State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

DRAFT
Summary of Questions and Answers

May 14th Public Meeting in Hickory, NC
May 23rd Public Meeting in New Bern, NC
2012

Introduction

Public meetings were held on May 14 and May 23, 2012, in Hickory and New Bern respectively to provide information on the Draft Statewide Mercury TMDL, Draft Post TMDL Wastewater Permitting Strategy, and Reduction Options for Nonpoint Sources.

- Jing Lin (DWQ Modeling and TMDL Unit) presented information on the TMDL.
- Jeff Poupart (DWQ Point Source Branch) presented information on the Wastewater Permitting Strategy
- Laura Boothe (Division of Air Quality) presented information on the Reduction Options for Nonpoint Sources
- Kathy Stecker (DWQ Modeling and TMDL Unit) facilitated the meetings

The presentations are available on DWQ's Mercury TMDL website http://portal.ncdenr.org/web/wq/ps/mtu/tmdl/tmdls/mercury.

May 14th Meeting, Western Piedmont Council of Governments, Hickory, NC

In addition to DWQ and DAQ staff members, 31 people signed in at the Hickory meeting. Attendees were encouraged to be interactive and ask questions during presentations as they arose. Questions or comments raised by the attendees have been grouped with the respective presentation.

TMDL

- *Question*: What conservative assumptions were used for the margin of safety?
    - *Response*: (1) A list of conservative assumptions is included in the TMDL document. Just for example, Largemouth Bass (LMB) fish tissue data is used for the TMDL; LMB is a top predatory fish with typically higher mercury concentrations than those found in the most consumed fish species in the coastal part of the state. In addition, the TMDL uses the 90th percentile of the fish tissue data. Also, total mercury concentrations were measured for fish tissue, and the TMDL target is methylmercury concentrations in fish tissue. We have conservatively assumed the all mercury measured in fish tissue was methylmercury.

- *Question*: 2002 data was used in the TMDL. Were there other data?
    - *Response*: Yes there are other data, but we used 2002 as the baseline year for this TMDL to account for all reductions have taken place in NC because of the Clean Smokestacks Act enacted in June 2002.

- *Question*: It seems like most mercury is coming from atmospheric sources but the most minimal sources are being regulated here. This seem like an imbalanced approach to the problem.
    - *Response*: The TMDL specifies a 67% reduction from all sources.

- *Question*: The TMDL requires no reduction from stormwater, but wouldn't treated stormwater put less mercury into the creek?
    - *Comment from Audience:* Stormwater ponds could actually facilitate the methylation of mercury as opposed to no stormwater treatment.
    - *Response*: There is little research and information on the effectiveness of stormwater treatment for mercury. We do require some stormwater monitoring for mercury but at this point there is little evidence that suggests that mercury concentrations in stormwater are higher than the mercury in rain water.

- *Question*: So once the TMDL is approved the waters won't be impaired and the NPDES waste water permits being held can be approved. The implementation of this TMDL, as most TMDLs, is weak.
    - *Response*: Once the TMDL is approved the waters will move to category 4, meaning they are still impaired. The fish consumption advisory won't be lifted

until fish tissues data suggest so. The TMDL shows that when all sources meet the 67% reduction then the fish tissue data should meet the mercury target.

- *Question*: If there wasn't a TMDL would reduction from air sources still take place (referring to future closings of older coal plants, installation of scrubbers and conversion from coal to natural gas on some plants).
    - *Response*: Yes
    - *Question*: So what is the point of the TMDL?
    - *Response*: The purpose of the TMDL is to quantify how much mercury is coming from NC, how much is coming from outside the state and how much is coming from point sources and what reductions are needed to reduce mercury to lift the fish consumption advisory. We will do what we can with point sources, which will be held at a collective limit of 81 lbs/year for all NPDES wastewater in the future. In addition this will give NC flexibility in how NPDES wastewater permits are issued. EPA currently won't issue a permit with mercury limits over the surface water standards of 12 ng/L; with the TMDL NPDES permitting will have flexibility to issue permits as outlined in the permitting strategy.

- *Question*: It appears that the Catawba River fish samples are not exceeding the fish tissue target.
    - *Response*: We acknowledge that Catawba appears to be one of the basins having lower fish tissue mercury concentrations compared with other basins in NC. However, high fish tissue mercury concentrations were also observed there.

- *Question*: There was a concern that TMDLs only burden municipalities and don't force the agriculture community to take action, specifically referring to phosphorus.
    - *Response*: This is not a nutrient management strategy. In this TMDL, we identified two major sources of mercury, atmospheric and wastewater.

