



COUNCIL

August 31, 2022

Pennsylvania Independent Regulatory Review Commission  
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Harrisburg, PA 17010

PENNSYLVANIA ANTHRACITE COUNCIL

Email: [hardcoalorg@paanthracite.com](mailto:hardcoalorg@paanthracite.com)



Re: EQB Proposed Rule Making for Water Quality Standard for Manganese (Mn)

Dear IRRC:

I am writing on behalf of the more than 3,000 men and women who earn their living mining and supporting Pennsylvania's anthracite mining industry to request that you disapprove the EQB final rulemaking which classifies manganese as a toxic substance and requires the treatment standards for manganese from go from its current 2.0 mg/L to 0.3 mg/L at the point of discharge.

I strongly urge the Commission's disapproval of the EQB's actions for the following reasons:

1. The proposed regulation does not comply with either Pennsylvania Act 40 of 2017 or Act 181 of 1982 (The Regulatory Review Act).
2. It is highly unlikely that anthracite mining operators required to treat manganese to the new effluent standard will ever be able to comply with the requirements being imposed on them.
3. The studies used by the Department to justify the rule change relies heavily on outdated information from international sources which in some cases come from third world countries dating back to WWII.
4. The Department's proposed rulemaking offers a considerable amount of qualifying language throughout its rulemaking and seems unsure of the results of the studies that it has used as the basis of those changes.
5. This is just another nail in the coffin of small businesses in Pennsylvania.

**The action being taking the by Pennsylvania Environmental Quality Board (EQB) is not consistent with Pennsylvania Law Under Act 40 of 2017 or Act 181 of 1982**

In 2017 the Governor Wolfe signed Act 40 of 2017 which amended the Pennsylvania Administrative Code of 1929. Specifically, the Act signed by the Governor required the following action:



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*Section 6. Section 1920-A of the act is amended by adding a subsection to read:*

*Section 1920-A. Environmental Quality Board.--\* \* \**

*(j) The board shall promulgate regulations under the act of June 22, 1937 (P.L.1987, No.394), known as "The Clean Streams Law," or other laws of this Commonwealth that require that the water quality criteria for manganese established under 25 Pa. Code Ch. 93 (relating to water quality standards) shall be met, consistent with the exception in 25 Pa. Code § 96.3(d) (relating to water quality protection requirements). Within ninety days of the effective date of this subsection, the board shall promulgate proposed regulations.*

More specifically, Act 40 requires that criteria for measuring manganese be measured at the point of withdrawal and not the point of discharge. 25 PA Code 96.3 (d) reads as follows.

*(d) As an exception to subsection (c), the water quality criteria for total dissolved solids, nitrite-nitrate nitrogen, phenolics, chloride, sulfate and fluoride established for the protection of potable water supply shall be met at least 99% of the time at the point of all existing or planned surface potable water supply withdrawals unless otherwise specified in this title.*

Basically, Act 40 directed the EQB to simply add manganese to the list of exceptions that already exist in the law. However, the Department completely ignored this legislative directive and wrote its own rule making package. This rulemaking far exceeded the legal mandate given to the Department in Act 40 of 2017. In fact, this new rule makes Pennsylvania's treatment of manganese the strictest in the nation far exceeding any other U.S. state or Federal guidelines for manganese.

Further, the manganese rulemaking fails to meet the standard set forth in Act 181 of 1982 "The Regulatory Review Act." According to Section 5 of the Act, the Commonwealth is required to provide "an economic impact statement" on its effect on small businesses in Pennsylvania on the same date to the Legislative Reference Bureau for publication.

To the best of my knowledge no economic impact study was submitted to the Legislative Reference Bureau of the time of its publication. Additionally, I am not aware of any analysis on the part of the Bureau of Clean Water regarding the economic impact on small businesses in Pennsylvania as a result of this rule change.

I would urge the IRRC to reach out to the Department to request such a document to see if in fact, it does exist.

