Spokane River Regional Toxics Task Force
Informal Discussion of Technical Topics Concerning Data Gathered To Date
Spokane River Forum Conference, March 22, 2016

Objective

Discuss additional analyses that can be conducted with existing data, considering:

- How does this analysis help address key data gaps?
- Are the available data sufficient to generate a conclusive result?

Near-term focus is water column concentration, eventual focus on fish tissue

Existing Data

Collected for Task Force

- Two low flow synoptic surveys of in-river PCB concentrations and known loading sources
- Spring high flow in-river PCB concentrations

Also Available

- PCBs in Spokane River fish and sediments
- PCBs in WWTP influent, groundwater (at a limited number of locations), stormwater/catch basins

Analyses Conducted to Date and Conclusions

Mass balance assessment of synoptic survey data

- Shows significant loading of groundwater PCBs at one location between Barker Rd. and Trent Ave.

Comparison of assessed loading sources

- MS4 stormwater and sum of wastewater treatment plants are important contributors on an annual basis
- Other than City of Spokane, most stormwater goes to groundwater (dry wells, swales)

Bioconcentration assessment

- Fish tissue levels are much higher than predicted using a bioconcentration factor

Key Data Gaps

1. What is the origin of PCBs sources delivered to the River? Needed to develop appropriate controls.
   - Significant groundwater source (Kaiser vs. upgradient); wastewater influent, and stormwater
2. What is the significance of non-monitored processes?
   - Stormwater discharged to dry wells
   - Fate of locally volatilized PCBs
3. What is the cause of existing fish tissue levels?
   - Importance of sediment versus water column as a source of fish tissue contamination
   - Do different sources contribute differently to sediment PCB, and therefore fish tissue levels?

Candidate Analyses

- Pattern analysis to better understand nature of significant ground water loading
- Pattern analysis to better understand sources and pathways to the water column
- Confirmation that conclusions of mass balance assessment conducted on total PCBs still hold when data are analyzed on a congener or homologue-specific basis
- Application of food web model (either existing or updated) to determine whether fish getting are PCBs from the water column or sediments.
- Water quality model to determine if different sources preferentially contribute to sediment PCB concentrations
- Pattern analysis of bed sediment and fish tissue
- Others?