

Response to Public Comments

Re: Proposed Total Maximum Daily Loads Regulation the Nanticoke River and Broad Creek.

Introduction

Delaware Department of Natural Resources and Environmental Control (DNREC) has proposed to establish and adopt Total Maximum Daily Loads for nitrogen and phosphorous for Indian River, Indian River Bay, and Rehoboth Bay.

As part of the public participation process, DNREC established an interagency TMDL workgroup with representatives from several state and federal agencies. DNREC also organized the TMDL Advisory Committee for the Inland Bays with representatives from many stakeholder groups. The Advisory Committee met on July 28th and August 11th 1998, at which time DNREC made presentations of the proposed TMDL and responded to the questions and comments. The proposed TMDL Regulations were published in Delaware Register of Regulations, Vol. 2, Issue 2, Saturday, August 1, 1998. A workshop was held September 2nd followed by a Public Hearing that evening. During the workshop, DNREC again presented the proposed regulation and the technical basis for the regulation and responded to questions and comments from the audience. During and after the hearing a number of commenters requested an extension of the deadline to make comments. DNREC extended the original deadline from September 11th to September 25th, 1998.

Following is a table indicating the commenter, their affiliation, date of comment and comment numbers. The comments and DNREC's responses follow the table.

Nanticoke

Commenter	Affiliation	Date of Comment	Comment#
Dan Kramer		9-9-98	1
Robert Bennet	Commissioners of Bridgeville.	9-9-98	2-11
Matthew Murawski	U.S.EPA	9-9-98	12-13
Bill Satterfield	Delmarva Poultry Industry	9-9-98	13-22
Joseph Calhoun	Delaware Farm Bureau	9-9-98	23
Randall Willin		9-9-98	24-28
Mark Allen		9-9-98	29
Martin Ross		9-9-98	30
Joseph Liefbroer	S.C. Johnson Polymer	9-9-98	31-36
Richard Stone	Town of Laurel	9-18-98	37-47
Annie Williams	Commissioners of Bridgeville	9-22-98	48
Carl Solberg	Delaware Chapter Sierra Club	10-1-98	49-53
Michael Terry	DuPont	10-1-98	54
Thomas Henry	U.S. EPA	10-2-98	55-61

1. We have the technology to really solve this problem. Why isn't it being used? Nobody wants to look into modern technology. They want to blame it on the chicken farmer. The chicken farmer didn't cause the problem. Everybody wants to say they did. Look at the houses. Look at the buildings. Look at the sewerage treatment plants. That's where you want to look.

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. The Clean Water Act and its implementing regulations require establishment of total maximum daily loads, which includes waste load allocations for point sources and load allocation for nonpoint sources and a margin of safety when water quality criteria are not met. The proposed TMDL has identified pollution load reductions that are necessary from point and nonpoint sources in order to meet the goals of the Clean Water Act. DNREC believes that its proposed TMDL regulation is equitable, appropriate and meets the goals of the Clean Water Act.

Specific contributions of each nutrient source and required levels of reduction will be determined during the development of the Pollution Control Strategy. DNREC intends to fully involve stakeholders in the development of the Pollution Control Strategy. The PCS will consider appropriate and cost-effective measures designed to achieve water quality standards

2. In general, we support the goal of improving the water quality of our rivers and creeks. We do, however, object to being singled out to shoulder the responsibility for stream clean up.

Response: DNREC acknowledges the support of the commenter for the goal of improving water quality.

DNREC believes that its proposed TMDL regulation is equitable, appropriate and meets the goals of the Clean Water Act.

3. We request a 45 day time extension for additional opportunity to review and comment. Our engineer requested a copy of the study on August 8, 1998 and did not receive it until September 3, 1998, only three working days prior to the public hearing.

Response: Recognizing the complexity of establishing TMDLs and the significant impacts they would cause to stakeholders in the watershed, DNREC developed a public participation process and stakeholders involvement plan that exceeded State of Delaware Regulatory Development Process guidelines. DNREC engaged in extensive public outreach by briefing stakeholders on the TMDL process at the following meetings.

