

## Kristen Graham (adpce.ad)

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**From:** Kristen Graham (adpce.ad)  
**Sent:** Wednesday, June 28, 2023 10:39 AM  
**To:** 'Bond Engineering'  
**Cc:** Tracy Brick; 'jkelly502mbd@yahoo.com'  
**Subject:** RE: City of Marion CAP  
**Attachments:** AR0021971\_CAP\_20230609.pdf

Good morning,

I'm reaching out about the CAP for the City of Marion [AR0021971, AFIN 18-00110] that was submitted to me on 6/9/2023. I have included a copy of the CAP for your reference. '

DEQ has had an engineer review the CAP, and they have made the following comments:

- Before beginning construction, please ensure you have a State Construction Permit.
- If more than 5 acres of land is to be disturbed during construction, please ensure you obtain a Construction General Permit.

Please take these comments into consideration when construction begins. Failure to obtain these Permits is considered a violation and may be followed by enforcement action from DEQ.

Thank you,

Kristen Graham  
Enforcement Analyst, OWQ  
501.682.0758

## **Kristen Graham (adpce.ad)**

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**From:** Kristen Graham (adpce.ad)  
**Sent:** Monday, June 12, 2023 8:42 AM  
**To:** 'Bond Engineering'  
**Subject:** RE: City of Marion CAP

Thank you for submitting the CAP for the City of Marion. Please continue to provide DEQ updates of your progress towards compliance via quarterly progress reports. The first report will be due September 15, 2023.

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**From:** Bond Engineering [mailto:bondengineering@hotmail.com]  
**Sent:** Friday, June 9, 2023 12:24 PM  
**To:** Kristen Graham (adpce.ad) <Kristen.Graham@adeq.state.ar.us>  
**Cc:** Richard Healey (adpce.ad) <Richard.Healey@adeq.state.ar.us>; Tracy Brick <tracy.brick@marionarkansas.org>  
**Subject:** City of Marion CAP

Kristen,

Please see attached.

Brad Stevens

### **Bond Consulting Engineers East, Inc.**

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C.H. BOND, JR., P.E.  
JEROME B. ALFORD, P.E.  
JACK G. BOND, P.E.

June 8, 2023

ADEQ  
5301 Northshore Drive, 5301 Northshore Drive,  
North Little Rock, AR 72118

Attn: Kristen Graham, Enforcement Analyst

RE: City of Marion  
NPDES Permit No. AR0021971

Dear Kristen,

Please consider this letter our Corrective Action Plan (CAP) due by June 16, 2023.

Please allow me to cover some history of Marion's treatment which will begin to explain our CAP.

The City of Marion built waste stabilization ponds in 1976 that were designed for a flow rate of approximately 1,000,000 gallons per day. Technology at the time got us approval for three cell lagoons with a static rock filter placed in the discharge end of pond #3. After several years, we were not meeting our discharge limits due to the static rock filters not performing as expected.

Around the late 1980's the new thinking on trying to polish pond effluent was to utilize rock reed filters based on some success in Benton, LA and promoted by EPA Region VI. There were 23 of these systems built in Arkansas, the best I can remember, and they each were successful in removing BOD and Suspended Solids but all but one (Carlisle) manufactured Ammonia which, of course, continued violations in permits.

In the early 2000's, Hino decided to locate in Marion. From what they promised us in discharge, Marion had to increase their treatment capacity to 1.6 mgd. A construction permit was issued for dividing the original pond #1 in to an aerated lagoon section by using baffle curtains and four 20 hp floating aerators.

Over the last few years Marion has taken sewage from the Town of Sunset and from a large mobile home park referred to as Lakeshore which is south of Marion but across Interstate 40 and 55 from West Memphis.

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Several years ago, after these many unsuccessful attempts, Marion built a discharge pumping station and 13 miles of 18" force main to change our discharge point to the Mississippi River. Then by discharging a "treatment equivalent to secondary treatment", our limits are 30 mg/L BOD, 90 mg/L Suspended Solids and of course a small amount of Chlorine. This system includes a Chlorine contact chamber, vertical turbine discharge pumps and de-Chlorination added at the pump discharge and a sampling point located 50' down the force main. These changes also created a fourth pond over the rock reed filter area after the top layer of rock was removed and used to line the original pond levees.

As your records show, Marion has still had problems meeting our discharge requirements. After 47 years of running sewage through these original ponds, we now face a substantial build up of sludge which has been moved around by the surface aerators. The volume taken up by the solids has reduced detention times to the extent that it appears our treatment system is now overloaded and must be improved or replaced.

Our CAP must include efforts to continue to honor our existing permit (30/90) and utilize the newly constructed discharge pump station and force main to the Mississippi River. We have already started calculations on determining design parameters for economically sizing new treatment facilities for a population of 20,000 people. What appears to be the most economical design based on land availability and land cost that is adjacent to our existing facility, is to plan on about 15 acres of aerated ponds followed by approximately 20 acres of a second pond and utilizing the existing fourth pond that was constructed over the rock reed filters installed only a few years ago.

As we progress with these design features, we are, of course, using Ten States Standards for sizing and determining the amount of air volume for the aerated lagoon. We will also be asking your agency for the assurance that this proposed treatment system will still qualify as "treatment equivalent to secondary treatment" which will allow us to maintain the 30/90 discharge to the Mississippi River. While this is being completed, funding for the construction costs and acquiring the necessary land will be ongoing. This will take some time because if you will review Google Earth map of the area just south of our existing ponds, part of this land is presently owned by the City of Marion and the police department has a firing range and a rather nice building that will need to be relocated. We are also seeing substantial increases in construction costs since the Covid era. This will add to the problems in providing enough money to

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complete this proposed project. We also have a new Mayor and are in the process of hiring a new water and sewer manager. This will also require a certain amount of time to get all of the new parties up to speed on this CAP issue.

As we have stated, we have already begun design for new treatment facilities to handle 20,000 people and a small amount of industrial loading. We anticipate needing 2 years to acquire the land, complete detailed plans and specifications to send to your agency and the Health Department for approval. We will also need several months for issuance of a construction permit, advertising for bids and constructing these facilities. Our soil conditions in this area will of course limit our construction efforts to dry weather since the biggest part of this project is levee construction.

The following is our best efforts at offering a Milestone Schedule:

- |  |              |
|--|--------------|
| 1. Acquiring land for proposed facilities      | March 2024   |
| 2. Preparing detailed plans and cost estimate  | October 2024 |
| 3. Provide funding and necessary rate increase | March 2025   |
| 4. Advertise for bids                          | July 2025    |
| 5. Complete construction                       | July 2026    |

Many other items to numerous to detail will be necessary in this endeavor. One will be how to recondition the existing 47 year old ponds to the point this land can be utilized for other purposes. Our construction plans will include necessary facilities to keep rainwater pumped off of this pond area so at some point we can sample the accumulation of solids to determine when it becomes a Class "A" sludge and then can be handled without any environmental issues.

If you need additional information, please contact us. As usual, we appreciate your agency's patience with the City of Marion.

Sincerely,

  
Jerome Alford, P.E.

  
City of Marion