

**WATER QUALITY ADVISORY COMMITTEE  
APRIL 1, 2004**

**ATTENDEES:**

<b>NY</b> Not in attendance	<b>DE DNREC (via telephone)</b> John Schneider, Env. Prog. Administrator
<b>EPA</b> Denise Hakowski, EPA Region III	<b>Dupont</b> Alfred Pagano, Env. Consultant
<b>PA DEP (via telephone)</b> Ed Brezina, Env. Prog. Mgr Michelle Moses, Program Council	<b>Delaware Riverkeeper Network</b> Tracy Carluccio, Director Special Projects
<b>NJ DEP</b> Debra Hammond, Water Quality Standards & Assmt. Natasha Demosthene, Legal Specialist	<b>Delaware Dept. of Public Works</b> Not in attendance
<b>DRBC</b> Ken Najjar, Branch Head Planning & Implementation Jonathan Zangwill, Water Resources Planner Bob Limbeck, Watershed Scientist	<b>Other attendees:</b> Bill Brown, Consultant

This meeting took place in the Planning Conference Room at DRBC offices.

**Review and Approval of Minutes**

The minutes from the November 6, 2003 meeting were reviewed and approved.

**Discussion of revised Water Quality Standards document (Article 3)**

*Article 3 Changes*

3.10 Definitions:

“Biological Integrity” – Change “adaptive” to “indigenous”

“Minimum Performance Standards” – Denise Hakowski recommended striking “The long-term average ...3.40.3.D.2 or3.”

Must define TMDL in this section

General Policies on Application of Criteria – Regulatory Mixing Zones, General Conditions

“Federal” should be changed to “Federal and State” (this applies throughout document where protected species are mentioned)

3.40.4 Antidegradation for Shared Waters and Tributaries to Shared Waters:

Minimum Treatment Requirements, last bullet: add “permitted” to “...will remain at or below the existing permitted levels.”

## Article 3 Questions

### 3.10 Definitions:

“Critical Habitat” – Should we remove “tidal” from this definition?

“Critical Habitat” – How is “critical habitat” used in the regulations?

“Design Discharge Flow” – Should “daily average” be changed to “annual average”? See Article 4

“Minimum Performance Standards” – Is this definition correct?

“Waste Assimilative Capacity” – Why has this term replaced TMDL?

“Waste Assimilative Capacity” – Should this definition also mention SEJ in Sig. Res. Waters?

“Waste Assimilative Capacity” – Do existing facilities have to ratchet down on their discharges?

### 3.40 Basin-Wide Surface Water Quality Standards:

Ed B. – How do we address existing sources that cannot meet these requirements? PA would require that an existing discharger would have to ratchet down in order to accommodate a new downstream water supplier.

### Table 4-Water Uses to be Protected – Tidal

Maintenance and Propagation in Zone 5: Explain in B&B why this is now possible in this zone and why DO criterion has increased.

### Table 6-Surface Water Quality Criteria – Tidal

Total Dissolved Solids – Shouldn’t we keep “500 mg/l, whichever is less”?

Turbidity – Shouldn’t this section remain?

### Human Health Criteria for Toxic Pollutants

a. Why is 1980 used as a benchmark? There are more recent data?

### Table 7

Why we using fixed values for chronic rather than hardness-based values?

General Policies on Application of Criteria – Regulatory Mixing Zones, General Conditions

Are the critical habitats mentioned here those that are federally designated? DRBC designated?

f. Heat Dissipation Areas: Are these special permits given as in Section 316A?

### Pollutant Trading

What is the mechanism for determining if a greater than 1:1 ratio is needed or desired?

### 3.40.4 Antidegradation for Shared Waters and Tributaries to Shared Waters:

Statements of Policy – How are “existing uses” to be protected?

### **Discussion of the Basis & Background Document**

A Basis & Background document is needed to explain the changes to Article 3.

The document should focus on the “big ticket” item changes.

The earliest the document should be ready for Commission approval is July 13, 2004.

The adoption schedule should be revised to reflect this timing.

### **Update of Lower Delaware Monitoring Program**

A Power Point presentation was given by Bob Limbeck to describe 2000-2003 Lower Delaware Monitoring Program preliminary results. Contents of the draft water quality monitoring report (as of 4/1/04) were shown to the Water Quality Advisory Committee. This information was given to provide evidence on water quality conditions relative to DRBC declaration of Special Protection Waters status for the Lower Delaware.

