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Via E-mail (swon461@ecy.wa.gov)

Ms. Siana Wong Environmental Assessment Program Washington Department of Ecology P.O. Box 47600 Olympia, WA 98504-7600

Re: Comments on Draft Evaluation of Hatcheries as a Source of PCBs to the Spokane River

Dear Ms. Wong:

Thank you for the opportunity to provide comments on the draft Evaluation of Fish Hatcheries as Sources of PCBs to the Spokane River dated March 2018. Inland Empire Paper Company (IEP) is a member of the Spokane River Regional Toxics Task Force (SRRTTF) and has a substantial interest in the water quality of the Spokane River. This study is a welcome additional step in identifying the contribution to PCB loads from the two fish hatcheries that provide rainbow trout stocks to the river.

Background SRRTTF Comprehensive Plan

The SRRTTF is attempting to identify all potential sources of PCBs to the Spokane River watershed. The SRRTTF approved a Comprehensive Plan (Plan) for PCBs in the Spokane River in November 2016. The Plan includes data drawn from studies by Ecology and SRRTTF monitoring to estimate the mass of PCBs currently present in various source areas throughout the watershed, as well as the estimated loading rates of PCBs to the Spokane River from various delivery mechanisms. The primary delivery mechanisms were determined to be cumulative loadings across all wastewater treatment plants, contaminated groundwater and stormwater/CSO overflows.

Loading rates were estimated and presented as ranges based on the assessed data (Table 5 in the Plan). Fish hatcheries were identified as a probable source of PCBs from stocking of PCB contaminated fish and the discharge of effluent.

It is important to recognize that the Plan does not provide a quantitative comparative assessment among the various sources. Percentage of load contributions were not estimated as

the SRRTTF concluded that the current data set ranges and data collection and assessment concerns do not support such load determinations.

Comments on Study QAPP

The Fish Hatcheries study followed the QAPP approved in 2016 for the study and collected and analyzed PCB levels in hatchery effluent, sediment and fish tissues. These results provide a snapshot in time of PCB loadings. At best, the results provide a semi-quantitative assessment of these estimated loadings. The assessment is based on a very small sample set and assumptions that effluent and fish tissue samples were representative of average concentrations.

Study Conclusion Concerns

The conclusions and comparisons to other studies as described in the discussion section of the draft report go beyond the ability of the data limitations and assumptions to support them. For example, comparisons to 2003-2006 data presented in the Serdar 2006 study should not be made directly due to differences in study and collection methods. Other factors differ and affect results such as blank corrections and tissue vs. fillet sampling with lipid percentage complications.

The potential contribution of PCBs from recent data collected on Griffith Springs should not be used to support conclusions regarding the relative contribution of the source water to fish feed and effluent. The unpublished Spokane County study should not be relied upon to support quantitative conclusions in this study regarding the relative contribution of other possible sources. The Comprehensive Plan does not quantify "other sources" to the Spokane River as percentages that can be compared quantitatively to each other and therefore should not be used to compare estimated hatchery sources. The Comprehensive Plan review of data and relative source contributions avoids this misrepresentation by not calculating estimated percentages for known sources. Sources are assigned loading ranges due to many factors including testing method limitations, age of data comparisons and collecting schedules and flows.

The presumptive characterization of hatchery study results should not be used to support statements such as "Still, PCB loads from the Spokane River hatchery and Troutlodge Hatchery raised fish represented only about 3% of the total load from hatchery operations." (page 26) These are estimated PCB loads from a small sample size and should not be presented as representative of total loads. "Semi-quantitative" results adapted from ranges do not support comparative numeric percentages. The draft also concludes that since many of the fish are caught and removed from the system, "the contribution of hatchery trout to PCB loads in Lake Spokane are shown to be small relative to other sources." The relative size of PCB source contributions cannot be determined with any certainty. Such a comparison would require that contributions identified in the Comprehensive Plan be much more precise than supported by the data.

The draft goes on to compare these estimated loads from hatchery fish to the larger contributions estimated from the drainage slough effluent (7.8% of the total estimated 97 mg/day

PCB load in the Little Spokane River.) These specific percentages are not supportable and are misleading. The results are limited and do not support the conclusion in the draft that "The overall results in this study suggest that hatchery operations represent a relatively small source of PCBs to the Spokane River system." (page 27)

Fish Tissue Concerns

The report should more specifically describe the levels of PCBs in pre-release fish tissue. These values represent 100% of the PCB load in each sampled fish prior to release and 100% of these loads to each fish come from fish feed or exposure to other sources of PCBs in the hatcheries themselves. There are no other identified sources other than these that contribute to the PCB levels in fish tissue, so these ranges should be emphasized.