May 19, 1997	Governor's Council on Agriculture
May 22, 1997	Council of Farm Organizations
June 27, 1997	Pesticide Advisory Committee
August 26, 1997	Delmarva Poultry Industry Growers Committee
October 16, 1997	Delaware Chapter of the Sierra Club
October 28, 1997	Potentially Affected Parties, Environmental Groups, Legislators
December 2, 1997	Delaware State Grange
January 22, 1998	Delaware Association of Conservation Districts
January 27, 1998	Delaware Farm Bureau
March 6, 1998	Christina Basin Task Force
March 27, 1998	Inland Bays Scientific & Technical Advisory Committee
April 1, 1998	Senate Natural Resources Committee
April 3, 1998	Center for the Inland Bays Board of Directors
April 8, 1998	Inland Bays Workshop
April 22, 1998	Environmentalists Meeting
April 29, 1998	US Army Corps of Engineers (Channelized Stream Maintenance General Permit)

DNREC also established an interagency TMDL workgroup with representatives from several state and federal agencies. Furthermore, DNREC organized the TMDL Advisory Committee for the Nanticoke River and Broad Creek with representatives from many stakeholder groups. The Advisory Committee met on July 30th, at which time DNREC made a presentation of the proposed TMDL and responded to the questions and comments. A workshop was held September 9th followed by a Public Hearing that evening. During the workshop, DNREC again presented the proposed regulation and the technical basis for the regulation and responded to questions and comments from the audience. During the hearing a number of commenters requested an extension of the deadline to make comments. DNREC extended the original deadline from September 18th to October 2nd, 1998.

DNREC followed and exceeded State of Delaware requirements for public participation process for development of regulations. In addition, DNREC believes that the public participation process not only meets but also exceeds requirements of the Clean Water Act. Also, please see comments #12, #13 and #56.

4. No economic analysis had been performed and no consideration given to the equitable distribution of costs.

Response: Section 303 (d) of the Clean Water Act does not require economic or financial considerations to be used in the establishment of TMDLs. Economic considerations will be made during the development of the PCS.

5. During the last renewal of Bridgeville's NPDES permit, there was no mention of nitrogen removal. Without a long-term strategy from DNREC, we have to ask, "If we upgrade now, will we have to upgrade again in five years?"

Response: Water quality degradation and violation of water quality standards in the Nanticoke River and Broad Creek has been documented by water quality monitoring and analysis. Point and nonpoint source controls have been implemented in the watershed which have resulted in water quality improvements for certain pollutants. However, water quality data still indicate that nutrient targets are not being met and will not be met without further reductions of nutrient inputs.

DNREC intends to fully involve stakeholders in the implementation of the proposed TMDL through the development of the Pollution Control Strategy. The Pollution Control Strategy development process will set the timetable for full implementation of the TMDL.

6. Adopting the TMDL stream loadings should be a separate process from adopting an implementation strategy. Singling out the three major point source dischargers at this phase of the study is premature and should be considered in concert with the entire Pollution Control Strategy. The final Pollution Control Strategy might include watershed trading and might make it unnecessary to upgrade certain plants.

Response: The Clean Water Act and its implementing regulations require establishment of total maximum daily loads, which includes waste load allocations for point sources and load allocation for nonpoint sources and a margin of safety. The proposed TMDL has identified nutrient load reductions that are necessary from point and nonpoint sources in order to meet the goals of the Clean Water Act. DNREC believes that its proposed TMDL regulation is equitable, appropriate and meets the goals of the Clean Water Act.

DNREC intends to fully involve stakeholders in the implementation of the proposed TMDL through the development of the Pollution Control Strategy. The PCS will consider appropriate and cost-effective measures designed to achieve water quality standards.

7. We object to meeting TMDL goals under the strict NPDES Permit requirements while the nonpoint sources operate as volunteers in this effort. Who will assist the municipalities in paying a stiff EPA fine if we are not perfect in achieving our new limits?

Response: Please see the responses to comments #4 and #6.

8. Without proper monitoring, nonpoint sources will probably not meet their nutrient removal goals.

Response: Through monitoring efforts targeted load reductions will be tracked. If targeted reduction goals are not met, appropriate actions will be required to meet the goals of the Clean Water Act.

9. There is no discussion of the criteria used for selecting stream targets for phosphorous, nitrogen and chlorophyll-a. Resources may not be available to correlate these pollutants to observed water quality problems. This casts a shadow over the entire modeling process.

Response: DNREC selected concentrations for total nitrogen of 3.0 mg/l and total phosphorous of 0.1 mg/l for the mainstem of the Nanticoke River and Broad Creek based on literature values and best professional judgement. These values were established to evaluate Delaware Waters in order to generate the State 305(b) Reports and 303(d) Lists as required by the Clean Water Act. The State's 303(d) listing process is subject to public comment.

