

Mike,

Thanks for your comments on our concerns with the national campaign proposal. We agree that having a dialog on issues can result in positive outcomes and look forward to working with you on reducing PCB contamination of the Spokane River.

Your comments helped clarify several of the questions we had with respect to the proposal. However, they did not address the fundamental deficiencies embedded in it. In addition to the issues identified in our initial letter, we have the following additional comments and observations:

- In order to be considered a leader in the issue of iPCBs, a more robust and complete understanding of the sources of them needs to be well established. Currently, there is a limited understanding of the sources of IPCBs and the dataset of testing to support that understanding is inadequate and highly questionable.

Sound scientific principal requires that any conclusion be drawn from multiple sampling and testing that is reproducible. So far, none of these criteria have been met as evidenced by the examples we identified in our initial letter regarding the proposal. Simply agreeing to this concept and acknowledging the limitations with the data is not sufficient justification to allow the project to move forward.

- Having a workshop on the topic is an excellent beginning but should not be considered the end point. The workshop provided an excellent venue to allow for continued education on the topic and it identified further avenues for research. These further avenues need to be explored before definitive conclusions can be reached.
- One significant aspect of the testing data set is the reliance upon EPA's 1668 test method. The method, while very powerful, is fraught with uncertainty regarding the interpretation of results due to background contamination. This is the primary reason why EPA does not allow the test to be used for regulatory or enforcement purposes. It is an excellent test for education and investigation. Therefore, its results cannot be used for legal purposes including lobbying EPA to revise a regulatory limit.
- We agree that it is clearly understood is that there are a large number of iPCB sources to the Spokane River and only a few of them are known or recognized. In addition, the magnitude of the contribution for each of these sources also has not been quantified. Therefore, we continue to believe that making broad assumptions that the sources of possible contamination are well understood is premature as it implies that exhaustive research has been conducted and clear conclusions can be drawn.

There seems to be an assumption that PCB-11 and other iPCBs that might be present in pigments is being shed solely from ink and coatings. However, there are no studies, that we are aware of, that provides a basis for this assumption. In addition, it does not appear that any studies on the behavior and fate of iPCBs in inks and coatings has been conducted. If you are aware of any such studies, we would welcome the opportunity to review.

Based our review of current studies, the key point to be understood is that the behavior and fate of this chemical family has not been studied and until such time additional information is

either identified or provided, making definitive statements regarding its ultimate fate are premature. In essence, speculation even by those who are studying PCBs, is not fact, but only an educated guess.

In looking at EPA's work on consumer products (Xiaoyu Liu, US EPA Office of Research and Development, 2019), they did use Method 1668 as the basis for the analysis. Here is some information from an EPA web page found at https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NRMRL&dirEntryId=346285

Duplicate products were extracted and analyzed for 209 PBC congeners using modified EPA Method 1668C. Sonication and soxhlet extraction methods were compared for several products as well. Our preliminary results show that 4 out of 14 products contained PCB-11 only, in the range of 41 to 168 ng/g and a fifth product had PCB-95, PCB-121, PCB-85, PCB-118, PCB-149, PCB-153, and PCB-138, in the range of 64 to 137 ng/g. More product testing is needed to identify and quantify inadvertent PCBs in consumer products to provide the basis for further study of their migration pathways and potential routes of human exposure.

As was presented at the October 2019 workshop there are numerous sources of PCB-11 besides certain pigments used in inks and coatings. I have attached the article that appeared in the Ink World Magazine *PCB-11 And Its Presence In The Environment - Covering the Printing Inks, Coatings and Allied Industries* at <https://tinyurl.com/y9tqzu44> that presents a more detailed description of the other sources of PCB-11.

In addition, there is research from 1996 entitled *Complete PCB Congener Distributions for 17 Aroclor Mixtures Determined by 3 HRGC Systems Optimized for Comprehensive, Quantitative, Congener-Specific Analysis* <https://hwbdocuments.env.nm.gov/Los%20Alamos%20National%20Labs/General/32162.pdf> that indicates that PCB-11 is present in Aroclor 121 is present in a concentration of 0.16 percent or 1,600 ppm or 1,600,000,000,000 ppq.

Recently, we discovered additional research that indicates that automobile and truck tires could also be source of PCBs. This paper from 2011 entitled *Artificial-turf playing fields: Contents of metals, PAHs, PCBs, PCDDs and PCDFs, inhalation exposure to PAHs and related preliminary risk assessment* at <https://tinyurl.com/ybqyys3z> examined the presence of PCBs in sports stadium artificial turf that was made from recycled tires.

It is also worth noting that PCB-11 is found upstream of IEP's plant, so this would indicate there are other sources of PCB-11 into the Spokane River than IEP. This lends credence that the source of PCB-11 is not just inks and coatings.

- To date, there is no clear understanding regarding the applicability, achievability, and practical implications of the 0.1 ppm (100,000,000 ppq) limit that is being used by HP and Apple. Before it can be considered as part of a nationwide campaign, it needs to be understood in its entirety. The other and perhaps even more important question that needs to be answered is its impact on the ability for IEP to meet its discharge limits.

One question that remains unanswered regarding IEP's situation is the background concentration of PCBs in its effluent, absent the contributions from the paper being recycled. Since the entire watershed is contaminated with PCBs and PCB-11 seems to be the predominant congener, the contribution of it from other sources such as the amount in the water used to recycle paper, drinking water, tires, caulking, etc. needs to be quantified. While the current regulations do not allow for IEP to take the other sources into account, this should be a primary focus area of the task force as PCB is essentially ubiquitous and no discharger should be held accountable for contamination beyond their control.

There also seems to be a misunderstanding that all pigments that could contain iPCBs have them present in a concentration of 50 ppm. As explained in our response to the proposal, this is not accurate and would be a violation of the regulation. Therefore, any estimated potential release of iPCBs from pigments based on this assumption overstates their possible contribution to the Spokane River and is misleading.

We look forward to having continued discussions on the proposal and how it can be structured to allow for outcomes that can be supported. To be truly effective, the project needs to be based on fact and the risks associated with the threat to human health and the environment from iPCBs. Unfortunately, the project proposal, as currently presented, needs a more definitive structure before it moves forward.

Sincerely,
Gary Jones and David Darling