STATE OF WASHINGTON

DEPARTMENT OF HEALTH

DIVISION OF ENVIRONMENTAL PUBLIC HEALTH

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Heather Bartlett, Program Manager
Water Quality Program
Washington State Department of Ecology
300 Desmond Drive S.E.
Lacey, Washington 98503

Dear Ms. Bartlett:

I am writing on behalf of the Division of Environmental Public Health (EPH) in the Washington State Department of Health to provide comments to you on the Proposed Draft Fisheries Resource Management General Permit (permit) and the permit Fact Sheet. Thank you for this opportunity to provide your department with comments.

First, I would like to express our appreciation to you for addressing some of the concerns that the Office of Drinking Water expressed to you last fall. Thank you for making changes in the permit and the permit Fact Sheet related to monitoring protocol, public notification, and the provision of bottled water to impacted residents.

Our Division has some remaining concerns about the contents of the draft permit and permit Fact Sheet. Our primary concern is the ability of the permittee to use methods other than direct water sampling to determine that the water is safe to drink after treatment with rotenone. We feel that analytical testing is the best method to determine that the water is safe to drink. Direct water sampling aligns with the requirements of the federal Safe Drinking Water Act, which public water systems must comply with to ensure safe drinking water.

We understand that the monitoring options outlined in the permit are based on the Standard Operating Procedures (SOP) 16 in the rotenone SOP Manual; however, we believe that the picture is not as clear as it could be for the ability of rotenone to remain in the environment and for the accuracy of fish bioassays. Although the water concentration of rotenone during treatment of a water body varies depending on the treatment objective, the Environmental Protection Agency (EPA) assumes that the peak estimated water concentrations during treatment is 200 parts per billion (ppb). However, the Drinking Water Level of Concern (DWLOC) established by EPA is 40 ppb. EPA believes that under certain circumstances residues of rotenone in drinking water could exceed the DWLOC (40 ppb) for up to several weeks. This is the reason EPA requires testing before the water is declared safe to drink (EPA RED, 2007).

The EPA and the permit allow a fish bioassay to serve as this safety test. The logic is that fish are killed by rotenone at concentrations below 40 ppb so this should serve as a sensitive test for human safety. However, according to a 2008 report by EPA, acute toxicity results are variable within the same fish species (Risks for rotenone use to federally threatened California Red-Legged Frog, 2008). For example, of sixteen acute toxicity studies on rainbow trout deemed acceptable to EPA, the lethal concentrations that killed fifty percent of tested fish (LC50) for rotenone ranged from 0.84 to 52 ppb. Nine of these studies had LC50s ≥35 ppb (near the DWLOC). Unless you have data demonstrating that the fish bioassay is consistently protective under the conditions of Washington State lakes, we think it is prudent public health practice to test drinking water analytically before declaring that the water is safe to drink after a rotenone application.

We also recommend that you continue to evaluate emerging information about rotenone and Parkinson's Disease and update the health risk assessment supporting this permit, as necessary. The 2007 rotenone risk assessments done by EPA and contractors for the Washington State Department of Fish and Wildlife (EPA RED, 2007 and Risk Assessment for Piscicidal Formulations of Rotenone, 2007), acknowledged a growing body of research into rotenone's potential to contribute to Parkinson's Disease. Both concluded that there was little risk with modern piscicidal applications of rotenone. Since these assessments, new mouse studies have shown novel pathways for progression of damage from gut neurons to the brain neurons that may alter risk assessment assumptions about oral exposure to rotenone. In addition, a number of new studies have shown elevated risk of Parkinson's Disease in people who applied rotenone historically and suggest that rotenone exposure may interact with dietary and genetic factors in producing Parkinson's Disease (see references). While none of these new studies prove that rotenone contributes to Parkinson's Disease in people, they do support an attitude of caution when it comes to minimizing rotenone exposure.

In addition to our concerns expressed above, we recommend the following suggestions:

- Add a requirement that the sampling plan submitted under section 6 B-*Monitoring a Chain of Lakes* in the permit must specifically address each known drinking water intake in each body of water.
- Do not remove the definition of "permittee" from the Fact Sheet. Return it to the definitions of the Fact Sheet and use the language currently found in the definitions of the permit.

Again, thank you for this opportunity to provide comments on the Proposed Draft Fisheries Resource Management General Permit. Please contact Brad Burnham, brad.burnham@doh.wa.gov or (360) 236-3158, in the Office of Drinking Water if you have any questions.

Sincerely,

Maryanne Guichard
Assistant Secretary

References

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