Studies have shown that nutrient concentrations in excess of the above values result in eutrophication and algal blooms (as represented by chlorophyll-a) which result in wide dissolved oxygen variations. Swings in dissolved oxygen commonly result in violations of Water Quality Standards and are harmful to fish and other aquatic resources. Furthermore, excessive algal blooms cause non attainment of other designated uses.

10. According to the computer model, the proposed TMDLs fall short of meeting stream goals for phosphorous or chlorophyll-a. This leaves us feeling vulnerable to even more stringent limits in the near future.

Response: The proposed TMDL meets State Surface Water Quality Standards for Dissolved Oxygen.

With regard to nutrients, DNREC selected the following approaches. First, in the absence of national nutrient criteria, DNREC selected targets of 3.0 mg/l total nitrogen and 0.1 mg/l total phosphorous for the Nanticoke River and Broad Creek. DNREC applied a 20% confidence limit to these targets to establish the proposed TMDL. The projected concentrations of nitrogen and phosphorous are within the confidence limit.

Secondly, DNREC chose conservative assumptions for estimating effluent concentrations from the wastewater treatment plants utilizing Biological Nutrient Removal (BNR) technology. In addition DNREC used conservative assumptions for stream flows and temperature. DNREC believes that the BNR process can achieve higher degrees of phosphorous reduction than were considered in the model, hence assuring achieving the total phosphorous concentration target. If future monitoring activities show that further phosphorus reductions are necessary from wastewater treatment plants to meet State Water Quality Standards, DNREC believes that those reductions can be achieved with minor modifications to plant processes.

11. This study does not discuss how Maryland TMDLs on the Nanticoke River might decrease nutrient contributions flushed upward with the tide.

Response: Because of mixing characteristics and flushing patterns in the Nanticoke River, DNREC believes there is no significant nutrient contribution from Maryland sources to the Delaware portion of the Nanticoke River. DNREC believes that elevated nutrient levels in the Delaware portion of the Nanticoke River are from point and nonpoint sources in Delaware.

12. The State has the primary responsibility to set the TMDLs. If Delaware doesn't set them, then EPA must, and we are prepared to do that.

Response: DNREC intends to establish the proposed TMDL as scheduled and recognizes EPA's authority to do so should there be a delay.

13. Delaware has done a great deal towards meeting the goals of the Clean Water Act. With the proposed Nanticoke River and Broad Creek TMDL, Delaware is taking another significant step towards meeting the goal of the Clean Water Act. We believe this proposed TMDL is an important first step towards improving the water quality.

Response: DNREC generally agrees with the intent of the comment and believes that the proposed TMDL is designed to meet the goals of the Clean Water Act.

14. We want to commend DNREC on efforts to involve stakeholders in the process of establishing this TMDL. We recognize that the short time frames that the State is working under make extensive public input difficult. Nonetheless, with the formation of an advisory committee, several public meetings, and now this hearing, the State has gone well beyond EPA's requirements for public participation. We support Delaware's intent to continue to seek stakeholder input as they move from establishing TMDL to the truly difficult task of implementation.

Response: DNREC acknowledges the support of the commenter.

15. Delmarva Poultry Industry (DPI) is very concerned about the lack of time for their members to acquaint themselves with the process and intelligently offer comments.

Response: Please see the response to comment #3

16. DPI is concerned that if goals are set to cause noncompliance then a set of devastating regulations will be implemented.

Response: The Clean Water Act requires establishment of TMDLs where water bodies are not meeting water quality standards. The proposed TMDL is established to meet Delaware's Surface Water Quality Standards and the goals of the Clean Water Act.

17. It is important that the Department realize that water quality degradation didn't occur overnight and that solutions will not come overnight. A scientifically valid amount of time must be allowed to permit voluntary programs to be effective.

Response: Please see the response to comment #5.

18. We have concerns about how water monitoring samples will indicate the exact source of a pollutant. While point versus nonpoint can be monitored through records of point source discharges, how will the Department know a specific cause of nonpoint source pollution? State efforts must exist to differentiate between nutrients from agricultural fields versus septic

systems, residential land, urban and suburban runoff, and nutrient droppings by fish and wildlife.

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. For purposes of establishing the TMDL it is not necessary or practical to differentiate between various sources of nutrients. Specific contributions of each nutrient source and required levels of reduction will be determined during the development of the Pollution Control Strategy. DNREC intends to fully involve stakeholders in the development of the Pollution Control Strategy. The PCS will consider appropriate and cost-effective measures designed to achieve water quality standards.

