be for such consideration. Adoption of appropriate water quality standards for such substances in coordination with a clear implementation policy would be the most appropriate method for consistently managing such pollutants in discharges.

Tyson

Comment: In the new language of Section 2.404, a mixing zone is not allowed for pH. It is unclear why a mixing zone is not allowed for this parameter. National Pollutant Discharge Elimination System (NPDES) permits already strictly regulate pH. It is also unclear why the following sentence was added to the section: “*A mixing zone shall not apply to any public or private domestic water supply intake or public water supply well,*” It is Tyson's understanding Regulation #2 regulates water quality standards for surface water, not ground water, therefore there may not be sufficient authority to include ground water language in Regulation # 2, Tyson recommends mixing zones be allowed for pH, and the language regarding ground water be removed from this section.

Response: The proposed addition of public water supply well is stricken. The proposed revision concerning bioaccumulative, persistent, carcinogenic, mutagenic, or teratogenic substances is stricken. The proposed pH revision also has been removed from APCEC Regulation 2.404. However, no mixing zone is allowed for pH in the existing 1999 CPP at Appendix D, Item H. Further, the issue of mixing zones for pH will be addressed in the CPP currently under revision.

The determination of whether a mixing zone is appropriate is a permitting issue, any such determination must be made on a case-by-case basis. Because the issue of a mixing zone must be determined on a case-by-case basis, the first sentence is being revised to recognize that a mixing zone can apply to a variety of parameters and circumstances. The first sentence is revised to read: “~~Where M~~mixing zones are allowed, ~~for all parameters not specifically excluded in Reg. 2.404 and~~ the effects of wastes on the receiving stream shall be determined after the wastes have been thoroughly mixed with the mixing zone volume.”

Reg. 2.405, Biological Integrity

EDCC & Albemarle

Comment: This proposed change amends current language which prohibits ADEQ from developing and imposing permit limits based on biological data (e.g. fish and benthic samples from a waterbody) to allowing such use. The specific language proposed says “Such data may be used to develop permit effluent limitations or conditions”. Besides the obvious issue of broadening ADEQ authority in an arbitrary manner there is no definitive technical process for

ADEQ to use biological data to determine that a specific effluent parameter is causing a problem. This language could be interpreted as giving ADEQ authority to require instream monitoring of fish and benthics as enforceable NPDES permit conditions in addition to arbitrarily deciding that a specific parameter should be further limited in a NPDES permit. We request that this proposed language be omitted from the final version of Reg.2.

EEAA

Comment: ADEQ proposes to amend the current language in Regulation 2.405 which prohibits ADEQ from developing or imposing permit limits based on aquatic biological data to specifically allow for such use. However, Regulation 2 does not provide a technical or scientific process for utilizing such biological data to determine that a specific effluent parameter is affecting biological integrity. The proposed revisions could be interpreted as allowing ADEQ to require permittees to conduct instream monitoring of fish and benthics as enforceable permit conditions. The proposed amendments to Regulation 2.405 are not required by a standard or regulation promulgated by EPA, and ADEQ has not provided an explanation of the necessity of the regulation and a demonstration that the proposed revisions are based on generally accepted scientific knowledge and engineering practices. As such, these proposed amendments to Regulation 2.405 should be rejected, and the existing language should be retained. Alternatively, if the Commission adopts the proposed revisions to Regulation 2.405, it should provide justification for doing so with appropriate references to the scientific and engineering literature or written studies on which the proposed revisions are based as required by Ark. Code Ann. § 8-4-202.

AEF

Comment: The word "hydraulic" is misspelled in the first sentence of the 2nd paragraph.

AEF is strongly opposed to the language added in the last sentence. We have long maintained that it is ADEQ's responsibility to determine that biological integrity is protected. The proposed additional language clearly provides for ADEQ to impose permit conditions to require municipalities and industries to conduct expensive studies (hundreds of thousands of dollars), entirely at the whim of the agency. The notion that ADEQ cannot use the data from Section 2.303 studies for assessment purposes because they did not "collect it" makes no sense. ADEQ approves the work plan and ADEQ and EPA approve the reports.

AEF believes that the added language should be stricken and the stricken language re-inserted.

Beaver Water District

Comment: *BWD supports the proposed changes.* BWD agrees that it should not be the sole responsibility or purview of ADEQ to "collect" the data for an aquatic biota assessment. There are a number of entities qualified to collect the data for an aquatic biota assessment. It also makes sense scientifically for ADEQ to be able to utilize available aquatic biota assessments where appropriate in developing NPDES permit limits.

Response: The term "hydrologic" most accurately represents the properties of the water. The Merriam-Webster Dictionary defines "hydraulic" as "operated, moved, or effected by means of water; of or relating to water or other liquid in motion." The Merriam-Webster Dictionary defines "Hydrology" as "a science dealing with the properties, distribution, and circulation of water on and below the earth's surface and in the atmosphere."

According to 40 C.F.R. § 130.4(b), “The State's water monitoring program shall include collection and analysis of physical, chemical and biological data and quality assurance and control programs to assure scientifically valid data. The uses of these data include determining abatement and control priorities; developing and reviewing water quality standards, total maximum daily loads, wasteload allocations and load allocations; assessing compliance with National Pollutant Discharge Elimination System (NPDES) permits by dischargers; reporting information to the public through the section 305(b) report and reviewing site-specific monitoring efforts” (emphasis added). Currently, biological collections are conducted as a support mechanism for water quality assessments (303(d) listings), designated use and standards attainment, TMDL development, UAA studies, and third party rulemakings.

The intent of this revision is to clarify the regulation in light of a potential literal interpretation. The removal of the words “collect and” from the last sentence conforms to the language of 40 C.F.R. § 130.7(5), which states, “Each state shall assemble and evaluate all existing and readily available water quality-related data...” If the language “collect and” is not removed, the language of APCEC Reg. 2.405 could be interpreted to continue to prohibit the use of outside data and force the Department to nullify any and all previous determinations that have occurred using data collected by outside entities. This would include all third party rulemakings that have occurred since the adoption of this language in 2004. In addition, leaving this language in the regulation could require the Department to perform all biological assessments as they relate to changes in standards, thus drastically changing the third party rulemaking process. This would result in enormous delays in the rulemaking process because the small staff and limited resources of the Department are not equipped to handle this potential additional workload. As a result, revisions of standards could not keep pace with permitting and permits likely would have to be issued with more stringent limits, requiring point source dischargers to implement additional treatment options to meet the more stringent permit limits.

To ensure that Reg. 2.405 conforms with 40 C.F.R. § 130.7(b)(5), the second to the last sentence will be revised as follows: “It is the responsibility of the Department to ~~collect and~~ evaluate the data for an aquatic biota assessment ~~and such data will not be used to develop or impose permit limits to protect aquatic life uses designated in Appendix A.~~”

Reg. 2.405, Biological Integrity

EPA

Comment: As the revisions to this section note, “*Such data may be used to develop permit effluent limitations or conditions.*” There is need to expand on procedures required for an acceptable biota assessment. To date, there are no detailed implementation procedures found in Reg. 2, Reg. 6 or the CPP. Additionally, it is difficult to draw a connection from the Biological Integrity provision back to the Designated Uses that discuss the types of species that should be present in various ecoregions.

Response: Implementation/assessment procedures are located in the Assessment Methodology. APCEC Reg. 2.405 states that aquatic biota assessments should include a comparison to a reference water body within the same ecoregion. The key and indicator species listed in Reg. 2.302(F)(3)(a-f) were present in least-disturbed waterbodies (i.e. reference water bodies) during the 1987 study. The key and indicator species can be used to verify a stream as a reference stream.

Reg. 2.406, Color

EPA

Comment: What is the method by which color is measured and assessed, what units, etc?

Response: Please note that this section of the regulation was not opened for public comment in the Department's proposed rulemaking. Pursuant to Regulation No. 8, the Commission's review of the proposed rulemaking during this Triennial Review is limited to the proposed changes submitted by the Department. See Reg.8.818 ("When amending portions of an existing regulation, the Commission's deliberations shall be restricted to those proposed amendments described in the public notice. Rulemaking proceedings concerning legally required periodic update of regulations shall be restricted to Department staff proposals.").

Reg. 2.409, Toxic Substances

EPA

Comment: What about bioaccumulative pollutants? This provides a link back to Reg. 2.404 for Mixing Zones which states that "*Careful consideration will be given to the appropriateness of a mixing zone where a substance discharged is bioaccumulative, persistent, carcinogenic, mutagenic, or teratogenic.*"

Response: The proposed revision to APCEC Reg. 2.404 has been stricken.

Reg. 2.502, Temperature

ADEQ

Comment: The last sentence of the first paragraph should be revised to read "The following standards are applicable:"

Response: EPA is encouraging ADEQ to move away from using definitive language.

Reg. 2.502, Temperature

Arkansas Game and Fish Commission (hereinafter "AGFC")

Comment: AGFC recommends striking, "...outside the mixing zone..." and instead, state as "Heat shall not be added to any waterbody in excess of the amount that will elevate the natural temperature by more than 5⁰F (2.8⁰C)..."

Response: At this time ADEQ has not determined or evaluated the appropriateness of this proposed revision or the appropriate implementation. Additionally, as required by APCEC Regulation 8, ADEQ has not conducted an Economic Benefit Environmental Impact Analysis to determine any potential economic or environmental impacts the addition of these values may have.

Reg. 2.503, Turbidity

ADEQ

Comment: The second sentence of the first paragraph should be revised to read "Specifically, waste discharge or instream activity should not cause turbidity values to exceed the base flows values listed below."

Reg. 2.503, Turbidity

EPA

Comment: EPA disapproved the change of “Storm Flows” to “All Flows”, in 2008. The attached Record of Decision (enclosure 6) outlines the reason for disapproval. The inclusion of “All Flows” in this revision without supporting justification limits EPA’s understanding as to why it would now be appropriate and approvable? In addition, the Reg states “*Additionally, the non-point source runoff shall not result in the exceedance of the in stream all flows values in more than 20% of the ADEQ Department ambient monitoring network samples taken in not less than 24 monthly samples.*” This language limits assessments to only ADEQ department ambient monitoring network data when all available data should be considered.

Response: Although the original turbidity study document from which these standards were taken makes reference to the term “storm flows,” it also states “Data from all stations within each ecoregion or on each river were combined and the maximum, mean, minimum and selected percentiles were determined.” These values represent the 90th percentile of all data, storm flow and non-storm flow data.

The values were derived using all data points for all months of the year for a period of five to ten years; assessing an “all year” standard without including the base flow period (June – October) would fail to appropriately apply the standard.

The phrase “Storm Flows” was originally chosen based on standard jargon of the time, even though it was not the most representative phrase. The term “All Flows” more accurately reflects how the standards were developed.

To clarify the turbidity standards for base flows and all flows the first paragraph will be revised as: “**There shall be no distinctly visible increase in turbidity of receiving waters attributable to discharges or instream activities. The values below should not be exceeded during base flow (June to October) in more than 20% of samples. The values below should not be exceeded during all flows in more than 25% of samples taken in not less than 24 monthly samples.**”

Reg. 2.504, pH

ADEQ

Comment: A typo was noted at the end of the third sentence, “(except as specified in 40 C.F.R. § 133.201(c))” should read “(except as specified in 40 C.F.R. § 133.102(c))”.

AEF

Comment: The sentence " No mixing zones are allowed for pH" should be stricken from the regulation.

Response: This proposed revision, “No mixing zones are allowed for pH (except as specified in 40 CFR § 133.201(c)),” was stricken from the regulation.

Reg. 2.505, Dissolved Oxygen

EPA

Comment: The Reg. states “*However, field verification is required in areas suspected of having significant groundwater flows or enduring pools which may support unique aquatic biota. In such waters the critical season standard for the next size category of stream shall apply.*” It seems like this would be an appropriate section to list those waters that would be considered to have naturally low DO levels and those that do not.

Response: The Department acknowledges this comment. A specific methodology for verifying

naturally low dissolved oxygen levels would need to be in place prior to listing waters as having naturally low dissolved oxygen.

Reg. 2.507, Bacteria

National Park Service

Comment: The revised bacteria standard has eliminated a section setting numerical criteria for designating impairment of ambient waters. The current regulation states "For assessment of ambient waters as impaired by bacteria, the above listed applicable values for *E. coli* shall not be exceeded in more than 25% of samples in no less than eight (8) samples taken during the primary contact season ... " We believe, in fitting with the current direction of the EPA, that a quantifiable threshold designating impairment is critical and ask that the current wording remain in this paragraph.

Central Arkansas Water

Comment: CAW, in general, supports the proposed changes to Reg. 2.507 that have made this provision more readable. However, the revised bacteria standard has eliminated a section setting numerical criteria for designating impairment of ambient waters.

Current regulation states, "(C) For assessment of ambient waters as impaired by bacteria, the above listed applicable values for *E. coli* shall not be exceeded in more than 25% of samples in no less than eight (8) samples taken during the primary contact season or during the secondary contact season.

