City of Hartford WWTP Activities Report

1/19/2023

1. Spare belts were ordered for the RBC drive mechanism.
    - It's extremely important that Hartford have spare belts on hand for the RBCs. If an RBC goes down for any more than a few hours an imbalance can develop in the distribution of microbial mass on the rotating drum. This leads to loping which can cause the shaft to break – a major failure. Removing the microbes to eliminate the weight imbalance makes the RBC almost worthless for an extended period while the microbes regrow. Hartford only has two RBCs. We can't afford to have one go off line.
2. Oil was changed in one of Hartford's two RBCs.
    - The RBCs were new in 2015. This was the first time one of them has had an oil change. The oil change went well, and the second RBC will have its oil changed in the next few weeks.
3. Midway Electric came out to look at a non-functioning heater on Hartford's grit classifier.
    - The grit classifier is designed to have biosolids in it at all times. It is located in an unheated building. It needs to have a functioning heater to prevent breakage. We are waiting on Midway to get back to us.
4. Solids that had been accumulating between the baffle and weir of the secondary clarifiers was removed.
    - To function properly the clarifier's weirs need to be clean.
5. Bushes and trees were trimmed.
    - It is important to maintain the grounds as it allows safe and efficient movement of personnel. A clean and orderly facility gives regulators from the State of Michigan the impression that Hartford is properly running their WWTP. When things look good employees are more likely to keep them looking good.
6. Hartford WWTP's effluent was sampled, and it was tested for mercury.
    - Two samples were analyzed. One was found to have 2.1 ng/l mercury and the other was found to have 1.9 ng/L mercury for an average of 2.0 ng/L mercury. Hartford's NPDES permit sets a goal of keeping effluent mercury concentrations at or below 1.3 ng/L, but sets the 12-month rolling limit for effluent mercury concentration at 4 ng/L.
7. AM Hawk's effluent was sampled as required by the state approved and mandated industrial user permit.
    - We are waiting on results.
8. Removed a growth mass from the channel upstream of the deragger.
    - Its important to keep solids out of channels and splitter boxes because they take up volume and can cause obstructions and equipment damage when they release.
9. Polymer usage was reduced by 1/3.
    - The operator has reported no change in his ability to draw sludge off the clarifiers. There has been no change in effluent solids. This polymer dosage will be maintained for a week or two and then reduced further. Polymer usage may be stopped altogether.
10. Chlorine usage was reduced by 11%
    - There has been no change in fecal coliform numbers. Usage will be further reduced next week. Hartford's NPDES permit allows for a fecal coliform geometric mean of 200

cfu/100 mL for the month and 400 cfu/100 mL for the week. In December Hartford's effluent had a max 7-day geo mean of 47.7 cfu/100 mL and a monthly geo mean of 37.4 cfu/100 mL. It would be good to get fecal coliform numbers up to about 100 cfu/100 mL. One hundred gives a nice big margin of safety while making sure money is not being wasted by over chlorinating. Reducing chlorine usage will also allow the reduction of Sodium Bisulfite that is used for dichlorination of Hartford's effluent.

11. Possible trial of NeoWaterFX, a rare earth chemical, to potentially replace ferric chloride which Hartford is currently using to treat phosphorus.
    - The Hartford WWTP has an unusually high influent phosphorus concentration. At this time Hartford is using Ferric Chloride to reduce their phosphorus levels to meet NPDES requirements. Ferric Chloride stains things brown, and the stain is basically unremovable. The Hartford WWTP is equipped with banks of UV bulbs that are capable of disinfecting it's effluent, but the bulbs get stained by the ferric chloride. The stains render the bulbs nonfunctional. Rare earth chemicals don't stain, and if they are able to replace ferric chloride the UV bulbs can be replaced and UV disinfection can resume. This would allow the plant to cease using chlorine and sodium bisulfite altogether.
    - Patrick Ummel, a sales rep for the company producing NeoWaterFX, is going to be onsite on January 26th to do jar testing on our influent. I will be there also.
    - EGLE has been informed of Hartford's intention to trial this product and we are looking at a possible approval happening this summer.
12. New method for measuring residual chlorine.
    - The Hartford WWTP's chlorine meter was nonfunctional. We went with a different method. Supplies arrived and residual chlorine testing resumed this week.