19. What happens if there is not success in achieving the very ambitious goals of reducing nonpoint nitrogen loads by 30 percent and nonpoint phosphorous loads by 50 percent in the Broad Creek and Nanticoke watersheds. We are concerned that farmers will be targeted by the State of Delaware personnel to the point they are driven out of business.

Response: The Clean Water Act and implementing regulations require establishment of total maximum daily loads (TMDLs) for waters that are not meeting State Water Quality Standards. A TMDL includes waste load allocations for point sources and load allocation for nonpoint sources and a margin of safety. The proposed TMDL has identified nutrient load reductions that are necessary from point and nonpoint sources in order to meet Water Quality Standards. DNREC believes that its proposed TMDL regulation is equitable, appropriate and meets the goals of the Clean Water Act.

DNREC intends to fully involve stakeholders in the implementation of the proposed TMDL through the development of the Pollution Control Strategy. The PCS will consider appropriate and cost-effective measures designed to achieve water quality standards.

Through monitoring efforts targeted load reductions will be tracked. If targeted reduction goals are not met appropriate actions will be required to meet the goals of the Clean Water Act.

20. DPI Supports the voluntary agricultural nutrient management options including nutrient management plans, analysis of animal wastes, storage facilities for animal wastes, composting structures for disposal of dead animals, use of new soil and plant Nitrogen testing methods, use of cover crops, buffer strip, water control structures and created wetlands for sediment and nutrient removal and nutrient management public education programs.

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. However, specific nutrient load reduction activities will be determined during development of the PCS. DNREC intends to fully involve stakeholders in the development of the Pollution Control Strategy

21. The British have something called Best Available Technology, Not Entailing Economic Cost. DNREC needs to keep that concept in mind.

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. However, please see the response to comment #6.

22. Commenter stated that if farmers were pushed out of the region then idle land could be converted to housing and other uses and could be more harmful to the environment than agriculture.

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. However, please see the response to comment #6.

23. All of us in this room agree that programs are necessary to improve water quality. Lets not put poultry growers and farmers who are doing their best job on environmental stewardship out of business.

Response: DNREC acknowledges the commenter's support of programs necessary to improve water quality. Please see the response to comment #6.

24. The Delaware Farm Bureau came up with the following voluntary practices to help reduce non-point source loadings including nutrient management plans, analysis of animal wastes, storage facilities for animal wastes, composting structures for disposal of dead animals, use of new soil and plant Nitrogen testing methods, use of cover crops, buffer strip, water control structures and created wetlands for sediment and nutrient removal and nutrient management public education programs.

Response: Please see the response to comment # 20.

25. I am greatly concerned that promulgation of these regulations at this point would, in fact, cause us to make decisions that may not be in the best interest of those individuals in the watershed.

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. However, please see the response to comment #6.

26. The point source contribution by all point sources is only being reduced by 13 percent. On the other hand, nonpoint source contribution must be reduced by 30 percent.

Response: Please see the response to comment #6.

27. I have some disagreement with regard to the interpretation of certain documents. The total nitrogen concentration in the Nanticoke River and Broad Creek once we reach a point below the Seaford 13A bridge, all but 2 of those sites, are below target. When the river leaves the State of Delaware, we already met the total daily loading requirements. We already meet approximately 75 percent of the requirements of the TMDLs. The chlorophyll-a concentration in all but two locations already meets the target. If, in fact, one of the effects of elevated nitrogen and phosphorous levels is an increase in chlorophyll-a concentration, why are these levels not consistent with the loading that has been evidenced in these reports? I think it would be wrong of us to request and implement, and then promulgate regulations when the science does not support many of these conclusions.

Response: The Clean Water Act and its implementing regulations require TMDLs for all water body segments that do not meet water quality standards. Please see the responses to comments #5, #6 and #10.

28. Economic justification (*of fertilizer use, ed.*) will go a long way in determining and affecting the kind of change we want to see here. But there must be sufficient science to support those conclusions.

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. Please see the responses to comment #5 and #6.

29. My challenge to you, have those who have set forth the standards, who have set forth the specific agenda to reduce these loadings, and then made the determinations on who is responsible for reducing that, have they equitably and have they honestly set forth the best science and drawn the best conclusions?

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. However, please see the responses to comments #5 and #6.

