Rule 2, 8 CAR Part 21

DEQ seeks legislative review and approval of Rule 2, and to codify the rule as 8 CAR Part 21. This rulemaking is necessary because the Clean Water Act requires triennial review of the applicable water quality rule to see if any changes are appropriate. DEQ determined during its triennial review that certain criteria needed updating.

This rule also needed stylistic changes to conform to the Code of Arkansas Rules. Rule 2 is not currently codified but will be after review and approval.

I. Department of Energy & Environment, Pollution Control & Ecology Commission (PC&EC) Rulemaking process vs Rule 2 2023 Triennial review process:

PC&EC Rulemaking Process	**Rule 2 2023 Triennial Review Process**
	Stakeholder workgroup meeting March 31, 2022
	Stakeholder workgroup meeting April 19, 2022
Governor's Review	Governor's Office approval November 21, 2024
	DEQ published the draft post-stakeholder workgroup meetings on the DEQ website November 23, 2024[1]
Petition the PC&EC	PC&EC approved petition to initiate rulemaking December 6, 2024
Public Notice	Public Notice: December 7, 2024
	Second Public Notice: December 22, 2024
Public Hearings	Public Hearings held January 6, 2025 and February 5, 2025
Public Comment Period	Public Comment Period ended February 5, 2025
PC&EC Adoption	PC&EC approved April 25, 2025
Legislative Approval	
Final State Action	
EPA Approval	

Stakeholders did not raise significant concerns about the new and revised criteria proposed for Rule 2.

Commentors did not raise concerns about the cost of achieving compliance with new effluent limits. Commentors requested that DEQ allow flexibility in implementing any new limits, as outlined in DEQ permitting procedures, EPA guidance, and the Clean Water Act and its implementing regulations.

DEQ received a comment on the feasibility of testing the lower ammonia limits that could be in permits. DEQ identified the approved testing method that could test for ammonia at those levels.

[1] Updated ESW species list, footnote added to xylene criteria proposal, added E. coli criteria

II. DEQ process for evaluating more stringent water quality criteria during a permit review

Working cooperatively with the permittee is an important part of DEQ's process of implementing new effluent limits in the permittee's permit. A key component of this process is DEQ's coordination and collaboration with permittees to assist with understanding and compliance readiness. This cooperative and collaborative communication may help identify appropriate compliance options including, but not limited to, operational changes and treatment upgrades.

Rule 2 does not have fees associated with it, making the cost of compliance with this rule the source of any financial impact. As a result, some entities may incur additional costs to achieve compliance with more stringent limits. Other entities will incur no additional cost because their current treatment systems can achieve compliance with the more stringent limits.

When a permit is modified or renewed, the new water quality standard is evaluated to determine any impact to the discharge. This evaluation considers the design flow, effluent monitoring data, and dilution to determine whether the facility's discharge will cause or contribute to an exceedance of the water quality standard and determine the appropriate effluent limit. This effluent limit would be included in the draft permit along with a compliance schedule that allows sufficient time for the permittee to achieve compliance with the new effluent limit. The draft permit is made available for thirty (30) days for public notice and comment. DEQ responds to each comment, makes any necessary adjustments, and then issues the final permit. Until the new permit limit becomes effective, i.e., during the compliance schedule period, the permittee is required to monitor and report for the pollutant of interest and provide progress reports describing the actions taken towards meeting the new effluent limitation.

Additional Information

III. Summary of 2023 Triennial Rule 2, 8 CAR Part 21, revisions, their justification, and associated economic impact.

a. **8 CAR § 21-507 (Rule 2.507)** – Extension of the primary contact recreation season.
   - **Justification:** Expanding the primary contact recreation season to include April and October will ensure human health protection for Arkansas citizens and tourists.
   - **Economic Impact:** There are currently 210 NPDES facilities with primary contact recreation season effluent limits or monitoring requirements. The economic impact for extension of the primary contact recreation season is expected to be minimal as these facilities are already treating their wastewater with a form of disinfectant.

b. **8 CAR § 21-507 (Rule 2.507)** – Revise *E. coli* geometric mean criteria for "All Other Waters.".
   - **Justification:** Provide clarification for permitting and TMDLs.
   - Permittees with fecal coliform bacteria (FCB) limits should expect to receive E. coli limits that are found in 8 CAR § 21-507 (Rule 2.507). Essentially trading one effluent limit for another.