We believe that a quantifiable threshold designating impairment is necessary and ask that the current wording remain or be strengthened to include the Recreational Water Quality Criteria (RWQC) recommendations regarding bacterial indicators issued by the United States Environmental Protection Agency (EPA) on or about November 29,2012.

ADEQ

Comment: Revise the second paragraph to read "For assessment of ambient waters, the applicable standards shall not be exceeded in more than 25% of samples in at least eight (8) data points taken during the primary contact season or during the secondary contact season."

Response: APCEC Reg. 2.507 will retain the currently approved statement; "For assessment of ambient waters as impaired by bacteria, the below listed applicable values for *E. coli* shall not be exceeded in more than 25% of samples in no less than eight (8) samples taken during the primary contact season or during the secondary contact season."

Reg. 2.507, Bacteria

EPA

Comment: This provision states that Arkansas Department of Health has the approval and disapproval authority for surface waters designated for public water supply. How will the recent approval of HB 1929 affect this statement as the bill appears to mandate removal of public water supply uses for all unclassified waterbodies in the State of Arkansas?

Response: Act 954 of 2013 (HB 1929) was repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session).

Reg. 2.507, Bacteria

AEF

Comment: The first sentence proposed to be inserted should be revised to read: "For the purpose of this regulation, all streams with watersheds less than 10 miles' shall not be designated for primary contact or domestic drinking water supply unless and until site verification indicates that such a use is attainable."

Beaver Water District

Comment: To the extent that other commenters suggest it, BWD would strenuously object to adding a requirement that streams shall not be designated as domestic water supplies for the purposes of Reg. 2.507 until site verification indicates that such use is attainable. This would be contrary to the existing designated uses in Reg. 2 and would be prohibited by the Antidegradation provisions of Section 303(d)(4)(B) of the Clean Water Act, 33 U.S.C. § 1313(d)(4)(B), 40 C.F.R. § 131.12, and Reg. 2.201 through 2.203. It also would be poor public policy for the State.

Response:

The addition of the phrase "or domestic drinking water supply" is not appropriate in that this section of the regulation protects "contact." The ADH has primacy for implementing the Safe Drinking Water Act and has the authority to regulate bacteria limits in drinking water.

Reg. 2.507, Bacteria

Beaver Water District

Comment: The United States Environmental Protection Agency (EPA) issued Recreational Water Quality Criteria (RWQC) recommendations regarding bacterial indicators on or about November 29, 2012. According to EPA, the recommended RWQC are based on the latest research and science, including "an extensive review of the available scientific literature and evaluation of new information from studies ... and after public notice and comment" See EPA Recreational Water Quality Criteria, Office of Water Document 820-F-12-058, p.1 (2012). Copies of the RWQC document, including Appendices A, B, and C, and the December 2012 EPA revised fact sheet regarding the 2012 RWQC were submitted to ADEQ via electronic mail on May 7, 2013. To the extent that the EPA 2012 RWQC are more protective than the current or proposed bacteria standards at Reg. 2.507, BWD requests that ADEQ incorporate the more protective provisions into Reg. 2.507. BWD's interest, of course, is in minimizing pathogens in our source water. In this case, the latest science regarding the protection of public health during primary contact recreation also supports BWD's goal of protection of our drinking water source. Therefore, BWD encourages the incorporation of the following more-protective recommendation from the EPA 2012 RWQC for primary contact recreation:

***Enterococci:** Culturable enterococci at a geometric mean (GM) of 30 colony forming units (CFU) per 100 milliliters (mL) and a statistical threshold value (STV) of 110 CFU per 100 mL; and*

***Escherichia coli (E. Coli):** Culturable E. coli at a GM of 100 CFU per 100 mL and a STV of 320 CFU per 100mL; and*

The waterbody GM should not be greater than the applicable GM magnitude in any 3D-day interval. There should not be greater than a ten percent excursion frequency of the applicable STV magnitude in the same 3D-day interval.

In the event that ADEQ decides not to incorporate the more-protective recommendations from the 2012 EPA RWQC, BWD offers the following: BWD, in general and subject to the following restrictions, supports the proposed changes to Reg. 2.507 that have

made this provision more readable. BWD objects, however, to the changes that have deleted: (1) the primary contact season *E. coli* geometric mean numeric criteria of 126 colonies/100mL for all waters other than Lakes, Reservoirs, Extraordinary Resource Waters (ERW), Ecologically Sensitive Waterbodies (ESW), and Natural and Scenic Waterways (NSW); and (2) the secondary contact season *E. Coli* geometric mean numeric criteria of 630 colonies/100mL for all waters other than Lakes, Reservoirs, ERW, ESW, and NSW. BWD also questions the language regarding the "assessment of ambient waters" and the calculation of the geometric mean. To the extent that other commenters suggest it, BWD would object to inclusion in Reg. 2.507 of an allowable exceedance rate such as twenty-five percent (25%) as not legally or scientifically supportable.

Beaver Water District

Comment: To the extent that other commenters suggest it, BWD would object to inclusion in Reg. 2.507 of an allowable exceedance rate such as twenty-five percent (25%) as not scientifically supportable. EPA's 2012 RWQC document recommends that the geometric mean value for *E. Coli* (and enterococci) not be exceeded in any 30-day interval. For the statistical threshold value for *E. Coli* (and enterococci), EPA's 2012 RWQC document recommends that there should not be greater than a ten percent (10%) excursion frequency in the same 30-day interval. See EPA Recreational Water Quality Criteria, Office of Water Document 820-F-12-058 (2012). Copies of the RWQC document, including Appendices A, B, and C, and the December 2012 EPA revised fact sheet regarding the 2012 RWQC were submitted to ADEQ via electronic mail on May 7, 2013.

Response: The bacteria standards adopted into APCEC Reg 2.507 are protective and follow EPA's 1986 Ambient Water Quality Criteria for Bacteria. For freshwater swimmers, EPA recommends states adopt criteria protective of illness rates of 14 or less per 1000 swimmers. These standards remain unchanged and are protective of the acceptable swimming-associated gastroenteritis rate of 8 per 1000 swimmers.

The Department respectfully disagrees with the interpretation of the regulation by the commenters. The bacteria standards remain unchanged from the October 26, 2007 and April 23, 2004 versions of APCEC Reg.2.507. Geometric mean for primary and secondary contact standards for *E. coli* did not apply to "All Other Waters," but only to ERW, ESW, NSW, Reservoirs, and Lakes.

EPA's February 1, 2002 Draft Implementation Guidance for Ambient Water Quality Criteria for Bacteria states that there are three options for states:

- State adopts a geometric mean value only
- State adopts a single sample maximum value only
- State adopts a geometric mean *and* a single sample maximum

Since they are considered "Lightly Used Full Body Contact Recreation" waters APCEC Reg. 2.507 makes use of the second option for "All Other Waters."

EPA Region 6 has repeatedly approved the use of a 25% exceedance rate for bacteria in Arkansas assessments.

Reg. 2.507, Bacteria

Beaver Water District

Comment: Although the current Reg. 2.507(A) and (B) is somewhat difficult to parse, the only reasonable interpretation of the regulation is that the *E. Coli* criteria calculated as geometric means apply to all waterbodies (according to the applicable primary versus secondary contact designations), not just to lakes, reservoirs, ERW, ESW, and NSW. In addition to the clear reading of the current Reg. 2.507(A) and (B), it makes no sense that there would only be individual sample criteria and no geometric mean criteria for *E. Coli* in waters other than Lakes, Reservoirs, ERW, ESW, and NSW. BWD is aware that ADEQ has not been following the language of the current Reg. 2.507(A) and (B), and has so commented to ADEQ in regards to the proposed Arkansas 2010 List of Impaired Waterbodies. In response to BWD's comment, ADEQ failed to provide an explanation of how the current Reg. 2.507(A) and (B) could be interpreted to omit the geometric mean criteria for *E. Coli* in waters other than Lakes, Reservoirs, ERW, ESW, and NSW. See ADEQ's April 1, 2010, Responsiveness Summary to Comments Concerning Arkansas's 2010 Impaired Water Bodies (303(d), page 16, ADEQ Response 7 (a copy of the cover letter and page 16 of the Responsiveness Summary was submitted to ADEQ via electronic mail on May 8, 2013).

The deletion of the current Reg. 2.507(A) and (B) geometric mean numeric criteria for *E. Coli* that apply to waters other than Lakes, Reservoirs, ERW, ESW, and NSW is contrary to and prohibited by the antidegradation provisions of Section 303(d)(4)(B) of the Clean Water Act, 33 U.S.C. § 1313(d)(4)(B), 40 C.F.R. § 131.12, and Reg. 2.201 - 2.202. ADEQ has conducted none of the analyses that would be required by Reg. 2.201 - 2.202 and 40 C.F.R. § 131.12 in order to consider removal of the primary contact season *E. Coli* geometric mean criteria of 126 colonies/100mL for waters other than Lakes, Reservoirs, ERW, ESW, and NSW and of the secondary contact season *E. Coli* geometric mean criteria of 630 colonies/100mL for waters other than Lakes, Reservoirs, ERW, ESW, and NSW. See EPA Water Quality Standards Handbook, Second Edition, Chapter 4 and Appendix G (1994), copies of which were submitted to ADEQ via electronic mail on May 7, 2013. Therefore, the current Reg. Reg. 2.507(A) and (B) geometric mean numeric criteria for *E. Coli* that apply to waters other than Lakes, Reservoirs, ERW, ESW, and NSW, can only be deleted from Reg. 2 if they are replaced with equivalent or more stringent criteria.

Response: The Department respectfully disagrees with the interpretation of the regulation by the commenter. The bacteria standards remain unchanged from the October 26, 2007 and April 23, 2004 versions of APCEC Reg. 2.507. Geometric mean for primary and secondary contact standards for *E. coli* did not apply to "All Other Waters," but only to ERW, ESW, NSW, Reservoirs, and Lakes.

APCEC Reg. 2.507 follows EPA's February 1, 2002 Draft Implementation Guidance for Ambient Water Quality Criteria for Bacteria which states that there are three options for states:

- State adopts a geometric mean value only
- State adopts a single sample maximum value only
- State adopts a geometric mean *and* a single sample maximum

Since they are considered "Lightly Used Full Body Contact Recreation" waters APCEC Reg. 2.507 makes use of the second option for "All Other Waters."

Since no criteria were deleted, there is no requirement to replace criteria with equivalent or more stringent criteria.

Reg. 2.507, Bacteria

Beaver Water District

Comment: Finally, proposed Reg. 2.507 provides: "For assessment of ambient waters, at least eight (8) data points must be taken during the primary contact season or during the secondary contact season." Reg. 2.507 also provides: "Geometric Mean - Calculated on a minimum of five samples spaced evenly and within a thirty-day period." These provisions are unclear in a number of regards. First, what is meant by the phrase "for assessment of ambient waters"? Does this refer to ascertaining compliance with the water quality standards, or to assessing impairment for purposes of the 303(d) list, or both, or something else? Is a "data point" the same as a sample or is it something else? How does the requirement for a minimum of eight samples relate to the requirement that the geometric means be calculated on a minimum of five samples? If only five samples within a thirty-day period are required for calculating the geometric mean, does this mean that any additional samples can be ignored? These two provisions should be clarified in a way that does not allow for "cherry picking" of the thirty day period that gives the best results, while ignoring other samples.

Response: The phrase "for assessment of ambient waters" refers to determining impairment for 303(d) list purposes.

A "data point" is synonymous with a sample result.

To clarify the minimum number of samples, the following footnotes will be added to the appropriate criteria:

³For assessment of Individual Sample Criteria – at least eight (8) data points

⁴For calculation and assessment of Geometric Mean – calculated on a minimum of five (5) samples spaced evenly and within a thirty (30) -day period.

Reg. 2.507, Bacteria

Buffalo National River

Comment: I would also like to see under section 2.507 consideration given to extending the primary contact season under Regulation for rivers such as the Buffalo River, Mulberry, Big Piney, Spring River and others, major water recreation streams in the Ozarks to start much earlier, because the fact of the matter is we have a lot of use outside of the primary contact season.

Response: At this time ADEQ has not determined or evaluated the appropriateness of extending the primary contact season for these waterbodies or the appropriate implementation.

Additionally, as required by APCEC Regulation 8, ADEQ has not conducted an Economic Benefit Environmental Impact Analysis to determine any potential economic or environmental impacts the addition of these values may have.

Reg. 2.508, Toxic Substances

Faulkner County Citizens Advisory Group (hereinafter "FCCAG")

Comment: As per our comment on Feb. 28, 2012 we still strongly feel under Toxic Substances Reg2.508 the criteria of maximum contaminant level (MCL) goals as recommended by Federal EPA of: Benzene=.005mg/L or 5ppm; Toluene=1mg/L or 1ppm; Xylene=10mg/L or 10ppm; Manganese=.05mg/L; Bromides=.5mg/L (W.H.O.); Thermogenic Methane=10-28mg/L (U.S. Office of Interior) be added to the adopted Regulation 2 rules.

