

**TOXICS ADVISORY COMMITTEE**

July 14, 2003

A meeting of the Toxics Advisory Committee was held at the Delaware River Basin Commission in West Trenton, NJ. Members or alternates present were:

<b>Delaware</b> Rick Greene	<b>Pennsylvania</b> James Newbold	<b>Environmental / Watershed</b> Dr. Laurel Standley
<b>Industry</b> Larry Sandeen	<b>Academia</b> Dr. David Velinsky	<b>Public Health Interest</b> Not represented
<b>New Jersey</b> Steven Lubow	<b>Municipal</b> Dennis Blair	<b>Agriculture</b> Ferdows Ali
<b>New York</b> Not represented	<b>Resources</b> Not represented	<b>U.S. EPA</b> Carol Ann Davis

**Delaware River Basin Commission**

Carol Collier  
Bob Tudor  
Pam Bush  
Dr. Thomas Fikslin  
Dr. Namsoo Suk  
Dr. Ron MacGillivray  
John Yagecic  
Steven Bearer

**Delaware Estuary Program**

Peter Evans

**Other Attendees**

Bruce Aptowicz, Philadelphia Water Dept.  
Dr. Rollie Hemmett, EPA Region II  
Tom Healy, Philadelphia Water Dept.  
Tom Harlukowicz, PSEG  
Bart Ruitter, DuPont  
Chuck Yingling, PADEP  
Mary Kuo, EPA Region III  
Dr. Tom Church, University of Delaware  
David Piller, Exelon  
Jess Vargo, Occidental Chemical Corp.  
Jack Armstrong, Occidental Chemical Corp.  
Dr. Joe Rogan, Exelon Power  
Joe Greenfield, Valero  
Chris Jepson, BCM Engineers

**I. Recommendations & Agreements**

During this meeting, the TAC passed 3 resolutions recommending:

- use of the explicit 5% margin of safety in the PCB TMDL
- allocation of the zone waste load allocations based on the existing proportion of Penta-PCB load for each discharge to their respective zones for the period February 1, 2002 to January 31, 2003 for the PCB TMDL.
- use of gross aggregate allocation of WLA's and LA's to each zone based on the existing proportion of Penta-PCB for the period February 1, 2002 to January 31, 2003.

## **II. Call to Order**

Meeting was called to order by Carol Ann Davis, alternate to the Chair of the Toxics Advisory Committee, at 9:40 am.

## **III. Approval of Meeting Minutes from May 7, 2002 and June 15, 2002**

The TAC reviewed the November 14, 2002 meeting minutes. A motion was made by Dr. Standley to accept the minutes as written. Mr. Sandeen seconded the motion and the motion carried with one abstention and the remainder in favor.

The TAC reviewed the February 12, 2003 meeting minutes. Changes to the February 12, 2003 minutes were recommended. A motion was made by Mr. Lubow to accept the minutes as amended. Dr. Standley seconded the motion and the motion carried unanimously.

## **IV. Membership Issues**

Dr. Fikslin discussed TAC membership issues as follows:

- Dr. Standley's and Mr. Blair's positions would expire shortly. Those representatives were asked to e-mail the DRBC Executive Director to indicate whether or not they wished to continue serving as TAC representatives.
- The current TAC Chair, Mr. App, had accepted a new position within EPA and would no longer represent EPA on the TAC. Mr. App's alternate, Ms. Davis, was also moving to a new position within EPA and would also no longer be representing EPA on the TAC. The Vice Chair position was currently vacant pending feedback from Mr. Sandeen regarding whether or not he would accept the nomination to serve as Vice Chair.
- Dr. Chuck Shorten was appointed the Public Health Representative by the DRBC Executive Director.

Mr. Sandeen confirmed that he would accept the nomination for the position of Vice Chair. Mr. Greene motioned that Mr. Sandeen be made Vice Chair. Mr. Lubow seconded the motion and the motion carried unanimously.

## **V. DELEP Update**

Mr. Peter Evans introduced himself as the new DELEP Director and provided updates on recent DELEP activities as follows:

- The DELEP Steering Committee elevated the status of PCB monitoring activities in the Delaware Estuary and allocated \$35K for low flow PCB sampling and analysis.
- The next Steering Committee meeting would be held on July 23, 2003. An extra meeting would also be scheduled to discuss funding needs for Stage 2 of the PCB TMDL.

