SRRTTF PMF Project Phase I – Blank Influence Analysis
Workgroup Conference Call – October 4, 2018 10 am

Overview

The overall goal of this project is to conduct a PMF analysis of PCB data associated with the Spokane River. As we know water column samples for the Spokane River have very low PCB concentrations and are often within the same range as laboratory method blanks. There are various ways to correct low level PCB data to try and account for the potential introduction of PCB's during sampling and analysis. The choice of a blank correction method can have a significant impact on the corrected results. Phase I of this project is to do a PMF analysis on a set of environmental samples using multiple blank correction methods to determine if a blank correction method with the least bias can be identified.

The scope of work includes consultation with the SRRTTF on the choice of blank correction methods. There are many permutations of correction methods, types of blanks, and sample groupings. Below are a set of options to consider:

Censoring at 3x, 5x, 10x

Values to censor by:

- Batch specific method blank
- Batch specific travel/trip blank
- Batch specific max on a per congener basis of method blank and trip blank
- Average of all method blanks in associated study (studies are 2014 synoptic, 2015 synoptic, 2016 monthly)
- Average of all travel/trip blanks in associated study
- Average of all blanks in associated study

Subtraction:

Values to subtract from result:

- Batch specific method blank
- Sampling day/group specific travel/trip blank
- Max on a per congener basis of batch specific method blank and sampling day/group travel/trip blank
- Average of all method blanks in associated study (studies are 2014 synoptic, 2015 synoptic, 2016 monthly)
- Average of all travel/trip blanks in associated study
- Average of all blanks in associated study

There are some issues with the data sets that don't allow a clean implementation of all options:

1. Three batches have 3 method blanks rather than one.
2. It is not clear if there is a difference between the trip blanks and field blanks. Also, some of the trip blanks were never in the field, just bottle blanks in the lab.
3. Some trip/field blanks were not run in the same batch as the samples they are associated with (same sample day).
4. 11 samples collected on 3/24/2016 and 12/13/2016 do not have any trip/field blank associated with them. The remaining samples have either a trip or field blank, or both.

Questions for Discussion

1. Use all identified correction methods? Are there others?
2. How should the anomalies be handled?
3. Samples included in Phase I are river and effluent samples. Should the effluent samples be excluded? Should only the higher effluent samples be excluded?
4. How should non-detects be treated?