The monitoring program was initiated to describe EWQ and to support Lower Delaware Management Plan goals. The LDMP also operates in support of DRBC Basin Plan water quality goals and objectives. The monitoring report addresses the Delaware Riverkeeper petition:

If Special Protection Waters policies are to be implemented in the Lower Delaware, some lessons could be taken from experience with Middle and Upper Delaware SPW implementation:

- 1) Reachwide average EWQ is too broad to detect measurable change.
- 2) Regular monitoring is necessary to assess measurable change to EWQ.
- 3) Water quality modeling is needed to predict human impacts on EWQ.

Study area maps and design methods were shown. A schematic diagram of the Lower Delaware was shown for water quality monitoring design using the control point approach. Also shown was the method used to distinguish major tributaries from minor tributaries (using a cumulative frequency distribution of watershed size). Based on the design, 24 sites were chosen for establishment of Interstate Control Points on the Delaware River and Boundary Control Points on tributaries. A list of parameters was shown.

Results:

- The 2000-2003 data represent a wide range of Delaware River flows.
- Most parameters meet the most stringent criteria. Bacteria and Total Phosphorus are the problem parameters that cannot be explained by natural conditions.
- Early biomonitoring results show that the Lower Delaware is as good or better than the Middle and Upper Delaware in diversity, richness, and pollution intolerance.
- Problem parameter 1: Enterococcus bacteria.
- Problem parameter 2: E. coli bacteria. Most violations occurred during high flow events.
- Problem parameter 3: Fecal coliform bacteria. High flow also explains problems.
- Problem parameter 4: Total Phosphorus.

Other significant results shown:

- pH problems (in areas) may be caused naturally or by increased nutrients.
- Dissolved oxygen criteria are low relative to EWQ. Raise minimum DO criterion to 5.5
- For some parameters (such as Nitrate), criteria levels are extremely high relative to EWQ.
- Above Easton, TDS concentrations are higher than criteria in more than 10% of samples. This is probably natural due to limestone influences from tributary streams...
- Pennsylvania warm water temperature criteria fit the Lower Delaware, and should be adopted for the reach.

Using DRBC's Integrated Listing Methodology, water quality indexes were developed for each designated use (plus a nutrient category) to compare and potentially prioritize water quality management actions on tributary streams. The General Water Quality index is simply the average scores of the other four indexes. The indexes have been revised to show how the Delaware River compares to its tributaries, and to demonstrate watershed prioritization based upon attainment of instream uses and protection of EWQ.

*Recommendations (these have been revised since 4/1/04 presentation):*

- 1) Designate & implement Special Protection Waters
- 2) Evaluate EWQ concurrent with 305(b) assessment
- 3) Use EWQ targets to protect or restore priority watersheds
- 4) Build watershed partnerships
  - Partnerships I: Better service to the states
  - Partnerships II: River recreation advisories
  - Partnerships III: Capacity building with volunteer organizations
  - Partnerships IV: Work with water suppliers
- 5) Fill critical information needs
  - Canal-River relationships
  - Cause and effect surveys within river reaches
  - Primary production and water quality
  - Nuisance vegetation management and invasive species effects
- 6) Change water quality rules
  - Create nutrient and/or eutrophication criteria
  - Create numeric aquatic life criteria – macroinvertebrates
  - Introduce bacteria standards for non-tidal river
  - Recreation advisory system to report risks to swimmers
  - Adopt temperature standards for protection of aquatic life
- 7) Support monitoring to meet recommendations
  - Add ICP sites between major tributaries for better assessment.
  - More continuous monitors (at Belvidere, Riegelsville, Paulins Kill).
  - Maintain support of Point Pleasant and Trenton monitors.
  - Reduce frequency of DRBC monitoring of minor tributaries

- Maintain frequency of monitoring for ICP and major BCP sites.
- Rotate synoptic surveys of minor tributaries for compliance monitoring
- Construct water quality model to support planning

WQAC Discussion:

- The EWQ vs. Criteria results matrix should be revised and simplified for readability.
- The WQAC did not seem to support a recreation advisory system as recommended. Perhaps a simple notice is appropriate that would warn swimmers to be aware of the risk of waterborne illness if entering the water during or immediately following a high-flow event.
- WQAC members asked about application of criteria for this analysis. Bob Limbeck explained that only the most stringent criteria were used, no matter the jurisdiction, so that 1.) A fair analysis could be made on a “level playing field”, and 2.) To demonstrate Delaware River water quality as assessed against only the highest quality criteria.
- WQAC members wanted time to look at the underlying data, which was provided after the meeting.