SPOKANE RIVER
REGIONAL TOXICS TASK FORCE

COLLABORATION INNOVATION PROGRESS

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RE: COMMENTS ON UPLAND FIN-FISH HATCHING AND REARING GENERAL PERMIT AND ASSOCIATED FACT SHEET

The following comments on the draft Upland Fin-fish Hatching and Rearing General NPDES Permit and associated Fact Sheet issued by the Washington Department of Ecology are being submitted on behalf of the Spokane River Regional Toxics Task Force (Task Force).

The Task Force is an organization of diverse stakeholders working to address toxics in the Spokane River. Ecology, the U.S. EPA, NPDES permittees, the Department of Health, and local conservation groups have formed the Task Force to develop an efficient and effective plan to reduce PCBs and other toxics in the Spokane River system.

The purpose of the Task Force is to "work collaboratively to characterize the sources of toxics in the Spokane River and identify and implement appropriate actions needed to made measurable progress towards meeting applicable water quality standards for the State of Washington, State of Idaho, and The Spokane Tribe of Indians and in the interests of public and environmental health." This is a complex and multifaceted issue with no simple solution, but the Task Force is dedicated to a collaborative process that will result in a reduction of toxics to the Spokane River.

The Upland Fin-fish Hatching and Rearing General Permit conditions are very relevant to the overall objectives of the Task Force. Thank you for the opportunity to provide comment. Please feel free to contact members of our organization if you have questions or require clarification.

Comments

1. **The permit and associated fact sheet should recognize that fish hatcheries are potential sources of PCBs to receiving waters and sediments, and that the hatchery fish themselves can be a source of PCBs in waters of the state.**

The proposed permit requires permittees that discharge to PCB listed waterbodies evaluate possible sources of Polychlorinated Biphenyls (PCBs) in the hatchery. We support this requirement, but request that you also acknowledge the known potential for hatchery effluent and hatchery fish to be a significant source of PCBs to receiving waters and sediments.

Rationale

Numerous studies[1] support the assertion that PCBs are found in measurable quantities in hatchery fish and paint and caulk used in the construction and maintenance of hatcheries. The levels at which PCBs have been found in hatchery fish tissue and the potential levels in hatchery effluent have the ability to impair the state's waterbodies. Currently, neither the draft permit nor the associated fact sheet acknowledge the potential impact on public health to state's waterbodies from the release of hatchery effluent and fish with fish tissue levels that exceed current extrapolated state human health water quality criteria (HHWQC) of 170 picograms per liter. These fish can be exposed to levels of PCBs in the hatchery that result in fish tissue levels above the WDOH advisory levels for fish consumption.

After testing fish feed and hatchery raised rainbow trout, Ecology (2006) concludes, "*One of the implications of these results, particularly from the practical standpoint of a regulatory agency, is that waterbodies may be included on the 303(d) list due to contamination stemming from hatcheries. Taken further, 303(d) listed waters often require a TMDL to assess contaminant sources. Sources considered for TMDLs are typically point sources (e.g., piped effluent) and nonpoint sources (e.g., agricultural and urban runoff, atmospheric deposition) which normally occur in the vicinity of the impaired waterbody. However, no known TMDLs in Washington have included hatchery fish as a contaminant source. For PCBs, and to a lesser extent dieldrin, hatchery fish may contribute to impairment and, in some cases, may cause the bulk of impairment. Therefore, TMDL investigators may want to consider including hatchery fish as contaminant sources among other sources*." [2]

Specific Comments

Fact Sheet

a) Page 21 – **References.** Fact sheet does not reference some of the most recent science from Ecology presented in a report entitled, *Persistent Organic Pollutants in Feed and Rainbow Trout from Selected Trout Hatcheries* (Ecology 2006). Please consider this recent reference in your permitting process.
b) Page 8 – **Wastewater Characterization** - There is no mention of PCBs under "Pollutants of Concern", there is only mention of TSS and SS and disease control chemicals (also referred to as toxics).
c) Page 10 – **Proposed Permit Limits and Conditions** - There is no mention of PCBs in the Section.