The unfortunate Tar Sands spill in Mayflower proves why these toxic substances must be added. Cost of compliance must never be an issue to not move forward with regulations that protect the most valuable resource on the planet-water. It along with clean air are the factors that determine human existence. Also when looking at cost of compliance ensure that cost of health care for humans and animals from under-regulation is brought to the table.

As new chemical's are discharged into our waters Reg2 should be amended more than every 3 years and detection limits changed from ppm to ppb. The above list of toxins have shown to produce expensive long term health care and should be addressed.

Response: At this time ADEQ has not determined or evaluated the appropriateness of these values for the State of Arkansas or the appropriate implementation. Additionally, as required by APCEC Regulation 8, ADEQ has not conducted an Economic Benefit Environmental Impact Analysis to determine any potential economic or environmental impacts the addition of these values may have.

Reg. 2.508, Toxic Substances

International Zinc Association (IZA) and Windward Environmental

Note: Due to the length, this comment is provided in summary.

Comment: ... In summary, the IZA and Windward Environmental encourage the ADEQ to adopt BLM-based zinc criteria as the default basis for development of state-wide zinc criteria or, at a minimum, as an explicit option for deriving site-specific zinc criteria. Use of the BLM to derive zinc criteria is based on the most current science and has been recommended by the EPA for copper (EPA 2007) and adopted in several states. However, we believe that statewide implementation of BLM-based zinc criteria should be the ultimate goal of the ADEQ. Using the BLM would allow the ADEQ to more effectively assess and manage waters where the hardness-based criteria could be over- or under-protective of aquatic life and correspondingly result in over- or under-regulating permittees. The evaluation of DeForest and Van Genderen (2012) indicated that for most waters the existing hardness-based acute zinc criteria are over-protective and that the chronic zinc criteria are under-protective.

The IZA and Windward Environmental believe that adoption of BLM-based water quality criteria for metals represents a fundamental advancement to achieve appropriate environmental protection and regulation. To this end, comments being submitted to the ADEQ on behalf of the Copper Development Association (CDA) and International Copper Association (ICA) are also recommending that the ADEQ consider updating the freshwater aquatic life criteria for copper using the BLM. ...

Response: The Department acknowledges this comment. However, the zinc criteria in this section are based on EPA's Quality Criteria for Water - 1986. APCEC Reg. 2.308 (A)(3) states site specific criteria may be established based on other scientifically defensible methods, which might include use of the Biotic Ligand Model (BLM). At this time ADEQ has not determined or evaluated the appropriateness of using BLM to derive either statewide zinc criteria or site specific zinc criteria.

Reg. 2.508, Toxic Substances

International Copper Association and Copper Development Association

Note: Due to the length, this comment is provided in summary.

Comment: ... Thus, the purpose of this letter is to urge the ADEQ to consider including in their updates the option to use the BLM to calculate aquatic life criteria for copper, as currently recommended by USEPA....

Response: The Department acknowledges this comment. The copper criteria in this section are based on EPA's Quality Criteria for Water - 1986. The use of the BLM to calculate site-specific criteria for copper is authorized under APCEC Reg. 2.308 (A)(3), which states that site specific criteria may be established based on other scientifically defensible methods, and this would include use of the BLM for copper.

Reg. 2.508, Toxic Substances

AEF

Comment: AEF believes that the first sentence should be re-inserted and the second, added sentence should be deleted. The terms "represent the concentration that will not be toxic" has no basis given and is vague. The re-inserted 1st sentence is more clear and has been protective for 30 years.

The inclusion of the MCL for Beryllium is not appropriate as a WQS. An MCL is an EPA published value for finished drinking water, not a standard for a designated domestic water supply.

Response: The proposed revision to the first sentence will be stricken and the current language will remain, which reads:

Toxic substances shall not be present in receiving waters, after mixing, in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of the indigenous aquatic biota.

Maintaining the current language is appropriate because it most accurately reflects the "no toxics in toxic amounts" provision of the federal Clean Water Act.

No revision to the beryllium criterion that was adopted by the Commission in 2007 and approved by EPA are proposed during this triennial review. EPA stated in its January 24, 2008 Record of Decision:

"... This criterion is consistent with the national recommended water quality criterion for beryllium for the protection of human health as shown in EPA's current (2006) national recommended water quality criteria table"

"Action: For the reason described above, EPA approved the revised beryllium criterion of 4000 ng/L in Arkansas' Regulation 2.508."

Reg. 2.508, Toxic Substances

Tyson

Comment: Tyson has completed Water Effect Ratio Studies (WER) for Tyson facilities located in Nashville, Grannis, and Waldron. The recommended WER from the Nashville study was used in development of the recently issued permit (NPDES No. AR0041734) for the facility. The Grannis and Waldron WER study reports were transmitted to ADEQ on January 25, 2012 and to date no adverse comments have been received. Tyson has been advised by ADEQ staff that EPA will require a Regulation 2 amendment based on these WER studies before the amended criteria

can be used for assessment purposes. Therefore, Tyson requests that the WERs documented in each of the reports previously submitted to ADEQ be used to amend the acute and chronic copper criteria for the applicable stream segments associated with the Nashville, Grannis, and Waldron Facilities.

Response: ADEQ and EPA comments on these WERs have been provided to the facilities. These WERs will have to be incorporated into APCEC Regulation No. 2 through rulemaking via adoption by the Commission and after an opportunity for public comment has been provided. The above referenced WERs are not final for public notice purposes.

Reg. 2.509, Nutrients

National Park Service

Comment: The latest draft has included 'Arkansas' in the following sentence; "However, when excess nutrients result in an impairment, based on Department assessment, by any Arkansas established, numeric water quality standard ". We believe that this regulation will not be enforceable until the state sets the needed numerical values, which are years from completion, leaving resources without proper protection. Until the Department finalizes values, we ask that 'Arkansas' be replaced with language accepting values approved by EPA in systems most similar to those found in Arkansas. Once the Department establishes numerical values, they will replace any non-state values.

Response: Water quality criteria can include narrative statements. (See 40 C.F.R. § 131.3(b).) ADEQ has enforced, via phosphorus permit limits, the current narrative standard in waterbodies where excess algae was present, and dissolved oxygen, diurnal dissolved oxygen, pH, and aquatic-life data supported nutrient impairment. The current adopted narrative criteria are protective of aquatic life.

The Department is in the process of developing criteria for waterbodies following the process outlined in the *State of Arkansas Nutrient Criteria Development Plan, 2012*, which has been mutually agreed upon with EPA.

Reg. 2.509, Nutrients

AGFC

Comment: AGFC is concerned about eliminating total phosphorus discharge limits from Reg.2. We would like to see total phosphorus discharge limits included in the Continuing Planning Process (CPP) as recommended by EPA-Region 6.

Central Arkansas Water

Comment: The proposed regulation includes generic language regarding the establishment of future numeric standards for nutrients. This regulation will not be enforceable until numerical values are established.

It is important that numerical criteria be based on site specific data applicable to the waterbody to which the criteria would apply. It is also important that stakeholders be allowed to participate into the process before nutrient criteria are adopted. We recommend that until ADEQ establishes numerical nutrient values, the current language remain.

CAW objects to the removal of the numeric phosphorus requirements for point source discharges into certain waterbodies in the legislatively designated nutrient surplus watersheds and on Arkansas's list of impaired waterbodies (303(d) list).

The deletion of the phosphorus requirements is contrary to and prohibited by the antidegradation provisions of Section 303(d)(4)(B) of the Clean Water Act, 33 U.S.C. §1313(d)(4)(B), 40 C.F.R. § 131.12, and Reg. 2.201 through 2.203. ADEQ has not conducted the analyses required by Reg. 2.201 through 2.203 and 40 C.F.R. § 131.12 in order to consider removal of the Reg. 2.509 phosphorus requirements.

Beaver Water District

Comment: Proposed Reg. 2.509, the removal of the phosphorus requirements for point source discharges into specified waterbodies: BWD objects to the removal of the numeric phosphorus requirements for point source discharges into certain waterbodies in the legislatively designated nutrient surplus watersheds and on Arkansas's list of impaired waterbodies (the so called 303(d) list)....

ADEQ's proposal to delete the Reg. 2.509 phosphorus requirements for point source discharges into certain waterbodies in the legislatively designated nutrient surplus watersheds and on Arkansas's list of impaired waterbodies because they are not water quality standards is inconsistent with its approach regarding the Oil and Grease standards at Reg. 2.510. ADEQ has proposed at Reg. 2.510 that, "Oil and grease shall be an average of no more than 10 mg/l or a maximum of 15 mg/L when discharging to surface waters." If this type of discharge-related requirement is an acceptable water quality standard for oil and grease (and BWD believes they are), then discharge-related requirements for phosphorus also should be acceptable.

The deletion of the Reg. 2.509 phosphorus requirements -- absent any of the analyses that would be required by Reg. 2.201 through 2.203 and 40 C.F.R. § 131.12 and absent the adoption of any equivalent or more stringent provisions regarding phosphorus or nutrients -- clearly runs afoul of the antidegradation laws and regulations cited above. BWD believes that even if ADEQ had attempted the requisite analyses, such waterbody-by-waterbody analyses would not support removal of the Reg. 2.509 phosphorus requirements (this would unquestionably be the case for the affected Outstanding Resource Waters). The current Reg. 2.509 phosphorus requirements, therefore, can only be deleted from Reg. 2 if they are first replaced with equivalent or more stringent instream, numeric phosphorus criteria or, possibly, if equivalent or more stringent effluent limitations on phosphorus are first included in APCEC Regulation No.6.

Response: The phosphorus discharge limits will remain in Reg. 2.509 until they have been incorporated in the approved revised CPP or adopted in APCEC Regulation No. 6.

Additionally, water quality criteria are defined to include narrative statements. (40 C.F.R. § 131.3(b).) ADEQ has enforced, via phosphorus permit limits, the current narrative standard in waterbodies where excess algae was present, and dissolved oxygen, diurnal dissolved oxygen, pH, and aquatic-life data supported nutrient impairment. The current adopted narrative criteria are protective of aquatic life.

The Department is in the process of developing criteria for waterbodies following the process outlined in the *State of Arkansas Nutrient Criteria Development Plan, 2012*, which has been mutually agreed upon with EPA.

Reg. 2.509(B), Nutrients – Site Specific Nutrient Standards
Association for Beaver Lake Environment (hereinafter “ABLE”)

Comment: In particular, ABLE would like to have 8 parts/billion for chlorophyll and 1.1 meters for Secchi Transparency as the standard for Beaver Lake. These standards are currently met for Beaver Lake and we do not want levels of water quality decreased. These standards are a result of a workgroup who set up a protocol establishing scientifically based nutrient standards for Arkansas lakes as required by EPA requirements. Beaver Lake was selected as the pilot lake because of the many years of collecting data there.

We always hear that decisions must be made on the basis of "sound science". We have that "sound science" given in the 2008 report by the Beaver Lake Workgroup that gives the proposed standards for Beaver Lake. The wealth of data was reviewed by many whose backgrounds reflect expertise from many perspectives in developing these proposed standards. This workgroup included Dr. Reed Green, USGS; Dr. Ralph Davis, U. of A.; Dr. Robert Morgan, Beaver Water District; Dr. Brian Haggard, Arkansas Water Resources Center; Dr. Kent Thornton, FTN. Inc.; Dr. Joe Nix, Ouachita Baptist University; as well as Steve Filipek, AGFC; Ellen McNulty, ADEQ at that time; Alan Fortenberry, CEO, Beaver Water District; among others. Because of such experience and knowledge of this group, I am certainly inclined to accept their proposed standards for Beaver Lake and propose that you do the same. The importance of water quality for Beaver Lake cannot be overemphasized! It is the water supply for Northwest Arkansas, the economic engine of the region, and contributes to the area's quality of life due to clean water for its recreational activities. Therefore, ABLE requests that Regulation 2 is used to maintain the highest water quality standards for Beaver Lake and for Arkansas water in general.

Central Arkansas Water

Comment: CAW supports the addition of site-specific numeric water quality criteria (WQC) for Chlorophyll a and Secchi Transparency for Beaver Lake that are at least as stringent as those proposed by ADEQ. Having scientifically-based and site specific numeric criteria for indicators of nutrient pollution will provide a straightforward method of assessing whether the water quality standards are being met.

Ozarks Water Watch

Comment: I am writing in support of Regulation 2.509 (Nutrients), Section B (Site Specific Nutrient Standards for Beaver Lake). The proposed standard establishes growing season geometric mean (May - October) of 8 ug/L of Chlorophyll (a) and an annual average Secchi transparency of 1.1m at the Hickory Creek site over the old thalweg, below the confluence of War Eagle Creek and the White River in Beaver Lake.

