

TOXICS ADVISORY COMMITTEE
October 21, 2010

A meeting of the Toxics Advisory Committee was held at the Delaware River Basin Commission Members or alternates present were:

Delaware

Dr. Richard Greene

Academia

Dr. David Velinsky

Agriculture

Not represented

Pennsylvania

Jenifer L. Fields

Public Health Interest

Not represented

U.S. EPA

Wayne Jackson, EPA Reg. II

(via conference call)

Denise Hakowski, EPA Reg. III

New York

Not represented

Industry

Dr. Steven Brown, Dow Chemical

Environmental/Watershed

Maya K. van Rossum

New Jersey

Debra Hammond

Federal Fish & Wildlife

Dr. Timothy Kubiak

Environmental/Watershed

Dr. Anthony Aufdenkampe

Municipal

Dr. Christopher Crockett, PWD

**Delaware River Basin
Commission**

Dr. Thomas Fikslin

Dr. Ronald MacGillivray

Dr. Namsoo Suk

John Yagecic

Other Attendees

Thomas Barron, PA DEP

Marc Gold, Esq. Manko, Gold et al.

Bonita Moore, PA DEP

Larry Sandeen, Synergistic Enviro.

Thomas Starosta, PA DEP

Clay Stern, US FWS-NJFO

Action Items

- Membership renewal letters will be sent to TAC members with 2010 term expirations.
- The Toxics Criteria Subcommittee reviewed the comments received and discussed technical issues raised. No testimony was offered at the public hearing.
- Comments received during the public comment period will be made available to the TAC members.
- Toxics Criteria Subcommittee (TCS) is charged to:
 - ✓ Assess use of the Biotic Ligand Model (BLM) in the derivation of copper criteria in the Delaware Estuary.
 - ✓ Evaluate policy on averaging period for acute aquatic life criteria for cadmium, chromium, lead, nickel, silver and zinc.
- DRBC staff is charged to solicit a legal opinion on retaining carcinogen class in Table 6.
- Wildlife criteria workgroup is charged to develop a scope of work for a wildlife risk assessment in the Delaware Estuary prior to wildlife criteria development.
- TAC will receive draft NG regulations for review when issued for public comment and meet within 30 days to discuss.

- DRBC staff is tasked to evaluate gaps in toxics criteria related to NG drilling in Zones 2 through 6.
- DRBC staff is tasked with recommendations for toxics criteria or EWQ parameters related to NG drilling to be proposed for adoption in Zone 1.
- TAC will coordinate with MAC and other DRBC advisory groups to review NG monitoring with emphasis on bioassays for toxicity.
- A request was made for an update from the Nutrient Criteria Subcommittee to the TAC

I. Call to Order

Dr. Chris Crockett, Toxics Advisory Committee chairperson, called the meeting to order at 9:35 a.m.

II. Review of the Meeting Minutes

The TAC voted to accept and approve the January 27, 2010 meeting minutes with a minor revision on Page 1, J. Bart Ruitter indicated that he was not the Industry representative in January 2010 and should be listed under "Other Attendees."

III. Membership Review

Dr. Crockett reviewed a table provided by DRBC of TAC Committee Members and their term years and noted that Rick Greene, DNREC had been eliminated in error. Six (6) member's terms end in 2010. Dr. Crockett asked how terms would be renewed.

Dr. Fikslin explained that in the late nineties it was decided that letters stating that your term is expiring would be sent with the members asked separately if they wished to continue. This approach was taken since some members had expressed that it felt as if it was an obligation to continue.

Subsequently, another letter was developed that thanked the members for their service, and asked if the members were interested in continuing to participate in TAC to contact DRBC Staff or Carol Collier. This letter would be sent to members with expiring terms. Since expiration dates vary it was suggested by Dr. Fikslin that the end of the calendar year would be an appropriate time to review the terms that are pending.

At the January 2010 meeting it was discussed that a representative from Public Health was needed since Arthur Frank has been inactive. Also there is an inactive member for Agriculture. Dr. Crockett asked if anyone has any suggestions for Agriculture or Public Health and stated that suggestions can be e-mailed later.

