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November 6, 2017

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Attn: Bailey Taylor – Enforcement Analyst

RE: City of Marion
NPDES Permit No.AR0021971
AFIN 18-00110

Dear Bailey,

Please refer back to our correspondence of September 22, 2017. Also refer to the attached correspondence of November 3, 2017 to Mayor Frank Fogleman concerning proposed improvements to Marion's sewer ponds in the form of instrumentation to determine Dissolved Oxygen (DO) levels at the surface and the bottom of our final pond before discharge. This equipment is now on order and contact has been made with Micro Comm, the City's control provider.

By having these two DO probes with a continuous read-out, hopefully we can predict a pond turn over instantly which will allow us to interrupt discharge until a turn over condition corrects itself. I understand that this is somewhat experimental and we can only hope that you will interpret these efforts as the City's attempt to reduce or eliminate discharge violations.

Sincerely,


Jerome Alford, P.E.


Mayor Frank Fogleman

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November 3, 2017

City of Marion
14 Military Road
Marion, AR 72364

RE: NPDES Permit AR0021971
Correspondence to ADEQ 9/22/17

Dear Mayor Fogleman,

Please refer back to the correspondence of September 22, 2017 to ADEQ concerning the reason for some violations in your permit where you exceeded your limits for CBOD.

I spent some time in explaining to Bailey Taylor what I assumed were the reasons for these violations and suggested that with your new permit that it would be easy for you to not discharge during those times that we might suspect unfavorable conditions.

I've had several conversations with Dr. Don Adams, Phd in environmental engineering, a consultant in Louisiana. I have also discussed this with Dr. Bob Blanz, Phd in environmental engineering, who is currently the head of the Permit Section of ADEQ. This was my attempt to find concurrence in an idea that might provide an early warning system for these conditions causing an upset in your pond rather than simply reacting to a suspicion. The real problem, of course, is caused by the fact that it takes 5 days to produce CBOD results, and by that time you may have already violated which must be reported to ADEQ.

The discussion in the September 22, 2017 correspondence refers to a pond turn over. This could very easily account for the CBOD in the bottom layer of the pond rising to the surface and then discharging. If the pond is not in a condition of turning over, one could suspect that the surface of the pond would be rich in Dissolved Oxygen (DO) due to surface transfer and the presence of algae, and the bottom layer would be void of oxygen due to the oxygen demand and the lack of sunlight penetration not allowing the algae to produce oxygen through photosynthesis. If these assumptions are true then we should be able to install DO sensors in the pond that would continuously record DO levels. Historical readings should then provide DO variations. If we had these continuous readings recorded in Jim's computer we could then reference back to

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the actual CBOD analysis received from the lab and know immediately when conditions were such that we should postpone discharge.

We have pricing from a manufacturer of a good quality DO probe. Two of these installed in your fourth pond near the inlet to the Chlorine contact chamber and reprogramming your Micro Comm computer to record these two readings continuously should cost in the neighborhood of \$7,500.

I have not found an instance where this has been done before. Sophisticated analysis of stabilization pond treatment is obviously not a common practice. Some people might consider this as absurd as putting a jet engine on a box kite. However logic dictates that it could work and it would show some effort on Marion's part in trying to avoid future excursions in the discharge.

Sincerely,



Jerome Alford, P.E.

Cc: Jim Shempert