Andy Baldwin

Thank you to all those that came to share and listen. My name is Andy Baldwin. I grew up here on the iron range, and now I'm a high school science educator.

Sulfates in our lakes are not only harmful to aquatic life, but are the cause of methymercury pollution.

Critics of the sulfate standard do not address anything about the risk of harm to the public from mercury, and I think this is because they don't understand how sulfates and mercury are related.

Sulfates are compounds that are relatively safe on their own for humans. Which is why the standard is higher for drinking water. But they will trigger a biological process within an ecosystem that leads to extremely toxic heavy metals being released from within the environment.

Sulfates are used by these bacteria for energy like how plants use CO2. The bacteria in wetlands, lake sediments, and flooded soils convert them into sulfides, which are released into the environment. Sulfides react with stable, inorganic mercury and form methylmercury. This is always happening in our lakes, as it can't be stopped, but increasing sulfates means increasing methylmercury. Any amount above zero is already too much.

Even small amounts of methylmercury in the environment compound to high levels of toxicity in game fish due to bioaccumulation. Delaying compliance only prolongs this, and so many of our lakes already have fish with unsafe levels of mercury.

If I could say one thing loudly about this it would be that we do not need to wait to find out what will happen if we do nothing about methylmercury pollution. There are enough examples in recent history of widespread mercury pollution, and each of those cases involved untold number of lives affected or lost. We do not need to make the iron range the next example of a tragic public health crisis.

It's important to preserve and enforce this standard of 10mg/l for sulfate effluence for Key tac. And it could even be lower. Numerous recent studies indicate that harmful sulfate levels are much lower at 120 micrograms/L. But if not for the sake of protecting aquatic life, then enforcement should be for the sake of limiting mercury. After-all, mercury pollution is a permanent environmental condition. Once it's there, you can never get it out.

Likewise, once a higher sulfate limit is set, it's difficult to lower it. If the mining industry in Minnesota dictates that overseeing agencies are powerless to enforce regulation, then all future mines will expect this same treatment. Cu-Ni mines guarantee the increase of sulfate pollution and methylmercury.

If voluntary compliance to regulations is the norm, it's likely that Minnesota's lakes will never be healthy again. There are no minerals critical enough to trade for this destruction.

Finally, to those fighting on behalf of these billion dollar mining corporations: you need to stop. They don't need your help. They have the resources to comply with the standards for environmental

protections that we need to keep people safe. To argue otherwise is irresponsible. Instead, there are people in your greater Minnesota neighborhood that do need your help. Help each other. Care about people.