Dr. MacGillivray added that he met Dr. Trevor Penning at a SETAC Meeting, he is at the Center for Environmental & Toxicology at the University of Pennsylvania, School of Medicine, but is interested in environmental health and human health. Dr. MacGillivray did not propose it to him at the time but discussed with Dr. Fikslin.

John Yagecic of DRBC stated that he had a contact named Julie Petix in one of the County Health Departments from the Water Quality Standards Academy so we could reach out to her.

Dr. Steve Brown, Industry Representative (Dow Chemical) recommended Laura McConnell.

Dr. Richard Greene of DNREC recommended Robert Underwood for DNREC alternate, Head of NPDES Program.

Wayne Jackson from EPA, Region II, informed TAC that Chuck St. Lucia of NYDEC retired in September. Wayne Jackson suggested that Scott Stoner be the contact or may delegate to Tim Sinnott.

Dr. Fikslin informed TAC that Sinnott was on the Wildlife Criteria call with the Toxics Subcommittee so they have been engaged on that aspect. Dr. Fikslin hoped that NY will be more engaged.

Dr. Crockett reviewed the State Representatives; PA has it voting member and alternate; Debra Hammond is representing NJ in Jack Pflaumer's absence; U.S. EPA Region 2 is Wayne Jackson and Denise Hakowski, U.S. EPA Region 3, who stated that she is Wayne's alternate.

IV. Toxics Criteria for Human Health and Aquatic Life

Dr. MacGillivray gave a PowerPoint presentation reporting that DRBC has done a comprehensive review of toxics criteria through the Toxics Criteria Subcommittee reviewing both human health and aquatic life criteria for Zones 1 through 5 with the proposal to extend those criteria into Zone 6. There was a public notice sent out in summer of 2010 and the comment period ended October 1, 2010.

DRBC revised criterion for 17 freshwater acute criteria, 13 freshwater chronic criteria, 16 marine acute criteria and 7 marine chronic criteria. Comments were received from DNREC, NJDEP and the Coalition of Municipal and Industrial Dischargers. Comments were thoroughly reviewed by DRBC staff and a response document prepared. Toxics Criteria Subcommittee met and discussed the comments further.

The human health criteria comments were related to fish consumption; methyl mercury, arsenic, carcinogens, cancer classification system and systemic toxicants. Aquatic life criteria key comments were related to cyanide, cooper-use of BLM and averaging period for acute aquatic life criteria. Dr. MacGillivray updated TAC about some of the key comments that were raised to make sure that TAC is comfortable with moving forward with proposing to the Commissioners.

V. Wildlife Criteria

Dr. MacGillivray provided an update relating to the information gathered on Wildlife Criteria as requested by TAC in January 2010. DRBC had good interaction with all of the basin states including New York, EPA and Fish & Wildlife service. The topic was also discussed at the Toxics Subcommittee Meeting on October 14, 2010. Initial thought was that New Jersey's proposed wildlife criteria would be utilized, change the numbers and come up with a new value and move forward. However, many expressed the need to document the benefits of wildlife criteria which would provide a strong foundation to move forward to adoption criteria.

There is information available on contaminant levels and wildlife body burdens which DRBC could use to compare exposure to effects levels. Essentially, a Wildlife Risk Assessment was proposed. Tim Kubiak of Fish & Wildlife Service forwarded about 15 different references. DRBC is setting up a web

based information exchange. All TAC members will receive an e-mail from DRBC to set up an account to access this portal and view all of these resources for the TAC.

The group suggested that DRBC should look at a whole list of wildlife criteria (mercury, PCB, DDT, TEQ-TCDD and any compound that may be showing contamination in wildlife in the estuary, possibly a list of persistent and bio-cumulative toxics and to also research status of wildlife criteria development nationwide.

VI. Roll Call

Dr. Fikslin requested a roll call of members to benefit a new alternate for Timothy Kubiak, Clay Stern of Fish & Wildlife and for those attending for the first time.

