AGENDA

TRINITY RIVER PCB TMDLs PUBLIC MEETING

NORTH CENTRAL COUNCIL OF GOVERNMENTS
616 SIX FLAGS DRIVE
CENTERPOINT II (TOM VANDERGRIFF CONFERENCE CENTER)
REGIONAL FORUM ROOM, FIRST FLOOR

Tuesday, August 26, 2008
1:00 P.M. – 3:00 P.M.

1. Welcome & Introductions

2. Overview of Trinity River PCB TMDL Project

- TMDL Overview and Process
- PCBs Review
- PCB Conceptual Model
- Data Collection Summary (March 2008 – August 2008)
- Preliminary Data Results (March 2008 – June 2008)

3. General Project Timeline for Upcoming Work

- Complete Sample Collection (August 2008)
- Allocation Tool Development and
  TMDL Source Allocations (Fall 2008 – Winter 2009)
- Draft Technical TMDL Report (Spring 2009)

4. Open Discussion of Ongoing TMDL Project Work

6. Meeting Conclusion

- Next Meeting Plans

7. Adjourn

The TCEQ web page for this TMDL project may be found at:
http://www.tceq.state.tx.us/implementation/water/tmdl/77-trinity_pcbs.html
The web page includes the project overview, meeting information,
meeting summaries, and project documents.

Attendees:

Angela	Kilpatrick	Trinity River Authority
Barbara	Nickerson	Freese & Nichols
Bob	Joseph	U.S. Geological Survey
Brad	Hudgens	CH2M Hill
Bryon	Okada	Fort Worth Star-Telegram
Casey	Nettles	City of Fort Worth
Christy	Yorek	Lockheed Martin
Chuck	Schechner	KRLD News Radio
Cindi	Makowsky	Trinity River Authority
David	Rutledge	Luminant (formerly TXU)
Echo	Rexroad	City of Grand Prairie
Elizabeth	Turner	City of Dallas
George	Walters	U.S. Air Force (ASC/ENVR)
Gregory	Moss	City of Fort Worth
Jennifer	Bronson	Texas Parks & Wildlife Department
Joan	Flowers	Jacobs Carter Burgess
Joseph	Fennell	North Texas Tollway Authority
Krystal	Zwinggi	North Central Texas Council of Governments
Mark	Ernst	Tarrant Regional Water District
Neil	Strassman	Tarrant County
Pat	Lambert	North Central Texas Council of Governments
Richard	Talley	City of Fort Worth
Robert	Ressl	City of Arlington
Sam	Brush	North Central Texas Council of Governments
Susan	Alvarez	City of Dallas
Tim	Wentrcek	DFW Airport
Tim	Raines	U.S. Geological Survey
William	Madison	City of Dallas

Support Staff:
Dania Grundmann – Texas Commission on Environmental Quality (TCEQ)
Chip Morris – TCEQ
Earlene Lambeth – TCEQ
John Mummert – TCEQ – Region 4
Randy Palachek– Parsons Engineering, Inc.
Kirk Dean – Parsons Engineering, Inc.

Administrative Issues

This was the second public meeting of the Trinity River Polychlorinated Biphenyls (PCBs) TMDL. The informal meeting was held to update the public about the Trinity River PCB TMDL project and the progress that has been made since the initial meeting held on July 19, 2007. Self-introductions were made by all meeting attendees.

Introduction

Dr. Kirk Dean with Parsons Engineering, the consultant contracted for the TMDL project, reviewed with the group information on TMDLs and the fish consumption advisory issued for segments 0829, 0806, 0841 and 0805 of the Trinity River in 2002 by the Texas Department of State Health Services (TDSHS). Kirk also reviewed with the group the basic information about PCBs and explained that the 209 compounds (congeners) collectively known as PCBs have varying toxic effects, limited water solubility, and tend to be associated with sediments in aquatic systems. PCB congeners are also known to partition into fish tissue (due to the fat content of the fish). The production, distribution and new use of products with these compounds were banned in 1977 by the Toxic Substances Control Act (TSCA). One of the main uses of PCBs was in electrical transformers.

