

ARKANSAS POLLUTION CONTROL & ECOLOGY COMMISSION

ECONOMIC IMPACT/ENVIRONMENTAL BENEFIT ANALYSIS

Rule Number & Title: Regulation No. 19, Regulations of the Arkansas Plan of Implementation for Air Pollution Control

Petitioner: Arkansas Department of Environmental Quality (“ADEQ”)

Contact Person: Mike Bates, Chief, Air Division **Contact Phone:** 501-682-0750

Contact Email: bates@adeq.state.ar.us

Analysis Prepared by: Elizabeth Sartain, Environmental Program Coordinator, Air Division

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2A. ECONOMIC IMPACT

1. Who will be affected economically by this proposed rule?

State: a) the specific public and/or private entities affected by this rulemaking, indicating for each category if it is a positive or negative economic effect; and b) provide the estimated number of entities affected by this proposed rule.

a) *Sources that emit more than 40 tons of nitrogen oxides, 40 tons sulfur dioxide, 40 tons of volatile organic compounds, 25 tons of particulate matter, 10 tons of fine particulate matter (“PM_{2.5}”), 15 tons of coarse particulate matter (PM₁₀), or 0.5 tons of lead per year will be affected by this rule. Some facilities that could be affected include paper products facilities, wood products facilities, facilities with combustion sources, and power plants. Costs to permit affected facilities and to conduct necessary monitoring, recordkeeping and reporting will vary between affected facilities based on facility type and amounts of emissions.*

b) *Approximately 92 sources emit 40 tons per year or more of nitrogen oxides or sulfur dioxide as their primary pollutant, and approximately 42 sources emit 40 tons per year or more of volatile organic compounds as their primary pollutant. Approximately four sources emit over 10 tons per year of PM_{2.5} as their primary pollutant. In total, around 150 sources in the state are affected by the federal rule changes.*

Sources and Assumptions: The number of sources that have actual emissions higher than 10 tons of PM_{2.5} per year is estimated to be 74, based on 2008 emissions inventory data. However, 70 of them emit another regulated pollutant as their primary pollutant. Sources that emit fewer tons per year of the respective pollutants than is listed above (1a) will not be affected by this rule change.

2. What are the economic effects of the proposed rule? State: 1) the estimated increased or decreased cost for an average facility to implement the proposed rule; and 2) the estimated total cost to

implement the rule.

- 1) *Estimated costs for sources to implement the rule are unknown, however it is reasonable to anticipate some increase in costs, and it will likely vary between facilities.*
- 2) *The total estimated cost for sources to implement the rule is unknown but is expected to increase. The cost for ADEQ to implement the rule is expected to be minimal.*

Sources and Assumptions: Amounts of emissions, controls, and other related costs such as monitoring will vary based on the facility type, size, and operating conditions. Costs to include PM_{2.5} in permits are expected to be minimal because ADEQ has been using PM₁₀ as a surrogate for PM_{2.5} for permitting purposes. ADEQ has also been modeling the National Ambient Air Quality Standards (“NAAQS”) for permitting purposes.

3. List any fee changes imposed by this proposal and justification for each.

No changes to fees are being proposed in this rulemaking.

4. What is the probable cost to ADEQ in manpower and associated resources to implement and enforce this proposed change, and what is the source of revenue supporting this proposed rule?

The proposed changes to Regulation No. 19 are anticipated to have only minimal implementation costs to ADEQ.

Sources and Assumptions: Costs to include PM_{2.5} in the permitting process are expected to be minimal because ADEQ has been using PM₁₀ as a surrogate for PM_{2.5} for permitting purposes and has been modeling for compliance with the PM₁₀, lead, nitrogen dioxide, ozone, and sulfur dioxide NAAQS to set emission limits in permits.

5. Is there a known beneficial or adverse impact to any other relevant state agency to implement or enforce this proposed rule? Is there any other relevant state agency’s rule that could adequately address this issue, or is this proposed rulemaking in conflict with or have any nexus to any other relevant state agency’s rule? Identify state agency and/or rule.

There is no known impact to another state agency nor is there another state agency’s rule that could address any of the proposed changes. This rulemaking is not in conflict with, nor has any nexus to, any other relevant state agency’s rule.