**It is highly unlikely that anthracite mining operators required to treat their mining discharges for manganese will be able comply with the new 0.3 mg/L treatment standard**



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At the January meeting of the Mine Reclamation Advisory Board (MRAB), representatives from the DEP Bureau of Clean Water participated remotely via telephone. During the discussion, I asked representatives from the Bureau of Clean Water if they were *“aware of any place in the United States where they are currently treating (manganese) to a 0.3 mg/L standard.”*

According to meeting minutes from the January MRAB meeting and approved at the April meeting of the MRAB, Kristen Schlauderaff, from the Bureau of Clean Water (BCW), reported the DEP they are *“talking with facilities and entities who work in this arena, and in the states, there are not a lot of regulatory requirements that force these kinds of limitations, therefore there isn't a need for technology.”*

Schlauderaff did go on to state that the Bureau of Clean Water has been working with companies who do have international experience in other countries where they have very stringent limits, well below anything in the U.S. She further stated those international locations have seen success with treatments at very low levels. Those limits, she stated, were well below anything in the U.S. She went on to add that the Department was *“getting that information.”*

Clearly the implied message here is that the Bureau of Clean Water had developed a rule and was now scrambling to find information that supported a poorly thought-out rule making.

Josh Lookenbill also representing the Bureau of Clean Water added *“the ability to treat below 0.3mg/L at certain discharges across the state is ‘anecdotal’, it just happens that the water chemistry and the treatment that's been implemented was able to remove a significant amount below 0.3 mg/L concentration of manganese.”*

At that point, I challenged Mr. Lookenbill asking him if the answer to his question was no, there are not any sites in the United States that are treating to 0.3 mg/L. Mr. Lookenbill clarified his remark saying *“there are sites treating with an effluent that results in concentrations below 0.3 mg/L, but they aren't specifically trying to do that, but they are otherwise able to get below 0.3 mg/L.”*

Following that statement, I requested information from the BCW for a list of those sites that I could call and personally investigate. Mr. Lookenbill said that the *“DEP can provide example site”* and reiterated that those sites are part of the *“ongoing evaluation the DEP is doing.”* He also said there were examples internationally with *“complete success for fairly large discharges.”*

Several weeks after that meeting, I did receive a copy of a report prepared by Robert Hedin, PhD regarding treatment at the Phu Kham Copper-Gold Operation in the Lao People's Democratic Republic (Laos).



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While the data provided by Dr. Hedin does seem to show a success in constructing a large passive treatment system in treating manganese to a 0.3 mg/L level in the Lao People's Democratic Republic (Laos). There are some significant differences between the hydrology, geology and geography of the anthracite coal fields in northeastern Pennsylvania and the gold-copper fields found in a far eastern nation like Laos.

A passive treatment system of similar size and scope to the one in Laos would simply be impossible to build and maintain in the anthracite coal region. Any mining operation consigned to treating manganese would be required to construct and maintain a far more costly active treatment system utilizing harsh chemicals to separate the manganese from the water.

Further, on July 7, 2022, I again reached out to the Bureau of Clean Water requesting information on active treatment sites that successfully reached 0.3 mg/L levels. In more than a month since this request was made, I have yet to even receive the courtesy of the Department acknowledging receipt of my request let alone any credible information citing successful active treatment of manganese in either domestic or foreign operations.

This lack of response by the BCW leads me to believe that the information I am requesting is either not readily available and they are searching for it or not available at all. I strongly urge the IRRC to request this information from the Department before lending its approval to this poorly conceived rulemaking.

**The studies used by the Department to justify the rule change relies heavily on outdated information from international sources which in some cases date back to WWII.**

The studies and the information compiled by the Department to justify their position shows an extreme confirmation bias by referencing studies from countries like WWII Japan, South Korea, Bangladesh and other less developed nations. These studies do not discuss other social and physical factors beyond manganese that may also contribute to negative health issues, lack control groups and are unreliable in their methodology.

In fact, the Department does not rely on any in-house studies done by the Department or any other state agencies. It should be further noted, the proposed rulemaking does not make a single reference to other coal states and how they treat manganese within their borders.