Dania explained that the Environmental Protection Agency (EPA) had requested that TCEQ determine TMDLs for each impaired assessment unit within an impaired segment. Changes to the current waterbody assessment unit (AU) location descriptions have been proposed to facilitate the allocation of loads to impaired AUs.

Kirk reviewed the TMDL process and the current Trinity project schedule. Initial tasks for the project, which began in May 2007, included a historical data review, development of a sampling plan and QAPP. Kirk said that in March 2008 Phase 4 of the project, which involves data collection and analysis, began. These activities are expected to be completed at the end of August 2008.

The next phase, scheduled to begin in September 2008, is the model analysis which will help identify the maximum loading allowable in the stream segments (point and non-point sources). Phase 6, during which a draft TMDL report will be written, released for public comment, and presented to the TCEQ for adoption; will begin after the model is developed.

Kirk explained that the modeling approach involves development of a multiple box analytical model based on a mass balance. The data inputs for the model will include flow, in-stream PCB concentrations in dissolved and particle-associated phases, in-stream suspended solids concentrations, sediment PCB concentrations, estimates of PCB loads coming in from point and nonpoint sources, and PCB concentrations in fish tissues reported from the TDSHS.

Sampling

The sampling locations were discussed and Kirk gave an in-depth report of the samples collected. Many new sampling sites were sampled, as discussed in the previous meeting.

Kirk explained the sampling plan using schematic figures. He noted that the figures were not drawn to scale. Dania said she would post the complete sampling results on the TCEQ web site for the stakeholders to review before the next meeting.

Kirk also presented the currently available data results. Kirk also brought attention to the fact that samples at Nutt Dam, Purcey Street, and some other sites were collected in duplicate for quality control purposes.

General Project Timeline

Dania and Kirk reiterated the TMDL project timeline that includes:

Completed Sample Collection (August 2008), Allocation Tool Development and TMDL Source Allocations (Fall 2008 – Winter 2009) and the public can expect a Draft Technical TMDL Report in the Spring 2009.

Preliminary Observations

- PCB levels in water exceeded water quality criteria in 13 of 15 samples.
- PCB levels in stormwater from older, densely developed urban areas are much higher than those measured in-stream, indicating continuing PCB inputs; however, storm water PCB levels were low in rural and suburban areas.
- PCB levels in wastewater effluent were lower than ambient levels in the river.
- Peaks and dips in the spatial distribution of PCB levels in ambient waters occur downstream of those in sediment, perhaps indicating gradual flux of PCBs from sediment to water.
- PCB levels in sediment appear to have declined since the 1970s and 1980s in all but Segment 0806 in Fort Worth.
- The variability in PCB levels in tributary sediments indicates continuing local sources in some areas.

Comment: The TCEQ is going through their Water Quality Standards Revision process. One of the revisions being proposed is to lower the water quality criterion for PCBs in fresh water. That criterion adjustment is based on an increase in the assumed fish consumption rate. We will have to see how it may affect this TMDL. The draft standards are expected to be posted on the Public Register before the end of this year. After that there will be a public hearing and ultimately adoption of the new standards. It could mean the water quality target that we are shooting for in this TMDL is in flux. The TCEQ is also considering changing the PCB criterion from a water concentration to a fish tissue concentration, which would require a translator mechanism from tissue to water concentrations. In the implementation procedures, the TCEQ would have to publish water column concentrations to target for.

Question: Did the type of sediment determine how much PCB might be there?
Answer: It sure does. We measured sediment organic carbon content and sediment grain size as an indicator of the tendency of sediment to absorb PCBs. Sand does not tend to hold as much PCB as finer clay type sediment, and organic matter (as indicated by carbon) holds much more PCB than non-organic sediment phases. I did not present it today but organic-carbon normalized concentrations in sediment tend to show the same type of picture (as the bulk sediment concentrations presented). When we meet next and I have all the data in I will present that.

