**Manganese Optimization Q & A**

**AWOP National Meeting**

**July 19 – 21, 2021**

1. **William McClimans – How do you handle the goals if the water system is using sequestration?**

* Clayton suggested the goals really apply to Mn or Fe removal and are not as applicable in cases of sequestration due to effective sequestration treatment not necessarily lowering Mn or Fe concentrations.

1. **Johnny Menendez – Do you have any experience with systems proposing in-situ oxidation of Fe and Mn in aquifers adjacent to wells? Do you know of any PWS that has used this technique successfully?**

* I am not familiar with anyone using in-situ, though it is interesting. I will do some research and see if I can find something like this. James McPherson: I do know of an in-situ oxida­tion to alter the subsurface redox conditions; however, it can *“clog”* the aquifer.

1. **James McPherson – Is Texas concerned about use of polyphosphates in PWSs that do not need corrosion control for lead and/or copper? Val Bosscher noted that polyphosphates have been linked to higher lead release.**

* Texas is concerned about these since sequestration agents do not work at the higher levels of iron and manganese. Now that we know there are potential health risks with Mn, it is a concern.
* Val Bosscher: From EPA 2016 OCCT guidance, *“Sequestering agents such as polyphos­phates and sodium hexametaphosphate may reduce black and/or red water complaints from iron and manganese oxidation, but may also cause increases in lead and copper levels measured at the tap (Schock, 1999; Cantor et al., 2000; Edwards and McNeil, 2002).”*

1. **Evan Hofeld – What is the effect of Mn when measuring chlorine using the amperometric method?**

* The amperometric titration chlorine method is not subject to interference from manganese.

1. **Sam Perry – Have you used the DPD method to measure permanganate concentration? If so, how did you do so?**

* Alison and Matt experimented with this a few years ago in Kentucky. The method applies, but measurements do not correlate exactly. There is a method by which to do this using a CL17 (total chlorine). This was provided by Larry: Part One: CL17 for Permanganate Measurement in Drinking Water (Permanganate Only) by Dr. Vadim Malkov.