- At the February meeting, New Jersey offered to coordinate a meeting to discuss and resolve issues pertaining to inconsistencies in fish consumption advisories across the three estuary states. A date for that meeting was not yet available.

## **VI. Basin Security**

Mr. Tudor made a presentation soliciting feedback on DRBC's role in Basin Security. Mr. Tudor referenced September 11<sup>th</sup> and a Philadelphia Inquirer article from May 25, 2003. DRBC recognizes that it occupies a unique position in the Basin, working across political boundaries and executing a water resources mission. Possible deliverables could include a Water Supply Contingency Plan and model to track transport and fate in response to a release. Dr. Standley expressed an interest in investigating fates of various contaminants. Mr. Aptowicz indicated that while distribution systems were the most likely targets, DRBC does have water resources planning capabilities. Mr. Aptowicz indicated that modeling could be critical and could evaluate the impacts of releases from reservoirs. Mr. Aptowicz would welcome that kind of effort.

## **VII. PCB TMDL Policies and Procedures**

Dr. Fikslin and Dr. Suk presented proposed policies and procedures for the PCB TMDL (attached). The group discussed the proposed procedures at some length. Dr. Fikslin presented the recommendation of the Policies and Procedures subcommittee that an explicit 5% margin of safety be used for the TMDL. Ms. Davis made a motion to recommend use of the explicit 5% margin of safety. Mr. Velinsky seconded the motion and the motion carried.

Some members requested clarifications on how contribution factors had been determined. Some commented that the contribution factors had been calculated based on assumptions and that changing the assumptions could result in different contribution factors.

Mr. Sandeen expressed concern that the TAC would apparently not have another opportunity to review and comment on the procedures before DRBC submitted draft documents to EPA.

Mr. Blair and Mr. Aptowicz asked how many dischargers would be required to submit waste minimization plans. The group discussed that the dischargers making up the upper 90% of the total point discharge load would be required to develop waste minimization plans. Mr. Aptowicz expressed concern that some smaller dischargers may not be required to submit waste minimization plans even though they could discharge a mass of PCBs equivalent to the entire assimilative capacity for the zone.

Mr. Greene recommended an alternate procedure for determining which facilities would be required to submit waste minimization plans. Mr. Greene made a motion to recommend allocation of the zone waste load allocations based on the existing proportion of Penta-PCB load for each discharge to their respective zones for the period February 1,

2002 to January 31, 2003. Dr. Standley seconded the motion. The motion carried with 7 in favor and 1 abstention.

Ms. Davis made a motion to recommend use of gross aggregate allocation of WLA's and LA's to each zone based on the existing proportion of Penta-PCB for the period February 1, 2002 to January 31, 2003. Dr. Standley seconded the motion and the motion carried with 7 in favor and 1 abstention.

### **VIII. Public Comment**

No public comments were presented at this time.

### **IX. Adjourned**

Dr. Standley motioned to adjourn the meeting. Mr. Lubow seconded and the motion carried unanimously. The meeting adjourned at 3:30 pm.

**Attachment 1**  
**Resolutions and Voting Record**

**1. MOTION: Ms. Carol Ann Davis made the following motion:** Motion to accept an explicit allocation of 5% for margin of safety.  
**Dr. David Velinsky seconded the motion**

Individual voting was as follows:

<b>INTEREST GROUP</b>	<b>NAME</b>	<b>YES</b>	<b>NO</b>	<b>ABSTAIN</b>
State of Delaware	Mr. Richard W. Greene	X		
State of New Jersey	Mr. Steven P. Lubow	X		
State of New York	Absent	***	***	***
Commonwealth of Pennsylvania	Mr. James Newbold	X		
U.S. Environmental Protection Agency	Ms. Carol Ann Davis	X		
Industry representative	Mr. Lawrence Sandeen	X		
Municipal representative	Mr. Dennis Blair	X		
Environmental/Watershed representative	Ms. Maya van Rossum	***	***	***
Environmental/Watershed representative	Dr. Laurel J. Standley	X		
Academic representative	Dr. David Velinsky	X		
Agriculture representative	Dr. Ferdows Ali	***	***	***
Federal Fish & Wildlife Resource representative	Mr. Timothy Kubiak	***	***	***
Public Health Interest representative	No representative at this time	***	****	***

**RESULTS:** Motion carried unanimously

YES VOTES = 8                      NO VOTES = 0                      ABSTAIN = 0

**2. Motion: Mr. Rick Green made the following motion:** To allocate the zone waste load allocations using the existing proportions of Penta PCB load to each during the period February 1, 2002 to January 2003.

