



Manganese Proposal Testimony by Delaware Riverkeeper Network 9.8.20

My name is Matthew McCann and I am a scientist for the Delaware Riverkeeper Network. The Delaware Riverkeeper Network supports the addition of manganese to the list of toxic substances relating to human health and aquatic life criteria. The science has shown that human exposure to levels of manganese beyond those necessary for maintaining adequate health can lead to excess manganese in brain tissue resulting in symptoms that mimic Parkinson's disease. Depending upon the length and severity of the exposure, these neurological effects may result in permanent, irreversible damage to the brain. Manganese is also harmful to aquatic life. Numerous studies have shown that the effects of manganese on fish include impaired gill functions and hormonal and metabolic interference. Excess manganese also has negative implications for water uses such as agriculture.

The EPA found that irrigation water containing manganese at concentrations of slightly less than 1.0 mg/L to a few milligrams per liter may be toxic to plants when applied to soils with pH values lower than 6.0. The existing Potable Water Supply criterion of 1.0 mg/L from DEP is based on taste, odor, and to prevent laundry staining. It does not take human health, aquatic life, or water supply use into consideration and is therefore inadequate to protect these uses. It is also higher than the EPA health advisory (HA) and other national and international standards set by governmental bodies. The Delaware Riverkeeper Network supports DEP's proposal to change the manganese criterion to 0.3 mg/L. The EPA's lifetime Health Advisory for adults and children is also 0.3 mg/L and was calculated using the reference dose (RfD) in the Integrated Risk Information System (IRIS). Adopting a manganese criterion of 0.3 mg/L in Pennsylvania would match the EPA's Health Advisory and be more protective to human health, aquatic life, and water supply use.

In addition, the Delaware Riverkeeper Network believes that the first point of compliance alternative is inadequate because no water quality-based effluent limits would apply to surface water if no potable water supply exists or is planned. Aquatic life would not be granted adequate protection under this alternative because stream segments and aquatic ecosystems would not be subject to the manganese effluent limits unless they are located close to a potable water supply. There could be long stretches of open water from the point of discharge to the nearest potable water supply that would be left completely vulnerable. Manganese is a persistent contaminant that can be carried long distances downstream. The only way to prevent manganese from reaching downstream sections is to enforce effluent limits at the point of discharge. The first alternative would shift the burden of manganese removal onto public water suppliers instead of the dischargers. This alternative is harmful and only benefits entities holding or seeking permits to discharge manganese into the surface waters of the Commonwealth.

DELAWARE RIVERKEEPER NETWORK
925 Canal Street, Suite 3701
Bristol, PA 19007
Office: (215) 369-1188
fax: (215) 369-1181
dm@delawareriverkeeper.org
www.delawareriverkeeper.org

The second alternative maintains the current point of compliance for manganese in all surface waters at the point of discharge. The Delaware Riverkeeper Network strongly supports this second alternative. Under this alternative, the manganese criterion for the protection of human health would be applicable in all surface waters to protect all relevant water uses. The threshold at which manganese needs to be maintained in the surface water to avoid toxicity to humans is lower than the level necessary to afford appropriate protection for aquatic life. Because of this, this alternative would afford aquatic life an appropriate level of protection from the negative impacts of manganese. Additional protections would be provided to the potable water supply use and other protected water supply uses such as irrigation, wildlife water supply, livestock water supply, esthetics, fishing, boating, and water contact recreation. There are also cost savings by public water systems because manganese levels in source waters would be lower and less treatment would be necessary to meet drinking water regulations. If the proposed manganese criterion of 0.3 mg/L is adopted and the second point of compliance alternative is adopted as well, all users of surface waters will benefit. These regulations are a necessary step to protect the health of all Pennsylvania residents while simultaneously protecting aquatic life and the natural resources that we depend on. Thank you for the opportunity to provide these comments.

Sincerely,

Matthew McCann

Matthew McCann, M.S.
Science, Research, and Policy Associate
Delaware Riverkeeper Network