Ozarks Water Watch considers the proposed criteria appropriate for nutrient standards in Beaver Lake. The criteria were established as the result of a technical workgroup developed to set scientifically based nutrient standards for lakes as required by EPA. A weight of evidence approach to developing the standards was used and all of the work was done with scientific rigor. Evidence considered to develop the criteria included the following:

- Surrounding state numeric criteria for chlorophyll, Secchi, total phosphorus, and total nitrogen,
- Ecoregion values,
- Percentile values based on both reference lakes and extant values for Beaver Lake,
- Statistical analysis of Beaver Lake and Reference Lake data,

- Empirical nutrient loading relationships, and
- Dynamic modeling results.

A focus was placed on Chlorophyll (a) and Secchi depth because those parameters represented the response of the lake to nutrient loading. The chlorophyll (a) standard is based on the geometric mean of measurements taken over the thalweg of the lake at Hickory creek during the growing season (April through October). By utilizing the geometric mean, the impact of extreme events will be minimized meaning that a single bad value will not result in the lake failing to meet the standard.

We believe this site specific criteria provides much needed protection to Beaver Lake. Beaver Lake is currently meeting or exceeding the proposed site specific nutrient criteria. This site specific criteria will establish a minimum standard, beyond which we do not want Beaver Lake to degrade.

For the protection of Beaver Lake and the people who use Beaver Lake now and in the future for recreation, drinking water, fishing, and many other uses, we strongly support retaining the site specific nutrient criteria for Beaver Lake in the final language of Regulation 2.

Beaver Water District

Comment: Second one's just a few comments about the Beaver Lake standards and those standards were the result, as several people have mentioned, of the workgroup that was pulled together by the department back in 2006. The purpose for pulling that workgroup together was to develop a protocol for developing nutrient regs or nutrient criteria for lakes in Arkansas and that was as deemed strongly encouraged by EPA, if not required. So the reason Beaver was selected because over the years there has been wealth of data collected, and it takes a lot of data to do good scientific work. Dr. Kent Thornton from FTN and Dr. Joel Nicks, led the effort, they're the two godfathers of water quality science in Arkansas. Kent was the author of the text book on reservoir technology. So it was a well led group, I will say I had the privilege of working with that group, but Kent and Joel definitely were in charge. The process that they took was strongly scientific based, they started by reviewing the standards from surrounding states because we wanted to be sure we weren't the most strict around, but then we went and we look at ecoregion values, we looked at the percentile values for reference lakes and also for what's been going on in Beaver Lake, we did statistical analysis of the data looking for the break points where chlorophyll or nuisance problems start to show up. We did empirical nutrient loading models; we did dynamic water quality modeling, and I guess maybe one main thing came out of it, we decided that the chlorophyll and secchi depth were the more appropriate things to regulate because that's what really matters to the world. So, in short, I think these standards are strongly scientifically based, like everybody wants, they're reasonable for Beaver Lake, part of the science was in deciding where the samples should be taken to protect the whole lake. The proposed concentrations are those which are more or less are being met at this time, and they are numbers that require averaging, so more particular violations does not a violation make. So, in short, I think the addition of the nutrient standards for Beaver Lake somewhat replaces the loss of protection we got from the removal of the nutrient limits on the wastewater discharges, but it also provides badly needed protection for our resource and the district fully supports the department's efforts in this proposal, thank you.

Response: The Department acknowledges these comments.

Reg. 2.509(B), Nutrients– Site Specific Nutrient Standards
EPA

Comment: EPA encourages efforts such as the Beaver Lake project in moving towards nutrient criteria development; however, we strongly encourage ADEQ to move towards the establishment of numeric nutrient criteria for all waterbodies in lieu of the narrative criteria. Additionally, the standards should be linked to the aquatic life designated use.

Buffalo National River

Comment: In Regulation 2.509, I would like to see site specific nutrient standards for nitrogen and phosphorus established for stream to stream segments in Arkansas, with special consideration given to extraordinary resource water bodies, the NSW waterways, and the ESWs.

Response: As resources become available, site-specific criteria can be developed for other Arkansas waterbodies, pursuant to Arkansas's Nutrient Criteria Development Plan (hereinafter "NCDP"), as mutually agreed upon with EPA.

As stated in Nancy Stoner's memo and captured in the NCDP, ADEQ is developing nutrient criteria for a class of waterbodies by 2014.

Reg. 2.509(B), Nutrients – Site Specific Nutrient Standards

AEF

Comment: The numeric Chlorophyll a criterion should be modified to read " **"The geometric mean of the growing season (May-October) for more than 25% of the time in the most recent 5 consecutive years".

An absolute criterion, without a frequency and a duration, such is included in the draft regulation, can easily result in a standards violation and an impairment designation, TMDL's and waste load allocations. It is the trend that is significant, not the specific criterion.

Tyson

Comment: Regarding Section 2.509, Tyson supports a specific criterion for Beaver Lake.

Tyson, however, believes that a multi-year standard would be more appropriate than a single year's growing season for Chlorophyll a and an annual average for Secchi transparency. Due to huge swings in precipitation witnessed in the past three years, it is important to look over a longer period of time than one year. Tyson recommends using at least a 5 year geometric mean approach.

Beaver Water District

Comment: BWD supports the addition of site-specific numeric water quality criteria (WQC) for Chlorophyll a and Secchi Transparency for Beaver Lake that are at least as stringent as those proposed by the Arkansas Department of Environmental Quality (ADEQ)...

BWD suggests one modification to ADEQ's proposed WQC for Chlorophyll a for Beaver Lake in the language following the double asterisk. BWD suggests that it be changed to read as follows: " **"The geometric mean of the growing season (May- October) values for the most recent 3 consecutive years. "

... To the extent that other commenters suggest it, BWD would object to inclusion of a duration longer than three (3) years and to the inclusion of an allowable exceedance rate such as twenty-five percent (25%) as not legally or scientifically supportable.

For all of the reasons set forth above, it is critical to the long-term protection of Beaver Lake as a drinking water source that site-specific numeric water quality criteria for Chlorophyll a and Secchi Transparency for Beaver Lake that are at least as stringent as those in proposed Reg.

2.509(B) be adopted.

Response: Generally, as addressed in the Assessment Methodology, ADEQ uses a five-year period of record. A five-year period of record ordinarily provides an adequate data set such that effects that may be artifacts of extreme drought or extreme flood years level out, but further study may be required to consider what the most appropriate assessment methodology is for this new site specific numeric nutrient standard.

According to EPA's Guidance for 2006 Assessment, Listing and Reporting Requirements and pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act, states can select key sample statistics (such as arithmetic mean concentration, median concentration, or a percentile).

Reg. 2.509(B), Nutrients – Site Specific Nutrient Standards

Madison County Farm Bureau

Comment: We are particularly concerned with the site specific standard calling for a secchi disk to be visible to a depth of 1.1 meter, near the mouth of the War Eagle Creek and just above the Beaver Water District intake. I have participated in Beaver Water District's annual secchi readings that take place in many locations during the summer, and consider the exercise helpful, although rather subjective. The disk is difficult to see on cloudy days, and two observers will usually have different opinions, so the record ends up an agreed on average. In addition, I have observed that the turbidity caused by rain storm caused natural bank erosion varies considerably, and of course, is another factor to consider when making a transparency evaluation. Having lived both on Beaver Lake and in the War Eagle Watershed for the last 21 years, participated in taking secchi readings, and having canoed the War Eagle several times, I personally feel that it is way too soon to have such an absolute standard incorporated as a regulation. Our Farm Bureau feels that a standard like this will lead to land use controls in the form of more regulations like the ones expressed in the opinions you have been gathering such as "make the land owner pay for stream bank protection, keep livestock out of streams, etc."

A University of Arkansas graduate student recently completed a Thesis that shows the water quality of Beaver Lake has been steadily improving since 1987.

Keep up with the secchi readings throughout Beaver Lake, and then, if even necessary, look at rational solutions, This arbitrary standard proposed should not be adopted.

Response: Use of secchi disk, under specified conditions is an acceptable method to determine water clarity.

The analysis used to determine 1.1 meters, and the use of an annual average takes into account man-made and natural variations of parameters which influence water clarity.

According to the February 8, 2008 Beaver Lake Site-Specific Water Quality Criteria

Development: Recommended Criteria, a weight of evidence approach was used to develop these recommendations for site-specific numeric water quality standards, which included considerations of:

1. Surrounding state numeric criteria for chlorophyll, Secchi transparency, total phosphorus, and total nitrogen values;
2. Ecoregion values proposed by USEPA;
3. Percentile values based on both reference lake data and extant data for Beaver Lake;

4. Hydrologic plunge point analyses;
5. Statistical analyses of data from Beaver Lake and the reference lakes;
6. Empirical nutrient loading relationships; and
7. Dynamic modeling results.

These recommendations are considered protective and supportive of all designated uses for Beaver Lake.

(Note: The plunge point in a reservoir is the location where, during stratified conditions, the buoyant force of a cooler inflow becomes greater than the inertial force, and the inflow moves from the surface to the depth with similar buoyancy (temperature)).

Reg. 2.509(B), Nutrients – Site Specific Nutrient Standards

Eric Anderson, representing local farmers

Comment: I'm just going to touch base on the Beaver Lake Reg., Regulation 2.509. I guess my concerns with this is where were standards established, you know on the secchi and the chlorophyll and the big concern that I have is, you got a lake that's 32,000 acres and 500 miles of shore line and we're going to take one sample in one spot and looks to me like it should be an average, maybe I'm reading it wrong but in section 2.507 in that it looked for assessment of ambient waters of at least 8 data points. So it looks to me, if we're going to do those samples, you know, how and where are they taken, maybe we should have an average of those samples instead of just one spot.

City of Fayetteville

Comment: The City of Fayetteville also has concerns with the Beaver Lake standards established in section 2.509. We do not specifically object to the proposed criteria of Chlorophyll a and Secchi Transparency. We are concerned, however, with the potential for unintended consequences from this type of criteria. It appears these criteria are measured at only one location in the Lake. The proposed regulation does not specify any guidelines for when the measurements are taken, nor does the proposed regulation specify what actions will be taken if the criteria are not achieved. There are many factors that impact Chlorophyll a and Secchi transparency results, including sediment, sunlight, stream bank vegetation and tree shading, riparian zone protections, rainfall events and the associated runoff, and many others. We are concerned that the most probable regulatory response would be targeted to the few municipal separate storm sewer system (MS4s) and NPDES dischargers upstream from the sample site, although the majority of the factors that impact Chlorophyll a and Secchi transparency are mostly unrelated to the MS4s and NPDES dischargers.

Response: The Hickory Creek sampling site was chosen based on a number of factors that showed it to be the best site to represent the lake as a whole and maintain the domestic water supply designated use. According to the February 8, 2008 Beaver Lake Site-Specific Water Quality Criteria Development: Recommended Criteria, the proposed location for the monitoring and assessment site, therefore, is over the thalweg at the Hickory Creek site in Beaver Lake, between the current Highway 412 and Lowell monitoring sites (Figure 9.1). Rationale includes:

1. It integrates the loadings from all three major tributaries – White River, Richland and War Eagle Creeks;
2. It is typically below the plunge point in the transition zone of the reservoir, which has the greatest water quality dynamics;
3. It provides some buffer from episodic excursions for the downstream drinking water intake, which represents one of the highest designated uses for Beaver Lake;

4. Water quality typically improves significantly for all constituents downstream from this location so downstream designated uses should be protected;
5. Subsequent tributary numeric WQS for nutrients and other constituents should protect Beaver Lake designated uses from minor tributary loadings downstream of the site;
6. Water quality constituent concentrations can be extrapolated from the Highway 412 and Lowell sites to estimate concentrations at the Hickory Creek site until sufficient data can be established at the Hickory Creek site to assess water quality status and trends; and
7. The Beaver Lake Watershed Management Plan should assist in moving toward restoration of tributaries that are currently not meeting WQS and provide protection of both upstream and downstream areas from degradation. The DA/SA [drainage area/surface area] ratio described in Chapter 5 indicated that best management practices implemented anywhere in the watershed should result in improved water quality conditions in Beaver Lake.

The sampling requirements should follow those outlined in Arkansas's Water Quality and Compliance Monitoring Quality Assurance Project Plan.

If the criteria are not achieved, as per 40 C.F.R Part130, waters not meeting water quality standards and/or designated uses will be placed on the impaired waterbodies list (303(d) list). Those waters will then have TMDLs or other controls developed.

Reg. 2.510, Oil and Grease

Beaver Water District

Comment: Proposed Reg. 2.510 states that "Oil and grease shall be an average of no more than 10 mg/L or a maximum of 15 mg/L when discharging to surface waters." *BWD believes that this should be corrected* to provide that "Oil and grease shall be an average of no more than 10 mg/L or a maximum of no more than 15 mg/L when discharging to surface waters." (Words added are underlined).

