Meeting Summary
DIOXIN & PCB TMDL STAKEHOLDER MEETING

August 28, 2008
1-4 PM

MEMBERS PRESENT: Scott Aspelin; Louis Brzuzy; Winston Denton; Tracy Hester; Ed Matuszak; Bob Stokes; Lial Tischler; Gordon Pederson; John Westendorf

MEMBERS ABSENT: Chris Barry; Charles Beckman; Ronald Crabtree; Luke Giles; George Guillen; Guy Jackson; Rory Lang; Sara Metzger; Kristy Morten; David Ramsden; Gerardo Ruiz; Steve Weishar; Kerry Whelan; Kirk Wiles; Bob Wood.

SUPPORT STAFF PRESENT: Carl Masterson (H-GAC); Rachel Powers (H-GAC); M.J. Naquin (Facilitator); Larry Koenig (TCEQ Austin); Monica Suarez (U of H); Hanadi Rifai (U of H)

OTHERS PRESENT: Catrina Cron (Harris County); Chip Morris (TCEQ); Divagar Lakshmanan (U of H); Erica McCauley (TCEQ); Felicia Najera (GCWDA); Gordon Pederson (GCWDA); Helen Drummond (TCEQ-GBEP); Jeff Stevenson (Shell); Jon-Paul Komar (Harris County); Karl Pepple (City of Houston); Linda Broach (TCEQ Houston); Maria Modelska (U of H); Nathan Howell (U of H); Randy Palachek (Parsons); Rohlf Jewell (interested observer); Steve Johnston (GBEP); Steve Smith (Lyondell-Basell); Victor Cardenas (Jackson Fischer Gilmour & Dobbs, P.C.); Wendall Honeyatt (Corrigan Consulting)

WELCOME & INTRODUCTIONS

MJ Naquin called the meeting to order at approximately 1:10 PM. Self introductions followed.

PCB Project Update

An update was presented by Hanadi Rifai.

First, Hanadi provided background information about PCBs. She then discussed the current PCB project, which started in 2007 with a one-year planning phase and data collection. She described the project area and transport pathways. In terms of water, sediment, and fish, Houston has some of the highest levels of certain PCB congeners in the world. Hanadi then provided more specific information about sampling results from an earlier study in 2002/2003 that examined water, sediment, catfish, crab, and other fish tissues.

Q: What surrogates and analysis protocols were used? Hanadi discussed the use of surrogates and analysis protocols (209 congeners vs. 43 congeners vs. Aroclor, etc.), and how there was little guidance from different agencies. U of H has chosen to use the 43 congeners for the analysis for various reasons. Earlier sampling—in 2002, 2003--used the Aroclor protocol. Hanadi considers this information useful for guiding current and future sampling, but does not consider it to be rigorous enough to provide scientifically valid results.

Hanadi then provided information about more recent sampling and analysis compositing three sampling phases (U of H in 2002/2003, TDSHS in 2006/2007, and U of H in 2008).

Q: Various questions about the Texas State Department of Health Service (TSDHS) sampling were asked, although no one had definitive information about the TSDHS sampling. Hanadi pointed out that the TSDHS samples included only one fish at each site, while the U of H samples used multiple fish at each location.

The results of the two studies do not appear to be inconsistent, although QA/QC and other analysis have not been completed. Generally, PCB levels in the ship channel were higher than in Upper and Lower Galveston Bay, and there appears to be little change over time. The levels appear to be relatively consistent geographically, although one sampling station, across and upstream from Banana Bend on the San Jacinto River, has significantly higher levels. Again, this information must be analyzed further.

Hanadi concluded by listing next steps, which include additional sampling and modeling.

Q: Is there any sense of what source studies will identify? There is little funding for source studies at this time, although wet-weather studies will address this to an extent. Some historical analysis of sites with SIC codes has been done, although little sampling has been done.

Q: Is there an idea or conjecture of why the one site had such high levels? It might be a result of catfish movement patterns. Labs use EPA Method 1668 and modify it for QA/QC; labs end up using non-standardized methods.