**Dr. Laurel Standley seconded the motion**

Individual voting was as follows:

<b>INTEREST GROUP</b>	<b>NAME</b>	<b>YES</b>	<b>NO</b>	<b>ABSTAIN</b>
State of Delaware	Mr. Richard W. Greene	X		
State of New Jersey	Mr. Steven P. Lubow	X		
State of New York	Absent	***	***	***
Commonwealth of Pennsylvania	Mr. James Newbold	X		
U.S. Environmental Protection Agency	Ms. Carol Ann Davis	X		
Industry representative	Mr. Lawrence Sandeen			X
Municipal representative	Mr. Dennis Blair	X		
Environmental/Watershed representative	Ms. Maya van Rossum	***	***	***
Environmental/Watershed representative	Dr. Laurel J. Standley	X		
Academic representative	Dr. David Velinsky	X		
Agriculture representative	Dr. Ferdows Ali	***	***	***
Federal Fish & Wildlife Resource representative	Mr. Timothy Kubiak	***	***	***
Public Health Interest representative	Not representative at this time	***	***	***

**RESULTS:** Motion carried

YES VOTES = 7

NO VOTES = 0

ABSTAIN = 1

3. **MOTION:** *Ms. Carol Ann Davis made the following motion:* Motion to use gross appropriate allocations waste load allocations and load allocations to each zone based on existing propotions for February 1, 2002 to January 31, 2004  
*Dr. Laurel Standley seconded the motion.*

Individual voting was as follows:

<b>INTEREST GROUP</b>	<b>NAME</b>	<b>YES</b>	<b>NO</b>	<b>ABSTAIN</b>
State of Delaware	Mr. Richard W. Greene	X		
State of New Jersey	Mr. Steven P. Lubow	X		
State of New York	Absent	***	***	***
Commonwealth of Pennsylvania	Mr. James Newbold	X		
U.S. Environmental Protection Agency	Ms. Carol Ann Davis	X		
Industry representative	Mr. Lawrence Sandeen			X
Municipal representative	Mr. Dennis Blair	X		
Environmental/Watershed representative	Ms. Maya van Rossum	***		
Environmental/Watershed representative	Dr. Laurel J. Standley	X		
Academic representative	Dr. David Velinsky	X	***	***
Agriculture representative	Dr. Ferdows Ali	***	***	***
Federal Fish & Wildlife Resource representative	Mr. Timothy Kubiak	***	***	***
Public Health Interest representative	No representative at this time	***	***	***

