**PCB Data Analysis Approaches for SRRTTF and related Data Sets**

*(Notes from 3/22/2016 Session with Dave Dilks and Dr. Lisa Rodenberg)*

General Concept to compare patterns of either Arochlors or specific congeners in different media to help identify sources and pathways.

Compare Arochlor/homolog and/or congener patterns in:

1. River Water
2. Wastewater influent and stormwater inflow and groundwater inflow (lump these sources together in analysis).
3. Wastewater effluent
4. Fish

Consider these subsets as part of the analysis:

1. Stormwater and groundwater versus river water column
2. Point source effluent vs. river water column
3. Point source influent to track back – source ID
4. Point source influent, effluent and river water column patterns
5. WET WEATHER (August 2014 sampling – look at congeners and look for wet weather signal, Look at Arochlor patterns from Latah Creek (are there Ag, Pesticide signals))

Additional Notes

* Purpose – Source identification
* Look at wastewater influent for source tracking – use of highly processed wastewater (in effluent) may mask actual arochlor sources or non-arochlor sources.
* Request that data be provided in an Access Database if possible
* Congener pattern analysis can be simple (compare arochlors and/or homologs) or complex (PMF). May use Positive Matrix Factorization (PMF) or more simplified, preliminary pattern analysis approach
* Blank correction will need to be relaxed for fingerprinting
* Compare Reach by Reach or all together? – We did not reach conclusion on this. May be dictated by needed sample size for the analysis.

**FISH QUESTIONS**

Where are fish getting exposed – sediment or water column. If sediment, what are the primary sources.

Two approaches:

1. Model Bioaccumulation (Dave Dilks to talk to Will Hobbs regarding river biology vs. sediment as a source in this model).
   1. run bioaccumulation model with old fish data
   2. rerun bioaccumulation model with new fish data
2. Fish vs. water column Pattern Analysis (congener patterns may change in fish). Is there a relationship between congeners in fish and water column – do a preliminary pattern analysis. Also consider looking at congener patterns in fish food supply

Notes

* Note congener patterns may change in fish, less change in river biota, so sediment concentrations are likely more related to invertebrates than fish

**Next Steps**

TTWG to meet and put detail around analysis request, provide to consultant

Consultant to provide Scope of Work. L.R can cost it two ways, one with her doing the work, and one where the contract funds a graduate student for a year. ACE to discuss contract preferences. Preliminary estimate of 15K to be refined with scope of work.