Dioxin Project Update

Hanadi introduced the Dioxin Project update by explaining that this presentation would discuss latest results from modeling, a mass-balance spreadsheet, and scenarios that have been analyzed. Hanadi asked Larry to discuss the study in terms of the TMDL report.

Larry Koenig explained that the results of this study will be used to craft a TMDL report and then eventually an implementation plan. After this meeting, the next thing stakeholders can expect to see is a draft TMDL report for public comment. The TMDL will address the acceptable loads and necessary reductions, but will not identify implementation actions. Supporting documents, including an Allocation Methodology Document and a Modeling Report are being reviewed by TCEQ but are available to anyone upon request.

Hanadi prefaced her presentation by acknowledging that the information is very complex. Hanadi reviewed the RMA2 and WASP models in the context of the daily load process. The study addresses the 17 dioxin and furan congeners that are considered toxic, with a focus on the six congeners that contribute most of the toxicity (>96%) in the sampled fish tissue. Flow, flux, and concentration were simulated or modeled every 30 minutes for two-and-a-half years. Some of the complexity of the Mass Balance Spreadsheet is to match model results to EPA- and TCEQ-required parameters.

Conclusions that can be generalized from the modeling scenarios are that the greatest source is historical sedimentation. The two congeners that contribute the most, 2378-TCDD and 2378-TCDF, come almost entirely from historical sedimentation. The remaining congeners, while still coming mostly from sediment, come from other sources to a greater extent, relatively speaking. Other sources include runoff (RO), point sources (PS), upstream sources (U/S), and atmospheric deposition (DD).

If sediment is removed as a source in the scenarios, both the state's water quality standard and the more stringent study target are met.

The Mass Balance Spreadsheet can be used in analysis mode or allocation mode. In the analysis mode, the spreadsheet will help identify the locations of dioxin sources. It will show whether each segment is a sink or a source for each PCB congener. Hanadi discussed slides that show segment 1007 as an example. The allocation mode allows the identification of required reductions, and can be used to generate geographical representations.

Monica Suarez then discussed the scenarios. Several scenarios were run, but two are being presented: Scenario A and Scenario B. These scenarios suggest that sources of dioxin must be

reduced by 43% to 96%, depending on segment, congener, source, and standard or target. The TEQ is currently the standard. For some segments and some congeners, more than 50% of the excess load is from contaminated sediment. The high levels shown in some of the maps at upstream stream segments and at downstream bay segments are because of a boundary effect in the modeling. In general, the spreadsheet over predicts, which is a conservative approach. Both Scenario A and Scenario B seem to meet both the target and the standard, except in one location which may be a result of conservative protocols. Monica then discussed the scenarios relative to fish tissue.

Monica concluded by discussing next steps, which include defining the TMDL, developing allocations, and drafting the TMDL report.

Comment: The new standards for dioxin and PCB will probably be a measure of fish tissue, so the report ought to express numbers in terms of fish tissue.

Wrap-Up Comments

MJ asked if there was any additional wrap up.

Q: How did surface concentrations compare to at-depth concentrations in core data? There was little change several centimeters into the sediment. There is no historical information that can be derived from the sediment, which appears to be disturbed, possibly by major events such as the storm of ’94 or Allison.

Q: How would major flood events affect the validity of geographical distribution of sinks and sources? Larry suggested that most of the contaminated sediment has been washed out from a few segments into the Bay where it settles in side bays. He described a sediment train with a choke-point at the Lynchburg Ferry. Hanadi pointed out the complexity and unpredictability of the sediment transport system. Larry discussed how, in other systems, dioxin can be addressed by waiting long enough so that the contaminated sediment is buried so deeply that it has no biological interaction, but that it would not work in our system because of the high level of sediment movement.

Q: Is there an idea of the source? Maybe the ‘lost’ waste pits on the San Jacinto River and possibly spills out of the Pasadena paper mill. There are some records of sinking barges, etc.

There was some discussion of the choice of segments/assessment units, and EPA requirements.

NEXT MEETING

The next meeting for dioxin will probably be once draft reports are prepared. Supporting documents will be available before that.

The next meeting for the PCB will be several months, perhaps early in 2009.

ADJOURN

The meeting adjourned at approximately 4:00 PM.