It should also be emphasized that post release trout appear to rapidly (within 4 months) accumulate additional PCBs from post release sources such as their respective receiving waters, sediments and food web contributions. Further studies should try to address why these results in post release fish are so different from earlier Ecology studies cited here that appeared to demonstrate that PCBs in post release fish declined supposedly due to dilution in the lake. This conflict illustrates the importance of not relying on small data sets to make assumptions regarding complex fish tissue PCBs.

Washington Department of Health (DOH) PCB fish advisories for trout taken from Lake Spokane and the Spokane River include warnings regarding consumption of hatchery trout and should be explained somewhere in the discussion section. This study does not advise that the DOH fish advisory for trout consumption should be revised, since the ranges found both in the pre-release and post-release hatchery fish exceed safe levels for consumption

The study should address the tissue concentrations in hatchery fish based on the applicable federal water quality criteria and the Tissue Equivalent Concentrations (TEC) that Ecology has proposed to use in the revised Water Quality Policy 1-11. The study discusses the Fish Tissue Equivalent Concentration (FTEC) that will no longer be used under Policy 1-11 based on the prior federal criterion for PCBs applicable in Washington. It is important to note that the ranges found both in the pre-release and post-release hatchery fish exceed the TEC proposed for the new Policy 1-11 for 303d listing of impaired waters for PCBs under WA State's proposed 303(d) listing policy.

The study should also address the tissue concentrations in hatchery fish at release relative to the tissue concentrations in hatchery fish after several months in Lake Spokane. The hatchery may or may not be a small source of PCBs to the Spokane River but appears to be significant source of PCBs in the tissue concentrations.

The study should assess the survival rate, predation, life cycle of hatchery fish in Lake Spokane. There is no discussion in the study as to how hatchery fish may contribute PCBs to sediments and bioaccumulation in other aquatic species.

Conclusions and recommendations appear to go beyond the scope of the study which was to evaluate the hatchery operations and trout as a source of PCBs. The report recommends policy actions that no further studies or control actions are needed, and that focus should be diverted to other sources: "Relative to estimated PCB loads in the Spokane River, the contribution of PCBs by hatchery operations is small. Continued tracking and identifying of alternative sources of PCBs to the Spokane River is recommended." (page 28) Contrary to these conclusions, Ecology should be actively assessing the need for further permit conditions and studies based on the results documented in this report. The report provides the first effluent monitoring data for the Spokane Hatchery with concentration ranges consistent with ranges from other point sources regulated under individual permits with monitoring requirements. If Ecology determines that the estimated relative loads to the Spokane River from the hatcheries are so small relative to other sources that controls are not needed, the basis for that decision should be provided and discussed relative to the other regulated sources to the River.

Additionally, the concentrations of PCBs found in pre-release hatchery fish tissue should not be trivialized since they exceed the proposed TEC for 303d listing of impaired waters for PCBs under Ecology's proposed update to Policy 1-11. This report should make recommendations for further study due to the limited data set, concerns of fish tissue concentrations that exceed the TEC and safe consumption concentrations, and the need for control actions to reduce these concentrations.

The impact of stocking PCB containing fish to the Spokane River watershed should also be assessed from a regulatory perspective. Although a portion of the PCB containing trout are eventually caught and "removed from the Spokane River system" the same correlation could be made for other sources which contribute to the contamination load of any fish caught and removed from the lake. The recent Lake Spokane carp removal study by Avista contains estimates of load removals relative to sources. The relationship of all sources to fish PCB levels is complex. This study is useful because it identifies fish feed and other hatchery sources as significant contributors to PCB levels in pre-release fish and the food web. The results could be used by Ecology in conjunction with ongoing fish feed PCB assessments to assess the need for feed controls.

Notwithstanding the policy recommendations in the draft report, the SRRTTF will in future amendments to the 2016 Comprehensive Plan include the results of this study to aid in assessing potential control measures.

I appreciate your consideration of these comments and invite Ecology staff to contact me for further information and clarification.

Sincerely,

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Douglas P. Krapas Environmental Manager