June 3, 2018

Kara Steward
Washington State Department of Ecology
Hazardous Waste and Toxics Reduction Program
Kara.steward@ecy.wa.gov

Re: PFAS Interim Chemical Action Plan (Publication 18-04-005)

Dear Ms. Steward,

Zero Waste Washington appreciates the opportunity to comment on the interim Chemical Action Plan (CAP) for per- and poly-fluoroalkylated substances (PFAS), dated April 2018.

Thank you for creating this plan and helping lead the nation in addressing PFAS. This is an important document with recommendations that are designed to protect human and wildlife health and we urge you to incorporate comments that will strengthen the plan.

Zero Waste Washington is a nonprofit group that represents the public on recycling and zero waste issues. We work to protect people and our natural world by advocating for products designed and produced to be healthy, safe, and continually recycled and reused. We envision a just and sustainable world where society responsibly produces, consumes and recycles.

Our comments follow:

- **Compost**. At this time, we would like you to include reference to and inclusion of a summary of the date from the compost study we conducted in partnership with Dr. Linda Lee of Purdue University. This study found PFAS in commercial compost that had food packaging as part of feedstock. I have attached the one-page summary. We are very concerned about the transfer of PFAS from compost (and biosolids) to stormwater, groundwater and potentially to plants.

- **Treat PFAS as a class of chemicals.** PFAS in legislation and across the US in other efforts and in research are being treated as a class of chemicals. We recommend that Ecology and DOH treat all PFAS as a chemical class, including long-chain compounds, short-chain compounds, and polymers.

- **PFAS in products.** While the Washington legislature passed landmark law to phase out PFAS in food packaging and addressing PFAS in firefighting foam, there remains a large number of products that need to be addressed. We need to stop the production of new products with PFAS (camping gear,

carpet, textiles, furniture, toys, etc.) that are directly impacting human health. We also need to address the legacy of used products. Ecology should specifically consider how to handle used products that end up at thrift stores, programs that provide items for recent refugees and other similar pathways, which will create a burden for low-income Washingtonians. Furthermore, we don't even have an inventory of ALL of the products sold in Washington which contain PFAS. This inventory is urgently needed so that people can take protective action.

- **Consideration of equity**. As an overlay on the plan, we support consideration of equity in terms of impacts on all populations in Washington, especially those that have been and continue to be disproportionately burdened by toxics chemicals (i.e. in this case PFAS).

- **Acceleration of data collection.** Outside of the planning process, we ask Ecology to accelerate testing for PFAS in products and in environmental media. The public awareness about PFAS has exploded over the past year, both nationally and internationally, and it is critical that Ecology provide answers to the public about exposures and problems here in Washington.

Thank you for consideration of our comments. I can be reached at heather@zerowastewashington.org or (206) 441-1790.

Sincerely,

Heather Trim
Executive Director

Attachment

Summary Sheet. January 2018 *(revised March 9, 2018)*

Evaluating Perfluoroalkyl Acids in Composts with Compostable Food Serviceware Products in their Feedstocks

Linda S. Lee, Professor in the Department of Agronomy, College of Agriculture, Purdue University
Heather Trim, Zero Waste Washington

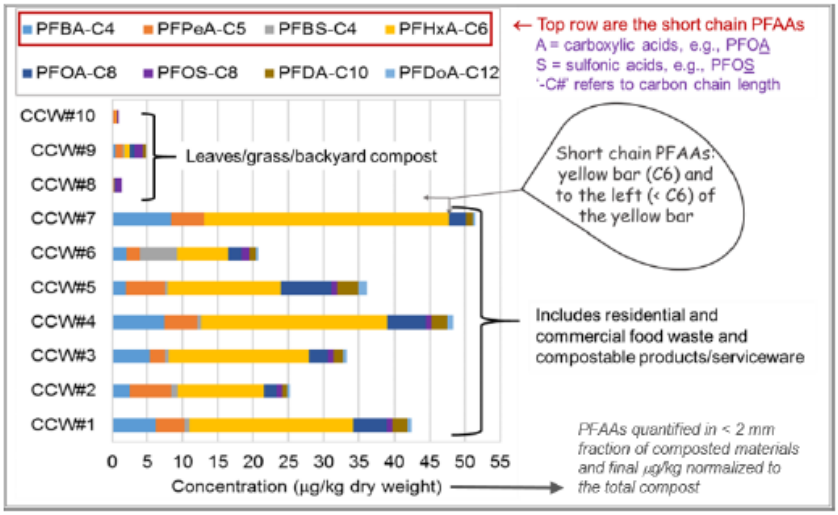
We recently conducted analysis of ten compost samples from across the United States for perfluoroalkyl acids (PFAAs), which range in carbon chain length from 4 to 16 carbons. PFAAs are a subclass of chemicals and final degradation products of the broader class of per/polyfluoroalkyl substances (PFASs) that are fire-resistant and repel water, fat and other substances. They are used in many commercial applications including food serviceware products such as paper plates and clamshells, pizza boxes and popcorn bags that are often present in wastes that are composted for reuse as fertilizers. Compost samples were collected from Washington, Oregon, California, Massachusetts and North Carolina at the consumer point of acquisition with assistance of nonprofit Zero Waste Washington. Nine of the samples were generated by commercial compost facilities and one was from a backyard compost bin. Samples were extracted and analyzed in Linda Lee's environmental chemistry lab using a method similar to EPA recommendations.

Results

Most of the PFAAs quantified were found in the compost samples with the short chain PFAAs (C4, C5, and C6) being most prevalent. PFAAs levels are much higher in the seven samples that had feedstocks of mixed food and yard waste and included compostable food serviceware. In contrast, low levels of PFAS were found in the three samples which did not include compostable food serviceware in the feedstock (two commercial yard/leaf waste composts and the backyard bin sample).

Comparison of Results

Results are similar to what Drs. Lee and *Mashtare's research groups found for commercially available nonbiosolid-based composts and significantly lower than found in pre-2015 biosolids composts; PFAA levels in biosolids composts were generally 2 to 10 times higher. Research by Blaine, Higgins, et. al (2013) with 1:10 biosolid/soil mixes showed that shorter chain PFAAs were taken up by lettuce and tomatoes in pot studies, but not significantly in pilot or full scale field trials. Gottschall, Topp et al. (2017) noted leaching to tile drains of PFAAs from compost-amended crop production fields at low parts per trillion levels. The concern about leaching to groundwater or stormwater needs further quantification.



PFAA Highlights

- *PFAAs are persistent*
- *Short chain PFAA are more mobile from soil:* 'Stickiness' to soil/media is proportional to organic carbon content and chain length
- *Crop uptake potential is higher for the shorter chain PFAAs*
- *Leaching to groundwater and stormwater has been documented (further quantification is needed)*
- *Much is still unknown on PFAA human and ecosystem health impacts*

Blaine, Higgins et al. (2013, EST, 47:14062-14069); Gottschall, Topp et al., (2017, Science of the Total Environment, 57:1345-1359)
*Dr. Michael L. Mashtare, Purdue University, Assistant Professor, Dept. of Agronomy (Previously Dr. Lee's post doc)

(Revised March 9, 2018_LSLee)