



Frequently Asked Questions about **PBDEs and Dioxins/Furans in the Spokane River**

from Ecology's Water Quality Program

PBDEs

Q: What are PBDEs?

A: PBDEs (polybrominated diphenyl ethers) are chemical additives used in everyday household products to reduce death and injury from fires.

A growing body of research indicates that PBDEs are building up in people's bodies, in animals and in the environment. PBDEs have been measured in blood, fat and breast milk in people around the world. The exact way that people are exposed to PBDEs is not fully known, but recent research points to human exposure from air and dust, and from certain foods.

Q: Why should I be concerned about PBDEs?

A: PBDEs are showing up in the air, soil and sediment, and are building up in animals throughout the food chain. Studies have found them in human blood, fat and breast milk. In lab tests with rodents, some PBDEs have been linked to problems in brain development and thyroid hormones. Most of these problems stem from pre-natal exposure and exposure soon after birth. The health effects appear to be permanent.

Q: How did the PBDEs get into the river at Ninemile? Why are the concentrations so high?

A: We don't currently know the specific origin of PBDEs in the Spokane River, but identifying those sources is a high priority so that we can begin to control them. However, we do know that these chemicals "escape" the products they are added to, and make their way into the environment and humans.

Q: Is there a specific plan for PBDEs?

A: The Departments of Ecology and Health began studying PBDEs and developing an action plan in 2004. After a thorough review of the science, and consulting with a broad spectrum of stakeholders, Ecology and Health released their final PBDE action plan in January 2006.

Ecology and Health recommend in the plan that the Legislature ban deca, the most widely used PBDE, and the only one remaining in production, provided that safer, effective alternatives are identified. We also recommended an immediate ban on two forms of PBDEs known as penta and octa, which are already being phased out of production. None of the recommendations would impact fire safety.

Our fundamental position is that the only reasonable way to stop the buildup of PBDEs in our environment and our bodies is to prevent them from being used in products when safer alternatives are available. We strongly supported a bill last session which would have banned PBDEs in certain uses. That bill didn't pass, but our position remains the same, and we intend to support such legislation in the future.

In addition to bans on penta and octa, and deca, other Plan recommendations include:

- Restrict the state's purchase of products containing PBDEs, unless there are no feasible alternatives. Health and the state Department of Labor and Industries (L&I) should continue to seek opportunities to implement a two-phase workplace study in collaboration with the Center for Disease Control.
- Funding through the Washington State Legislature for Ecology and Health to continue to evaluate alternatives to deca and continue to monitor levels of other persistent toxins in the environment.

Several of the plan recommendations have been completed or are already underway. Ecology has begun a process to evaluate and determine appropriate disposal and recycling practices, including potential financing options, for products containing PBDEs. L&I provides public information on its Internet Web site on how to minimize PBDE exposures. DOH has created brochures and a website to educate the public on reducing exposure to PBDEs.

Q: What about the fact that it could come from anywhere in the air and be deposited here?

A: Based on a thorough review of the science and the possible alternatives, Ecology's action plan would prevent further buildup of these contaminants in the environment of our state.

Dioxins/Furans

Q: What are dioxin/furans? What do they come from? How did dioxins/furans get into the Spokane River?

A: Dioxins and furans are the abbreviated names for a family of toxic substances that all share a similar chemical structure. There are a variety of dioxin sources. Most dioxins and furans are not man-made or produced intentionally, but are created when other chemicals or products are made.

Some of the chemicals that produce dioxins/furans when created include herbicides and products in the pulp and paper industry. They also can be produced when other items are burned, such as municipal waste, sludge, medical waste, wood (both forest fires and yard waste), and cement kilns.

Nationwide, dioxins and furans have been found in the air, soil and food. Currently, we do not know the most important sources to the Spokane River.

Q: What is the Department of Ecology doing about toxic chemicals like PBDEs and dioxins/furans that are persistent and bioaccumulative? What's the strategy?

A: Our efforts on the Spokane River are consistent with the department's priority of reducing toxic threats, in particular persistent bio-accumulative toxic chemicals, which we consider "the worst of the worst." Highlights are:

- We have been and are continuing to eliminate historical sources.
- We are pursuing further reductions, e.g., cleaning up sediments and assessing the need for the further reduction of PCBs in effluent discharges.
- We are recognizing the importance of sediments as an ongoing source that has ecological implications.
- We are working to improve public awareness.
- We are bringing dischargers to the table to identify ways to make more improvements.

Earlier this year, as part of Ecology's "Persistent Bioaccumulative and Toxic Chemical (PBT) Initiative," Ecology established a new regulation that is designed to address further reductions of listed PBT chemicals. This rule establishes Ecology's process and procedures to address the subject of persistent bioaccumulative toxic substances and helps Ecology set its internal priorities.

The goal of the PBT Rule is to reduce and phase-out PBT uses, releases, and exposures in Washington.

Currently, Ecology is developing a multi-year schedule of which PBTs the agency will address next. PCBs are being considered for the next round of "chemical action plans."

For more information

Information on the Spokane River can be accessed through Ecology's Web site. The address is:
http://www.ecy.wa.gov/geographic/spokane/spokane_river_basin.htm.

More information on PBDEs can be found at: http://www.ecy.wa.gov/programs/eap/pbt/pbde/PBDE_faq.htm.

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