[1] Davis and Gannon. 2012., Debruyn, et al. 2004., Johnson, LL et. al. 2009., Maule, A.G., A.L. Gannam, and J.W. Davis. 2007., Wa. Department of Ecology (Ecology). 2006., Montana DEQ (2005).
[2] Please note that this reference (Ecology 2006) is not included in the Ecology generated fact sheet for the permit.

d) Page 15 –**Toxic Pollutants**: The fact sheet mentions only disease control chemicals and states they pose no reasonable potential to violate federal or state water quality standards. This is misleading in that it may be interpreted that Ecology does not feel any toxics discharging from state hatcheries have the potential to violate state water quality standards. Please (1) clarify the second paragraph on page 15, and (2) specifically acknowledge that PCBs are potential toxic pollutants that could be released from the hatchery and result in violation of state water quality standards.

e) Page 16 – **Whole Effluent Toxicity** – There is no mention of PCBs in this section. There is a statement that "Ecology determined that toxic effects caused by unidentified pollutants in the effluent are unlikely." It is unclear whether this is referring to WET test measures of acute toxicity or ALL potential toxic effects from chemicals such as PCBs in effluent and in fish tissue of hatchery fish. It is not accurate if referring to all toxic compounds. Please clarify the statement.

f) Page 19 – **Polychlorinated Biphenyls Evaluation** – Please acknowledge the data that indicate that PCBs are a potential contaminant that can be present in hatchery effluent and in fish tissue and carcasses.

g) Page 20 – Please specifically address PCBs in your description under Sections titled: **Solid Waste Management Plan** (specifically the section on carcass placement) and **Pollution Prevention Plan**.

General Permit

h) Page 26 – S6.C, 2nd paragraph. 'PCP listed waters' – Should this read 'PCB listed waters'?

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2. The permit should require that hatcheries monitor effluent for all constituents with a reasonable potential to contribute to a water quality impairment in segments of a receiving waterbody with a 303(d) listing, including PCBs in cases where a hatchery discharges to a PCB listed waterbody.

Rationale

The Task Force requests additional language in the permit that requires monitoring for PCBs and all other 303(d) listed constituents in ALL hatchery effluent that discharges into a 303(d) listed waterbody. This requirement should extend to any constituents that could potentially contribute to an existing 303(d) listing (eg., Total Phosphorus on a waterway listed for dissolved oxygen).

The Washington State Department of Ecology § 401 Certification for the Leavenworth National Fish Hatchery (Ecology, 2010) requires sampling within the hatchery for PCBs. The permit states that the permittee is prohibited to discharge "Solids, including sludge and grit that accumulate in raceways or ponds, in off-line or full-flow settling basins, or in other components of the production facility in excess of the applicable limits in this permit" and "Toxic substances, including drugs, pesticides, or other chemicals, in toxic amounts that have the potential to impair designated uses or violate water quality standards" (USEPA, 2006; Ecology, 2010). Furthermore, the facility must achieve compliance with the final phosphorus limitations.

In compliance with the Montana Water Quality Act and the Clean Water Act, applicants issued an authorization letter for the Montana Concentrated Aquatic Animal Production General Permit are permitted to discharge wastewater effluent from fish farms and hatcheries to state waters in accordance with effluent limitations, monitoring requirements and other conditions. The permit states specific effluent limitations for PCBs; "There shall be no discharge of polychlorinated biphenyls (PCBs) in excess of 0.00065 µg/L in any sample" (Montana DEQ, 2005).

Ecology has the authority under the NPDES permit program to require that a permittee sample and test its effluent for suspected pollutants. Ecology routinely includes such requirements for PCBs and other toxics in both individual and general permits. Monitoring to characterize pollutants in an effluent can be the most effective method of identification and assists Ecology in determining how to include conditions in a permit to reduce or eliminate them.

Section S6.C (page 26 of 49 of the current draft) requires existing facilities discharging to waterbodies on the Clean Water Act 303(d) list for PCBs to implement "procedures to eliminate, to the maximum extent possible, the release of PCBs from any known sources in the facility; including paint, caulk, or feed, that come in contact with water". However, the permit language does not require monitoring of hatchery effluent or fish tissue for PCBs. Without monitoring there is no way to determine whether the PCB reduction plans and the "procedures to eliminate" PCBs are effective.

In a recent document filed with the federal court, EPA Region 10 recommended that Ecology include PCB monitoring requirements for hatcheries located in the Spokane River study area including the Spokane Hatchery covered by the state's general permit (USEPA, 2015.) As mentioned above, the current draft permit does not include any effluent monitoring requirements for the Spokane hatchery or for other hatcheries that discharge to PCB (or other 303(d) listed) impaired waterbodies as identified in Appendix E to the draft fact sheet.