Question: Since we have banned PCBs since 1976 and there have been so many sources of PCBs out there, are we still seeing influx from external sources or is it just moving through the environment and ending up in the water column? Is it still tied up in the soil in the watershed? The model seems awfully weak.
Answer: In 1976 "new" uses were banned. That does not mean that in 1976 PCBs were removed from existing uses. It took a number of years for transformers with PCBs in them to be removed. I suppose we have someone from the electric utility here?
Comment: With Luminant, we went through a replacement program back in the 1980s and all our transformers with PCBs were replaced by the late 1980s or early 1990s.
Answer (continued): I am not meaning to say that transformers are "the source". There are probably still some PCBs out there. PCBs are tied up in soils and sediments or even groundwater. Every time it rains there is another flushing of those PCBs through the system. There are still sources out there.

Comment: In the electrical distribution system there are still transformers that have PCBs. We have identified them and as they need repair we replace them. I don't believe we have very much left but in some parts of the country, there are a lot. When Katrina came through New Orleans I went there and we found many.

Comment: I just read an article about this lake on the border…Donna. It apparently had an extremely high concentration of PCBs and TPWD were electro-fishing taking all the fish out. If there is no new source how can it be that high?

Comment: The situation at the Donna Reservoir and Canal is different because fish tissue PCB concentrations are much greater than in the Trinity River, and because there does appear to be an as yet unidentified source.

Comment: Once the PCBs are in the sediments they can stay around for a hundred years. It could have been contamination that occurred in the 1940s.

Comment: I was involved with a PCB project in Oakland, CA and one of the products that had a lot of PCBs is window caulking.

Question: PCBs don't just exist in Texas and nowhere else. How do I get rid of them? Do I dredge up all the soil? What are some of the possible solutions? We talk about the TMDL assigning limits to various sources coming in, but we don't even know where the source is. What are some of the other states doing? How are their models compared to our model; their data compared to our data, etc.?
Answer: With PCBs primarily, people use the "mass balance" modeling approach. PCBs are very difficult to model in the same way you would model dissolved oxygen simply because the spatial and temporal resolution in sampling that you would need to develop that type of model would be extremely expensive.

Question: If we are using a mass balance approach, how is the flow data integrated into a concentration based sample? When are you collecting samples. How are you biasing based on flows?

Answer: We are measuring the flow in order to get the mass balance. In our modeling approach we are going to look at the long term steady state type of approach. In other words, a long term average flow. Admittedly, you cannot grab a one day sample under various hydrological conditions – we just do not have a budget to sample under all hydrologic conditions. So our model is going to be an approximate solution. That is a very typical approach in modeling PCBs.

Question: The water samples were collected over a number of hours?
Answer: Yes, about five hours. That is one reason we are relying heavily on sediment sampling. A water sample is only a five hour sample, while a sediment sample is theoretically an integration of the concentration to what that sediment is exposed to over a long period of time. That gives us a better long term estimate of the in-stream concentration.

Question: PCBs are essentially not soluble in water. Are they tied up with other things that are in this water sample?
Answer: Usually about 40% of it (total PCB) is dissolved and 60% of it is particle-associated. That is for the sum of all the PCB congeners. Some of the 'lighter" PCB congeners that don't have many chlorines are found mostly in the dissolved phase and only a little bit in the particulate phase, whereas the heavier PCB congeners (those with a whole bunch of chlorine atoms), are almost exclusively associated with the particulate phase.

Question: So your water samples are not filtered but total?
Answer: They are filtered. We collect both suspended solids and the dissolved PCB phases. These phases are separately analyzed for each PCB congener, then we can calculate the total as the sum of dissolved and particle-associated (suspended) PCBs for each PCB congener, and for the sum total of all PCB conegeners.

Comment: The other PCB projects around the country, say around the Hudson, they are dong a very big remediation job. There are a number of places on the East coast that are doing just that – dredging the sediments.