30. The theory or idea that old man river will carry it away is passe. And the sins of the past are coming back to haunt us somewhat in that soil conservation (*by creating a ditching network, ed.*) has opened the door and the horse has gotten out. When you connect the entire county with a conduit of rapid runoff, what do you expect?

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. However, please see the response to comment #5.

31. We're rushing into the TMDLs without giving them a realistic look of what the ramifications of them are, and whether they are truly justified or not and how they have been arrived at.

Response: Please see the response to comment #5, #6 and #10.

32. During the July 30, 1998 Nanticoke River Advisory Committee meeting, Hassan Mirsajadi of DNREC stated that non-detectable concentrations were treated as zero; however, it appears that non-detectable concentrations were actually set at the detection limits. The load listed for S.C. Johnson Polymer (0.2 kg/day) is based on a phosphorous concentration level of 0.1 mg/l which equals the detection limit. It would not be appropriate for DNREC to include a phosphorous load from our facility into its model since there is no evidence that our cooling water and the City of Seaford's treated drinking water contains phosphorous.

Response: DNREC has modified the input to the model by incorporating the updated phosphorous loading information provided by the commenter. The TMDL analysis report has been updated to reflect this modification. DNREC believes that the result of these modifications do not warrant changes to the TMDL regulations as proposed.

33. Table 2-3 list a BOD₅ concentration of 2.5 mg/l for S.C. Johnson's Seaford, Delaware facility. In the past 7.5 years, only 2 of 90 samples (3 and 6.2 mg/l) have ever had a BOD₅ concentration greater than the detection limit. Both of these events occurred due to flushing water mains by the City of Seaford. Since we rarely detect BOD₅ in our cooling water, it would not be appropriate for DNREC to include a BOD₅ load from our facility into its model.

Response: DNREC has modified the input to the model by incorporating the updated BOD₅ loading information provided by the commenter. The TMDL analysis report has been updated to reflect this modification. DNREC believes that the result of these modifications do not warrant changes to the TMDL regulations as proposed.

34. Table 2-3 list a nitrogen concentration of 6.5 mg/l for S.C. Johnson's Seaford, Delaware facility. We request that DNREC not include a daily nitrogen load for our facility into the model since the nitrogen is in the intake water provided by the City of Seaford. This is consistent with the approach DNREC has used for the DuPont plant and State Water Quality Standards.

Response: In order to be consistent with the CWA and its implementing regulations, DNREC considered all point and nonpoint source discharges that add nutrient loads to the Nanticoke River. The nitrogen discharge from S.C. Johnson's facility is an additional load; hence it was included in the model and analysis.

35. Table 2-2 of the draft analysis list a flow of 400,000 gallons per day. This flow does correspond to the average daily flow corresponding to a yearly basis; however it does not correspond to the maximum flow permissible. DNREC amended S.C. Johnson Polymer's NPDES permit, effective June 1, 1997 to allow our facility to discharge an average daily flow of 0.8 mgd for the period between March 1 and November 30 of each year.

Response: DNREC has modified the input to the model by incorporating the updated permitted seasonal discharge flow for the facility. The TMDL analysis report has been updated to reflect this modification. DNREC believes that the result of this modification does not warrant changes to the TMDL regulations as proposed.

36. We have attached amended Tables 2-2 and 2-3 to summarize the changes that we request DNREC make in its modeling and computation of the allowable future TMDLs.

Response: Please see responses to comments #32, #33, #34 and #35.

37. We request article 2 be amended so that it is clear that the allowable nitrogen and phosphorous loads do not include loads in intake water and also to include the revised loads in the revision to Table 2-2.

Response: Please see responses to comments #32, #33, #34 and #35.

38. The TMDL analysis is technically flawed because the models utilized to establish the TMDL used "target" values for total nitrogen and total phosphorous instead of numeric criteria derived from the State of Delaware Surface Water Quality Standards.

Response: Please see the response to comment #9.

39. The TMDL analysis is technically flawed because no scientific basis for the target numbers was presented.

Response: Please see the response to comment #9.

40. The TMDL analysis is technically flawed because scenario 11 was the basis of the TMDL because it was deemed to be “the most cost effective” scenario of the seventeen scenarios considered. No cost information was provided to support “the most cost effective” claim. It is clear that Scenario 11 is the most cost effective plan for the 3 industries and one mobile home park since they have nothing to do to meet the TMDL requirements.