Current FCB Limit	Expected E. coli limit (ORW1 /lake)	Expected E. coli limit (all other waters)
200 col/100 mL (monthly avg.)	126 col/100 mL (monthly avg.)	126 col/100 mL (monthly avg.)
400 col/100 mL (daily max.)	298 col/100 mL (daily max.)	410 col/100 mL (daily max.)
400 col/100 mL (7-day avg.)	298 col/100 mL (7-day avg.)	410 col/100 mL (7-day avg.)
1000 col/100 mL (monthly avg.)	630 col/100 mL (monthly avg.)	630 col/100 mL (monthly avg.)
2000 col/100 mL (daily max.)	1490 col/100 mL (daily max.)	2050 col/100 mL (daily max.)
2000 col/100 mL (7-day avg.)	1490 col/100 mL (7-day avg.)	2050 col/100 mL (7-day avg.)

c. **8 CAR § 21-508 (Rule 2.508)** – Revision of cadmium criteria.
   - **Justification:** Current Rule 2 cadmium criteria are from 1986. EPA updated the cadmium criteria in 2016. EPA's 2016 criteria are supported by current science and DEQ has determined that these revisions will be more protective of aquatic life.
   - **Economic Impact:** Most NPDES permitted facilities with current effluent limits for cadmium (twelve out of sixteen) can meet limits based on the proposed criteria.

d. **8 CAR § 21-508 (Rule 2.508)** – Addition of human health criteria for benzene, toluene, ethylbenzene, xylene, and phenol.
   - **Justification:** Current Rule 2 doesn't not contain criteria for these five parameters. These parameters are known to have negative health effects for humans: benzene – carcinogen; toluene - nervous system, kidney, or liver problems; ethylbenzene - blood, liver, and kidney damage; xylene - impaired lung function, memory, and

breathing; phenol – digestive, blood, and liver effects. DEQ has determined that adoption of these criteria will be more protective of human health.

- **Economic Impact:** None. NPDES permitted facilities with current effluent limits for benzene, toluene, ethylbenzene, xylene, and phenol are capable of meeting effluent limits based on the proposed criteria.

e. **8 CAR § 21-512 (Rule 2.512)** – Ammonia – Revision of ammonia criteria.
   - **Justification:** Current Rule 2 criteria are from 1999; EPA updated the ammonia criteria in 2013. The 2013 criteria consider the sensitivity of freshwater mussels, which are common in Arkansas' waters.
   - **Economic Impact:** Ammonia criteria changes for ammonia will result in more stringent effluent limits for ammonia, affecting five hundred and twenty (520) NPDES facilities. It is not possible to quantify the cost of compliance for any one system until that system determines what, if anything, it will change in its treatment process.

     Several methods for removal of ammonia are common, but each treatment plant must determine which process is most effective. For example, some treatment plants could achieve compliance with new limits using with existing processes, and other facilities may need to add additional treatment capacity or processes. Certain treatment processes could be impacted by temperature, pH, the concentration of ammonia being treated and the presence or absence of other pollutants.

     At the next permit renewal, DEQ will obtain information about each treatment plant's plan and timeline for achieving compliance with each new water-quality based effluent limit that is appropriate for that permit. DEQ expects to provide a period for each treatment plant to study its options, including allowing some trials when appropriate. That information will inform DEQ's implementation of that limit, including the need for any schedule of compliance, variance, or some other implementation tool.

f. **Appendix A** – Addition of site-specific dissolved oxygen (DO) criteria for three waterbody assessment units (AUs).
   - **Justification:** It has been demonstrated that the observed DO range, which is lower than current criteria, can be described as natural and capable of supporting aquatic life in the Alum Fork Saline River, South Fork Ouachita River, and Saline River (Red River Basin) AUs.
   - **Economic Impact:** None.