For example, according to a paper published in 2003 by the EPA titled, "Health Effects Support Document for Manganese" makes the following statement about a 1941 study on a small Japanese community:



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*“A small Japanese community (total 25 individuals) ingested high levels of manganese in contaminated well water (that leaked from dry cell batteries buried near the wells) over a three-month period (Kawamura et al., 1941). Manganese intake was **not determined** at the time of intoxication, but when assayed months later, it was **estimated** to be close to 29 mg/L (i.e., 58 mg/day or approximately 1 mg/kg-day assuming a body weight of 60 kg). Symptoms included lethargy, increased muscle tonus, tremor, mental disturbances, and even death. Autopsies revealed macroscopic and microscopic changes in the brain tissue. In contrast, six children (1- to 10-yr-old) were not intoxicated as were the adults by this exposure. The elderly were more severely affected. **Some effects may have resulted from factors other than manganese exposure.**”*

*There is no information available on the carcinogenic effects of manganese in humans, and animal studies have reported mixed results. Based on the 1999 Draft Guidelines for Carcinogen Risk Assessment, there is “**Inadequate Information to Assess Human Carcinogenic Potential**” for manganese (U.S. EPA, 1999b). According to the 1986 Guidelines, EPA considered manganese to be not classifiable with respect to carcinogenicity, Group D (U.S. EPA, 1986b). Data from oral exposure suggest that manganese has a low developmental toxicity.”*

Along with manganese, the dry cell batteries would have also been leaching zinc, zinc chloride and ammonium chloride. The EPA report does not discuss the impact of these chemicals on the villagers in this report, but it does state that “**Some effects may have resulted from factors other than manganese exposure.**” Which begs the questions: what were some of those effects and why were they simply glossed over in the proposal?

Additionally, the Department points to a 2011 study of children living in Bangladesh, a third world country. The study looked at arsenic and manganese and concluded that manganese was “*significantly more strongly related to externalizing behavior problems.*”

This leads to a very important question, has a similar study been done among children of the same in first world nations like the U.S., Great Britain or Canada? What other factors could have impacted the behavior of children in Bangladesh, a third world nation, besides manganese exposure?

A close examination of the facts seems to indicate that in many cases more information is needed to fully understand the effects of manganese on humans. This point is noted by the Bureau of Clean Water numerous times in its own proposed rulemaking.

**The Department’s proposed rulemaking, offers a considerable amount of qualifying language in its rulemaking and seems unsure of the results of the studies that it is basing its recommendations on.**



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Throughout the Department's proposed rulemaking they use a lot of qualifying language expressing weakness in their position. If you will do even a cursory reading of the proposed rulemaking you will find a number of sentences starting with phrases like the following:

- "more research is needed to understand..."
- "Researchers have begun to examine the effects of chronic low-level exposure on children."
- "Preliminary data suggests.....more research is needed."
- "It is unclear whether this data....."
- "further research is needed"
- "hampered by the lack of data..."
- "The results of the study suggest an association...."
- "Unclear"

Given the magnitude and potential impact of such a rulemaking on small business in Pennsylvania, I think it is incumbent on the Department to be much clearer on the data it is using to justify its position and impose strict new limits on small business.

**This is just another nail in the coffin of small businesses in Pennsylvania.**

Nationwide and here in Pennsylvania, many small businesses are struggling just to stay alive. Adding a new regulatory burden to Pennsylvania businesses in the midst of a stagnating economy is not a wise move.

Instead, it would be more sensible for the Commonwealth and the Department to look for ways to help businesses by eliminating overburdensome regulations.

It is unreasonable for the Commonwealth to take such an unprecedented action at this time. In her comments to the Department on February 26, 2018, Rachel Gleason, Executive Director of the Pennsylvania Coal Alliance noted that other coal states were far less restrictive in their regulation of manganese. In her comments to the Department, she stated:

"Pennsylvania's application of the 1.0 mg/l PWS criterion for manganese at coal mining discharges is more restrictive than any other coal mining state, and, as previously detailed, more restrictive than federal regulations. Specifically:

In Ohio, designated uses are provided in Chapter 3745-1-07 of the Ohio Administrative Code. Section (B)(3)(a) designates that "... *all surface waters within five hundred yards of an existing public water supply surface water shall be classified as 'Public Water Supply.'*" Further, Ohio does not have a PWS standard, an aquatic life standard, or a human health standard for manganese. Rather, it regulates mine discharges consistent with 40 CFR §434.



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In Kentucky, all streams, according to 401 Kentucky Administrative Regulations 5:026, are designated for warm water aquatic habitat and primary and secondary contact recreation. *“The designation for domestic water supply is applicable only at points of intake.”* Further, Kentucky does not have a PWS standard, an aquatic life standard, or a human health standard for manganese. Rather, it regulates mine discharges consistent with 40 CFR §434.