Response: The Draft TMDL Report indicates that scenario 11 is the scenario with the least restrictive load reduction targets that still meets the goals of the Clean Water Act.

41. The TMDL analysis is technically flawed because no evidence was provided that field data was gathered to calibrate the DYNHY5 model for Broad Creek.

Response: As indicated in the report entitled “Hydrodynamic and Water Quality Model of Nanticoke River, Delaware”, DNREC’s Exhibit B, field data was used to calibrate the DYNHY5 model for the Nanticoke River and Broad Creek.

42. The TMDL analysis is technically flawed because the cited studies used in the report were not for facultative lagoon systems, the type of wastewater treatment system serving the Town of Laurel.

Response: The TMDL analysis used representative values for concentrations of pollutants in effluents of wastewater treatment plants that utilize biological nutrient removal technology. Any equivalent technology, which would result in the same levels of pollution reduction, will be acceptable under the proposed TMDL regulation.

43. DNREC has failed to upgrade the Surface Water Quality Standards on the required three-year schedule and, therefore, does not have either a nitrogen or phosphorous numeric standard on which to base the TMDL analysis.

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. However, as required by the CWA and its implementing regulations, DNREC used numeric criteria from Delaware’s Surface Water Quality Standards for dissolved oxygen and narrative criteria for setting the nutrient targets to develop the proposed TMDL. Also, please see response to comment #9.

44. The TMDL process is premature because the guidance documents necessary to establish nutrient standards for these types of waters will not be available until 1999 for Rivers and 2000 for estuarine systems. The State of Delaware and the Town of Laurel have limited resources to apply to environmental issues. It does not seem logical to apply these limited resources toward complying with a TMDL that may change in 2 years.

Response: The Clean Water Act and its implementing regulations require establishment of total maximum daily loads, which includes waste load allocations for point sources and load allocation for nonpoint sources and a margin of safety when water quality criteria are not met. The proposed TMDL has identified nutrient load reductions that are necessary from point and nonpoint sources in order to meet the goals of the Clean Water Act. As required by the Clean Water Act, DNREC has used existing narrative and numeric criteria to establish this TMDL. DNREC believes that its proposed TMDL regulation is equitable, appropriate and meets the goals of the Clean Water Act.

45. The TMDL document fails to recognize that the Town of Laurel has already made a capital commitment of more than \$600,000 for BNR compatible with a facultative lagoon system. The Town of Laurel should, therefore, be recognized as having made its contribution to point source BNR reduction and be excluded from the list of point source dischargers required to make further improvements.

Response: Any facility meeting its wasteload allocation as specified in the TMDL analysis report will be in compliance with the requirements of Article One of the proposed TMDL. Also, please see the response to comment #42.

46. There is a gross inequity when the plan for the TMDL includes a strategy that requires three municipalities that contribute 26% of the point source nitrogen in the Nanticoke River to reduce their contribution even further when the plants that contribute 74% of the load are not required to do any nitrogen load reduction. Why are they not being required to further reduce the nitrogen through some other management program as is called for in DNREC's TMDL strategy? If they were required to make these reductions, then there would be no need for Laurel and Bridgeville to do any nitrogen load reduction.

Response: The source of the nitrogen load for the facility we believe to be in question is intake water being used as non contact, cooling water. Therefore, in this proposed TMDL, DNREC has not required the facility to treat its discharge. Instead DNREC has capped the nitrogen load to the existing load. DNREC believes that the proposed TMDL regulation is equitable, appropriate and meets the goals of the Clean Water Act.

47. DNREC has unnecessarily included pollution control strategy functions in the TMDL. It is recommended that the draft Total Maximum Daily Load Analysis for Nanticoke River and Broad Creek, Delaware be amended to delete that portion of the waste load allocation that requires BNR at the 3 large wastewater treatment plants. The executive summary for Delaware's TMDL lawsuit clearly stated that the parceling out of load reductions amongst the various contributors would be done in the Pollution Control Strategy.

Response: The Clean Water Act and it's implementing regulations require establishment of total maximum daily loads, which includes waste load allocations for point sources and load allocation for nonpoint sources and a margin of safety when water quality criteria are not met. 40 CFR 130.2(l) defines waste load allocations as the sum of the individual waste load allocations from point sources.

The proposed TMDL has identified nutrient load reductions that are necessary from point and nonpoint sources in order to meet the goals of the Clean Water Act. DNREC believes that its proposed TMDL regulation is equitable, appropriate and meets the goals of the Clean Water Act.