Specific Comments

Fact Sheet

a) Page 14 – **Evaluation of Surface Water Quality-Based Effluent Limits for Numeric Criteria** – The fact sheet requires temperature monitoring for hatcheries discharging to streams with 303(d) listed segments. Although the title of the subsection is "Temperature and Dissolved Oxygen", neither the fact sheet (nor the permit) requires monitoring for DO or any constituents that could impact DO for hatcheries located on DO listed waterbodies. Please add this requirement to the permit and include Total Phosphorus which is known to cause DO-related impairments.
b) Page 15 – **Discharges to 303(d) Listed Impaired Water Bodies** – Appendix E cites five state hatcheries that are located on/or discharge to waterbodies that are 303(d) listed for PCBs. However, this section explicitly mentions only fine sediment and temperature compliance.

Please acknowledge the potential for hatcheries to discharge other 303(d) listed constituents including PCBs, DO, Total Phosphorus and other nutrients impacting DO levels.

General Permit

a) Page 6 – **Condition S1.A.1c (i) – (iii)** – Ecology may require permit coverage for any facility on a case by case basis in order to protect waters of the state. It is unclear how Ecology will determine whether existing hatcheries are posing a risk to water quality when there is no requirement to monitor for toxics. We request the permit require routine PCB monitoring of effluent discharge and hatchery fish tissue for all hatcheries located on a waterbody with a 303(d) listing for PCB. Similarly, we request that the permit require routine monitoring of effluent for other 303(d) listed chemicals for hatcheries discharging to a 303(d) listed waterbody. For those hatcheries discharging to a waterbody listed for dissolved oxygen, please also require monitoring for constituents that have a reasonable potential to affect dissolved oxygen levels such as Total Phosphorus.

b) We refer to Appendix E of the fact sheet for a list of hatcheries and those that discharge to 303(d) listed waterbodies.

c) Add a condition for the general permit (versus permit requiring special conditions or individual permit) – "must not violate the state water quality and ground water standards (Chapters 173-200 and 201A) "

d) Page 6 – **Eligibility** - **Section S1.B.1** It does not appear there is a monitoring requirement for 303(d) listed chemicals in the permit, nor is there a clear requirement to monitor for PCBs (in effluent or fish) for hatcheries that discharge to PCB 303(d) listed waterbodies. Please include a condition in the permit under Section S1.B that requires monitoring for 303(d) listed chemicals for hatcheries discharging to a 303(d) listed waterbody.

e) Page 7 – **Section S1.C.1 (ii) – Explicitly require routine monitoring indicating concentrations of the 303(d) listed parameters as documentation**.

f) Page 11 – **Section S3 – Discharge Limits** – Limits appear to be defined for settleable solids and total suspended solids and total residual chlorine. Please add language that recognizes limits for any 303(d) listed parameter, where applicable.

g) Page 13 – **Section S3.H – Discharges to Impaired Waters** – This section requires permittees that discharge to an impaired water body to evaluate their discharge for the listed parameters. There is a reference to Table 1 for sampling requirements and limits, but those requirements and effluent limits are provided only for Temperature. Please list all other 303(d) listed parameters indicated in the fact sheet Appendix E identifying existing discharges to impaired waters to Table 1. These include: Temperature, PCBs, Dissolved Oxygen, and Turbidity. For those hatcheries discharging to a waterbody listed for dissolved oxygen, please also require monitoring for constituents that have a reasonable potential to affect dissolved oxygen levels such as Total Phosphorus.

h) Page 26 – **Section S6.C – PCB Reduction Activities and BMPs** – As discussed in the rationale above, this section of the permit requires existing facilities discharging to waterbodies on the Clean Water Act 303(d) list for PCBs to implement "procedures to eliminate, to the maximum extent possible, the release of PCBs from any known sources in the facility; including paint,

caulk, or feed, that come in contact with water". However, the permit language does not require monitoring of hatchery effluent or fish tissue for PCBs. Without monitoring there is no way to determine whether the PCB reduction plans and the "procedures to eliminate" PCBs are effective. **Please add language that requires annual monitoring of hatchery discharge for PCBs for all facilities listed on the 303(d) list for PCBs (as indicated in Appendix E of the fact sheet).** Monitoring PCB concentrations in effluent can be used as an indicator to determine whether additional PCB reduction activities should be undertaken. We recommend that the following sampling and analytical methods be specified in the permit: Total PCBs (picograms (pg)/L), 4 times per year, 24-hour Composite, and use EPA method 1668 with a reporting limit or quantitation limit of 10 pg/L per congener.