**RESULTS:** Motion carried

YES VOTES = 7

NO VOTES = 0

ABSTAIN = 1



**Attachment 2**

**Presentation by Dr. Fikslin and Dr. Suk  
Regarding PCB TMDL Policies and Procedures**

# Approach to Establishing TMDLs for PCBs for Zones 2 to 5 of the Delaware Estuary: Version 4

Toxics Advisory Committee  
July 14, 2003

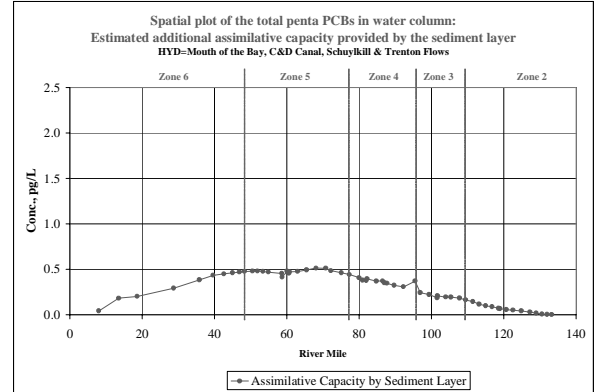
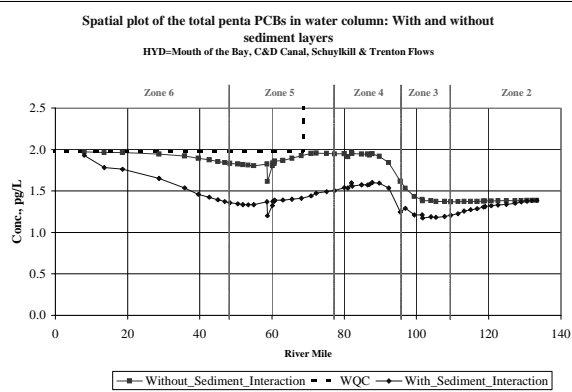
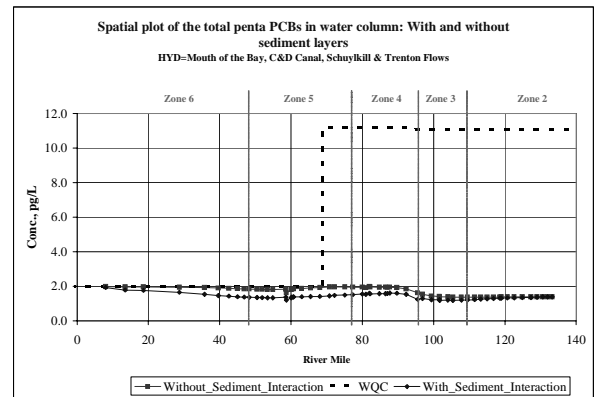
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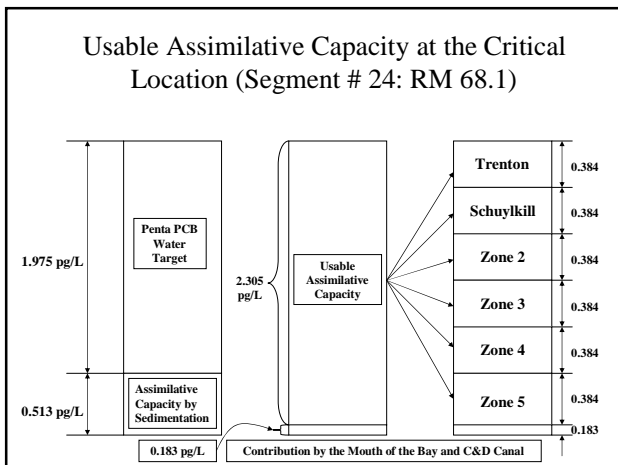
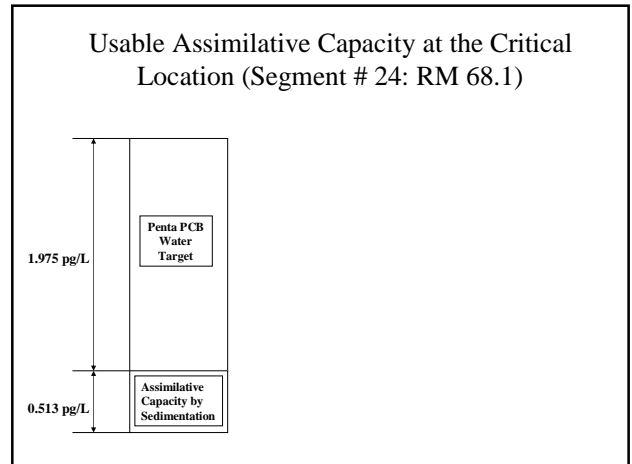
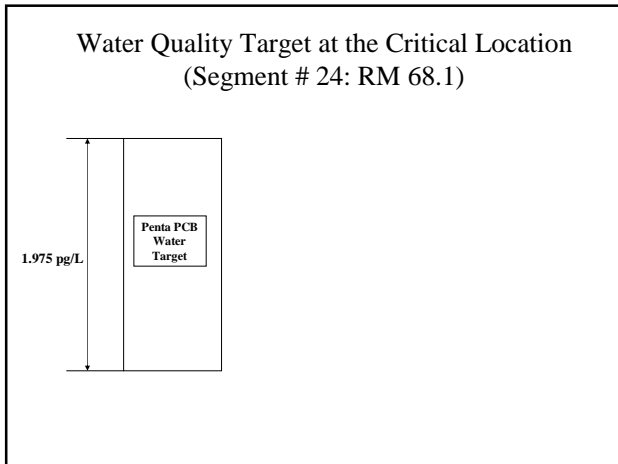
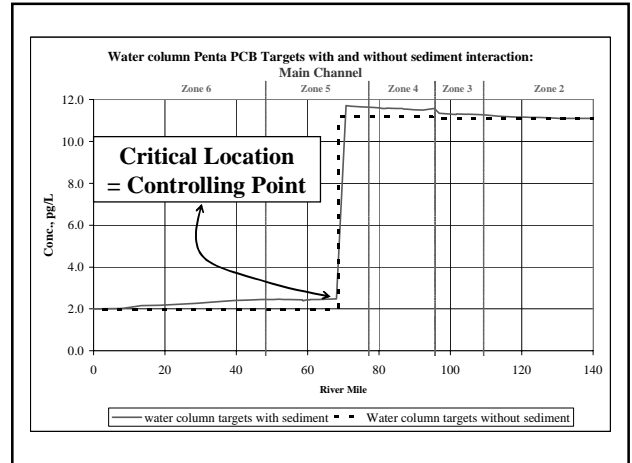
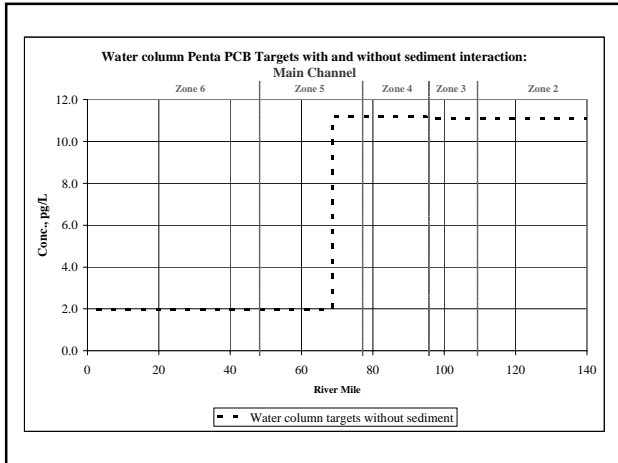
## Approach