48. Because the Department has not yet established specific water quality criteria and standards for nitrogen and phosphorous, a margin of safety for these two pollutants of concern cannot be established. Therefore, DNREC cannot establish a TMDL for nitrogen and phosphorous in accordance with DNREC's TMDL program and in accordance with Federal Regulations. For this reason, the cited report and TMDL should not be adopted until such time as nitrogen and phosphorous criteria are adopted and a fully supported TMDL regulation that has a scientifically defensible margin of safety for those nutrients.

Response: Please see the response to comment #43.

49. The town commissioners of the Town of Bridgeville do hereby declare their support for a proposal to reduce nutrients from the discharge of waste waters originating in the Town operated waste water treatment facilities from the Bridgeville Branch and the implementation of other treatment alternatives but only under the following conditions: 1. Funding be made available from the State of Delaware or the U.S. EPA for the costs associated with the project. 2. That the project be undertaken in such a time that it does not interfere with other ongoing projects at the wastewater treatment plant and, 3. That DNREC supports technically achievable permit requirements and that a long term strategy from DNREC guarantees the validity of the decision for a reasonable time frame.

Response: This comment does not apply to any specific article(s) of the proposed TMDL Regulation. However, economic considerations will be made during the development of the PCS. DNREC will work with any party to help them secure existing funding or other funding as it becomes available.

50. The calibrated water quality model is based on hydrologic, water quality and eutrophication models with proven applicability to the segments under study. The range of scenarios developed for the estimate of loadings appears to be sufficiently inclusive of possible conditions under which water quality standards will show response. The adequacy of the nonpoint source nutrient estimation process is less clear to us, however. We are unable to determine the merit of Tetra Tech's approach over the regression analysis by Davis and Greene of 12 tributaries' flows with appropriate monitoring data. The Department does not provide sufficient explanation of the inadmissibility of the Davis and Greene approach.

Response: DNREC acknowledges the commenter's support for the water quality model selected and the range of scenarios considered.

The final TMDL analysis report has been modified to better clarify the basis for the nonpoint source loading estimates used.

51. Will biological nutrient removal at the Seaford, Bridgeville and Laurel WWTPs ensure that changes in facility capacity and demand by growth of wastewater discharges in the region will not produce further exceedances?

Response: Load allocations for the wastewater treatment plants in the proposed TMDL regulation are based on the plant's design capacities, which, in turn, were based on projected demand and growth. Therefore, future growth has been considered in the development of the proposed TMDL regulation.

52. Why does the waste load allocation for the Seaford WWTP appear unchanged after the application of BNR in table 4-2 when compared to the current NPDES permitted flows at Table 2-2?

Response: The Seaford wastewater treatment plant has already incorporated BNR technology for treatment of wastewater. Hence their current NPDES permitted flow and loads as shown in table 2-2 is the same as the proposed load allocation shown in table 4-2.

53. The CWA section 303(d) does not "suggest" a margin of safety. As a required element of a TMDL it may be flexibly implemented, but it must be demonstrable. We recommend that the Department provide a more understandable assurance that a functional MOS for water quality standards for N and P improvement is achieved.

Response: The final TMDL Analysis report has been modified to clarify how the Margin of Safety will be achieved.

54. We endorse Delaware's comprehensive basin-wide approach to TMDL implementation. The Department should, however, consider a more iterative approach to the expected future implementation of these WLA and LA reductions by referencing this in the body of the TMDL for each element. Providing a clear connection between the TMDL and implementation of PCS is generally supported by the TMDL FACA and strongly encouraged by the Sierra Club.

Response: Section 303(d) of the Clean Water Act does not require an implementation schedule as part of a TMDL. However, DNREC is planning to develop the PCS in a timely manner following the adoption of the proposed TMDL regulation in coordination with the Department's Whole Basin Management Program. DNREC intends to fully involve stakeholders in the development and implementation of the PCS

55. The draft document implies that the waters of our ditch are waters of the state. DuPont contends that the Seaford Site's effluent ditch (so called "DuPont Gut") is inappropriate and DuPont requests it be deleted from the draft TMDL document.