Response: To clarify, the second to the last sentence of the paragraph will be revised to state "Oil and grease shall be an average of no more than 10 mg/L or a maximum of no more than 15 mg/L."

Reg. 2.511, Mineral Quality

EDCC & Albemarle

Comment: In addition, the proposed regulation contains a revision stating that Ecoregion criteria will not be used to evaluate attainment of the water quality standards (i.e. used in the 303d listing process). This change is appropriate and we request that it be retained in the final regulation.

Response: The Department acknowledges this comment.

Reg. 2.511, Mineral Quality

ADEQ

Comment: Revise ER footnote as follows: "ER – ecoregion value"

Response: No response necessary.

Reg. 2.511, Mineral Quality

Alice Andrews

Comment: The current standards of 250 ppm Phosphorus, 250 ppm for Chlorides and 500 ppm for total dissolved solids are recognized as difficult or economically impossible for small water treatment facilities to achieve. I have been advised that these standards are not harmful to aquatic communities since they adjust slowly over time to these levels of minerals. Would it not be possible to create new standards that are slightly higher to accommodate water utilities and allow them to be in compliance without doing a use attainability analysis ecoregion by ecoregion. A level should be set that accomplishes this without endangering aquatic biota. There would likely be some environmental impact but aquatic life does adjust in time to small changes.

Response: It is possible to adopt new standards. The adoption of new standards must comply with the requirements in 40 C.F.R. § 131 and APCEC Reg. 2.306.

At this time ADEQ has not determined or evaluated the appropriateness of new minerals standards or the appropriate implementation. Additionally, as required by APCEC Regulation 8, ADEQ has not conducted an Economic Benefit Environmental Impact Analysis to determine any potential economic or environmental impacts the addition of these values may have.

Reg. 2.511, Mineral Quality

Central Arkansas Water

Comment: ADEQ needs to clarify the impact of Act 954 of 2013, and how the language and implementation of this and other sections will be modified as a result of that legislation.

AEF

Comment: This entire section should be revised to comply with Act 954 of 2013.

Tyson

Comment: The draft changes to Regulation #2 do not appear to meet Act 954 of the 2013 Arkansas General Assembly, specifically related to mineral standards. Tyson requests that ADEQ propose and thereafter adopt changes necessary to implement the provisions of Act 954 in Regulation No, 2.

Response: Act 954 of 2013 was repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session).

Reg. 2.511, Mineral Quality

Beaver Water District

Comment: In general, BWD strongly supports the changes to Reg. 2.511 as they have made this provision much clearer and more science-based. To the extent that ADEQ contemplates making different changes to Reg. 2.511 as a result of Act 594 of 2013, *BWD requests that an additional public notice and comment period be held on Reg. 2.511.* As noted in Comment 5 above, BWD believes Act 594 to be void for vagueness, contrary to the federal Clean Water Act and its implementing regulation, and premised on unscientific thought and conclusions.

Reg. 2.511(B), Mineral Quality

Cities of Fayetteville, Harrison, Jonesboro, Rogers, Springdale, and Yellville

Comment: Consider Sending Questions Related to Minerals Back Out for Further Public Comment...

Response: No change is necessary as Act 954 of 2013 was repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session).

Reg. 2.511(A)(1), Mineral Quality

City Water and Light Plant of the City of Jonesboro (hereinafter "CWL") & FTN Associates, Ltd. (hereinafter "FTN")

Comment: Table 2.511(A)(1) includes a proposed addition for "Big Creek Ditch to Bayou DeView" with criteria of 20 mg/L chloride, 30 mg/L sulfate, and 270 mg/L TDS. According to recent informal communication between ADEQ Water Quality Planning Branch and FTN Associates, ADEQ intended this entry in the table to represent only the portion of Big Creek Ditch upstream of the unnamed tributary into which CWL discharges. This portion of Big Creek Ditch was not addressed by CWL's Use Attainability Analysis and third party rulemaking. It is FTN's understanding that the criteria of 20 mg/L chloride, 30 mg/L sulfate, and 270 mg/L TDS have never been applied to this portion of Big Creek Ditch either in Regulation No.2 or in ADEQ's biennial assessments; therefore, site specific criteria should not be applied to this portion of Big Creek Ditch. We respectfully request that ADEQ remove the proposed addition to Table 2.511(A)(1) for "Big Creek Ditch to Bayou DeView".

If ADEQ disagrees with our request to remove "Big Creek Ditch to Bayou DeView" and the accompanying criteria from Table 2.511(A)(1), we request that ADEQ change "Big Creek Ditch to Bayou DeView" to a more specific description such as "Big Creek Ditch upstream of CWL discharge tributary". This change would clarify that ADEQ is applying these criteria only to the portion of Big Creek Ditch that was not addressed by CWL's Use Attainability Analysis.

ADEQ

Comment: Revise Big Creek Ditch in table as follows:

Big Creek Ditch (Headwaters to unnamed trib)

Response: Upon further review of historical versions of APC&EC Regulation 2, it was noted that the criteria of 20 mg/L chloride, 30 mg/L sulfate, and 270 mg/L TDS were not intended to apply to the portion of Big Creek ditch upstream of the unnamed tributary into which CWL discharges. The criteria of 20 mg/L chloride, 30 mg/L sulfate, and 270 mg/L TDS apply to Big Creek which flows directly into the White River in Philips County.

This proposed revision will be stricken.

Reg. 2.511(A)(1), Mineral Quality

ADEQ

Comment: Revise Bayou Bartholomew in table as follows:

Bayou Bartholomew ~~50~~30 ~~20~~30 ~~500~~220

The 2007 version of Reg. No. 2 was inadvertently changed; the numbers from the 2004 version are the correct site specific standards.

Response: No response necessary.

Reg. 2.511(A)(2), Mineral Quality

FTN

Comment: Certain criteria are marked with either a single asterisk or double asterisk. Do the single asterisk and double asterisk have the same meanings as in the current version of Regulation No. 2.511? The explanations of the single asterisk and double asterisk have been stricken in the redline version.

Response: The double asterisk will be retained as previously stated. The single asterisk will be retained as the following clarification. “* - ~~based on~~ developed using critical background flow of 4 cfs)”.

Reg. 2.511(A)(2), Mineral Quality

EDCC

Comment: The proposed amendments delete the site specific rulemakings previously approved by the Commission but not approved by USEPA. We do not feel the deletion of these rulemakings is appropriate as the rulemakings were approved by the Commission and EPA's disapproval does not automatically negate the State actions. And in one of the cases there is a Federal court appeal which is still ongoing and it has not yet been determined that the EPA decision will ultimately be upheld. We request that the waterbodies and criteria continue to be listed in the regulation.

Reg. 2.511(A)(2), Mineral Quality

AEF

Comment: Secondly, ADEQ's proposed revisions remove several site specific rulemakings approved by the Commission after formal rulemaking which were subsequently disapproved by USEPA. One, in particular, is the subject of an ongoing federal lawsuit. It is not appropriate for those to be deleted as this a state rule and USEPA disapproval does not nullify a state decision to our knowledge. Perhaps a separate listing for these situations is appropriate.

Response: 40 C.F.R § 131.21(c) states that state adopted standards are not applicable for CWA purposes until approved by EPA.

The site specific criteria approved by the APC&EC but not approved by EPA that has an ongoing Federal court appeal will be retained in Reg. 2.511 and Appendix A, with a † notation and footnote stating “Not applicable for Clean Water Act purposes until approved by EPA.”

Reg. 2.511(B), Mineral Quality

ADEQ

Comment: Revise the first sentence to read “The following values were determined from ...”

Response: No response necessary.

Reg. 2.511(B), Mineral Quality

EPA

Comment: The draft Reg. 2 language states that “*The values listed in the table below are not intended to be, nor will be, used by the Department to evaluate attainment of the water quality standards.*” This statement suggests that the values identified for unclassified ecoregion waters of the state are not themselves water quality standards. EPA disagrees. EPA records show that Arkansas adopted – and EPA approved – these Ecoregion Values in the early 1990s as minerals criteria intended to be protective of aquatic life.

Historical documentation from past triennial revisions indicates that ADPC&E adopted these Ecoregion (ER) Mineral Values as criteria protective of the aquatic life beneficial use for unclassified waterbodies for which no site-specific criteria apply. In response to a comment received during its 1987 triennial review public participation process regarding the appropriateness of the ecoregion minerals values to protect beneficial uses, ADPC&E responded:

“The Agency understands that specific standards are designed to protect the designated uses... The basic philosophy of the Agency has been to establish ambient conditions as standards and allow for future modification of those standards on a site-specific basis.” See ADEQ’s 1987 Responsiveness Summary, Enclosure 8.

The Public Notice for ADEQ’s 1987 WQS revisions further stated:

“Minerals standards in specifically listed waters are modified where necessary, so that those values do not exceed the domestic water supply requirements of 250/250/500 mg/l of chlorides, sulfates and total dissolved solids, respectively. Additionally, standards for waters which are not listed are established by ecoregion.” See ADEQ’s 1987 Public Notice, Enclosure 9.

In addition to their use for unclassified waters under Reg. 2.511(B), ADEQ has historically referenced these ER Minerals Values as site-specific criteria necessary to protect the beneficial uses of certain waterbodies listed under 2.511(A). The current draft of Reg. 2 continues to do so, specifying “ER” as the protective site-specific criteria for various listed waterbodies. As the ER values are identified as protective standards in these instances, they must also be considered as such for unclassified waterbodies covered by 2.511(B).

ADEQ has in the past used these ER Minerals Values to assess attainment of designated uses as well. This practice ceased in 2004 when the state changed its assessment methodology to reflect language similar to that now included in the draft Reg. 2, despite no change to state water quality standards. ADEQ did not provide a scientific rationale for this change in its interpretation of 2.511(B) to exclude ER Minerals Values from its 2004 303(d) list assessment methodology and has not done so in subsequent submittals of 303(d) list assessment methods. However, in accordance with the state’s Continuing Planning Process (CPP), ADEQ continues to implement the Ecoregion Values as criteria in other programs, including its NPDES permitting program. For instance, an ADEQ NPDES permit recently submitted to EPA for review includes the following language:

The ecoregion minerals standards contained in Reg. 2.511(B) are in-stream standards, i.e., the discharges may not cause the levels in the stream to exceed those levels and the standards are not meant to be permit limits on an individual outfall.

The headwaters of Loutre Creek are located approximately 1,000 feet north of the permittee’s northern property line. All wastewater discharges from Outfalls 001 through 007 are made into Loutre Creek before it leaves the permittee’s property. Since the permittee is responsible for the majority of water in Loutre Creek when it leaves their property, the Department has included SMS 008 in the permit with minerals limits set equal to the ecoregion standards. This will allow the permittee the opportunity to demonstrate that they are not causing exceedances of the ecoregion standards. See ADEQ draft Permit, Enclosure 7.

Because the Ecoregion Minerals Values specified in Reg. 2.511(B) were adopted by the state and approved by EPA as default minerals criteria to be applied in waters lacking site-specific criteria [and are in fact referenced as the appropriate site-specific criteria for certain waters listed in Reg. 2.511(A)], the language now included in ADEQ’s draft revisions to Reg. 2 in effect removes criteria that are currently included in Arkansas’s water quality standards to protect the designated aquatic life use in these waters. Under the CWA, such criteria cannot be removed unless alternate criteria are in place sufficient to protect the use. Thus, if ADEQ revises its water quality standards to include the draft language, it must propose a replacement set of scientifically defensible values for the protection of aquatic life in the subject waterbodies. The draft in its current form does not propose to do so.

Response: Due to the confusion regarding the use of the ecoregion values the Department proposed the revision. Although Arkansas’ 2002 Integrated Water Quality Monitoring and Assessment Report includes the following line in the Assessment tables, it lacks details regarding how these values are used and whether they are connected with the historical categories of “partially supporting” or “waters of concern.”

PARAMETER	ECOREGION STANDARD	SUPPORT	NON-SUPPORT
		DATA POINTS EXCEEDING CRITERIA	
CL/SO ₄ /TDS (E.R.)	17/23/250 ¹	≤50%	>50%

Arkansas’s 2004 Integrated Water Quality Monitoring and Assessment Report contains details regarding how these values are used:

The ecoregion values described in section 2.511 are used to determine whether there is a ‘significant modification of the water quality.’ These values are not intended to be used to indicate an impairment of a waterbody. The Commission would have used the term ‘impairment’ if the ecoregion values were intended to be used for 303(d) list purposes. In accordance with section 2.511 of Regulation No.2, waters exceeding the ecoregion values greater than 50% of the time should be considered as candidates for a modification in accordance with section 2.306 of Regulation No. 2.