In Illinois, per Title 35, §303.202 *“...waters of the State shall meet the public and food processing water supply standards . . . at any point at which water is withdrawn for treatment and distribution as a potable supply or for food processing.”*

In Indiana, Title 327, Article 2, *“All waters that are used for public or industrial water supply must meet the standards for those uses at the points where the water is withdrawn.”* Further, Indiana does not have a PWS standard or an aquatic life standard for manganese.

In West Virginia, *“The manganese human health criterion shall only apply within the five-mile zone immediately upstream above a known public or private water supply used for human consumption.”*

**Summary**

According to the IRRC website, the Commission’s mission is to review regulations to make certain that the agency has the statutory authority to enact the regulation and determine whether the regulation is consistent with legislative intent. IRRC considers other criteria, such as economic impact, public health and safety concerns, reasonableness, impact on small business and clarity. The Commission also acts as a clearinghouse for complaints, comments and other input from the General Assembly and the public regarding proposed and final regulations.

To complete this mission IRRC websites state that, the Commission must also consider the following criteria to determine if the regulation is in the public interest:

- Economic or fiscal impacts;
- Protection of the public health, safety, and welfare, and effect on this Commonwealth’s natural resources;
- Clarity, feasibility, and reasonableness;
- Policy decision of such a substantial nature that it requires legislative review;
- Whether the regulation is supported by acceptable data;
- Whether a less costly or less intrusive alternative method of achieving the goal of the regulation has been considered for a regulation impacting small business;
- Comments, objections, or recommendations of a committee; and
- Compliance with the RRA and IRRC’s regulations.



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As we pointed out earlier in our comments, the manganese rule change proposed by the Department does not comply with either Act 40 of 2017 or Act 181 of 1982 and should be disapproved based solely on the merits that it does not comply with legislative intent. A review and investigation by the Commission's own legal staff will show this to be true.

Additionally, the only study we received showing the ability to treat manganese to a 0.3mg/L the Department could produce was based on a passive treatment system in a gold/copper mine in the far east nation of Laos. Based on the many hydrological and geologic differences between the anthracite region of Pennsylvania and the mountains of Laos, it will be impossible to construct and maintain such a passive treatment system in northeastern Pennsylvania.

The Pennsylvania Anthracite Council has numerous requests to the Bureau of Clean Water for information on active treatment sites and guidance on how the new standard can be met through active treatment. To date, we have not received one response from the Department providing us with information on active treatment sites.

It is my considered opinion that the Department is not withholding this information because they just want to be uncooperative and unresponsive to our requests. I think the main reason our requests for information have gone unmet is because the information and data simply does not exist and the Department cannot provide what they do not have.

Rather than delay imposition of the rule until data and accurate information on active treatment systems can be obtained, if it even exists, the Department is insisting on imposing treatment standards that it cannot justify. Instead, anthracite mining companies required to treat for the 0.3 mg/L will face the daunting task of meeting an impossible standard.

Further, the studies used by the Department rely heavily on incomplete and outdated information from Third World countries dating back to WWII. The Department wants to impose impossible standards of treatment on small businesses around the state while their filing acknowledges throughout that:

- "more research is needed to understand..."
- "Researchers have begun to examine the effects of chronic low-level exposure on children."
- "Preliminary data suggests.....more research is needed."
- "It is unclear whether this data....."
- "further research is needed"
- "hampered by the lack of data..."
- "The results of the study suggest an association...."

Finally, there has been no economic study examining its potential impact on small business. Requests for information are going unanswered and there is no clear direction from the Department on how compliance can be achieved.

In fact, the Department has failed to meet even a single other criterion outlined on the Commission's website that would allow it to, in good conscience, vote to approve such a rule.



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Based on everything we have outlined in this letter; we urge Commission to disapprove the proposed new manganese treatment standards.

Thank you for taking the time to read over and consider my comments. We look forward to working with the Commission on this timely and important topic. Please feel free to contact me with any questions or comments you may have.

Sincerely yours

A handwritten signature in blue ink that reads "Duane C. Feagley". The signature is written in a cursive style with a long, sweeping tail on the final letter.

Duane C. Feagley  
Executive Director