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3. **The permit should require sampling of fish food and require implementation of BMPs (Best Management Practices), in accordance with sampling results, to reduce sources of PCBs in fish meal for all fish life stages.**

Rationale

Davis and Gannon (2012) report that over the past several decades it has become increasingly evident that 'feeds used in aquaculture worldwide contain significant concentrations of contaminants, including PCBs (Mac et al. 1979; Hilton et al. 1983; Hites et al. 2004; Maule et al. 2007)'. Johnson et al. (2009) found measureable concentrations of DDT, PCBs and PAHs in feed from all eight Columbia River hatcheries they tested.

Furthermore, Davis and Gannon (2012) have recommended that, based on their study of fish feed in three Pacific Region National Fish Hatcheries (NFH), "***The USFWS should work with the contracted manufacturers of the fish feed supplied to the Pacific Region NFHs to reduce or eliminate contaminant sources in fish feed. By selecting the least contaminated feeds, NFHs will also reduce the amount of contaminants released into the aquatic environment from sources like excess food, effluent and fish carcasses***." The most prevalent chemicals detected in feed from these hatcheries were PCB congeners and DDT metabolites, which were detected in **all** tissues from some fish in each hatchery. Maule et al. (2007) also found PCBs in all 46 samples of fish feed sampled in their study.

Based on the results of an Ecology (2006) study on feed and rainbow trout in Washington State, Ecology (2006) recommends *"**that fish feed and trout fillet tissue sampling be expanded to include all 26 WDFW hatcheries raising catchable trout. . . . Water in hatcheries should also be sampled where contaminant levels in fish are exceptionally high**. . . A review of the current 303(d) list should be conducted to identify cases where tissue data used to assess impairment may have come from WDFW catchable trout plants. TMDL project managers should consider the implications of hatchery fish as a possible source of contaminants to waterbodies being assessed.*

Recent studies have demonstrated that fish feeds contain significant concentrations of contaminants, many of which can bioaccumulate and bioconcentrate in fish (Maule et al. 2007). Concentration of

PCB's in fish meal fed to hatchery fish is limited to 2 ppm as regulated by the FDA under Title 21 CFR 509.30 Code of Federal Regulations. The allowable concentration in fish meal (2 ppm) is approximately 11,764,000 times higher than the Washington Water Quality Standard for PCBs (170 ppq).

The Task Force recommends a fish meal testing program that specifies how and where testing will be done on fish meal to ensure concentration requirements are met. This testing program should recognize that studies have shown that the types and concentrations of chemicals in feeds can vary substantially from lot to lot (Johnson et. al. 2009) because contaminants can enter fish feeds from a variety of sources, but generally reflect global contaminant inputs into oceans and eventually into marine food webs, which are the main sources of fish oil and fish meal used in fish feed (Horst et al. 1998). The U.S. Fish and Wildlife Service currently performs chemical testing on feeds used in national fish hatcheries (e.g., Maule et al. 2007), and the procedure should be encouraged for hatcheries managed by other agencies (Johnson et. al. 2009). The testing programs that have been implemented to date appear to have led to improvements in feed quality (Maule et al. 2007), and continued efforts will help to minimize any risks to fish, wildlife, and human health (Johnson et. al. 2009).

Furthermore, Section S6.C.2 contains a requirement that facilities listed on the 303(d) list for PCBs must develop and implement a plan to reduce PCBs in the facility discharge from fish feeding activities and that the plan should contain purchasing procedures that give preference for fish food that contains the lowest amount of PCBs that is "economically and practically feasible". The draft Fact Sheet states that "EPA and Ecology are not aware of a feasible way to reduce PCBs in fish feed." These two statements appear inconsistent.

<u>Specific Comment – General Permit</u>

a) Page 27 - **Section S6.C.2 – Fish Food** – Add language to Section 2a to clarify "economically and practically feasible" given the inconsistency noted above between the fact sheet and the draft general permit.
b) Specifically require a fish meal testing program that specifies how and where testing will be done on fish meal to ensure concentration requirements are met.

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4. **The permit requires a paint and caulk removal plan that allows a Toxic Substances Control Act (TSCA) exception for paints or caulk that are known to be less than 50 ppm. Please remove the reference to the TSCA allowance and the 50 ppm. Paints and/or caulk at the "allowable" TSCA level of 50 ppm have the potential to further impair 303(d) listed receiving waters.**

<u>Specific Comment – General Permit</u>

a) Page 26 – **Section S6.C.1** – Remove the last two paragraphs.

References

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