

2020 PFAS Sampling Effort

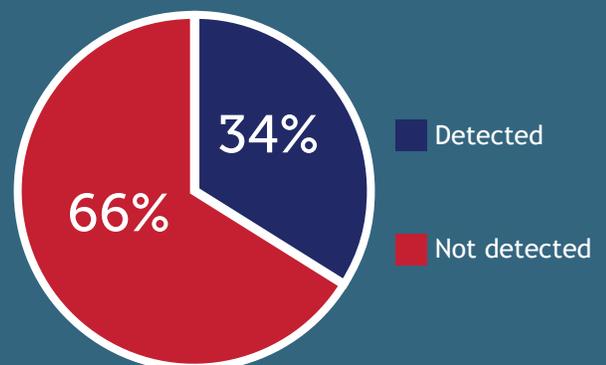


In the fall of 2019, the state legislature awarded the department \$500,000 to investigate potential impacts to drinking water from PFAS, pervasive chemicals that originate from toxic firefighting foam and other sources. The department used this money to facilitate voluntary statewide sampling of 400 water systems, 15 firefighting districts, and an additional 43 streams. The sampling included about half of the community public drinking water systems in the state serving around three-quarters of the population. The results are posted in an online dashboard at www.colorado.gov/pacific/cdphe/pfcs.

