

Response to Public Comment
TMDL for Dissolved Oxygen in Lake O' the Pines
January 26, 2006

Tracking Number	Date Received	Affiliation of Commenter	Summary of Request or Comment	Summary of TCEQ Action or Explanation
001	11/17/05 (Public Hearing)	City of Daingerfield	The commenter expressed concern that if the City of Daingerfield has to have additional treatment for phosphorus, that might change the status of the City's wastewater treatment plant from a Category C plant to a Category B plant which would lead to additional monitoring, chlorination, de-chlorination, and six part composites twice a week.	The TMDL does not specify the actions that will need to be taken in order to meet the water quality targets. It is not known if the City of Daingerfield or any other municipality in the watershed will be required to have additional treatment for the removal of phosphorus or, if there is such a requirement, how that requirement would be met. Further, in TCEQ rules the 0.7 million gallons per day permitted flow currently in the City of Daingerfield's permit is classified as a Category C or D plant under all treatment systems identified in Figure 30 TAC §30.350(e). No changes to the TMDL were made in response to this comment.
002	12/05/05 (Letter)	Caddo Lake Institute	<p>The commenter stated that the Caddo Lake Institute was in general support of the TMDL and the TMDL provides a good step forward toward improving water quality in Lake O' the Pines. The commenter states that the Institute would like to work with TCEQ and stakeholders in the development and implementation of the water quality protection plan.</p> <p>The commenter does express concern that major aspects of the TMDL can only be resolved through an effective monitoring program during the implementation phase. The commenter recommends that the TMDL or implementation plan include clear steps for testing assumptions including: (1) the lack of a need to reduce nitrogen loadings, (2) the assumed inputs from point sources, and (3) the sufficiency of chlorophyll-<i>a</i> data to reflect the impact of rooted vegetation in the reservoir. The commenter states that the TMDL or implementation plan should provide improvement in the existing monitoring in the reservoir and assure that monitoring can be used for regulatory purposes.</p>	<p>The TCEQ appreciates the expression of support for the TMDL and welcomes the Institute's participation in the development and implementation of the water quality protection plan. No changes to the TMDL were made in response to this comment.</p> <p>These matters relate to the implementation plan for the Lake O' the Pines TMDL. The TCEQ welcomes the Institute's participation in the development of the implementation plan and in helping to prioritize the use of available resources in facilitating the implementation and monitoring of management measures. No changes to the TMDL were made in response to this comment.</p>

Tracking Number	Date Received	Affiliation of Commenter	Summary of Request or Comment	Summary of TCEQ Action or Explanation
003	12/05/05 (Facsimile)	National Wildlife Federation	<p>The commenter states that the draft TMDL represents a reasonable starting place for improving dissolved oxygen levels in the reservoir.</p> <p>The commenter cites the assumption used in the analysis that point source dischargers are discharging at their maximum permitted levels while, in actuality, they are discharging at lower levels. The commenter states that it is unclear how this assumption contributes to a margin of safety. The commenter further states that problems are occurring at the actual levels of discharge and if actual point source loadings are much lower than maximum permitted levels, the TMDL could result in little reduction in actual loading.</p>	<p>The TCEQ appreciates the statement of support for the TMDL. No changes to the TMDL were made in response to this comment.</p> <p>The TCEQ seeks to explain how this assumption contributes to the margin of safety for the TMDL. The margin of safety for this assumption results from the fact that the wasteload allocation derived from the TMDL will be used to set the maximum permitted discharge level. The majority of permittees operate at a level that is well below their maximum permitted level so as to insure compliance with permit requirements. The extent to which actual discharge levels from point sources in the watershed are lower than their maximum permitted discharge levels (i.e., the TMDL wasteload allocation) constitutes a margin of safety for the TMDL. The comment that water quality problems are occurring at the actual levels of discharge is consistent with the findings of the TMDL and load reductions are specified in the TMDL for both point and nonpoint source loadings in order to remediate these conditions. Self Reporting data verifies that actual loadings from point sources are greater than the wasteload allocation for these sources specified in the TMDL. The TMDL will result in significant reduction in actual phosphorus loadings to Lake O' the Pines. No changes to the TMDL were made in response to this comment.</p>

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			<p>The commenter cites the discussion in the draft TMDL of the variation between the SWAT model calculation of phosphorus loading and the measured levels in Big Cypress Creek which may be subject to a “low-flow sampling bias.” The commenter states that this discussion does not provide an adequate basis for claiming an inherent margin of safety.</p>	<p>The TCEQ disagrees with the comment. The draft TMDL states that the SWAT model tends to predict higher average annual loadings of total phosphorus to Lake O' the Pines than those calculated based upon the results of monitoring data collected in Big Cypress Creek. The TMDL acknowledges that the monitoring data is subject to a “low-flow sampling bias.” An acceptable way to estimate loadings which includes the effects of high flow events is through the use of models. Actual loadings presumably lie somewhere between the low value calculated from monitoring data and the high value calculated in the SWAT model. The use of the higher value from the SWAT model yields a higher load reduction requirement and thus provides a margin of safety to the TMDL analysis. No changes to the TMDL were made in response to this comment.</p>
			<p>The commenter cites the discussion in the draft TMDL of the relatively low violation rate of the dissolved oxygen standard in Lake O' the Pines and the TMDL analysis which results in a relatively large reduction in total phosphorus loadings. The commenter states that these circumstances are not a sufficient basis for claiming an inherent margin of safety. The commenter states that a goal for the TMDL to achieve compliance with state water quality assessment criteria is not appropriate.</p>	<p>The TCEQ disagrees with the comment. The violation rate described in the draft TMDL is indeed low. This suggests that the water quality conditions in the reservoir are only minimally below the goal established for it in the state water quality standards. The TMDL does not adopt a target condition based upon state water quality assessment criteria. Rather, the analytical approach used in the determination of the TMDL is completely independent of the violation rate. It is based upon meeting target water quality conditions throughout the reservoir at all times. No changes to the TMDL were made in response to this comment.</p>

