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Comments to the Hudson River Engineering Performance Standards Peer Review Panel
Glens Falls, New York
May 5, 2010

My name is Jay Field. I've worked for NOAA on the Hudson River project for over 20 years, so I can appreciate the challenge you face in reading all the reports and comments and sifting through the data. I appreciate the panel's willingness to take this on.

I want to present my perspective on two issues that were discussed during this meeting: re-deposition and modeling.

Re-deposition

Re-deposition of suspended material outside the dredge prism is a very important process to understand. Unfortunately, the planned attempts to quantify the magnitude of the problem with supplemental data collection were unsuccessful, and for the reasons that EPA discussed yesterday, the data collected in sediment traps and re-located cores, provide, at best, marginal insight into this issue.

The panel should be aware of the difficulty in addressing this problem, given the existing background concentrations: For example, the average concentration in the top 2 inches of the sediment outside of the actively dredged Phase 1 CU's is more than 40 ppm total PCBs. Much of this contamination is in shallow water less than 10ft deep, highly susceptible to disturbance from vessel traffic. The situation is even more challenging in Phase 2. To assess re-deposition of PCBs in River Section 2 from Phase 2 dredging, you need to take baseline conditions into account. In River Section 2, the average concentration of total PCBs in the top 2 inches is 35 ppm. Due to the much higher cleanup standards in River Section 2, the average total PCBs in the top 2 inches outside the Phase 2 dredge areas are more than twice as high in River Section 2 (17 ppm) compared to in River Section 1 (8 ppm).

We recommend that EPA and GE develop a comprehensive and well-designed study for implementation in Phase 2 to improve our understanding of this process.

Modeling

We learned at this meeting that GE has developed the "next generation" version of their previous Upper Hudson River fate and transport model, and this "state-of-the-art" model now "nails the natural recovery data." This is important, because as we now know from the remedial design and baseline monitoring plan data that those earlier models significantly underestimated the PCB concentrations in the sediment surface throughout the Upper Hudson, as well as the PCB load to the Lower River. PCBs in the sediment

surface are not recovering nearly as rapidly as the models predicted and are not being buried.

The earlier models used by GE and EPA were also "state-of-the-art" models, developed by two of the top modeling teams in the country. These models also claimed to "nail the data." But, because they overestimated the rate of natural recovery, they also underestimated the difference in benefits between the selected remedy and monitored natural recovery.

These new models have much higher spatial resolution, high quality data collected during remedial design, better bathymetry, probably even stainless steel knobs- but they still rely on the same problematic historic data, incomplete information on key parameters, black boxes for processes not well understood. The new data, no matter how extensive, only represent a short time scale relative to the proposed temporal extrapolations. From our analyses of the baseline monitoring and historic fish data, we learned the pitfalls of relying on short time series to estimate temporal trends, even with high quality data collected specifically for that purpose.

Models can give us important perspective on processes that we need to understand to make decisions, but they only provide one line of evidence. Much as I respect Dr. Connolly's expertise and experience as a modeler, I certainly would not advocate giving his model decision-making authority to establish the load standard, as GE proposes.