



**What is “PFAS”?** PFAS is pronounced “p”, then “fas” (like fast with a silent “t”). It is the acronym for a group of hundreds of chemicals that are very persistent. They build up over time and then stay for decades in the human body, other living organisms, and in the environment. PFAS chemicals are used in products to resist grease, oil, stains, water, and heat.

**So what?** There is evidence PFAS exposure can lead to adverse health effects, like pregnancy complications, development and growth of infant and children, liver damage, cancer, effects on the immune system and on cholesterol, thyroid disease, asthma, decreased response to vaccines, decreased fertility, and decreases in infant birth weight.



**Where are PFAS?** PFAS are in many consumer products that we buy in stores and online, and in chemicals that different industries use.

**Firefighting foam!** PFAS are in fire-fighting foams, and contaminate the groundwater where large-scale firefighting or firefighting drills take place, such airports and military bases.



**Food!** Food that is packaged in PFAS-containing materials like pizza boxes, fast-food wrappers, and microwave popcorn bags. Also, even food processed with certain equipment that uses PFAS, or food grown in PFAS-contaminated soil or water can contain PFAS.

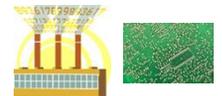


**Commercial household products!** For example, stain-repellant and water-repellent fabrics for clothing, shoes, furniture, and carpets (e.g., “ScotchGuard™”); heat-resistant nonstick products like frying pans, baking pans (e.g., “Teflon™”), and other non-stick products for food packaging; adhesives, polishes, waxes, paints, cleaning products, personal care products, and insulation for electrical wire. PFAS are also in leather, textiles, paper and packaging, coatings, rubber, and plastics.



**Drinking water:** Typically localized and associated with a specific facility (e.g., manufacturer, landfill, wastewater treatment plant, firefighter training facility). One study published in 2016 found that more than 16 million Americans drink water contaminated with PFAS (Hu et al 2016). But there *are no enforceable Drinking Water Standards for PFAS*.

**Workplace:** Production facilities or industries that use PFAS (e.g., chrome plating, electronics manufacturing, or oil recovery), in addition to firefighter training locations.



**Waste treatment and landfills:** All waste treatment facilities and landfills for industries that use PFAS for processing. For example, the Wolverine World Wide tannery liquid waste dump is a heavily contaminated site. And *all municipal landfills and their leachate contain PFAS* because our garbage contains it.

**Soil and groundwater:** PFAS enters the soil and groundwater through the disposal and use of PFAS-containing products.



**Animals, fish, and humans:** Because PFAS is in our environment, it can now be found in us and the animals and fish that we are responsible for and depend on. The older and bigger we are, the more PFAS we have.



**What exactly are PFAS?** PFAS is the acronym for a group of man-made chemicals that have carbon and fluorine as a base. The chemical name of these groups are perfluoroalkyl substances and polyfluoroalkyl substances, or “Per- and polyFluoroAlkyl Substances” for PFAS. The first PFAS were developed in the 1930s and have been manufactured and used in a variety of industries around the globe, including in the United States, since the 1940s. Two PFAS chemicals—PFOA and PFOS—have been the most extensively produced and studied.

**How much PFAS is “safe”?** We don’t know what level is safe, but it is a tiny amount. According to the Centers for Disease Control (CDC), as little as 7-10 parts per trillion of PFAS in drinking water may be unsafe for you. What does “one in a trillion” look like? Picture 7 to 10 grains of sand out of 100 dump truck loads of sand.

