



Shenango, LLC

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September 24, 2020

Environmental Quality Board
P.O. Box 8477
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Submitted by eComment



Re: Water Quality Standard for Manganese and Implementation (25 Pa. Code Chapters 93 and 96); Notice of Proposed Rulemaking 50 Pa. B. 3724, July 25, 2020

Shenango, LLC offers the following comments on the proposed Water Quality Standard for Manganese and Implementation; Notice of Proposed Rulemaking, 50 Pa.B. 3724, July 25, 2020. The Environmental Quality Board (EQB) has expressly invited comments concerning two alternative points of compliance for manganese. Shenango LLC supports what has been labeled the "First Alternative Point of Compliance". The First Alternative is consistent with Pennsylvania Act 40, 71 P.S. § 510-20(j), insofar as it provides for a point of compliance at the point of withdrawal from a public water supply. The EQB has also invited comments concerning the financial impact associated with the proposed standard. Shenango's comments below focus on these potential financial impacts. However, as a preliminary matter, Shenango LLC does not agree with statements in the proposed rule asserting that "current data and science demonstrate" that it is necessary to lower the water quality standard to 0.3 mg/l to protect human health from the neurotoxicological effects of manganese. As the notice itself acknowledges, US EPA has not published a human health criterion for manganese, nor have they proposed a health-based drinking water standard for manganese. Rather, US EPA relies instead on a secondary drinking water standard for manganese that addresses only aesthetic concerns such as taste and odor.

Shenango, LLC operates mine drainage treatment systems to comply with NPDES permit effluent limits imposed on seven postmining pollutional discharges that resulted from surface coal mines. Currently, two of the seven sites are required to meet manganese effluent limitations. With this rule all seven sites will be required to meet the new manganese limit. Due to the severe financial impact, significant issues with feasibility in adding manganese treatment to the existing passive treatment systems. The present-day capital cost for all seven systems is approximately \$650,000. Adding manganese limits on the five other discharges, an additional investment approximately equal to the current capital value of the existing treatment systems will be needed, effectively increasing the treatment costs by 100%. Related costs including maintenance and recapitalization would also increase commensurately.

Manganese removal in passive treatment systems requires the iron concentration to be reduced to less than 1 mg/L, well below the standard effluent limit for mine discharges of 3.0 mg/L, prior to entering a component specifically designed to remove manganese. These additional treatment

components require significant quantities of limestone and land area. Many treatment sites do not include viable construction area within the existing permit boundary. In the case of the Shenango water treatment sites, adding a restrictive manganese effluent limit at the point of mine site discharge will require significant redesign and expansion of most of the treatment systems. Area that is currently wooded and provides wildlife habitat would need to be sacrificed to accommodate additional rock-filled treatment ponds.

Though the seven treatment systems operated by Shenango achieve permit compliance with passive technology, it is well known that active treatment systems that use chemicals to remove manganese are subject to similar cost increases. Watzlaf 1988 reported that manganese removal can increase the chemical reagent cost by 140 – 180%, at least doubling and almost tripling the cost for chemical treatment when compared to the cost needed to achieve a circumneutral pH with compliant iron concentrations.

The environmental benefit of adding and lowering the manganese limit to the Shenango operated mines sites will be minimal. Lowering the standard to 0.3 mg/l is well below the 1.0 existing potable water standard. In the case of the Shenango sites, the distance from the mine site discharge to the nearest water withdrawal point is several miles away in the Monongahela River. The mine sites contribute only a very small amount of water in comparison to the size of the river. At the very low concentration being implemented, compliance at the point of discharge will yield little to no environmental or human health benefit. Additionally, as noted above, EPA has not proposed a health-based drinking water standard for manganese, simply a secondary maximum contaminant limit for potable water. Therefore, the point of compliance should be at the point of water withdrawal when implementing this lower limit.

Reference cited:

Watzlaf GR, 1988. Chemical Stability of Manganese and Other Metals. Proceedings of the American

Society of Mining and Reclamation. <http://doi.org/10.21000/JASMR88010083>.