While these details in the 2004 305(b) report may be interpreted as a revision in the use of the ecoregion values, it is more likely a clarification of the use of the ecoregion values due to the discontinued use of the historical categories of “partially supporting” or “waters of concern” after the 2002 Sierra Club et al. vs. U.S. E.P.A. et al. lawsuit. The ecoregion values were likely considered when determining “waters of concern.”

To clarify, the paragraph will be revised to: “The following values were determined from Arkansas’ least-disturbed ecoregion reference streams are considered to be the maximum naturally occurring levels. For waterbodies not listed above, any discharge which results in instream concentrations more than 1/3 higher than these values for chlorides (Cl) and sulfates (SO₄⁼²) or more than 15 mg/4L, whichever is greater, is considered to be a significant modification of the water quality maximum naturally occurring values. These waterbodies should be considered as candidates for site specific criteria development in accordance with Regs. 2.306 and 2.308. Similarly, such modification exists site specific criteria development should be considered if the following TDS values are exceeded after being increased by the sum of the increases to Cl and SO₄. Such modifications criteria may be made developed only in accordance

with Regs. 2.306 and 2.308. The values listed in the table below are not intended nor will these values be used by the Department to evaluate attainment of the water quality standards.”

Further ADEQ is working with EPA to develop a formal plan for evaluating methods to address minerals criteria.

Reg. 2.511(B), Mineral Quality

AEF

Comment: The words "or designated uses" should be added at the end of the last sentence.

Response: Designated Uses are water quality standards, therefore the addition of “or designated uses” is unnecessary.

Reg. 2.511(B), Mineral Quality

EEAA

Comment: The mineral quality criteria in Regulation 2.511 should be consistent with the assessment protocol for determining mineral impairment. ADEQ’s proposed revisions to Regulation 2.511 cause an inconsistency between the assessment protocol for determining minerals impairment and the development of permitted discharge limits, and should not be adopted. Under the proposed revisions to Regulation 2, ADEQ assesses for minerals impairment based on the secondary drinking water standards for chlorides, sulfates and total dissolved solids. However, if an impairment is determined, ADEQ reverts to the ecoregion reference stream minerals values in 2.511(B) to develop permit limits calculated using the harmonic mean flow (*see* proposed revisions to Critical flows definition and Comment II.B., above). EPA has criticized this practice and stated that if ADEQ utilizes the ecoregion reference stream values for establishing permit limits, it should assess for impairment based on those standards. However, assessment of a stream or stream segment based on the extremely conservative ecoregion reference stream minerals values in Regulation 2.511 is inappropriate and would be extremely burdensome for regulated businesses and communities. These inconsistencies in the proposed revisions to Regulation 2.511(B) will have unintended consequences for regulated businesses and communities, and should not be adopted as proposed. Alternatively, if the Commission adopts the proposed revisions to Regulation 2.511, it should provide justification for doing so with appropriate references to the scientific and engineering literature or written studies on which the proposed revisions are based as required by Ark. Code Ann. § 8-4-202.

Response: The proposed revision to 2.511 (B) is consistent with ADEQ Assessment Methodology for the 303(d) list (list of impaired waterbodies). The minerals assessments for the Final 2008 303(d) list were determined using site specific standards and domestic water supply standards, but not ecoregion values, as noted in the following excerpt from the 2008 Assessment Methodology:

Reg. 2.511 - Minerals

Mineral quality will be evaluated as follows: assessments for waterbodies with site specific criteria are made according to the specific values listed in Reg. 2.511. For those waterbodies without site specific criteria, and those stream segments which receive waste water effluent, the criteria of 250 mg/l of chlorides, 250 mg/l of sulfates, and 500 mg/l of total dissolved solids in Reg. 2.511 will apply. In either case, if greater than 10%

of the total samples for the period of record exceed the applicable criteria, the waterbody will be included on the 303(d) list as being impaired for the mineral assessed.

Statewide Minerals Assessment Criteria

Parameter	Standard	Support	Non-Support
Site Specific Standards	See Reg. 2.511	< =10%	>10%
CL/SO ₄ /TDS ¹	250/250/500	< =10%	>10%

The ecoregion values described in Reg. 2.511 are used to determine whether there is a ‘significant modification of the water quality.’ These values are not intended to be used to indicate an impairment of a designated use. Any discharge which results in instream chlorides, sulfates, and or total dissolved solids concentrations greater than the calculated ecoregion reference stream values list below is considered to be a significant modification of the water quality and should be considered as candidates for a modification in accordance with Reg. 2.306.

The draft 2010 and 2012 303(d) list minerals listings were also determined using this approach as noted in the respective Assessment Methodology versions. Similarly, the 2014 Assessment Methodology assesses water quality using the site specific standards and the domestic water supply standards (but in the 2014 Assessment Methodology the percentage indicating support/non-support has been changed to 25% for site specific criteria).

Reg. 2.511(B), Mineral Quality

Cities of Fayetteville, Harrison, Jonesboro, Rogers, Springdale, and Yellville

Comment: Include a Substantial Explanation of the Changes to Reg. 2.511(B) in the Response to Comments....

Response: Adding “Chlorides” and “Sulfates” and placing their atomic symbols in parentheses defines the symbols.

Inclusion of the “s” after Reg and the addition of “, and 2.308” clarifies that both regulations are necessary for water quality modifications.

Addition of “the values listed in the table below are not intended nor will these values be used by the Department to evaluate attainment of the designated uses” clarifies that these values are not intended to be used in designated use attainment. Additionally, the above response provides further explanation for the addition of the last sentence of the paragraph.

In 2007 the table was revised to the calculated values and the text stating how to do the calculations was not omitted. Having both the calculated values and the instructions leads to confusion concerning these values. Reverting back to the previously approved table will eliminate this issue.

Reg. 2.511(B), Mineral Quality

Cities of Fayetteville, Harrison, Jonesboro, Rogers, Springdale, and Yellville

Comment: Clarify that Ecoregion Values for Minerals in Reg. 2.511(B) Are Not Water Quality Criteria Within the Meaning of the Clean Water Act.

... The Municipalities submitting these comments agree with the changes proposed by ADEQ in this regard, but the Municipalities believe that even stronger clarification should be given. To that end, the Municipalities request the following revisions to Regulation No. 2.

- Add a footnote attached to the title of Reg. 2.511(B) as follows:
"(B) Ecoregion Reference Stream Minerals Values *
"* The Ecoregion values listed in Reg. 2.511(B) are exceptions to the general rule set forth in Reg. 2.501 that most values listed in Chapter 5 of Regulation No. 2 are intended to be water quality standards."
- With the exception of the first sentence, adopt all of the revisions to Reg. 2.511(B) proposed by ADEQ.
- Replace the first sentence of Reg. 2.511(B) with the following:
"The following values listed below ~~determined~~ were derived from historical measurements of minerals concentrations collected in Arkansas' least-disturbed ecoregion reference streams. These ecoregion minerals values are considered to be the maximum naturally occurring levels. They are historical benchmark values. They are not based upon, or connected to the protection of, any designated or existing use and they are not intended as water quality criteria or water quality standards. Instead, the values are useful as historical benchmarks that aid in identifying and quantifying changes in the concentration of minerals that may be worthy of attention given the unique limitations in technology available to treat for minerals, but do not amount to a failure to attain water quality standards."

Response: Reg. 2.501 is proposed to begin with "Unless otherwise stated in this Chapter..." and the paragraph in Reg. 2.511(B) is proposed to end with "The values listed in the table below are not intended nor will these values be used by the Department to evaluate attainment of the water quality standards." With the other proposed revisions, the addition of a footnote on the heading of 2.511(B) is unnecessary.

A description of the development of a value is not a standard; therefore including the development history of the values would be inappropriate.

Reg. 2.511(B), Mineral Quality

Cities of Fayetteville, Harrison, Jonesboro, Rogers, Springdale, and Yellville

Comment: Establish a Simpler, Faster Procedure for Adopting Site Specific Modifications to Ecoregion Values for Minerals

... The Municipalities are not committed to any specific form for a new procedure, so long as the procedure is simpler and less time consuming. To promote discussion of how such a simpler and less costly procedure might be structured, the Municipalities offer the following proposal.

- Add a new Reg. 2.312 as follows:
"2.312 This procedure is applicable in those cases where a party asks the Commission to adopt a site specific modification to an Ecoregion value for minerals and the modification: (i) will not involve the removal of an existing or designated use; and (ii) the new proposed value will not exceed the criteria set forth in Reg. 2.511(C).
"The Commission may allow a modification of an Ecoregion value for minerals under this section to accommodate important economic or social development in a local area if existing

uses are maintained and protected fully and the requirements for public participation in the State of Arkansas Continuing Planning Process are met. Requests for modification of an Ecoregion value for minerals under this section shall follow the procedures in Regulation No. 8 governing Rulemaking proceedings. The following information shall be submitted to the Commission and the Director to support the requested modification:

- (1) A summary history of point source discharges in the affected water body segments;
- (2) Toxicity analysis consisting of either:
 - a. Results of whole effluent toxicity testing of the relevant point source in the affected water body segment, spiked to 250 mg/1 chlorides, 250 mg/1 sulfate, and 500 mg/1 total dissolved solids; or
 - b. some comparable or superior demonstration that there will be no adverse toxic effects to aquatic life due to minerals;
- (3) Statistical analysis of minerals concentrations from the relevant point source and the receiving stream to derive a new site specific minerals value
- (4) Mass balance computations to derive modifications to Ecoregion minerals values in downstream segments, if relevant; and
- (5) Documentation regarding the technological or economic limits of treatability."

"The Department shall submit any comments it may have regarding the proposed modification within 60 days following receipt of the request filed with the Commission."

"Modifications to Ecoregion values for minerals adopted by the Commission using the procedure set forth in this Reg. 2.306(B) shall be listed in a separate Appendix in Regulation No. 2."

City of Fayetteville

Comment: The City of Fayetteville would like to see those comments expanded to address site-specific criteria that were apparently established for a number of stream segments within the State at the same time as the ecoregion standards, based on the same original study. This appears to be the case with the White River in and near Fayetteville.

Response: The Cities propose a new procedure for adopting site specific modifications to ecoregion values for minerals in order to promote discussion of how a simpler and less costly procedure might be structured. But any such discussion should involve all interested stakeholders before the Triennial Review is initiated. At this time, ADEQ has not evaluated the appropriateness of the proposed procedure nor, as required by APCEC Regulation 8, has ADEQ conducted an Economic Benefit Environmental Impact Analysis to determine any potential economic or environmental impacts of establishing new procedures for modifying mineral ecoregion values.

Reg. 2.511(C), Mineral Quality

EPA

Comment: HB 1929 affects this section by requiring removal of the criteria protective of drinking water put in place for all waterbodies of the state. Though this is not a CWA 101(a)(2) designated use, EPA notes that the current draft does not attend to this issue, and that removal of these protections would bypass the public process and approval/disapproval authority, as specified in Reg. 2, of the Arkansas Department of Health. Additionally, it is unclear in the current draft what waterbodies and segments are to retain drinking water criteria?

Response: The Department acknowledges this comment. Act 954 of 2013 (HB 1929) was

repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session).

Reg. 2.512, Ammonia

EPA

Comment: The Reg. states “*The total ammonia nitrogen (N) criteria and the frequency of occurrence established in the following tables are as follows:*” The ammonia standard has language that excludes typical monitoring data. Specifically, the standard states that the chronic criterion will be assessed based on a thirty day average concentration. The state collects the vast majority of its monitoring data on a monthly schedule.

Response: To maintain consistency with typical monitoring data, the Reg. 2.512(B) Heading will be revised to read, “The ~~thirty-day~~ monthly average concentration of total ammonia nitrogen shall not exceed those values shown as the chronic criterion in the following tables:”

Appendix A

CWL

Comment: In the list of Site Specific Standards Variations Supported by UAA in the Delta Ecoregion (Appendix A), "TDS" was mistakenly spelled out as "total dissolved oxygen" rather than "total dissolved solids" for the Unnamed Tributary to Big Creek Ditch, Bayou DeView from AR Hwy 14 to Whistle Ditch, Bayou DeView from mouth to AR Hwy 14, and two other stream reaches.

FTN

Comment: In the list of Site Specific Standards Variations in the Delta Ecoregion (Appendix A), “TDS” was mistakenly spelled out as “total dissolved oxygen” rather than “total dissolved solids” for five stream reaches.

Response: These sections will be revised to state “total dissolved solids.”

Appendix A

ADEQ

Comment: The following typos were noted:

A typo was noted on Page A-37, “southern hickrynut” should read “southern hickorynut.”

A typo was noted on Page A-46, “winger mapleleaf” should read “winged mapleleaf.”

A typo was noted on Page A-47, “Loutre creek” should read “Loutre Creek.”

Response: No response necessary.

Appendix A

FTN

Comment: On Plate OM-2 in Appendix A, the boxes with the numbers 6 and 7 were not carried forward from the current version of Regulation No. 2. These boxes show approximate locations where site specific criteria apply for two reaches of Wilson Creek. We request that these two boxes be added to Plate OM-2 as they are shown in the current version of Regulation No. 2.