Tracking Number	Date Received	Affiliation of Commenter	Summary of Request or Comment	Summary of TCEQ Action or Explanation
			<p>The commenter states that the assumption of no net loss of phosphorus in the stream channels feeding Lake O' the Pines fails to provide a margin of safety.</p>	<p>The TCEQ disagrees with the comment. Some loss of phosphorus containing materials very likely occurs between the point at which the materials enter the water course and the point at which the tributary streams enter the reservoir. The assumption results in an over- estimation of the phosphorus loads to the reservoir which in turn yields a larger phosphorus load reduction requirement. No changes to the TMDL were made in response to this comment.</p>
			<p>The commenter states that the newly installed best management practices on agricultural lands fail to support the claim of a margin of safety.</p>	<p>The TCEQ disagrees with the comment. The draft TMDL states that monitoring data collected to support the TMDL analyses were collected prior to the installation of best management practices on agricultural lands in the watershed. Consequently, the model (which was developed based on this "pre-BMP" information) likely overestimates the phosphorus loadings from these areas. The load allocation for the TMDL is established based on this higher loading rate. The extent to which actual loading rates from these areas are lower than the assumed loading rates (i.e., the TMDL load allocation) constitutes a margin of safety for the TMDL. No changes to the TMDL were made in response to this comment.</p>

Tracking Number	Date Received	Affiliation of Commenter	Summary of Request or Comment	Summary of TCEQ Action or Explanation
			<p>The commenter states that the use of total phosphorus loading, rather than some more readily available component of total phosphorus, does not provide a margin of safety as claimed in the draft TMDL.</p>	<p>The TCEQ disagrees with the comment. Some fraction of total phosphorus entering the reservoir is in a form that can not readily be used to support new biological growth. It is not known what fraction of this non-available phosphorus may ultimately become biologically available. It is also not known how much of this phosphorus may ultimately be lost through deep burial or other mechanisms within the reservoir. The use of total phosphorus as the basis for managing metabolic activity in the reservoir is a conservative assumption that likely overestimates the amount of phosphorus actually available to support biological activity. This overestimation of the average annual phosphorus load yields a higher load reduction requirement and thus provides an additional margin of safety to the TMDL. No changes to the TMDL were made in response to this comment.</p>
			<p>The commenter states that failure to quantitatively account for the contribution of rooted vegetation to swings in levels of dissolved oxygen calls into question the contention that there is an adequate implicit margin of safety in the TMDL.</p>	<p>The TCEQ disagrees with the comment. The TMDL project did investigate, in part, the contribution of rooted vegetation through the deployment of respirometers. These measured the metabolic activity of the entire biological community (both benthic and planktonic). The results of these measurements were incorporated into the overall analysis of the reservoir. Analytical approaches which address the specific effects of rooted vegetation in the reservoir would have required a significantly higher level of effort than was deemed necessary by watershed stakeholders, technical professionals, and the TCEQ. The empirical approach used in the draft TMDL, the use of a related parameter (chlorophyll-<i>a</i>) as an intermediate target for the TMDL, and other conservative assumptions in the TMDL analysis was determined to be the more cost-effective approach for the TMDL. No changes to the TMDL were made in response to this comment.</p>

Tracking Number	Date Received	Affiliation of Commenter	Summary of Request or Comment	Summary of TCEQ Action or Explanation
			<p>The commenter states that the TMDL should incorporate an explicit margin of safety.</p>	<p>The TCEQ disagrees with this comment. Conservative assumptions used in the development of the TMDL provide an adequate margin of safety. Extensive peer review of the draft TMDL by TCEQ staff, technical professionals, and watershed stakeholders found the implicit margin of safety used in this TMDL to be appropriate. The use of an implicit margin of safety is common in TMDLs approved by the TCEQ and the EPA and is entirely consistent with the regulatory requirements for a margin of safety. No changes to the TMDL were made in response to this comment.</p>
			<p>The commenter states the TMDL should include an acknowledgement of the importance of monitoring the measures implemented and water quality conditions and a commitment to revisit the load allocation based on the results of monitoring.</p>	<p>The TCEQ does not agree that the TMDL is the appropriate document in which to make these acknowledgements and commitments. These matters relate to the implementation plan for the Lake O' the Pines TMDL. The implementation plan will specify the actions to be taken to meet the load allocations, how progress toward meeting the water quality goals will be measured, and a mechanism for revising the TMDL and/or the implementation plan if necessary. No changes to the TMDL were made in response to this comment.</p>