- The open boundaries (C&D Canal and the mouth of Delaware Bay) are set to 'Water Quality Target' for all model simulations since they do influence compliance with the penta PCB target at the critical point (RM 68.75).
- All the other sources of PCBs are treated equally. i.e., the boundaries are treated in a same way as Zone loadings.
- Only two of the major boundaries are separated from the Zone Loadings. The two boundaries are Delaware River at Trenton, and the Schuylkill River.
- The Zone loading includes the category loadings from (1) point discharges, (2) CSOs, (3) contaminated sites, (4) tidal portion non point sources, (5) tributaries except the boundary tributaries, and (6) atmospheric deposition.

## Baseline Analysis

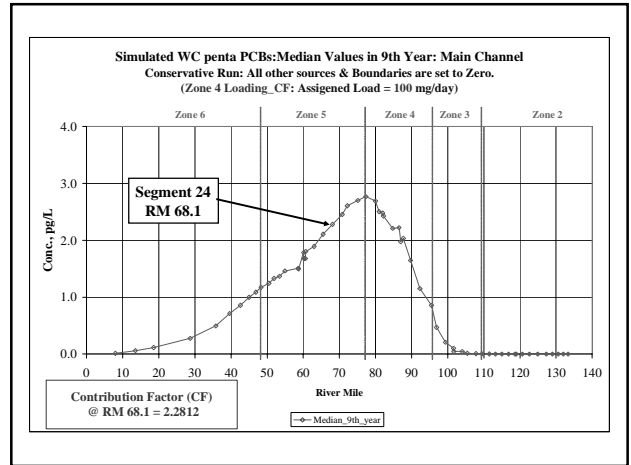
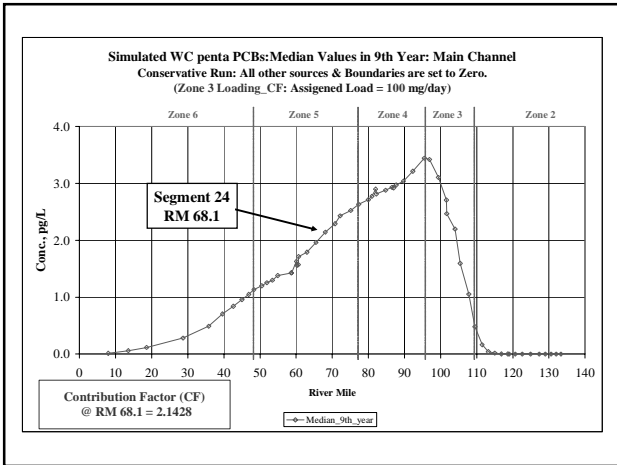
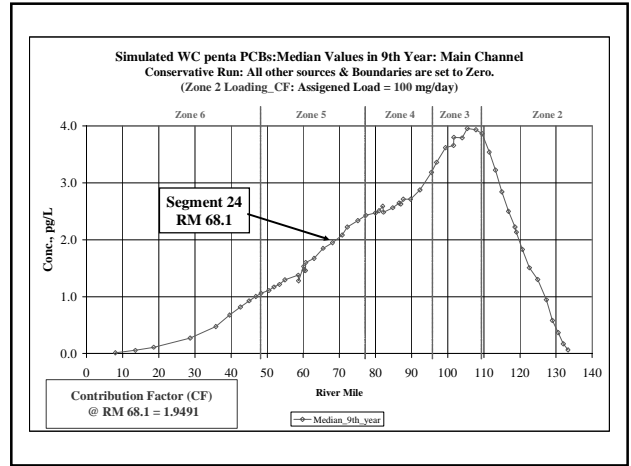
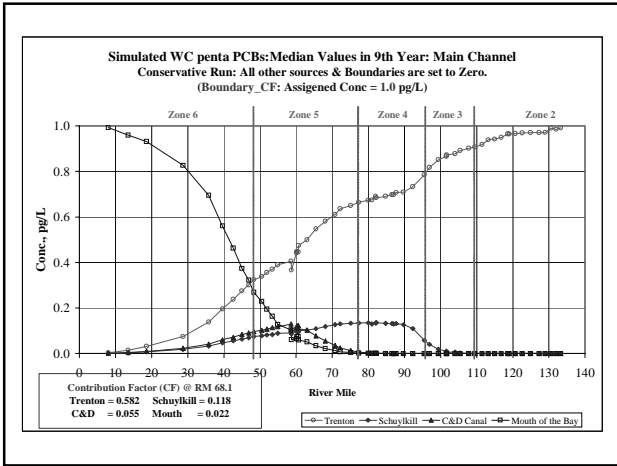
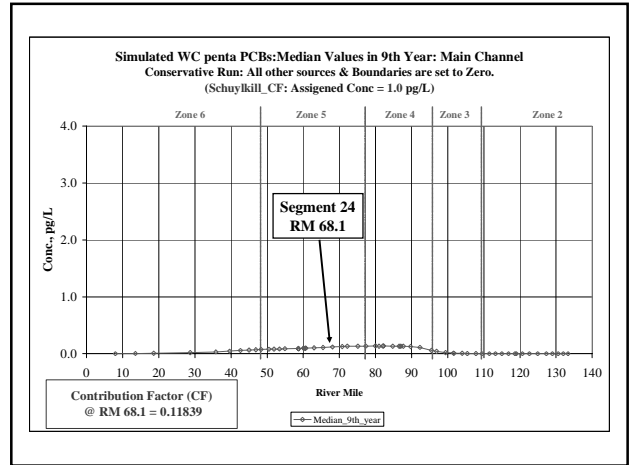
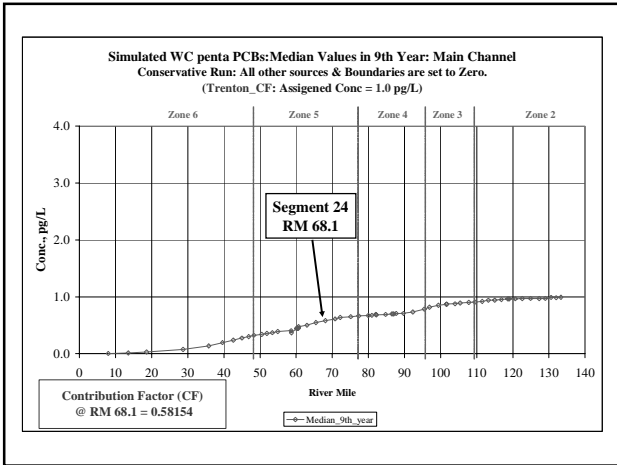
- Procedure:
  1. To minimize the simulation time of the model runs, water column interactions with sediment layers and the air were excluded in the Baseline Analysis. This allows the use of the conservative chloride model for these runs.
  2. However, to accommodate the assimilative capacity provided by sedimentation and burial, the penta WQ target was raised and used in conservative simulations.
  3. Determine the four Zone Allowable Loadings and Two Allowable Boundary Concentrations.