Sources and Assumptions: Not applicable

6. Are there any less costly, non-regulatory, or less intrusive methods that would achieve the same purpose of this proposed rule?

No

Sources and Assumptions: Not applicable

2B. ENVIRONMENTAL BENEFIT

1. What issues affecting the environment are addressed by this proposal?

Emissions of PM_{2.5}, lead, nitrogen dioxide, ozone, PM₁₀, sulfur dioxide, and precursor pollutants.

2. How does this proposed rule protect, enhance, or restore the natural environment for the well-being of all Arkansans?

The proposed rule requires sources to be permitted for their emissions to ensure the emissions will not contribute to a violation of any of the current NAAQS. EPA finalized revised NAAQS for particulate matter (PM_{2.5} and PM₁₀) in 2006, for ozone and lead in 2008, and for sulfur dioxide and nitrogen dioxide in 2010, to protect the health of Americans.

The proposed rule requires sources to be permitted for their emissions in excess of 0.5 tons per year of lead.

The proposed rule requires sources to be permitted for their emissions in excess of 40 tons per year of nitrogen oxides, volatile organic compounds, or sulfur dioxide.

The proposed rule requires sources to be permitted for their emissions in excess of 10 tons per year of PM_{2.5}.

This proposed rule is compatible with these standards.

Sources and Assumptions: The NAAQS are intended to protect human health and the environment. Lead exposure is known to negatively affect human health. Particulate matter can enter the human respiratory system, is linked to cardiovascular health problems, and can pose a risk to human health. Nitrogen oxides and volatile organic compounds are precursor pollutants that contribute to the formation of ground-level ozone, which is a respiratory irritant. Sulfur dioxide is also a respiratory irritant and can contribute to the formation of particulate matter.

3. What detrimental effect will there be to the environment or to the public health and safety if this proposed rule is not implemented?

NAAQS emissions would remain under-regulated and expose people and the environment to unpermitted levels of pollutants. Permits issued for criteria pollutants may not be protective of public health and in non-compliance with the current EPA's NAAQS without this rulemaking.

Sources and Assumptions: PM_{2.5} is not currently explicitly subject to permit limits. Various NAAQS have been revised at the federal level but are not incorporated or enforceable under the current State regulations. In October 2006, the EPA revised the 24-hour PM_{2.5} primary and secondary NAAQS from 65 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 35 $\mu\text{g}/\text{m}^3$, revoked the annual standard for PM₁₀, and retained the 24-hour primary and secondary NAAQS

standards of 150 $\mu\text{g}/\text{m}^3$ for PM_{10} (71 FR 61144, Oct 17, 2006). In March 2008, EPA revised the 8-hour ozone NAAQS standard from 0.08 parts per million (ppm) to 0.075 ppm (73 FR 16436, Mar 27, 2008). In November 2008, EPA revised the lead NAAQS standard from a calendar quarter average of 1.5 $\mu\text{g}/\text{m}^3$ to a rolling three month average of 0.15 $\mu\text{g}/\text{m}^3$ (73 FR 66964, Nov 12, 2008). In June 2010, EPA retained the secondary 3-hour NAAQS standard of 0.5 ppm for sulfur dioxide, and added a 1-hour standard of 75 ppb (75 FR 35520, Jun 22, 2010). In February 2010, EPA added for nitrogen dioxide a primary 1-hour NAAQS standard of 100 ppb and retained the primary and secondary annual standards of 53 ppb (75 FR 6474, Feb 9, 2010).

4. What risks are addressed by the proposal and to what extent are the risks anticipated to be reduced?

NAAQS emissions are linked to negative heart and lung health effects in people. Permitted levels of criteria pollutants consistent with the revised standards will help ensure that people are not exposed to unhealthy levels of $\text{PM}_{2.5}$, lead, nitrogen dioxide, ozone, PM_{10} , and sulfur dioxide.

Sources and Assumptions: Permit limits for $\text{PM}_{2.5}$, lead, nitrogen dioxide, ozone, PM_{10} , and sulfur dioxide will be based on the current EPA's NAAQS, which are health based standards.