



ARKANSAS
Department of Environmental Quality

Memorandum

TO: Governor Mike Beebe

FROM: Teresa Marks, Director

DATE: April 2, 2007

SUBJECT: Proposed El Dorado Joint Pipeline Project

Enclosed is a brief history of the ADEQ's involvement with the proposed El Dorado Joint Pipeline Project. The ADEQ has been working on this project since the National Pollutant Discharge Elimination System (NPDES) permit applications were submitted in late 2004. The information submitted was carefully reviewed, and additional information was gathered during ongoing communication and numerous meetings with the facilities and their agents (i.e., consultants and attorneys), concerned citizens of Arkansas and Louisiana, State agencies (i.e., Arkansas Game and Fish Commission), federal agencies (i.e., Region 6 of the Environmental Protection Agency and the U.S. Fish and Wildlife Service), and other state agencies (i.e., Louisiana Department of Environmental Quality).

The draft permits were drafted for public notice on March 22, 2006, and a public meeting and public hearing were held on May 18, 2006. After a careful review of the comments and the Final Nutrient Modeling Study, final NPDES permits were issued on February 28, 2007.

All NPDES permits issued by the ADEQ's Water Division are in compliance with all state and federal regulations. The terms and conditions in the permits are protective of the water quality of the State of Arkansas. Please be assured that the ADEQ has carefully reviewed all the technical issues before issuing these permits.

El Dorado Joint Pipeline Project Summary

- Application Receipt Dates
 - El Dorado Water Utilities – November 16, 2004 (AR0049743 and AR0049743C)
 - Lion Oil Company – El Dorado Refinery – September 20, 2004 (AR0000647)
 - El Dorado Chemical Company – October 7, 2004 (AR0000752)
 - Great Lakes Chemical Company – Central Plant – October 5, 2004 (AR0001171)
 - Joint Pipeline Permit – November 16, 2004 (AR0050296)

- Important Dates
 - Notice of the issuance of all the draft permits was published in the *El Dorado News Times* on March 22, 2006.
 - A public meeting and a public hearing were held in El Dorado on May 18, 2006.
 - The comment period was extended to June 21, 2006, during the public hearing due to the high interest level.
 - Final permits and the response to comments were issued on February 28, 2007.

- Applications and Draft Permits were reviewed by the following agencies:
 - U. S. Environmental Protection Agency
 - U. S. Army Corps of Engineers
 - Arkansas Department of Health and Human Services
 - U. S. Fish and Wildlife Service
 - Department of Arkansas Heritage
 - Arkansas Game and Fish Commission
 - Louisiana Department of Environmental Quality (LDEQ)

- Nutrient Study
 - The State of Louisiana, the Arkansas Game and Fish Commission, and the U.S. Fish and Wildlife Service expressed several concerns over the Interim Nutrient Modeling Study submitted on behalf of the permittees on April 4, 2006. The Final Nutrient Modeling Study was submitted on June 1, 2006. Due to concerns about the final study, the Department requested that the study be revised. The Revised Nutrient Modeling Study was submitted on February 13, 2007. In response to the results of the revised study, the Department lowered the phosphorous limits for the months of July through October from 1 mg/l to 0.7 mg/l.

- Total Phosphorous
 - The Department outlined the permitting approach that would be taken for various parameters, including Total Phosphorous, in a letter dated September 23, 2005. A Total Phosphorus limit of 0.5 mg/l was proposed because the permittees' consultants had previously stated that 0.2 mg/l was the typical effluent concentration. This was expected to be protective of the environment while maintaining a reasonable margin of error for permit compliance.
 - In a response letter dated October 6, 2005, the permittees' consultants objected to the proposed Total Phosphorous limits pending the results of the modeling study.

- The Revised Nutrient Modeling Study (February 2007) estimates the downstream chlorophyll-a concentration for three critical season scenarios – (1) current condition with no discharge from the pipeline, (2) pipeline discharging maximum flow of 20 MGD where Total Phosphorous = 1 mg/l, and (3) pipeline discharging anticipated flow of 13.5 MGD where Total Phosphorous = 1 mg/l.
The model predicts no net increase of chlorophyll-a concentration for the anticipated flow of 13.5 MGD. However, at the maximum flow of 20 MGD, the model does predict an increase in chlorophyll-a concentration. The Total Phosphorous concentration limits for the months of July – October have been reduced by the ratio of the flows (1-(13.5/20) = 0.3) so there will be no net increase of chlorophyll-a concentrations. The Total Phosphorous concentrations for the months of July – October are 0.7 mg/l on a monthly average and 1.4 mg/l on a daily maximum.
- Phosphorus is usually present in natural water as phosphates (orthophosphates, polyphosphates, and organically bound phosphates).
- Sources of phosphorus include human and animal wastes (*i.e., sewage*), *industrial wastes*, soil erosion, and fertilizers.
- Excess phosphorus causes extensive algae growth called "blooms," which are a classic symptom of cultural eutrophication and lead to decreased oxygen levels in river water.
- Data from 1/20/2004 through 3/13/2007 for ADEQ monitoring station OUA0037 (approximately 9 miles downstream from the City of Camden) shows the average of 0.05 mg/l and 0.48 mg/l for Orthophosphates and Total Phosphorus, respectively. Loading of Orthophosphates at Station OUA0037 with low river flow at 750 cfs (485.44 MGD) is about 161 lbs/day. The Cities of Malvern, Arkadelphia, and Camden upstream discharges from Station OUA0037 are discharging 0.6, 0.6, and 0.7% of the low river flow while the pipeline will discharge more than 4% of the low river flow. Therefore, total phosphorus limits in the permit are appropriate.