- *Question*: We are already ahead of the game with the Clean Smokestacks Act in NC. How are you going to get China to reduce?
    - *Response*: The US EPA reduction rule will get other states and national utilities to reduce. We can encourage EPA to work with other countries.

<u>Post TMDL Wastewater Permitting Strategy</u>

- *Question*: Who keeps track of mercury from point sources? When will we know the 81 lbs/year limit is reached?
    - *Response*: NPDES wastewater major permittees and minors that have a reasonable potential to discharge mercury have to monitor for mercury.

- *Question*: So 98% of data are already under 47 ng/L?
    - *Response*: Yes.

- *Question*: So how is this draft moving the needle towards reducing mercury if we require no reduction for 98% of dischargers?
- *Response*: The 81 lbs/year represents 67% reduction from the 2002 baseline load, and NC will be held at that level in the future. The actual total NPDES wastewater load was 252 lbs in 2002.

- *Question*: Is 12 ng/L (water quality standard) more of the number we should set the limit at?
  - *Response*: If you are a large discharger into a small stream then your mercury limits would be something close to the 12 ng/L standard.

- *Question*: How many NPDES wastewater permits are held up waiting for the TMDL approval?
  - *Response*: 13.

- *Question*: How is a wastewater treatment plant responsible for natural occurring mercury, e.g., rain water?
  - *Response*: Air is a major pathway for mercury transportation; mercury is introduced into air from natural sources as well as through human activities. The concentration of real naturally occurring mercury in the air and in the water should be very low.

- *Question*: What is your guess on the current NPDES wastewater load today?
  - *Response*: I think that we are currently well under 81 lbs of mercury per year.

<u>Air Quality Modeling and Options for Nonpoint Source Reductions</u>

- *Question*: Other studies (not specified) show that local sources deposit 40% of mercury within a 30 mile radius. How is NC only contributing 16 percent?
  - *Response*: The 16% contribution is in total within North Carolina, not limited to places having a local impact from specific air emission sources. The estimation of the 16 percent of the mercury deposition due to air emission sources in NC is in-line with what other states have estimated for their own state. The global pool of mercury contributes very significant portion of mercury deposition in NC.

- *Question*: How is a single model run for one year adequate?
  - *Response*: The CMAQ model was developed by the US EPA. It has already been calibrated, gone through comments, and rulemaking. The model, model input and emission files were all provided by EPA. NCDAQ ran the model and analyzed the model results. Generally mercury emissions are falling on an annual basis. This is to give us an idea of what NC is contributing and who is contributing to NC.

- *Question*: When you look at the Charlotte grid (in the CMAQ model) did you look and see if the lbs of mercury for one day matched what were actually happening in that grid that day?
    - *Response*: Mercury emissions data from facilities are included in the model; however, there isn't mercury monitoring data detailed enough to provide a comparison like that (especially for dry deposition). There were, however, three wet deposition sites in NC that were compared to the model and the results were comparable.

- *Question*: Glad you are using the good CMAQ model, but was 2005 representative of all years?
    - *Response*: We basically wanted to get a good snapshot of how much mercury was coming into NC and how much NC was contributing. Mercury emissions have been on a downward trend since 2005.

<u>Other Concerns</u>

Several people expressed concern about the fate of mercury in coal ash, particularly the breaching of coal ash dams and use of coal ash in consumer products. Attendees were encouraged to submit comments of their concerns and ideas for ways to reduce nonpoint sources of mercury.

May 23rd Meeting, Craven County Cooperative Extension Office, New Bern, NC

In addition to DWQ and DAQ staff members, 21 people signed in at the New Bern meeting. Attendees were encouraged to be interactive and ask questions during presentations as they arose. Questions or comments raised by the attendees have been grouped with the respective presentation.

TMDL

- *Question*: For the fish tissue data, did they use the whole fish or subset of fish tissue?
    - *Response*: They mainly use the edible fish fillet.

- *Question*: Your map only showed a short list of states developing TMDLs, why aren't the other states developing TMDLs?
    - *Response*: Only statewide approach TMDLs are listed (in the slide); other states are working on site specific TMDLs.

- *Question*: What other alternatives to the (statewide) TMDL are there?
    - *Response*: The idea of a statewide TMDL, or regional TMDL, comes from most of the mercury coming from air deposition. Earlier mercury TMDLs focused on site specific locations and generally looked at NPDES dischargers which really are generally a small part of the problem. Statewide TMDLs are more effective at being able to account for nonpoint sources.

- *Question*: Are we close to meeting the reductions required in the TMDL?
    - As projected, we expect to meet the target for nonpoint sources in 2016 and believe that we are also under the target for point sources.

