Using Biofilms to Identify Sources of PCBs to the Spokane River

2019 Preliminary Results

Presentation to SRRTTF

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Acknowledgements

• SRRTTF
• SGS AXYS
• Ecology Staff
What are Biofilms?

- Complex, diverse assemblages of algae, microbes, fine sediments
- Attached to each other and surfaces via secretion of mucilage
- Base of aquatic food webs
- Can act as natural passive samplers
Methods

• **19** Biofilm sites in 2018

• **33** Biofilm sites in 2019 -- *Most of the 2018 sites with more focused efforts on suspected hot spots.*

• Composited scrapings of slime from cobble-sized rocks into certified clean jars.

• SGS AXYS Laboratory

• EPA Method 1668C

• Inclusion of NJ-qualified results and 3x MB censoring

• QAPP and QAPP Addendum: [https://fortress.wa.gov/ecy/publications/SummaryPages/1903103.html](https://fortress.wa.gov/ecy/publications/SummaryPages/1903103.html)
Sampling Locations 2018 & 2019
Total PCBs in Biofilms 2018 and 2019*

*2018 data Final; 2019 data Provisional
Total PCBs in Biofilms in the “Mission Reach”
Upriver Station Comparisons

- **Total PCBs pg/g (pptr)**

- **Deca**
- **Nona**
- **Octa**
- **Hepta**
- **Hexa**
- **Penta**
- **Tetra**
- **Tri**
- **Di**
- **Mono**

- **2018**
- **2019**
Right & Left Bank Comparisons in the “GE Reach”
Is the fill the source?
Brick Vs. Rock at SR3A

Total PCBs pg/g (pptm)

Deca, Nona, Octa, Hepta, Hexa, Penta, Tetra, Tri, Di, Mono


650,000 / 150,000

2018, 2019
Next Steps:

- Data validation complete by June 2020
- Provide final data to Dr. Lisa Rodenburg, Limnotech and Amy Sumner (SRRTTF database)
- Data complete in EIM by fall of 2020
- Draft report of combined 2018 & 2019 data in fall of 2020
Questions?