Seasonal Lagoon Discharges

By Mike Lucas, Wastewater Technician

Last summer many systems experienced heavy rains combined with excessive amounts of Inflow and Infiltration (I&I). Some operators had not done a lagoon discharge for many years, if ever. Along with that, across the state we had several new operators. I feel that it might be helpful to review the process of completing a "seasonal **controlled** discharge" from your wastewater treatment lagoons.

I usually recommend that the final polishing cell that you discharge from has been isolated from the others by closing the inlet valve for at least 10 days to 2 weeks. The inlet valve to the final cell should remain closed during the entire discharge. Now take a representative sample of a discharge by opening the discharge valve for 10 minutes. Fill the sample bottle that you have ordered from your lab. Then close the valve. Take the d.o. and pH immediately and record it.

Next review your current NPDES Permit. Determine what the parameters are for the time of year that you are anticipating the discharge. You must communicate these to your laboratory so that they know what to test for and send the sample to the lab.

After you receive the lab results (it's quicker by phone) compare those results to your permit seasonal concentration limits (usually in mg/l). This will tell you if you would be in compliance with the concentration for each parameter if you elect to discharge.

If you are in compliance regarding concentration you then need to select the parameter that is closest to your **concentration** limit to determine the allowable rate of discharge to be in compliance with your permit **loading** limit. **You must be able to determine the rate of discharge flow in MGD by measurement, metering or calculation and adjust the flow rate accordingly**. The formula that you use is (mg/l x MGD x 3.78 = <kg/d). You can potentially be in compliance with the concentration and out of compliance with loading due to too high a rate of discharge.

You must take a sample again at the end of the discharge. You must also take an additional sample if you discharge in more than 1 month so I usually advise starting the discharge early in the month if you can to save on lab fees. A flow measurement must be recorded each time that you take a sample.

Finally, don't forget that you probably have a "once in a permit" toxicity test and an annual influent 24 hour composite sample to complete. Those can be easily forgotten. Be sure to be very familiar with your NPDES permit.

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