### Contribution Factor (CF) Analysis

- Purpose:**
  - To find individual 'Cause and Effect' relationship to the 'Critical Location' from the Delaware River, Schuylkill River and loading from each of the Zones.
- Principle:**
  - Once figuring out the CF, one can back calculate the allowable loadings and concentrations. (Because we already know the allowable 'Effect')



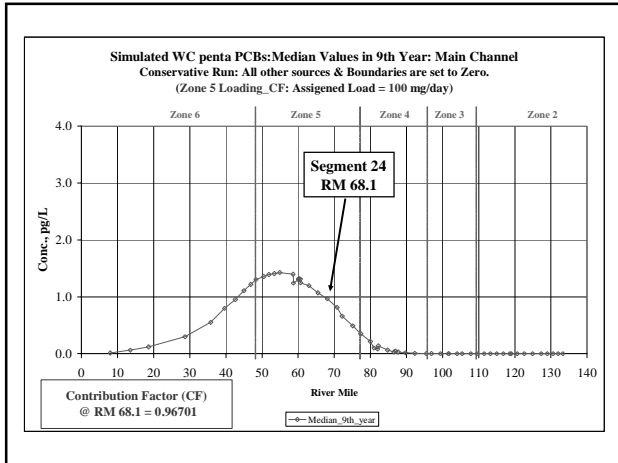


Table 1. Summary of the Contribution Factors (CF) at the Segment 24 (RM 68.1) for the Individual Sources

	Contribution Factor [pg/L] / [100 mg/day]	Contribution Factor [pg/L] / [pg/L]
<b>Zone 2</b>	<b>1.9491</b>	-
<b>Zone 3</b>	<b>2.1428</b>	-
<b>Zone 4</b>	<b>2.2812</b>	-
<b>Zone 5</b>	<b>0.9670</b>	-
<b>Delaware River @ Trenton</b>	-	<b>0.58154</b>
<b>Schuylkill River</b>	-	<b>0.11839</b>

### Example Calculation of the Allowable Boundary Concentration

<Example 1> Find the Allowable Concentration at Trenton Boundary

CF for BC @Trenton = 0.58154 [pg/L] / [pg/L]  
 CF x BC @Trenton = 0.384 pg/L  
 BC @ Trenton = 0.384 / CF  
 BC @ Trenton = 0.660 pg/L

### Example Calculation of the Allowable Loadings

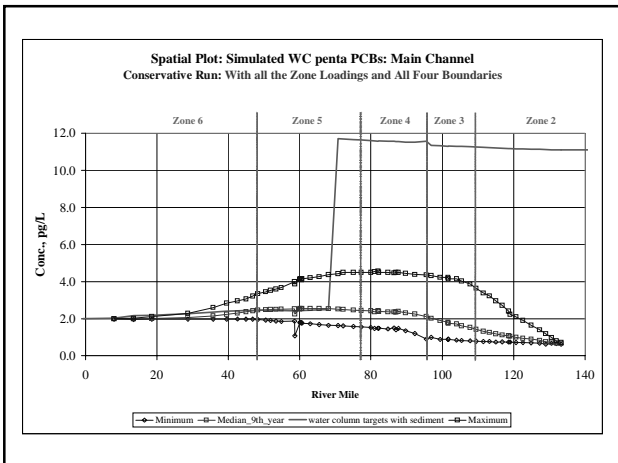
<Example 2> Find the Zone 3 Allowable Load

