**TOXICS ADVISORY COMMITTEE**
**March 1, 2011**

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

**Delaware**
Dr. Richard Greene

**Pennsylvania**
James Newbold

**New York**
Not represented

**Environmental/Watershed**
Not Represented

**Environmental/Watershed**
Dr. Anthony Aufdenkampe

**Delaware River Basin Commission**
Dr. Thomas Fikslin
Dr. Ronald MacGillivray
Dr. Erik Silldorff
Dr. Namsoo Suk
John Yagecic, P.E.

**Academia**
Not Represented

**Public Health Interest**
Not represented

**Industry**
Dr. Steven Brown, Dow Chemical
J. Bart Ruiter, DuPont (Alternate)

**New Jersey**
Debra Hammond
Thomas Belton (Alternate)

**Municipal**
Dr. Christopher Crockett, PWD

**Other Attendees**
Bonita Moore, PA DEP *(via conference call)*

**Agriculture**
Dr. M. Ferdows Ali (Alternate)

**U.S. EPA**
Wayne Jackson, EPA Reg. II *(via conference call)*
Denise Hakowski, EPA Reg. III

**Federal Fish & Wildlife**
Dr. Timothy Kubiak

***Action Items***

- DRBC staff will contact Julie Petix, NJDOH and Laurel McConnell, USDA as potential TAC members or suggestions for members.

- In order to better assess chemical contaminant data in fish, DRBC staff will consult with state representatives on procedures used in basin states for evaluating human health risks associated with the consumption of chemically contaminated fish.

- The wildlife criteria workgroup is charged to incorporate available data on tissue residue in fish and other biota in the scope of work for a wildlife risk assessment in the Delaware Estuary prior to wildlife criteria development.

- DRBC staff will further investigate tissue residue approach for ecotoxicity assessment.

***I. Call to Order***
Dr. Chris Crockett, Toxics Advisory Committee chairperson, called the meeting to order at 9:10 a.m.

***II. Review of the Meeting Minutes***
Meeting Minutes of 10/21/10 were not voted on or approved.

***III. Membership Review***
Candidates for vacant agriculture and public health members were discussed. Dr. Steve Brown, Industry Representative (Dow Chemical) recommended that DRBC contact Laurel McConnell, USDA to ask if she could suggest someone that would be appropriate for representing Agriculture. DRBC staff recommended contacting Julie Petix, NJDOH.

***IV. Toxics Criteria and Natural Gas Drilling in Marcellus Shale Discussion***
**Natural Gas Regulations Update**
Dr. Fikslin gave a presentation entitled DRBC Natural Gas Regulations, Update to the Toxic Advisory Committee. The Commissioners directed DRBC staff to develop regulations for Natural Gas Development. DRBC's regulatory strategy is based on a three legged stool approach which includes; 1) Water Withdrawal; 2) Well pads and Ancillary Infrastructure; and 3) Wastewater Disposal.

Discussions took place with Committee members regarding the water cycle that is addressed with the rule and how it may relate to issues of human health, air quality and pad workers. It was explained that DRBC has a water resources mission, not an OSHA type mission and the States have primacy regarding well construction and operations.

**Framework of Natural Gas Regulations**
Dr. Fikslin discussed the Natural Gas Regulations and noted that Section 7.5 Well Pads and 7.6 Wastewater may be of particular interest to TAC.

**Monitoring Requirements**
Contained in the regulations are monitoring requirements which include the following components: groundwater monitoring, pre-drilling and post-drilling requirement for groundwater wells, either to use existing wells for nearby homes or to install groundwater monitoring wells. Surface water monitoring is also required. The monitoring would be both upgradient and downgradient of well pad to include water chemistry. Biological monitoring would principally be macroinvertebrate monitoring both pre-drilling and post drilling. There is also a requirement to monitor the flow back water.

**Monitoring Framework**
John Yagecic explained the Comprehensive Monitoring Framework. The point of the framework was to state that the DRBC intends to perform monitoring and to have applicants also perform some monitoring but recognizes that States, academic institutions and other organizations also monitor. All of this information needs to be brought into one place so if there are gaps, they can be addressed. John Yagecic gave a presentation entitled Monitoring Requirements in the current Draft Natural Gas Development Regulations. John emphasized that this is tentative, the regulation could change as part of the public participation process and that there will be a guidance document that implements that regulation.

John Yagecic gave an additional presentation entitled: Re-Analysis of Archived Samples for Marcellus Gas Frac Water Parameters. Under DRBC SPW regulations there are existing water quality definitions in the upper, middle and lower Delaware, the non-tidal Delaware. The EWQ definitions at the time they were developed considered the likeliest threat to water quality was municipal WWTP and to a lesser degree non-point source runoff, spent frac water or gas related parameters were not considered.

**Applicable Criteria**
Dr. MacGillivray discussed the criteria that would change with the Natural Gas Regulations. First, the EPA drinking water standards are incorporated and second, the toxicity standard is adopted. John Yagecic passed out a chart of Chemical Parameters proposed for monitoring; TDS, chloride and sodium are at the top of the list. Also current DRBC water quality regulations were discussed and a chart was provided.

***V. Nutrient Criteria Update***
Dr. Silldorff gave a verbal update on nutrient criteria development for the non-tidal Delaware River as well as the Delaware Estuary. Much of the current focus is estimating nutrient loads via point-source monitoring and non-point source monitoring and estimation for the Delaware Estuary, with the persistent dissolved oxygen sag in the estuary's urban corridor closely tied to the nutrient criteria development.

The broad discussion following this update covered the interrelationship among ammonia toxicity criteria and D.O. in the estuary, timelines for different criteria, unanticipated consequences for PCBs and the estuary's ecosystem functions, and measures of biological responses in the estuary.

***VI. Assessing Chemical Contaminant Data in Fish***
Dr. Fikslin introduced the topic and reported that DRBC and the States are collecting fish tissue data, one of the main uses of the data is to establish fish consumption advisories. The data will also be used as part of the integrated assessment process (which DRBC does not prepare) and the 305(b) Assessment prepared by DRBC for the main stem Delaware River. This work utilizes EPA human health focused screening values (carcinogens and non-carcinogens). What DRBC staff has noted over the years is that advisories may not be pollutant specific. Staff would like to move toward performing 305(b) assessments utilizing fish tissue data. Dr. MacGillivray has done some research and the primary goal is to discuss and get some recommendations from the committee, DRBC is exploring alternative assessments and conducted a TEQ Analysis of PCBs and Dioxin/Furans. Dr. MacGillivray presented a PowerPoint to the committee entitled Assessing Chemical Contaminant Data in Fish (please refer to website or portal to view document).

***VIII. Meeting Adjournment***
The meeting was adjourned at 11:50 AM.