

Cary / Apex Water Treatment Facility FACT SHEET

Per and Polyfluoroalkyl Substances (PFAS)

What are PFASs?

Per and polyfluoroalkyl substances (together, PFASs) are a class of man-made chemicals used for common product applications such as waterproof and stain proof fabrics, nonstick cookware, some food packaging materials, and fire suppression foams.

PFASs can enter lakes, rivers, or groundwater through industrial releases, discharges from wastewater treatment plants, and the use of fire-fighting foam. Often, PFASs in water are localized and associated with a specific facility, such as river adjacent to a facility where these chemicals were produced or used to manufacture other products. However non-point sources such as fire training facilities, military bases, domestic airports and biosolids land application sites have also been identified as potential PFASs contributors.

Are PFASs Regulated?

PFASs in drinking water are not currently regulated in North Carolina. However, six PFASs were monitored under US Environmental Protection Agency's (EPA) Third Unregulated Contaminant Monitoring Rule (UCMR3). The EPA uses the UCMR to collect data for substances which are suspected to be present in some waters, may have the potential to cause some health effects, and do not currently have health-based standards established.

Following nationwide UCMR3 testing, EPA released health advisories in 2016 for two PFASs: perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), indicating a health advisory level for combined concentration of 70 parts per trillion (ppt). EPA's health advisories provide technical guidance to state agencies and public health officials on protecting people from possible health effects, appropriate testing methods, and treatment technologies associated with certain substances which may be present drinking water. These advisories are not regulatory limits.

Some states do have their own health advisory levels. For example, the state of New Jersey recently established a more conservative health advisory level of 14 ppt for PFOA.

Are PFASs Found in Town of Cary Drinking Water?

Yes, but the results of our sampling indicate that the Town of Cary's water does not fall under any established health advisory for PFASs. In 2015, the Town of Cary participated in UCMR3 and tested for six PFASs. Only one PFAS, PFHpA, was detected. It was detected at 10 ppt - the equivalent of ten grains of sugar in an Olympic size swimming pool and was detected in one of four samples collected.

In 2017, the Town of Cary tested for 14 PFASs on four different occasions. Five PFASs were detected at very low levels in Cary's water. The total concentration of the PFASs detected ranged from 35.2 parts per trillion (ppt) to 61.2 ppt. The combined

concentration of PFOA and PFOS ranged from 3.9 ppt to 13.6 ppt - which is less than the federally established health advisory of 70 ppt.

The Cary/Apex Water Treatment Process

The Cary/Apex Water Treatment Plant produces drinking water using the nearby surface water supply, Jordan Lake. Activated carbon is added to remove organics, and aid in taste and odor control. Ozone is used to disinfect. Super-Pulsator Flocculator Clarifiers help remove particles from the water. The water is filtered through layers of sand, gravel, and anthracite coal that help remove even smaller particles. Finally, chlorine and ammonia are added for disinfection.

The Town of Cary is actively investigating treatment improvements to further reduce PFASs from the drinking water.

What Are the Health Affects?

Human health effects related to exposure to low concentrations of PFASs have not yet been clearly established. Some studies have shown that certain PFASs may:

- affect the developing fetus and child, including possible changes in growth, learning, and behavior.
- decrease fertility and interfere with the body's natural hormones,
- increase cholesterol,
- affect the immune system, and
- increase kidney, testicular, pancreatic and liver cancer risk.

What Should I do if I am Concerned about PFASs in my Drinking Water?

- PFASs are **not** removed from water by boiling.
- Bottled water quality can vary. We recommend that you contact the bottled water manufacturer for information about contaminant levels.
- Showering or bathing with water containing part-per-trillion levels of PFASs is not considered a significant risk to health.
- Reverse Osmosis (RO) filtration is the most effective technology in removing PFASs. A "point-of-use" (POU) water treatment system can be installed in the kitchen for cooking and drinking.
- Granular activated carbon (GAC) is effective in removing some PFASs from water. However, it is not effective for removal of all PFASs.
- The National Sanitation Foundation (NSF) (a non-profit organization that among other things provides testing and certification services for point-of-use (POU) drinking water treatment systems) has tested and certified a few POU devices for PFOA and PFOS reduction. These units are certified to meet NSF Protocol P473 or to reduce PFOA and PFOS to below 70 parts per trillion. To find products certified for reduction of PFOA and PFOS, visit the official NSF certification listings <http://info.nsf.org/Certified/DWTU/> or call NSF International's consumer information specialist at 1-800-673-8010 or send an email to info@nsf.org.
- If a treatment is used, it is important to follow the manufacturer's guidelines for maintenance and operation.

References

EPA Fact Sheet

https://www.epa.gov/sites/production/files/2016-06/documents/drinkingwaterhealthadvisories_pfoa_pfos_updated_5.31.16.pdf

EPA information on Drinking Water Health Advisories for PFOA and PFOS

<https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>

American Water Works Association

<http://www.drinktap.org/water-info/whats-in-my-water/perflourinated-compounds.aspx>

American Water Works Association Perfluorinated Compounds Treatment and Removal

<http://www.awwa.org/portals/0/files/legreg/documents/awwapfcfactsheettreatmentandremoval.pdf>

American Water Works Association Perfluorinated Compounds Prevalence and Assessment in Drinking Water

<http://www.awwa.org/portals/0/files/legreg/documents/awwapfcfactsheetprevalenceandassessment.pdf>

American Water Works Association Perfluorinated Compounds Resources for Identifying and Managing PFCs

<http://www.awwa.org/Portals/0/files/legreg/documents/AWWAPFCFactSheetResources.pdf>

New Jersey Department of Health FACT SHEET PFOA & PFOS Drinking Water Health Advisories

http://www.state.nj.us/health/ceohs/documents/eohap/generic_pfc_factsheet.pdf

CDC https://www.atsdr.cdc.gov/pfc/health_effects_pfcs.html

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Date Prepared: 3/26/18