In the list of Site Specific Standards Variations in the Gulf Coastal Ecoregion (Appendix A), the existing entry for “Boggy Creek from the discharge from Clean Harbors El Dorado LCC downstream to the confluence of Bayou de Loutre” does not include a reference to a number on a map. We request that “(GC-2, #51)” be appended to this entry for clarification purposes.

On Plate GC-4 in Appendix A, the boxes with the numbers 52, 53, and 54 were not carried forward from the current version of Regulation No. 2. These boxes show approximate locations where site specific criteria apply for McGeorge Creek, Willow Springs Branch, and Little Fourche Creek. We request that these three boxes be added to Plate GC-4 as they are shown in the current version of Regulation No. 2.

Response: Revisions to Appendix A will be made to reflect these numbers that correspond with site specific standards.

Appendix A

FTN & CWL

Comment: On Plate D-1 in Appendix A, the boxes with the numbers 38, 39, and 40 were not carried forward from the current version of Regulation No.2. These boxes show approximate locations where site specific criteria for Big Creek Ditch and Bayou DeView apply. We request that these three boxes be added to Plate D-1 as they are shown in the current version of Regulation No.2.

Response: Revisions to Appendix A will be made to reflect these numbers that correspond with site specific standards.

Appendix A, Maps

EPA

Comment: Are the revised maps utilizing the most recent ecoregion map data to delineate the ecoregion boundaries? It is important for ecoregion boundaries to be reflective of the most recent and scientifically supportable information (i.e., 2004 Level III and IV EPA ecoregion poster).

Response: The map plates in Appendix A reflect the ecoregion delineations originally depicted in the version of APCEC Regulation 2 adopted in 1988.

Appendix A, Ecologically Sensitive Waterbodies

AGFC

Comment: The Arkansas Department of Environmental Quality (ADEQ) is proposing to include only species records from peer-reviewed publications. In addition to these records, AGFC recommends including validated records from the U.S. Fish & Wildlife Service, the Arkansas Natural Heritage Commission and certified Wildlife (through the Wildlife Society) and Fisheries (through the American Fisheries Society) biologists.

Response: The proposed species additions to current ESW reaches have been stricken.

Appendix C

AEF

Comment: Concern that the inclusion of all aquatic biota, including federally designated threatened and endangered (TE) species, may cause confusion with the ecoregion based key and indicator fisheries species (the fisheries use is renamed Aquatic Life) that have been the basis of the WQS for 30 years. Additionally, the inclusion of the federally designated TE species may be construed to incorporate the federal listings into state law. If the listed TE species are not present, is the waterbody impaired, if they are present, is the waterbody now an Extraordinary Resource Water? The original intent was to include some of the more common TE species as an indicator of the pristine or unique nature of a particular waterbody, not as criteria for designation or

impairment determination. This appendix and any references to it in the body of the regulation should make it clear that this listing, is just that, a listing, and should not, cannot be construed to incorporate a TE species into Regulation 2.

This may also be problematic when the changes to Biological Integrity in Section 2.405 are taken into consideration.

This is also a concern when comparing fisheries with ecoregion Key and Indicator species (Section 2.302) in Section 2.306 and 2.308 studies. Recent trends from ADEQ indicate that if a particular species is not present that it indicates impairment, when in fact, it may indicate nothing of the sort, and is most likely a sampling phenomenon.

Response: The proposed table added to Appendix C listing species protected under current ESW reaches has been stricken.

GENERAL COMMENTS NOT RELATED TO A SPECIFIC REGULATION

Ray Warren

Comment: Water quality standards set by ADEQ should protect the states waterways. Most of Arkansas's waterways either already fail or are falling behind. TDS and sediment transport are issues that desperately need to be addressed.

These standards were studied years ago and it was decided that this would be what it would take to protect our waterways. Now that we are concerned about water quality and we want to come up to current standards, we are only trying to achieve standards that were set a mere thirty years ago. These standards were set during most of our lifetimes - these are not standards that were pre-whiteman. For middle- aged Americans to expect for their children, the same lifestyle that they grew up with is not too much to ask from our government.

Though TDS and sediment transport are issues that are not being addressed, WET chemistry (whole effluent toxicity) should be addressed also as it is approaching levels that are near the limit.

Why does our state government allow these numbers to continually build by creating more standards that drive the numbers up? My children have grown up healthy drinking well water that contains no fluoride or chloride. Both of these elements have been proven to be endocrine disrupters. People don't want this in their drinking water anymore but we spend thousands of dollars putting it in domestic drinking water and then we spend thousands of dollars taking it out at the sewage treatment plant - why should we have it? Fluoride in drinking water has taken Carroll county backwards in several elections.

Why is it so difficult for a property owner to repair a cut bank? To be issued a permit, the land owner must go through too many government entities. They have a short time to complete a very expensive project and the government is just in the way - it's like government trips over it's own feet.

When the Nature Conservancy acquired land in Madison county, a severe cut bank was repaired in a few weeks. This proves that it can be done. We feel the Kings river is fining up with gravel, but gravel is just a small percentage of the bank that gets sloughed off during flood events. The major portion of the bank is sand which gets carried to Table Rock lake. This is an issue that our neighbors to the north have already noticed. How long will it take us to address this issue?

We should remember that industry must produce profit and are not paid to produce clean water. Industry must be held responsible for its actions just as citizens are responsible for their actions. As parents we teach our children that they clean up their own messes. We should uphold the standards that we are currently not upholding to truly protect our waterways and the future of our state.

Response: ADEQ must follow the water quality planning and management requirements set out in 40 CFR Part 130. Also, the commenter expressed concern on areas over which ADEQ does not have direct authority, including drinking water standards for fluoride and stream bank stabilization.

EPA

Comment: The following comments by the Environmental Protection Agency (EPA) on draft revisions to Arkansas's Regulation No. 2 include questions and concerns related to the effects of the Arkansas legislature's recent approval of HB 1929 (Enclosure 2) even though changes authorized by the bill are not currently included in the draft revisions. HB 1929 appears to mandate changes to water quality standards for minerals criteria in unclassified ecoregion streams, as well as to require removal of drinking water protections and criteria for those waterbodies not currently designated as a public drinking water supplies. EPA would ask the Arkansas Department of Environmental Quality (ADEQ) and the Arkansas Pollution Control and Ecology Commission (APC&EC) if they plan to propose to modify Reg. 2 to reflect these changes. As noted by EPA in its recent correspondence with ADEQ regarding the bill in its draft form and in its April 5, 2013 response to Senator Boozman's February 28, 2013 letter (Enclosures 3, 4 and 5, respectively), any changes to state water quality standards specified in the bill must be enacted in accordance with CWA requirements for revision of state water quality standards, including requirements for public participation and review and approval by EPA.

Response: The Department acknowledges this comment; however, Act 954 of 2013 (HB 1929) was repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session).

AGFC

Comment: Reg. 2 does not address sedimentation and embeddedness. AGFC recommends the use of language similar to the State of Oklahoma's to include sedimentation and embeddedness in Reg. 2 and encourages the immediate implementation of sedimentation and embeddedness standards in the ecoregions bordering Oklahoma; Ozark Mountains, Arkansas River Valley and Ouachita Mountains. ADEQ report WQ99-07-1 contains data collected for reference streams in the aforementioned ecoregions that could be used to determine impairment.

Gene Dunaway

Comment: Need sediment criteria of embeddedness be developed for streams.

Response: The Department agrees with the importance of protecting our waterways from excess sediment and embeddedness. During the 2013 triennial review process, a sediment / embeddedness stakeholder sub-group was formed to more closely discuss this issue. The sub-group presented three options for the main stakeholder workgroup to consider (the following is a summary of the three options):

1. Immediate establishment of sediment criteria prior to establishment of implementation procedures.

2. Immediate establishment of sediment benchmark prior to establishment of implementation procedure (voluntary benchmark placeholder in the regulation; potential legal issues need to be investigated).
3. Report investigation findings one year prior to the next triennial review.

Ultimately, the workgroup decided that the third approach was most appropriate; and ADEQ agreed that it would be inappropriate to immediately establish any criteria, benchmark or otherwise, without adequate scientific research specific to Arkansas' diverse ecoregions and land use practices. Additionally, as required by APCEC Regulation 8, ADEQ has not conducted an Economic Benefit Environmental Impact Analysis to determine any potential economic or environmental impacts associated with the adoption of sediment or embeddedness standards.

Alice Andrews

Comment: Endangered species - If the changes to Regulation 2 indeed provide a way to identify and add new or unlisted species of concern, then I agree with the changes.

Response: No changes in the procedures regarding the identification and adding endangered species are proposed in this Reg. 2.

David Ore

Comment: Good evening, thanks for taking testimony tonight. I have some concerns that I'll list and I want to echo the gentleman who just preceded me (Charles Bidding), I'm in full support of his proposals. I think that we need numerical standards across the state, especially in the extraordinary resource waters and the extraordinary surface water body classified streams. But we also need to have numerical standards for all streams because without that the residents of this state have no way of knowing exactly whether a particular stream standard is being held to these permits that are granted for each stream are actually contributing to meeting that standard or not. This is something really important as we begin to experience the effects of climate change. This is an important concept for today given the floods that we had here in the area this morning. In areas where this is a lot of construction, road construction, construction of subdivisions and commercial property, there's a lot of run off and there's not adequate stormwater management in most of these, and even Fayetteville we have a lot of violations, and if the state is not giving us some really clear guidance, it's hard for us the citizens to know if the cities and the state are actually regulating these permittees and violators appropriately. And consequently, we need to make sure that the commission that you sit on is actually setting penalties that are creating a disincentive for the violators to continue their violations.

With climate change, we're expected to experience cycles of flood and drought. So when we're looking at the flow criteria we should be putting into the regulations for the future, criteria that take them into account the likelihood of having long periods where flows will be very low and punctuated by high flow pulses resulting from flash flooding. Now this leads to turbidity and for example, Lake Fayetteville got a huge pulse of turbid water this morning, this is one of our crown jewels here in the city of Fayetteville. That's a good example of how the state needs to really begin to get on the front end of this so we don't continue to have to deal with it on the back end. And I'd like to ask too, that somehow incorporate in these regulations goals that will allow the state to uprate stream segments. If it's not an extraordinary resource water today, we the citizens need to know what we need to do to be able to improve that stream water quality and make it an extraordinary resource water body tomorrow. The Buffalo River and the Mulberry

River have experienced some real cracks lately and I want to talk about two years ago. The State Highway Department, in error, built a road project that slid off a mountain side and ended up dumping huge amounts of sediment into the Mulberry River. That's something that could have been avoided and something that the state regulations need to take into account that when things like that happen, the state itself needs to take steps to prevent that from happening again. And if there are no penalties it's not going to be a disincentive. Finally, for the Buffalo River, I would imagine that most of the people here tonight share my concern about the permitting of confined animal feeding operations and how the Department of Environmental Quality is doing the permitting. So I hope that in the development of these standards that it's made very clear that the Department of Environmental Quality has to do a much better job of informing the public of the permitting that it's doing subsequent to meeting the national pollutant discharge elimination system.

Response:

At this time ADEQ has not determined or evaluated the appropriateness of numerical standards across the state or the appropriate implementation. Additionally, as required by APCEC Regulation 8, ADEQ has not conducted an Economic Benefit Environmental Impact Analysis to determine any potential economic or environmental impacts the addition of these numerical standards may have.

ADEQ has guidelines to set appropriate permit limits for permitted facilities and a Uniform Penalty policy to determine the appropriate penalties for facilities that violate their permit limits. These policies are available on the ADEQ website as are copies of the permits.

The water quality standards in Regulation 2 were developed using ambient water quality data over a span of years taking into account periods of both low flow and high flow.

When an NPDES permit is written or renewed a public notice is included in a newspaper with statewide distribution.

Aubrey James Shepherd

Comment: I am very concerned about the Buffalo right now; I think every major conservation group in the state and a lot of people who are farmers who don't like much regulation, even so they care about this river. I think the fact that your board and ADEQ as an agency and a board, right where the separation is at, the titles have changed over the years in my experience. Anyway, it's a shame that we don't have more power, it's a shame that more people... But the public, there's no way you can over share this information with the public. People look at Facebook, videos on YouTube and other sharing groups of that sort and on Flickr photos. I think it's important, if you took a poll on a lot of your decision making you might find over whelming support to be strong and I think after what's going on with the Buffalo River that will be obvious to you. This morning I went out and photographed and did a little video reporting on the streams within a mile of my house inside the city limits and there's construction going on there. There were silt fences, public bales on these sites, nearly all had baled over the years. Some people have the big round bales, they strip along, and water finds its way under it. And there are no construction workers available on those... to just get out there and just put those back in place and hammer down the sections to hold the silt fence down and those other whatchamacallit. Anyway please think about stronger regulation and there are plenty of people like experts here with us tonight who can explain the reasons, not just in numbers, not just in particles per billion and such things as that, and that's all wonder, but you know I can see silt going down the creek and I know what it does to the creek. And you can see algae going in them,

ordinary outdoorsman recognizes clean water, you know a lot more people in the city want clean water.