VII. Toxics Criteria and Natural Gas Drilling in Marcellus Shale Discussion

Dr. Fikslin provided an update regarding Natural Gas Regulations. In May, the Commissioners directed staff to develop regulations. A primary concern of the Commissioners was that there would not be a duplication of effort and that the existing State regulations and proposed DRBC regulations did not overlap.

The regulation framework has three components that have been referred to as the three- legged stool. Two legs of the stool DRBC already has authority to regulate: water withdrawal and wastewater discharges. The water volume requirements can be extensive for hydro-fracking natural gas wells. At the July Commission meeting, Stone Energy, one of the drilling companies applied for a docket and was approved for the withdrawal of water at a site in Hancock, NY. There were conditions in that docket that the water had to be used within the basin and had to be used at pads that had received dockets from DRBC. Comments were received that although the water withdrawal was approved Stone Energy could not do anything with the water pending adoption of regulations.

The second leg of the stool is wastewater disposal which will be covered under existing DRBC regulations. Many members were concerned with toxic aspects. The concerns included that the wastewater is very high in TDS, chloride, sulfates, some metals, naturally occurring radioactive materials, particularly in the flow back water from the hydro-fracking. Should that waste be sent to a treatment facility within the basin, that treatment plant (WWTP or an industrial WWTP) will require a DRBC docket.

The third leg is natural gas development plans which consolidate and complement existing State regulations. A lot of DRBC's work has been to harmonize the regulations. Draft regulations include; siting of well pads, tracking of water and waste, actual operations on the site, specifications on the well and how it is cased.

In terms of where development will occur, it will be in the upper basin where the Marcellus Shale underlays the basin. That particular area is covered under DRBC's Special Protection Water regulations which relate to maintaining existing water quality. Regulations for the Upper Delaware from Hancock down to the southern boundary of Delaware Water Gap Park were adopted in 1992. Instead of trying to ensure that water quality isn't exceeded, DRBC is trying to ensure that existing water quality doesn't measurably change.

In 2005 the regulations were extended from the lower part of the Park down to Trenton and as part of that change of regulations, DRBC has adopted 26 tables that list the parameters and values for existing water quality at points within the main stem Delaware and in a number of tributaries to the Delaware. It has been determined that water quality should be updated for the Upper and Middle Delaware portions. DRBC has been working with the National Park Service to gather data to come up with a set of tables that would be applied to these reaches.

Originally it was believed that action on adopting regulations would occur at the December meeting. There would have to be a comment period so as of now, the comment period would extend past the December meeting. The next Commission Meeting is early March so that is the earliest date when action could occur. As of the October meeting, the proposed regulations were not out for public comment.

Dr. Fikslin also spoke of issues regarding criteria. DRBC already has a TDS basin wide criteria that would apply for any dockets. Pennsylvania did not have TDS criteria but has moved to adopt criteria.

Dr. MacGillivray reported on the issue of what chemicals are being injected into the wells and presented a report in PowerPoint entitled, Water Quality Standards for Assessment of Hydraulic Fracturing Flowback Wastewater. The data that Dr. MacGillivray reviewed was for the flow back water and was obtained from two databases: one from the Marcellus Shale Coalition Report prepared by Gas Technology Institute in 2010 and the other from Northeast Pennsylvania 2008 frac wastewater sample data from PADEP. Published information of NORM in produced water was also included.

John Yagecic of DRBC has done an assessment of that work and developed a list of probable contaminants and radioactive waste in frac flowback wastewater as referenced in the PowerPoint presentation.

John Yagecic presented a monitoring framework matrix for Natural Gas Drilling. During the development process, it became clear that there were many matrices of concern. There were also multiple entities that were proposing to perform different monitoring. DRBC interacted with the Academy, several universities, U.S.G.S as well as the monitoring that the States were proposing. It became apparent that unless there was a way to organize all the matrices and the proposed monitoring, there would be gaps. The matrix is an effort to try and identify what could and should be monitored, and ultimately to indicate who is responsible for that monitoring.

VIII. Meeting Adjournment

The meeting was adjourned at 12:00 Noon.