



Office of Water Programs

Final-Form Rulemaking - Water Quality Standard for Manganese and Implementation

Pennsylvania Chamber of Business and Industry
September 21, 2022

Tom Wolf, Governor

Ramez Ziadeh, P.E., Acting Secretary

Water Quality Standard for Manganese

Act 40 of 2017

(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.

Water Quality Standard for Manganese

- The Department must review and update water quality standards to reflect current scientific knowledge and understanding (for example, updated national recommendations and published scientific literature).
- The Department published an advance notice of proposed rulemaking (ANPR) on January 27, 2018 to solicit scientific data and other information necessary to prepare the rulemaking documents required by law.
- Information was received from 15 organizations and individuals.

Proposed Rulemaking

The proposed regulation for manganese included recommendations to:

- Delete the existing Potable Water Supply (PWS) criterion of 1.0 mg/L from Table 3, and
- Add a human health toxics criterion of 0.3 mg/L to Table 5.

Proposed Rulemaking

The Environmental Quality Board (Board) also sought public comment on two alternative points of compliance for the proposed human health toxics criterion, including:

- 1st alternative point of compliance would move the point of compliance from the point of discharge to the point of downstream potable water supply withdrawal.
- 2nd alternative point of compliance would maintain the point of compliance at the point of discharge.

Proposed Rulemaking

The proposed regulation was adopted by the Board at its December 17, 2019 meeting and was published in the *Pennsylvania Bulletin* on July 25, 2020 (50 Pa.B. 374)

- 60-day public comment period that ended on September 25, 2020
- 3 public hearings held on September 8, 9 and 10, 2020

Proposed Rulemaking

- The Board received comments from 957 commenters including comments and testimony from:
 - 13 witnesses at the 3 public hearings
 - U.S. Environmental Protection Agency (EPA)
 - Independent Regulatory Review Commission (IRRC)
- The comments received, and the Department's responses, are summarized in the Department's **Comment and Response Document**.
 - The Department considered all public comments received on the proposed rulemaking in preparing the final-form rulemaking.

Proposed Rulemaking

Summary of Public Comments and Testimony

Supportive:	924 (including 869 form letters)
<u>Opposing:</u>	<u>32</u>
Total:	956 plus IRRC comments (957)

Final-Form Rulemaking

The Department's Final-Form Recommendation to the Board:

- Delete the Potable Water Supply use criterion of 1.0 mg/L from § 93.7, Table 3.
- Add a Human Health criterion of 0.3 mg/L to § 93.8c, Table 5.
- Maintain the point of compliance in all surface waters (at the point of discharge) in accordance with § 96.3(c).

Final-Form Rulemaking

Summary of Economic Impact Estimates associated with the 1st Alternative provided by Public Water Systems*

- **Pennsylvania American Water**
 - 16 of 68 permits affected = \$40-\$60 million in capital costs + \$740,000-\$1.4 million annually
- **Reading Area Water Authority**
 - 1 permit = \$2.1 million in capital costs + \$15.8 million (20-year operating costs)
- **City of Lancaster (ANPR)**
 - 1 permit = tens of millions in capital costs + tens of thousands in operating costs (also anticipate millions of dollars in lost efficiency due to lower plant performance and increased membrane filter replacement)

*Cost information was provided by third parties.

Final-Form Rulemaking

Economic Benefit Estimates of the 1st Alternative Point of Compliance provided by Mining Industry*

- Projected annual savings to the mining industry resulting from moving the point of compliance to downstream potable water supply withdrawals would be upwards of \$1 million (Pennsylvania Coal Alliance).

* Cost information was provided by third parties.

Final-Form Rulemaking

Summary of Economic Impact Estimates associated with the 2nd Alternative provided by Industry*

- **Pennsylvania Coal Alliance (PCA)(Report by TetraTech)**
 - Overall cost = \$200 million in capital costs + \$44-\$88 million annually
- **New Enterprise Stone & Lime Co.**
 - 6 of 51 permits affected = \$320,000 in capital costs + \$450,000 annually
- **Shenango, LLC**
 - Estimate for all (7) permits affected = \$650,000
- **Talon Energy Supply, LLC**
 - Rushton Mine permit = \$30 million in capital costs + \$2 million annually

*Cost information was provided by third parties.

Final-Form Rulemaking

Summary of Economic Impact Estimates provided by Penn State University

- Used AMDTreat software to calculate mining related costs.
- Analysis considered different percentages of permits affected, multiple treatment options and different types of coal mining discharges based on flow and other water quality characteristics.
- If 75% of mining permits are affected:
 - Overall costs = \$137-\$143 million in capital costs + \$33-\$46 million in annual costs.
- If 50% of mining permit are affected:
 - Overall costs = \$91-\$95 million in capital costs + \$22-\$31 million in annual costs.

Final-Form Rulemaking

Summary of Economic Impact Estimates provided by Penn State University (continued)

- Actual costs for mining facilities may be substantially lower than these estimates if sites are able to utilize existing treatment infrastructure or if the relatively few deep mines with larger flows are able to remove dissolved manganese using co-precipitation and sorption.
- On an equal flow and manganese load basis, capital and annual operating costs for the drinking water industry and the coal industry would be similar.

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Analysis of Estimated Economic Impact provided by Drexel University

- Qualitative evaluation of the two proposed points of compliance to determine which one is most appropriate.
- The analysis included consideration of treatment techniques and costs.

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Summary of Conclusions - Drexel University

- It is not less costly to remove manganese from diluted sources (surface waters) than it is from concentrated sources (wastewater discharges).
- The need for significant pH adjustments to remove dissolved manganese from water applies equally to the treatment of coal mine drainage and potable drinking water.
- Treatment difficulties associated with the presence of aluminum are not restricted to treatment of coal mine drainage. Aluminum-based coagulants are typically used by public water systems in their treatment processes.
- Public water systems often treat manganese to levels below the SMCL of 0.05 mg/L due to customer complaints.

Final-Form Rulemaking

Summary of the Economic Benefits of the Final-Form Rulemaking

- A reduction of manganese, a neurotoxin, in surface waters is expected to have a positive effect on the human health of the Commonwealth's residents and may result in a reduction of costs for treatment and caring for persons with diseases and disabilities attributed to manganese exposure.
- Downstream users will not have to bear the costs associated with remediating discharges of manganese from upstream users.
- A reduction of environmental toxins, such as manganese, will benefit aquatic life and wildlife as well as positively affect outdoor recreation activities and ecotourism.
- Industrial land redevelopers will benefit by having clearly defined remediation standards for surface waters and being eligible for liability relief under state law.

Final-Form Rulemaking

- Adopted by the Board on August 9, 2022.
- Presented to but disapproved by IRRC on September 15, 2022.
- IRRC will issue an order specifying which criteria from the Regulatory Review Act have not been satisfied.
- The Board may resubmit with or without revisions, withdraw the regulation or take no action.



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