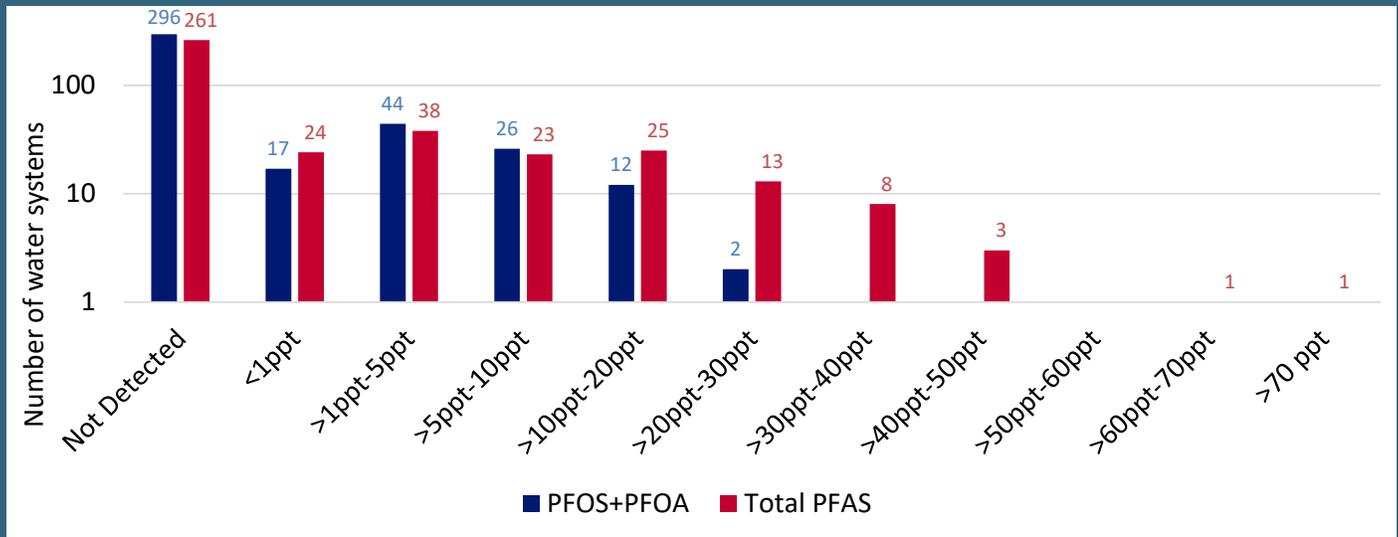
Key findings

- None of the treated drinking water tested was above the EPA's health advisory level.
- Four entities that tested source water had sample results that exceeded the EPA health advisory. Three of the four entities had already tested for the chemicals in previous years and have notified the public of those results. Those drinking water systems are Stratmoor Hills Water and Sanitation District, Security Water and Sanitation District located in El Paso County, and Sugarloaf fire district located in Boulder County. The entities are either not using that source water or treating the water to remove the chemicals before using it as drinking water. The additional entity that exceeded EPA's health advisory level is the Fourmile Fire District.
- Fourmile Fire District, located in Teller County, had not previously tested for the chemicals and found high levels in a well at one of their stations but the state was informed the firefighters do not drink this well water. Even though the well is primarily used to wash trucks and handwashing, the fire district has proactively installed treatment to remove PFAS from this well. Residents that live near the Four Mile station have been notified of the results and what steps they can take if they are concerned. Although the nearest private wells are located about a half mile from the station's well, the fire district, local public health agency, and state are examining the geographical area and will take additional samples to ensure residents living nearby aren't impacted.
- All of the samples taken from lakes and rivers had some detectable level of the chemicals. The sample collected at the mouth of Sand Creek in Commerce City was above the EPA drinking water health advisory, but the state isn't aware of anyone directly drinking this affected water. Nonetheless, high levels of the chemicals in streams can impact downstream drinking water supplies since they don't break down.
- The data indicate that industrial entities that have permits to discharge wastewater into rivers and streams may play a large role in the buildup of the chemicals. The state sampled Sand Creek twice, one sample upstream of Commerce City on the east end of Aurora and one downstream before it flows into the South Platte. A number of industries treat and discharge wastewater in that area. The upstream sample result was 13 parts per trillion (ppt) for PFOA and PFOS combined, and the chemical amount increased downstream to a level of 77 ppt for the combined chemicals, exceeding EPA's drinking water health advisory.
- The state tested 18 PFAS chemicals with each sample and the most prevalent chemicals were PFOS, PFOA, PFHxS, PFBS, PFHxA, and PFHpA with detections in greater than 20 percent of the samples. PFNA was detected in more than 10 percent of the samples.
- Only the samples that exceeded the EPA health advisory exceeded Policy 20-1 translation levels, the state's policy that guides how to limit these toxins going into Colorado waters through discharge permits.

34% of the drinking water systems that participated in the project had some level of PFAS chemicals in their drinking water. No sample was above the EPA health advisory level.



PFAS Concentrations in Treated Drinking Water Systems (number of water systems= 397)



Many of the systems that had detectable PFAS had levels at less than 10 parts per trillion. We looked at two chemicals from the PFAS family, PFOS and PFOA. If these two chemicals combined are above 70 parts per trillion (ppt), then they are above the EPA's health advisory level. 25 percent of the drinking water systems that participated in the project had some level of these combined chemicals. No treated drinking water had these two chemicals at levels above the health advisory. When we combined all 18 PFAS chemicals that we tested for, 75 parts per trillion was the highest level and it was only for one system.

Taking action on results

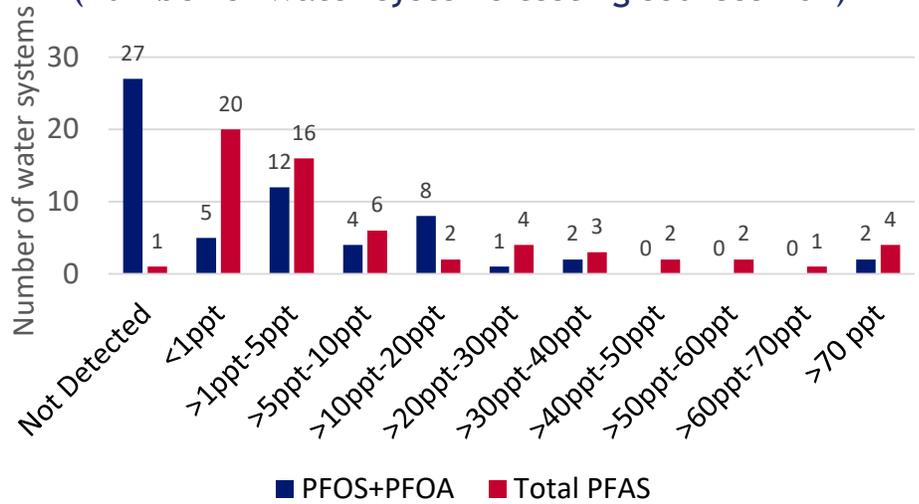
The department evaluated the PFAS sampling project data and took additional action including:

- Evaluating results from the sampling project and evaluating known or suspected areas where PFAS releases may have originated to see if private wells or additional public water systems that didn't sample could be at risk with levels above the EPA health advisory.
- Following up with water systems that showed higher PFAS levels in their source water to evaluate the robustness and reliability of their treatment to ensure it consistently removes PFAS and to offer resources for further investigation.
- Re-evaluating the list of PFAS chemicals submitted to the Water Quality Control Commission in the 2019 Annual Report that should be considered for developing drinking water standards. The current list includes PFOS, PFOA, PFHxS, and PFNA, and the department decided not to add any new chemicals to the list. This is due to the limited health effects data available for the other PFAS compound levels detected during this sampling project. The department will be monitoring health effects data as it becomes available and detections in future sampling efforts and will amend the list as applicable.