g. **Appendix A** – Addition of site-specific pH criteria for five waterbody AUs.
   - **Justification:** It has been demonstrated the observed pH range, which is lower than current criteria, can be described as natural and capable of supporting aquatic life in Dry Fork Creek, Irons Fork Creek, Barren Creek, Short Creek, and Caney Creek.
   - **Economic Impact:** None.

h. **Appendix A** – Remove the exceptions of "no fishable/swimmable or domestic water supply uses" and "exempt from Rule 2.406 and Chapter 5" from Coffee Creek.
   - **Justification:** A 2007 study by Parsons and a 2013 study by AquAeTer both noted the existence of aquatic life in Coffee Creek. Removal of these exceptions will add Aquatic Life, Primary Contact Recreation, Secondary Contact Recreation, and Domestic Water Supply designated uses and the criteria to protect those uses. This revision will make the uses of Coffee Creek consistent with all other waterbodies in the ecoregion.
   - **Economic Impact:** One NPDES permitted facility discharges to lower Coffee Creek. DEQ notes that the economic impact of this revision is dependent on how the decides to meet the effluent limits that result from this revision and therefore unknown at this time.

i. **Appendix A** – Ecoregion boundary line updates.
   - **Justification:** Revised Arkansas ecoregion boundaries have higher resolution to better reflect the true geographical boundaries of our distinct ecoregions. The new ecoregion boundaries were developed by a group of state and federal agencies. These agencies included, but were not limited to, DEQ, EPA, Arkansas Natural Heritage Commission, Office of State Geologist, Arkansas Multi-Agency Wetland Planning Team, USDA-NRS, Arkansas Soil and Water Conservation Commission, U of A, USACOE, USGS, AGFC, Arkansas Forestry Commission, and Arkansas Cooperative Extension Service. These ecoregion boundaries were developed for every state in the US and are industry standard in water quality and aquatic ecology.
   - Economic Impact: Fifty-eight (58) of the seventy-three (73) facilities impacted by new ecoregion boundaries are likely to have revisions to the following parameters:

Parameter	**Number of Facilities**
Temperature	3
Dissolved Oxygen	23
Base Turbidity	25
All Turbidity	30
Cl^-	27
SO_4	9
Total Dissolved Solids	13
Hardness	6

j. **Appendix A** – Species additions to Ecologically Sensitive Waterbodies (ESW) – stakeholder input from Arkansas Game and Fish Commission (AGFC).
    - **Justification:** Updated list of species documented in currently designated ESWs supporting protecting these threatened and endangered species. No additional ESW stream or stream reaches are being proposed for addition.
    - **Economic Impact:** None.

k. **Appendix A** – Remove trout water designated use from three lakes (Bull Shoals, Greers Ferry, and Ouachita).
    - **Justification:** AGFC no longer stocks trout in Bull Shoals Reservoir, Greers Ferry Reservoir, and Lake Ouachita. AGFC does not manage these lakes for trout.
    - **Economic Impact:** None

l. **Appendix A** – Remove "Unnamed tributary of Lake June below Entergy Couch Plant to confluence with Lake June – maximum water temperature 95 degrees F (limitation of 5 degrees above natural temperature does not apply) (GC-1, #30)."
    - **Justification:** Entergy Harvey Couch plant closure was completed December 7, 2017. The associated NPDES permit AR0000493 was voided December 18, 2017.
    - **Economic Impact:** None

m. **Appendix A** – Remove current Rule 2 language "Unnamed tributary to Flat Creek – no fishable/swimmable uses (GC2, #4)." Add seasonal aquatic life and secondary contact recreation designated uses.
    - **Justification:** The removal of these uses and the site-specific DO criteria occurred in 1986. The revision was in consideration for an NPDES facility that is no longer in operation. These revisions will add seasonal aquatic life and secondary contact recreation designated uses.
    - **Economic Impact:** None

n. **Appendix A** – Remove current Rule 2 language "Unnamed tributary to Smackover Creek - no fishable/swimmable uses (GC2, #2)." Add seasonal aquatic life and secondary contact recreation designated uses.
    - **Justification:** The removal of these uses and the site site-specific DO criteria occurred in 1981. The revision was in consideration for an NPDES facility that is no longer in operation.
    - **Economic Impact:** None