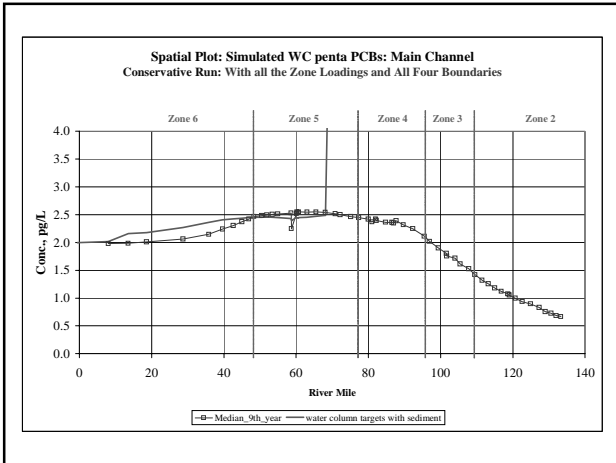
CF for Zone 3 = 2.1428 [pg/L] / [100 mg/day]  
 = 0.021428 [pg/L] / [mg/day]  
 CF x Zone 3 Load = 0.384 pg/L  
 Zone 3 Load = 0.384 / CF  
 Zone 3 Load = 17.92 mg/day

Table 2. Summary of the Allowable Loadings and Boundary Concentrations

Allowable WQ Target for the individual sources at the critical location is 0.384 pg/L

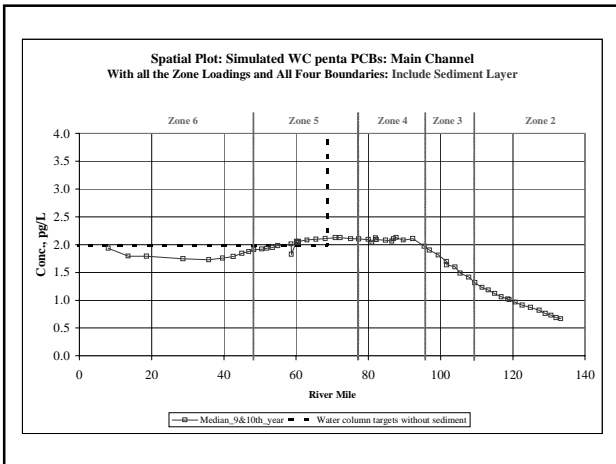
	Contribution Factor [pg/L] / [100 mg/day]	Allowable Loading or Concentration Units are in mg/day or pg/L
<b>Zone 2</b>	<b>1.9491</b>	<b>19.710</b>
<b>Zone 3</b>	<b>2.1428</b>	<b>17.928</b>
<b>Zone 4</b>	<b>2.2812</b>	<b>16.841</b>
<b>Zone 5</b>	<b>0.96701</b>	<b>39.727</b>
<b>Delaware River @ Trenton</b>	<b>0.58154</b>	<b>0.661</b>
<b>Schuylkill River</b>	<b>0.11839</b>	<b>3.245</b>





## Multiple Analysis Procedure

- Step 1: (include the sediment layers)
  - a. Using the calibrated PCB model (air-water gaseous exchanges are still disabled):
    - ✓ Find the equilibrium sediment condition.
    - ✓ Fine tuning may be required to make sure that the Multiple Analysis results with equilibrated sediment are fully utilizing the assimilative capacity.
    - ✓ The penta WQ target must also be met throughout the Estuary.



## Multiple Analysis Procedure

- Step 2: (include air-water gaseous exchanges)
  - a. Using the calibrated PCB model and the loadings determined in step 2:
    - ✓ Set the gaseous air concentration for penta PCBs at the calculated equilibrium concentration.
    - ✓ Fine tuning may be required to make sure that the results with air-water gaseous exchange and sediment interactions are fully utilizing the assimilative capacity.
    - ✓ The penta WQ target must also be met throughout the Estuary.