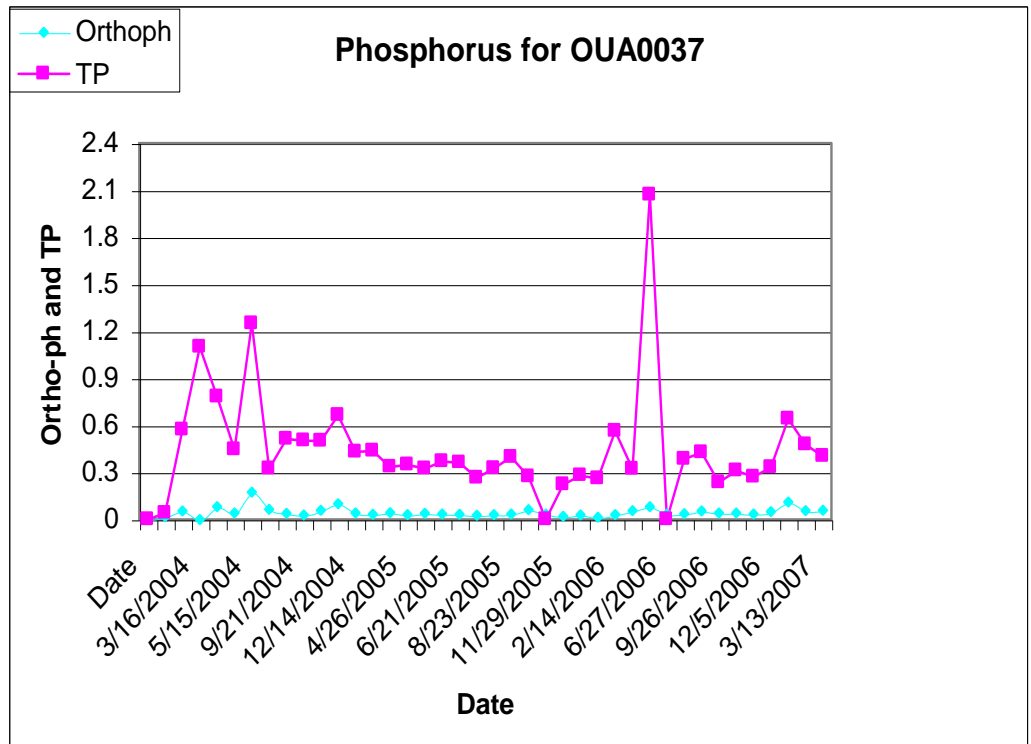


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OUA0037

| Date | Orthoph | TP |
|------------|---------|-------|
| 1/20/2004 | 0.019 | 0.039 |
| 2/17/2004 | 0.054 | 0.573 |
| 3/16/2004 | ?0.0321 | 1.1 |
| 4/13/2004 | 0.081 | 0.783 |
| 5/11/2004 | 0.042 | 0.446 |
| 5/15/2004 | 0.175 | 1.25 |
| 7/20/2004 | 0.066 | 0.324 |
| 8/17/2004 | 0.041 | 0.513 |
| 9/21/2004 | 0.03 | 0.502 |
| 10/19/2004 | 0.058 | 0.501 |
| 11/30/2004 | 0.102 | 0.664 |
| 12/14/2004 | 0.042 | 0.431 |
| 2/22/2005 | 0.034 | 0.438 |
| 3/28/2005 | 0.044 | 0.334 |
| 4/26/2005 | 0.032 | 0.35 |
| 5/2/2005 | 0.04 | 0.324 |
| 5/23/2005 | 0.035 | 0.37 |
| 6/21/2005 | 0.034 | 0.362 |
| 6/27/2005 | 0.028 | 0.264 |
| 7/26/2005 | 0.032 | 0.325 |
| 8/23/2005 | 0.035 | 0.398 |
| 9/27/2005 | 0.063 | 0.274 |
| 10/25/2005 | 0.035 | void |
| 11/29/2005 | 0.022 | 0.224 |
| 12/27/2005 | 0.029 | 0.279 |
| 1/17/2006 | 0.014 | 0.261 |
| 2/14/2006 | 0.031 | 0.563 |
| 4/18/2006 | 0.056 | 0.322 |
| 5/16/2006 | 0.083 | 2.07 |
| 6/27/2006 | 0.035 | ?0.31 |
| 7/25/2006 | 0.038 | 0.384 |
| 8/29/2006 | 0.055 | 0.426 |
| 9/26/2006 | 0.043 | 0.236 |
| 10/24/2006 | 0.043 | 0.311 |
| 11/28/2006 | 0.036 | 0.272 |
| 12/5/2006 | 0.051 | 0.332 |
| 1/2/2007 | 0.111 | 0.642 |
| 2/6/2007 | 0.056 | 0.478 |
| 3/13/2007 | 0.058 | 0.403 |



| | | |
|-------|------|------|
| Avg | 0.05 | 0.48 |
| Min | 0.01 | 0.04 |
| Max | 0.18 | 2.07 |
| Stdev | 0.03 | 0.35 |