Dan Cooty

Comment: Thank you, Mr. Charles Bidding representing the Buffalo River basically addressed my concern, we fully support his perspective, I only want to make one observation though, citizens across the state, across the United States, are spending more and more money to improve our wastewater, our effluent standards. EPA and state EPA Departments of Environmental Quality require higher and higher standards, stricter standards that we must meet and spend a lot of money to meet for that effluent. Pointed source pollution represents about 4% of the national water pollution, 96% is non-pointed source pollution. So we're spending more and more money to help solve 4% of the problem while 96% of the problem is enjoying more and more lax regulation. So the more money we spend, the more widely polluted water we end up with, so this has to change. We support the Buffalo River very much.

Response: The Department acknowledges these comments.

Shelia Roinfelt

Comment: Thank you, I'm a resident of Fayetteville and I'm also a business owner along the Buffalo River and I'm president of the Upper Buffalo Merchant's Association and under-member of the Buffalo River Chamber. So I wanted to follow Mr. Shepherd's comments a little bit in regards to the, my concern, I've been following ADEQ of course with the farm that's actually under construction out near Mt. Judy. As a business owner, I have a rental business right along the tributary of the Buffalo River. And as business owner, I am required to have my septic system evaluated and reported to the state every six months and I have, of course, a minimal rent business along there and my concern is that the proposed farm there also only required to have testing done every six months along the Big Creek River, the tributary to the Buffalo. Of course, I have nowhere near 6,500 clients coming to my business and I would like to see ADEQ increase their commitment to evaluating the water quality along the Big Creek and the Buffalo River during this time. I am concerned as a citizen, that ADEQ has said they will not do another environmental assessment at the hog farm site because the national park service was excluded from the original assessment process and I know there's been some communication back and forth and I'm hoping that ADEQ is willing to look at the items that they have pointed out. I would like to see them, if there's so much public resistance and outcry asking for some assessment, I don't understand why ADEQ is at least at this current time refusing to do another environmental assessment. The backer of the farm claims to look to innovation as ways to preserve and protect the environment and again the fact that there seems to be some resistance to being open about that and being willing to look at some of the concerns that citizens have and business owners have along the river concerns me. I heard a report today that some of the businesses along the middle Buffalo, which will be right along the path of the farm, are already losing business and that concerns me because I know with tourism is a big part of our economy here in Northwest Arkansas and I would like to see that support.

Response: The Department acknowledges these comments. The Farm Services Association conducted the environmental assessment. At the direction of the Governor, the University of Arkansas is conducting a research project to evaluate the sustainable management of nutrients from the C&H Farm operation. The major tasks of this project include:

- 1) Monitoring the fate and transport of nutrients and bacteria from land-applied swine

effluent on pastures.

- 2) Assess the impact of farming operations on the quality of critical water features on and surrounding the farm.
- 3) Determine the effectiveness and sustainability of alternative manure management techniques.

Harry Elliott

Note: Due to the length, this comment is provided in summary.

Comment:

2013 Triennial Review Public Comment

Arkansas does not maintain a legislative history; but the history of Act 954, which, among other things, **strips the domestic water supply use from many of Arkansas' water bodies**, should be documented.

Domestic Water Supply Use History

The federal Clean Water Act, enacted in 1972, required states to develop water quality standards to protect surface waters. Arkansas' water quality standards are contained in Regulation No. 2. According to ADEQ's analysis of HB 1929, "[t]he domestic drinking water use (or classification as a raw water source for public water supplies) has been applied to all of the state's surface waters since at least 1973. In limited situations, and based on site-specific scientific studies, the domestic water supply designated use has been removed but only *after a demonstration* that the designated use is not an existing use and that the removal of the use *will allow all other designated uses to be protected.*" These studies follow the procedures in Regulation No. 2 and the Continuing Planning Policy (CPP). The broad application of the domestic water supply use to Arkansas' surface waters adopted in Regulation 2 seems intended to protect existing and future domestic water supplies for the citizens of Arkansas. Act 954 strips the domestic water supply use protections from a large number of water bodies throughout Arkansas without any demonstration like that required by Regulation 2 or the CPP.

Removing the domestic water supply use from Arkansas' waters must be accomplished through a change to the Water Quality Standards. But any such change should be required to follow the procedures for making these types of changes that are set out in Regulation 2 (Reg. 2.306 and 2.308) and the CPP. Further, any removal of the domestic water supply use protections must ensure that the other designated uses, such as aquatic life, are protected. Where domestic water supply use protections are removed, then, until some other mineral standard is adopted and approved by EPA, please use the Ecoregion values as the mineral standards for protecting aquatic life.

I understand that the Ecoregion values are very stringent. However, stringent standards are better than no standards, which is what we are left with when Act 954 removes the domestic water use from numerous water bodies around the state.

So, What are the Current Domestic Water Supplies?

ADEQ does not maintain a list of current domestic water supplies. The Arkansas Department of Health (ADH) maintains this list because ADH is the agency recognized by US EPA as having primacy for the federal Safe Drinking Water Act.

This list identifies lakes, reservoirs and streams with public water supply intakes, but it does not identify the **"stream segments"** (an undefined term) in which the water supply intakes are located. Under Act 954, only the **stream segments** where the intakes are located will be protected as a drinking water supply, not the entire length of the stream. Under Act 954 only that portion of the stream tapped for a public water supply will retain the domestic water supply use protections, while inexplicably all "bodies of water", great and small, river and ditch alike, located within the **watershed** of a lake or reservoir used as a public water supply shall retain the domestic water supply use. What justification can possibly exist for providing greater protection to the streams that feed a water supply lake then to a stream that serves as the actual drinking water supply? In one instance, the lake and every stream located within its watershed will be protected. In the other, only a portion of the stream will be protected. Hopefully, it will

be the part upstream of the water intake, but there is no guarantee of that under Act 954!

Under Regulation 2, “domestic water supply” includes both public and private water supplies. The Safe Drinking Water Act covers public drinking water supplies only. ADH has an accurate list of public drinking water supplies, but I do not know if they maintain lists of sources used as private drinking water supplies or if there are any private drinking water supplies in the state that use surface water. Therefore, would the Commission please provide notice to the public about the changes required by Act 954 and ask the public to provide the Commission or ADEQ with information about any private water intakes located on lakes or streams in Arkansas before the domestic water supply use protections are removed from the state’s surface waters as required by Act 954.

What Planned or Potential Drinking Water Supplies are Listed in Current State Water Plan?

Act 954 allows the domestic water supply use protections to remain on lakes, reservoirs or **stream segments** listed in the State Water Plan as planned or potential domestic water supplies. The State Water Plan is developed by the Arkansas Natural Resources Commission, not ADEQ.

Currently, as the Plan now exists, it appears to consist of some vintage Basin Reports that identify major tributaries and reservoirs and impoundments in each Basin. The Reports consider surface water quality, uses, and stream flow at designated gauging stations, as well as other information. Reservoirs serving population centers might be noted in some Basin Report, but based on my quick review of a few of them, **no list of planned or potential domestic water supplies seems to exist in the State Water Plan.** So, it does not look like many water bodies will retain the domestic water supply use protections based on its listing in the existing State Water Plan.

Some future update of the State Water Plan may add a list of planned or potential water supplies. Because the revised list in a future Plan update was not the list that existed when Act 954 was enacted, will Act 954 have to be amended in order to add the water supply use to the new listings?

Can't We Just Add The Domestic Water Use Back on Stream Segments When Needed?

What does 40 CFR § 131.10(j) mean? The federal regulation provides:

- (j) A State must conduct a use attainability as described in § 131.3(g) whenever:
 - (1) The State designates or has designated uses that do not include the uses specified in Section 101(a)(2) of the Act....

I understand that the Section 101(a)(2) uses are the “fishable./swimmable” uses, and those uses do not include drinking water. Does this federal regulation mean that a city, wanting to add the domestic water use to a stream so it can use surface water for drinking water purposes, has to conduct a use attainability analysis in order to add the domestic water supply use back onto a stream that had the use before it was removed by operation of Act 954? I don't know what this regulation means, but surely EPA does not intend to object or would object to adding a use to a water body when that use existed prior to Act 954.

But, either way, a public drinking water supplier can always use surface water as a source whether or not the source is designated as a domestic water supply in Regulation 2. The only difference in this post Act 954 era is that if a domestic water supply use is not attached to a stream or lake, then any industrial discharger or sewage treatment plant discharging to that water body does not have to worry about controlling minerals in its effluent. It is the water supplier who will have to meet the drinking water standards, and not the polluters. Addressing minerals can be extremely costly, as polluters have noted. So **Act 954 has effectively transferred the financial burden of cleaning up mineral pollution from the polluting discharger to any new drinking water supplier.**

Commission's List is Published

Act 954 requires the Commission to regularly publish the list of stream segments and reservoirs that have an existing use as a domestic water supply or are listed in the Arkansas Water Plan as a planned or potential water supply. ADH provided a list of some reservoirs and streams with water supply intakes, but it did not specify where those intakes are such that the Commission can identify the particular **stream segment** where the domestic water

supply use protections apply under Act 954. And the Commission may not obtain this information if it is related to the security of public water systems because that information is exempt from disclosure under Arkansas' Freedom of Information Act. So how does the Commission publish a list of stream segments to be protected if the information related to the location of a public water supply intake is exempt from disclosure under the FOIA? And how can domestic water supply use protections be applied to any stream segment where the location of the public water supply intake is supposed to be a secret?

There is another related problem under Act 954. The Commission's list does not include the publication of water bodies located within the watersheds of lakes or reservoirs used as public water supplies. (See A. C. A. 8-4-202(b)(3)(B)(iv)(c), which only references (b)(3)(B)(iv)(a), but not (b).) Why should the Commission publish one list and not the other?

4 cfs

Please advise where or how it makes sense to use 4cfs for stream flows when data collected from the stream in question shows the stream flow is less than 4 cfs? On this point, please see ADEQ's comments, which are attached.

Data

Regarding the requirement for an average concentration of minerals using "at least 60 actual measured samples taken at regular intervals over at least a five-year period," when assessing water quality for mineral impairments, please see ADEQ's comments on this point, as well as current federal case law. This requirement may play havoc with Arkansas' 303(d) list because EPA will not be bound by this requirement. Hopefully, EPA will proceed to do what needs to be done, despite Act 954. Indeed, Act 954 may focus EPA's attention on minerals data and the effort to avoid listings based on mineral impairments may backfire.

Permits

These permittees may be ones who can obtain a stay or waiver of the mineral limits under Act 954. See ADEQ's comments concerning the merits of changing permit conditions through a stay or waiver as authorized under Act 954 without modifying the permit in conformance with state and federal law and NPDES program delegation.

Conclusion

The domestic water supply use designations should not be removed from any waters, unless the use is removed in accordance with the procedures set forth in Regulation 2 and the Continuing Planning Process and where mineral standards will still exist to protect aquatic life uses.

Act 954 also establishes a data credibility law for determining mineral impairments that EPA should ignore in Arkansas, just as it did in Florida and Iowa.

If any changes are made to Regulation 2 as a result of Act 954, please give the public an opportunity to review and comment on those changes. The public was shut out of the legislative process. Please don't shut us out of the rule making process too.

Response: The Department acknowledges this comment; however, Act 954 of 2013 was repealed on October 21, 2013 (Act 4 of the 2013 Extraordinary Session). An additional public notice is not necessary, as the Department will not be implementing the provisions of Act 954 of 2013.

List of Commenters

Albemarle Corp.
Alice Andrews
Arkansas Department of Environmental Quality (ADEQ)
Arkansas Environmental Federation (AEF)
Arkansas Game and Fish Commission (AGFC)
Association for Beaver Lake Environment (ABLE)
Aubrey James Shepherd
Beaver Water District
Buffalo National River
Central Arkansas Water
City of Fayetteville
City of Harrison
City of Jonesboro
City of Rogers
City of Springdale
City of Yellville
City Water and Light Plant of the City of Jonesboro (CWL)
Dan Cooty
David Ore
El Dorado Chemical Company (EDCC)
Energy and Environmental Alliance of Arkansas (EEAA)
Environmental Protection Agency (EPA)
Eric Anderson
Faulkner County Citizens Advisory Group (FCCAG)
FTN Associates, Ltd. (FTN)
Gene Dunaway
Georgia-Pacific LLC
Harry Elliott
International Copper Association and Copper Development Association
International Zinc Association (IZA) and Windward Environmental
Madison County Farm Bureau
National Park Service
Ozarks Water Watch
Ray Warren
Shelia Roinfelt
Tyson