TESTIMONY

of

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EARTHRES GROUP, INC.

before the

SENATE ENVIRONMENTAL, ENERGY & RESOURCES COMMITTEE MEETING

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My name is Terry Schmidt and I work at Earthres Group, Inc. where we employ nearly 100 people. I am a lifelong resident of Pennsylvania and grew up in Southwestern Pennsylvania, enjoying the outdoors including fishing in areas where some local streams were impacted by pre-law pollution. One personal goal of my 35+ year career was to help achieve improvements that can turn lifeless streams into thriving reproducing trout streams, which has been achieved at several locations.

I became familiar with manganese and manganese treatment in the late 1970's and early 1980's while working in the coal mining industry. Through my graduate assistantship at Penn State in the late 1980's, I worked with the Pennsylvania Department of Environmental Protection, Environmental Protection Agency, and others to develop "REMINE", a computer program used to estimate treatment costs for mining sites in an effort to encourage mining which would result in environmental improvement.

During my engineering consulting career, I designed over 100 treatment systems. Many of these systems were designed using government funding mechanisms to treat pre-law discharges and improve stream quality. Additionally, I have designed treatment systems for NPDES discharges where the primary design challenge was to meet existing manganese discharge limits.

Manganese is a very common element on earth and there are locations in Pennsylvania where ambient background levels of manganese in the streams are greater than the proposed limits. Manganese is generally not considered toxic to aquatic organisms below 2 mg/L. I have worked on treatability studies where conventional treatment was used to treat manganese to predetermined levels and was subsequently subjected to Whole Effluent Toxicity (WET) tests where neither acute or chronic toxicity was observed at levels much higher than 2 mg/L. Based on everything I have learned throughout my career, there is no risk or benefit to the receiving streams by lowering the manganese discharge limit.

Manganese is also an essential mineral for good human health. Several manganese compounds are generally recognized to be safe as a direct human food ingredient. Manganese is added to infant baby formulae as recommended by the Food and Agriculture Organization of the United Nations and World Health Organization.

Regulation of manganese in surface waters initially followed the Environmental Protection Agency's 1972 and 1977 Clean Water Acts where resulting manganese concentrations were limited in the range of 2-4 mg/L. The Environmental Protection Agency's mid 1970s report of Coal Mining Effluent Guidelines indicated treating water to these limits also ensured other trace elements were controlled, as manganese acted as a surrogate for other elements. Manganese was selected because when manganese was present, other priority pollutants were also present, and when manganese was removed during conventional treatment, other priority pollutants were also removed. Conventional treatment typically involves adding alkalinity to raise pH, then precipitating the metals in a settling area. However, this technology may require the pH to be raised to over 10 standard units to precipitate manganese, followed by a chemical re-acidification of the water in order to discharge the water at a pH below 9. Manganese treatment involves a careful balance between chemical dosage to control pH, while carefully managing total suspended solids and aluminum levels to ensure a compliant discharge.

The Department of Environmental Protection's analysis fails to measure the economic impact as well as the domino effect implementation would cause. In particular, the Regulatory Analysis Form did not adequately explain how the benefits of the regulation would outweigh the costs, nor provide any specific estimates and/or savings to the regulated community. The costs were identified as "Not Measurable". I have designed treatment systems that consistently reduce Manganese to less than 2.0 mg/L. However, many existing systems are simply not capable of treating manganese to a level below 0.3 mg/L. There are many challenges to meeting a limit to 0.3 mg/L at the NPDES discharge point. This limit would financially break the back of many dischargers, causing bonds to be forfeited and the discharges to become the responsibility of the state. Many of these discharges are perpetual and will not stop once the industrial activity has ceased. The regulation would also serve to stunt new investment and cost Pennsylvania jobs. The additional cost to meet proposed limits is more like doubling or tripling the cost, not just a small percent increase in cost. This is particularly the case where large discharges are being treated. In those cases, there would be inadequate bond for the state to treat these discharges to the new manganese limits and other funds would be required. In addition, lowering manganese limits would put an additional financial burden on Pennsylvania as the state is already responsible for treating water from all previous bond-forfeited sites.

In summary, this regulation will come at both a high cost to industry and an increased cost to the state of Pennsylvania. This substantial cost is just not justified by an environmental benefit. I oppose changing the current limit and support the point of compliance as being at the intake to the first downstream public water supply, per Act 40 of 2017.

Thank you for the opportunity to present and I can take any questions you may have.