State of Louisiana

Department of Environmental Quality

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KATHLEEN BABINEAUX BLANCO
GOVERNOR

MIKE D. McDANIEL, Ph.D.
SECRETARY

AUG - 3 2005

Martin Maner, Chief
Water Division
Arkansas Department of Environmental Quality
PO Box 8913
Little Rock, AR 72219-8913

COPY

RECEIVED
AUG 15 2005

RE: Eutrophication Modeling of the Ouachita River

Dear Mr. Maner:

The Louisiana Department of Environmental Quality (LDEQ) has reviewed the work plan prepared by GBM^c & Associates for sampling and modeling the impact of nutrients in the Ouachita River and Felsenthal Reservoir. We appreciate the opportunity to review the work plan and to provide you with comments that are enclosed.

LDEQ also appreciates the time that was taken to talk with us over the phone about the proposed pipeline discharge. We are pleased that you have considered Louisiana's concerns with this proposed discharge, and look forward to working with you to address these concerns.

If you wish to discuss the work plan in more detail please contact Mrs. Barbara Romanowsky at (225) 219-3557.

Sincerely,

Mike D. McDaniel, Ph.D.
Secretary

esc

Enclosure

c: Mary Leath, Deputy Director, ADEQ
Mo Shafii, Permits Manager, ADEQ
Barbara Romanowsky, LDEQ
Dick Duerr, LDEQ
MDM-05-041

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REVIEW OF ADEQ's WORK PLAN FOR A SURVEY OF THE OUACHITA RIVER

July 25, 2005

The Louisiana Department of Environmental Quality (LDEQ) has reviewed the work plan prepared by GBM^C & Associates for the City of El Dorado, Arkansas and three El Dorado companies proposing to construct a pipeline to reroute their effluent to the Ouachita River above the Felsenthal Reservoir in Arkansas. These entities, the "Joint Pipeline Group", have contracted with GBM^C & Associates to model the Felsenthal system for the impact of that proposed direct discharge to the Ouachita. The work plan outlines a field study and eutrophication modeling study for the Ouachita River and Felsenthal Reservoir. The LDEQ hereby submits the following comments.

- As shown on the attached map, the survey sites are grouped near the backwater from the Felsenthal Dam.
    - Ouachita River sites:
        - SR-1 Saline River just upstream of its confluence with the Ouachita
        - Oua-1 Ouachita River, just upstream of Saline River confluence
        - Oua-2 Ouachita River, just upstream of Hwy 82 bridge
        - Oua-3 Ouachita River, just upstream of Felsenthal dam
    - Felsenthal reservoir/backwater:
        - OB-1 "Open Brake"
        - OB-2 "Open Brake - Flat Water"
        - CSS-1 "Crooked S Slough"
        - PW-1 "Pete Wilson Lake"

  No calibration sites are proposed on the River above Oua-1, which is located just above the Saline River, nor are sites proposed on any tributaries presently carrying loads from El Dorado POTW and El Dorado Chemical to the Ouachita. In addition, there are no sites in Coffee Creek and the Ouachita River at the state line. Passing mention is made of the study being consistent with "historical studies", but no specifics are given. We do not believe that a reasonable calibration from above Smackover Creek and the proposed pipeline outfall to the state line can be achieved by neglecting these reaches of the Ouachita River.
- The plan indicates that the field study will consist of four collection events during summer low flow conditions, but it does not specify the time frame during which the sampling would occur. The time frame should be described.
- The proposed BOD (5-day and 20-day) analysis is of concern. LDEQ has had a problem with the TCMP nitrification inhibitor failing during a 20-day BOD test, giving erroneous results. We have switched all BOD series testing to method SM5210C, as developed by a group headed by Dr. Ray Whittemore. This is very similar to the test that was used by HydroQual for their study of the Ouachita River from the Saline River to Sterlington ("Development of a Water Quality Model of the Ouachita River", HydroQual, Inc.,Mahwah, N.J., 1992). Method SM5210C should be used for this study.

- The proposal for velocity measurements in the brakes, in which the 60% depth will be measured regardless of channel depth, is not in accordance with USGS methods.
- Continuous monitoring (diel) data is proposed for at least a 24 hour period, but only for three sites within the reservoir system. We have found that at least 48 hours is needed (and preferably 3-4 days) to obtain representative data. Continuous monitoring data is needed in the main channel of the Ouachita River as well, both upstream and downstream of the proposed survey area.
- The Ouachita and Saline River flows will be taken from USGS gauges at Camden in the Ouachita and near Rye in the Saline. The Camden gage is just 25 river miles upstream of the mouth of Smackover Creek, and should provide a good measure of upstream flow in the Ouachita. The gage at Rye, however, is about 70 river miles from the mouth of the Saline River, so flows from the Saline may be underestimated.
- The U. S. Army Corps of Engineers has a HEC-2 model of the Ouachita and Black Rivers from Camden, Arkansas to the Red River that includes the Jonesville, Columbia, Felsenthal, and H.K. Thatcher dams. This model was used as a source of hydrology for the LDEQ model of the river from Sterlington to the Columbia Dam, and might be a useful source of hydrology for the Arkansas model.
- It is stated that the model will be calibrated to the "parameters of concern", chlorophyll a, dissolved oxygen, phosphorus, and macrophyte biomass. It is important that the model also be reasonably well calibrated to ultimate carbonaceous BOD, organic nitrogen, ammonia, and nitrites+nitrates. We question the possible use of the critical flow plus 20% for the projections, and would like to know at what temperature the projections will be run. To provide headwater conditions for the Louisiana model, the flow would need to be the 7Q10 statistic and the temperature would need to be the 90 percentile of ambient data.
- The choice of modeling programs, Qual2K, WASP7, and Aquatox, is appropriate to the task.

MAP FOR EL DORADO