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Brian,

I am writing to follow-up on the aeration and enzyme project at the Saltlick drinking water reservoir brought online May 20, 2020. GJWA approved the project to address high levels and variability for HAA5s. While our timeline is only 4 months and 4 data points we have seen a fluctuation of around +/-5% versus a more typical +/-50%. In addition, the average levels are about 30% lower than a year ago and below the regulatory limit.

We have noticed is an increase in TTHM levels but they are still within the regulatory limit and a positive indicator of the aeration performing its intended function. Temperature distribution is nearly uniform in the reservoir. For the first time in over 100 years the summertime temperature of the organic deep sediment has reached close to 80 degrees F versus a typical max of 50 degrees. As a result we are releasing accumulated methane that previously caused our "spikes" in TTHM levels every fall during turnover. The levels we are seeing now are still lower than last October, even though the summer-time readings were higher than previous summers. I expect this issue to continue to improve with the overall reservoir environment. In the meantime, we have several methods available to manage TTHM levels through our treatment process as our reservoir continues to "heal" thanks to oxygenation.

TOC levels have decreased by about 30% in our incoming source water. As a result, we are seeing improved summer chlorine residuals in distribution despite the high water temperatures. There is less available to react with the chlorine. In addition, negative taste and odor have been absent from the water for the entire season.

We have completely transformed the pH and the metals profile of our water source. Summer and early fall have historically been a struggle for manganese oxidation and removal. One reason is due to the lowered pH when the water would stratify. When drawing from the 45 foot deep level we would see pH drop as low as 6.4 while our oxidant, Potassium Permanganate prefers 6.8 and higher. Manganese levels exceeded 0.4 mg/l and it was nearly exclusively in solution and needed chemical oxidation and pH adjustment pre-filtration. This summer our total manganese concentration from the reservoir was under 0.1 mg/l and our dissolved manganese was typically less than 0.01mg/l while the pH leaving the reservoir never dropped below 6.85. Today we are seeing total manganese levels below 0.06 mg/l and pH over 7.0. In June we saw a pH of 7.2.

I appreciate the professionalism shown by you and your staff throughout the process and look forward to continuing to work with you through the next couple of years as we continue the enzyme treatments at Saltlick and also bring Dalton Run Reservoir's aeration system online and treat that with the enzymes. I feel that many of the other challenges regarding water quality at our Riverside plant can be addressed based upon the results that we continue to see at Saltlick.

Thomas F Brown, Assistant Manager