The DuPont effluent ditch is manmade and was specifically dug by DuPont for the conveyance of the Seaford Site's wastewater to the Nanticoke River. DuPont has aerial photographs from the late 1930's that show no ditch nor natural tributary existed in the vicinity of the noted "DuPont Gut" prior to the construction of the DuPont Seaford manufacturing facilities in 1939. Therefore the existing effluent ditch is not a natural tributary to the Nanticoke as has been implied by DNREC. To further support our request, the State of

Delaware's Surface Water Quality Standards definition of waters of the state identifies certain instances when waters are not "water of the state". Those waters identified as not "waters of the state" are waste and storm water systems, including but not limited to treatment ponds or lagoons designed to meet the requirements of the Clean Water Act. DuPont contends that the constructed effluent ditch is part of the overall wastewater treatment system that conveys wastewater to the Nanticoke River

Response: The Gut is a tidally influenced tributary of the Nanticoke River with known beneficial uses. Due to its tidal nature, this tributary would exist regardless of DuPont's discharge. Additionally, a recent review of historic information indicates that what has been referred to as a "man-made effluent ditch," is, in fact, identified by the USGS as Lewes Creek. Hence, not only is "DuPont Gut" waters of the State, the effluent ditch (Lewes Creek) is also waters of the State.

56. DNREC's efforts go well beyond EPA's requirements for public participation. Federal regulations require only that the State make the proposal available for public comment for thirty days.

Response: DNREC acknowledges the support of the commenter.

57. The primary function of a TMDL is to limit pollutant loading to the point where water quality standards are expected to be met and maintained. As the TMDL is presented, it is not clear that the TMDL meets this function. The model results show that the nutrient levels are predicted to well exceed the levels you established to indicate the attainment of standards. We recognize that the nitrogen and phosphorous indicators are only guidelines; they are not criteria defined in your water quality standards. However, since they are the guidelines you use to list waters on the 303(d) list, it is only logical that the TMDL be designed to bring the concentrations below these values so the waters wont remain perpetually listed. The final TMDL must clearly establish the indicators of nutrient impairment and demonstrate that the TMDL will meet them. Without such a demonstration, we cannot approve the TMDL. Commenter suggested 3 options to remedy his concerns.

Response: Please see the response to comment # 10.

58. The statement made in section 4.3 of the proposal, "the proposed total maximum daily loads [for nutrients] are established to achieve overall water quality instead of meeting a specific water quality criteria and standard" is not consistent with the requirement that TMDLs be designed to meet water quality standards and should be removed.

Response: The Final TMDL Analysis Report has been modified accordingly.

59. For clarity and to avoid debate when the WLAs are implemented in permits, we recommend adding a brief discussion of how you anticipate the WLAs being incorporated into permits (i.e. as seasonal limits, year round limits, etc.).

Response: The Final TMDL Analysis Report has been modified accordingly.

60. We believe the regulations require that the load allocation for nonpoint sources be broken down into separate allocations for categories of nonpoint sources rather than all categories combined. In order to be consistent with the federal regulations concerning allocating to nonpoint sources, the documentation for the Nanticoke and Broad Creek TMDL must identify the significant categories of nonpoint sources and show the allocated load (or, at a minimum, the percent reduction needed) from each significant source. Commenter provided an example of a table to be included in the documentation for the Nanticoke and Broad Creek TMDL.

Response: A table similar to the one suggested by the commenter has been added to the Final TMDL Analysis Report.

61. The proposal states that a margin of safety is not necessary for nutrients since the nutrient TMDLs are not based on specific water quality criteria and standards. We disagree. Whether a TMDL is based on an established numeric criterion or a surrogate indicator, a margin of safety must be included. That said, we note that EPA guidance allows for the margin of safety

requirement to be met either explicitly by allocating a portion of the total allowable load to the MOS, or implicitly through conservative assumptions in the analysis. We suggest that you use the latter approach to satisfy the MOS requirement. Among the conservative assumptions you might discuss are the following: (1) use of constant point source loads (2) maximum permitted flow from the point sources, (3) 7Q10 flows, (4) concurrent discharge from all point sources, (5) warm temperatures (6) and, most significantly, the occurrence of all these conditions simultaneously.

Response: The Final TMDL Analysis Report has been modified to clarify how the Margin of Safety will be achieved.

62. Federal regulations require that TMDLs be developed for critical conditions. We believe this analysis likely meets this requirement already, but we request that you make it explicit in the report. We suggest adding a brief discussion of why these TMDLs, designed for low flow conditions and not others, such as high flow, are protective. We suggest citing data that show that the documented water quality problems in the Nanticoke River and Broad Creek occur exclusively during periods of low flow.

Response: The Final TMDL Analysis Report has been modified accordingly.