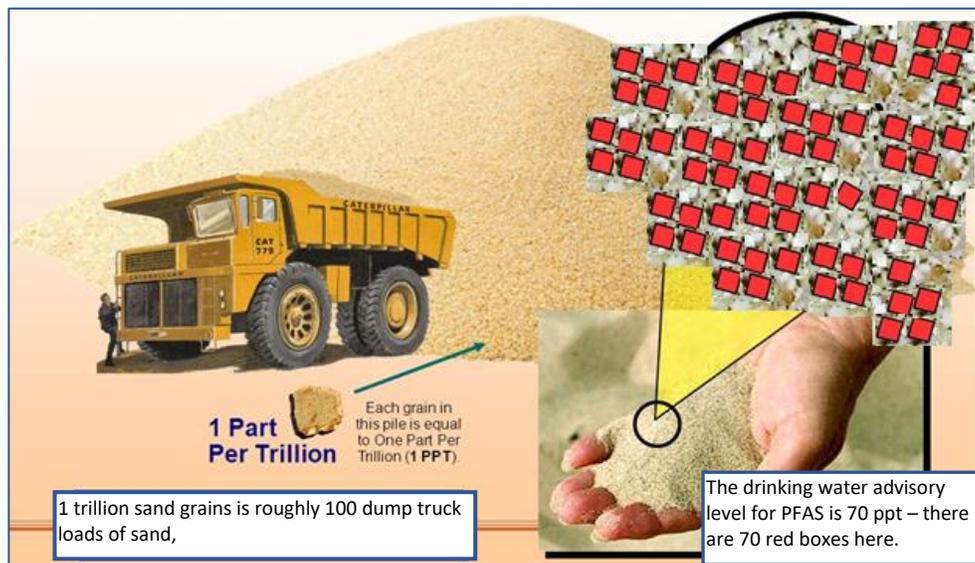


Image credit: Toxicology Consultants and Assessment Specialists, 2014, <https://slideplayer.com/slide/4246513/>

**Some good news!** PFAS Action: Some PFAS chemicals are no longer manufactured in the United States as a result of phase outs. One phase out is the “PFOA Stewardship Program” in which eight major chemical manufacturers agreed to eliminate the use of PFOA and PFOA-related chemicals in their products and as emissions from their facilities.

**The bad news...** Although PFOA and PFOS are no longer manufactured in the United States, they are still produced internationally and can be imported into the United States in consumer goods such as carpet, leather and clothes, textiles, paper and packaging, coatings, rubber and plastics.

**What can you do?** *Provide comments to EPA! Your tribe’s concerns of PFAS contamination in your environment, drinking water, and tribal resources matter.* EPA can’t address tribal PFAS concerns if they don’t know what they are.

**Submit your comments online by September 28:**

<https://www.regulations.gov/docket?D=EPA-HQ-OW-2018-0270>

Your important input will help EPA as they develop a PFAS Management Plan for release later this year. **Appropriate PFAS management will make a difference in your tribe’s exposure to these harmful chemicals.**

#### Resources:

Centers for Disease Control, National Biomonitoring Program. *Per- and Polyfluorinated Substances (PFAS) Factsheet.* [https://www.cdc.gov/biomonitoring/PFAS\\_FactSheet.html](https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html). Accessed 08/24/2018.

Environmental Protection. *What is PFAS—and Why Should You Care?* <https://eponline.com/Articles/2017/06/15/What-is-PFAS.aspx?p=1>. Accessed 08/24/2018.

Hu XC, Andrews DQ, Lindstrom AB, Bruton TA, Schaidler LA, Grandjean P, Lohmann R, Carignan CC, Blum A, Balan SA, Higgins CP, Sunderland EM. *Detection of Poly- and Perfluoroalkyl Substances (PFASs) in U.S. Drinking Water Linked to Industrial Sites, Military Fire Training Areas, and Wastewater Treatment Plants.* *Environ. Sci. Technol. Lett.*, 2016, 3 (10), pp 344–350. DOI: 10.1021/acs.estlett.6b00260. Publication Date (Web): August 9, 2016. Accessed 08/24/2018.

Mlive. 07/10/2018. *What is PFAS?* <https://www.youtube.com/watch?v=ZdfsoD0Yumo>. Accessed 08/24/2018.

Scialla M. *What are PFASs, the toxic chemicals being found in drinking water?* <https://www.pbs.org/newshour/science/pfas-toxic-chemical-millions-peoples-drinking-water>. Accessed 08/24/2018.

U.S. Environmental Protection Agency. *PFOA, PFOS and Other PFASs.* <https://www.epa.gov/pfas/basic-information-pfas>. Accessed 08/24/2018.