Question: There is not any kind of bio-remediation?
Answer: Not in dry soils. PCBs are one of the hardest things for microorganisms to degrade. If there is anything else around they are going to degrade that first. It is not a very reliable approach.

Question: Some of the older sediment data studies were compared to the new ones. Can you give us a feel about comparability?
Answer: I wish we had analyzed some of the samples both ways (using the historical low-resolution as well as the current high-resolution analytical methods) just to see the difference we would have gotten. I am confident I can find some examples of that in the literature. The older analytical method doesn't measure a specific PCB congener, but instead estimates the original trade mixtures of congeners (known as Aroclors). It is not a very sensitive method. When the concentrations are high I would expect the two

methods would come to a fairly comparable number for the total PCB level. I am not aware of any systematic bias between the methods. I would trust our numbers using the current high resolution method a lot more.

Meeting Conclusion

One of the things Kirk wanted to do at the meeting was to draw on the knowledge of the attendees and asked them to provide information on storm water flows, potential sources of PCBs, or perhaps the volumes of storm water coming in on the sump pumps from the City of Dallas. There was a brief discussion of various areas and hot spots.

Question: How are we going to know if the water quality standard is going to be attained?
Answer: The reason we are doing this TMDL is because of a fish tissue advisory by the TDSHS. We could have a numeric water quality goal and we could also have the goal that the TDSHS reassesses levels in fish and lift the fish consumption advisory if PCB levels are no longer a risk to consumers and fish. We could have two goals. The ultimate goal or end target would be to have the advisory removed. TMDL implementation would include a task to have the fish consumption risk assessed by TDSHS every five years.

Question: Do you know how much (PCBs) the average person has in them from drinking milk, cattle we eat, grain? They are probably low levels but it could build up.
Question: Are there more PCBs at Donna Reservoir than here?
Answer: Yes, the levels are higher at Donna. The population also eats and consumes more fish – there is a lot of poverty. The risks there are higher.

A spring 2009 meeting will be held to update the stakeholders on the progress. Dania indicated she would keep the web updated as reports became available. The meeting was adjourned.

The web page includes the project overview, meeting information, meeting summaries, and project documents that include meeting presentation materials.

Segment Name	Segment ID	AU ID	Current AU Location Description	Proposed Location Description
Clear Fork Trinity River Below Lake Benbrook	0829	**0829_01***	Lower 1 mile of segment	n/a
West Fork Trinity River Below Lake Worth	0806	0806_02	Upper 11 miles of the segment	From confluence of Clear Fork Trinity River upstream to Lake Worth Dam.
	0806	**0806_01***	Lower 22 miles of the segment	From confluence of Village Creek upstream to confluence of Clear Fork Trinity River.
Lower West Fork Trinity River	0841	**0841_02***	Upper 13 miles of segment	From the Tarrant/Dallas county line to confluence of Village Creek.
	0841	**0841_01***	Lower 14 miles of segment	From confluence of the Elm Fork Trinity River to the Tarrant/Dallas county line.
Upper Trinity River	0805	**0805_04***	Upper 8 miles	From confluence of Cedar Creek upstream to confluence of Elm Fork Trinity River.
	0805	**0805_03***	11 mile reach near S. Loop 12	From the confluence of Fivemile Creek upstream to the confluence of Cedar Creek.
	0805	**0805_06***	From 15.57 mi. upstream of SH 34 to 4.71 mi. downstream of S Loop 12	From confluence of Tenmile Creek upstream to confluence of Fivemile Creek.
	0805	**0805_02***	25 mile reach near SH 34	From confluence of Smith Creek upstream to confluence of Tenmile Creek.
	0805	**0805_01***	25 mile reach near FM 85	From confluence of the Cedar Creek Reservoir discharge canal upstream to confluence of Smith Creek.
	0805	**0805_05***	Remainder of segment	This AU will be merged with 805_01

*** PCB in Fish Tissue Impaired AU**