- *Question*: We, Progress Energy, monitor mercury in fish tissue using a trophic weighted average and our monitoring (on the Catawba River) shows that we are below 0.3 mg/kg mercury in fish tissue. Instead of using largemouth bass, why not use a trophic weighted average?
    - *Response*: The water quality standards protect all uses of waters, including fish consumption. If some portion of the population, those that eat largemouth bass or other top predator fish, cannot safely eat the fish then the standard is considered violated.

- *Question*: Would DWQ consider delisting a waterbody where the discharger has site specific data that shows fish tissue mercury concentrations below the action level?
    - *Response*: With an approved TMDL all waters would be delisted and moved to category 4 in the integrated report. Our goal is to have all waters meet the target. In the cases of mercury impairment being listed waterbody by waterbody, since the major source is

coming from the air, a statewide approach would still be appropriate. Although the impairment may be local, the mercury sources are not restricted to local.

- *Question:* Does the TMDL take into hot spots of mercury into consideration?
    - *Response*: The NPDES wastewater permitting strategy will address hot spots.

- *Question*: Why was 2002 selected as the baseline year?
    - *Response*: The Clean Smokestacks Act was enacted in 2002 which significantly decreased mercury air emissions in subsequent years. We wanted to ensure NC received credit for reductions that have already been made.

- *Question*: Do you know if EPA is requiring other states with mercury problems to limit NPDES dischargers to the 12 ng/L water quality standard?
    - *Response*: Once the water is impaired you have to have a TMDL. Since NC has a water quality standard of 12 ng/L we are held to that standard. The TMDL is our way of telling EPA that most of the mercury is from atmospheric deposition. After the TMDL is approved we can gain flexibility in NPDES wastewater permitting.

- *Question*: Is there flexibility in the TMDL to increase the 81 lbs/year NPDES WW limit if mercury air emissions fall far enough?
    - *Response*: There is a way to rebalance the WLA and LA in a TMDL.
    - Comment from audience: I don't think we could support trading between wasteload allocation and load allocation.

- *Question*: Based on the air reductions made, will we meet the fish tissue criteria based on the TMDL limits?
    - *Response*: The reduction in NC alone will not result in the fish consumption advisory being lifted. It will take reduction from regional and global sources also.

- *Question*: It might be helpful to look further back in the discharge data which might show that we have made even greater reductions.
    - *Response*: We don't have good data from earlier years.

- *Question*: The TMDL will not impose limits on stormwater permits, correct?
    - *Response*: There will be no additional action on stormwater permits proposed from the TMDL. Mercury may be incidentally reduced through other stormwater improvement projects though.

<u>Post TMDL Wastewater Permitting Strategy</u>

- *Question*: Are we close to meeting the TMDL target of 81 lbs/year?
    - *Response*: We don't know the exact number right now but we believe we are significantly under 81 lbs/year.

- *Question*: We, as a state, are currently meeting the TMDL so why is EPA objecting to permit over 12 ng/L?
    - *Response*: We need the TMDL approved first so they can see we have a plan in place to control mercury.

- *Question*: Even with the TMDL, permittees are capped at 47 ng/L, which still isn't that reasonable.
    - *Response*: There will be flexibility in the permitting strategy; cases made for a higher discharger concentration will be considered.

- *Question*: How does reasonable potential (for determining monitoring requirements) work?
    - *Response*: If your sample comes back with a mercury concentration at or above the detection limit you will probably receive mercury monitoring requirements.
    - There was a discussion about monitoring cost.

- *Question*: Is there a plan in place to allocate the 81 lbs of mercury per year to the NPDES wastewater dischargers?
    - *Response*: We need to see what the current total mercury discharge is then we will allocate the mercury to the dischargers, leaving any remaining allocation available for future dischargers.

<u>Air Quality Modeling and Options for Nonpoint Source Reductions</u>

- *Question*: The Minnesota TMDL lists naturally occurring mercury as a source. Where does naturally occurring mercury fit into this model?
    - *Response*: In the model, part of the naturally occurring would occur in the area source. In the TMDL, naturally occurring mercury was assumed to contribute about 6% of the total nonpoint source load in NC.

- *Question*: Looking at the TMDL target we would like for the Commission to know that North Carolina has met the reductions and done our fair share and that we can't bear the cost of reductions for the rest of the world.
    - *Response*: We are proposing that NC get reductions proportional to our contributions.

- *Question*: What is the margin of error in the model?
    - *Response*: It's difficult to determine the margin of error largely due to the lack of ambient mercury monitoring data, especially for dry deposition. The model does closely match the data from the few mercury wet deposition monitoring sites in NC.