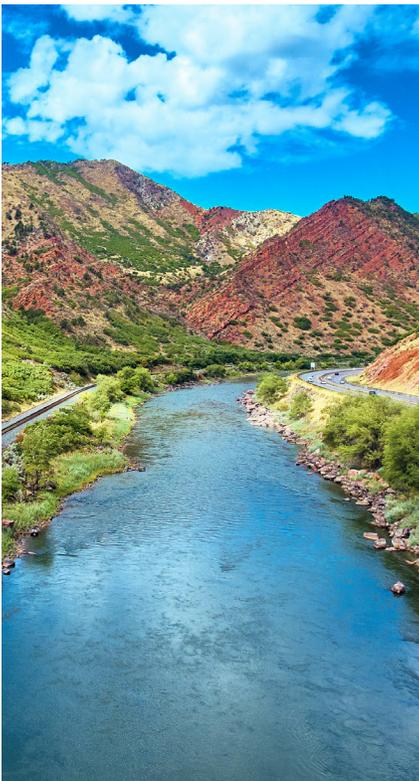




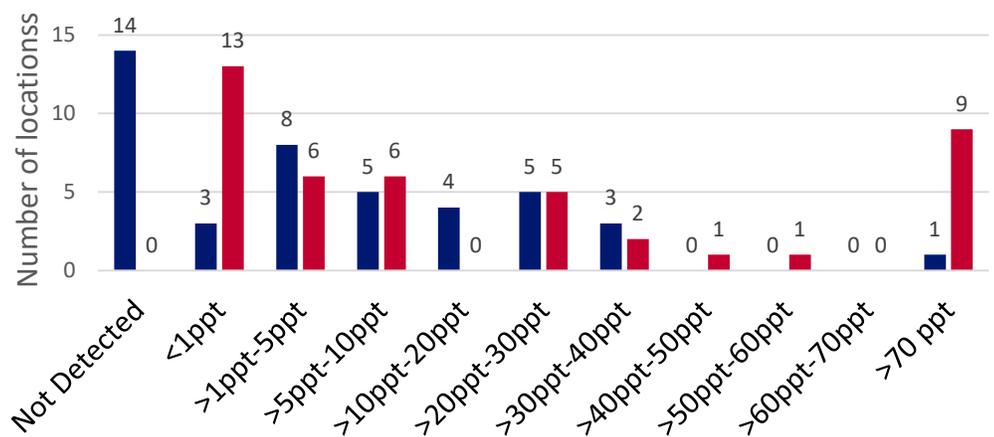
PFAS Concentrations of Drinking Water Sources (number of water systems testing sources= 61)



The state sampled the untreated drinking water that systems treat and deliver to their customers, also known as their source water. Source water can include lakes, rivers, and groundwater. Two systems had levels above the EPA health advisory in their source water, but one doesn't use this water and the other system treats the water to remove the chemicals before distributing it as drinking water. The additional two systems that had the highest levels of all the PFAS chemicals we tested, have treatment that consistently removes PFAS from drinking water.



PFAS Concentrations in Colorado Streams (number of locations= 43)



The state sampled streams and found some level of PFAS chemicals in all surface water locations. One location, Sand Creek, had levels of PFAS above the EPA health advisory. While no drinking water system is using this contaminated water for direct delivery to customers, PFAS do not breakdown and these chemicals can build up and can impact systems downstream.

Additional state efforts to monitor for PFAS

There are other efforts in place to further monitor PFAS and decrease levels entering state waters:

- The department released a survey that requires state dischargers to disclose information about the use and storage of certain products containing PFAS chemicals. This will help the state better understand the risk of the chemicals potentially entering state waters.
- The department is using its hazardous waste authority to require various sites along the Front Range to sample and identify if there are potential impacts to groundwater. State inspectors have evaluated three oil and gas facilities in the area of Sand Creek, and found that one facility has significantly impacted groundwater next to Sand Creek. The state will use the groundwater data and the surface water data from Sand Creek to determine what measures are needed to protect the creek.
- The Water Quality Control Commission adopted Policy 20-1 that enhances the department's ability to monitor for the chemicals at facilities that are permitted to discharge wastewater to state waters. The policy also provides the department with clear guidelines for setting PFAS limits on wastewater discharges.
- The legislature passed important laws regarding the chemicals. There are now restrictions on the use of firefighting foam that contains the chemicals and a fee structure so the state can have the necessary resources to investigate and support communities that may be impacted by these chemicals. The fees will provide critical resources to (1) support additional sampling and health assessment for water systems; (2) implement a takeback and disposal program of materials with the chemicals; and (3) assist water systems impacted by these chemicals with treatment options.

More information about the chemicals can be found at www.colorado.gov/pacific/cdphe/pfcs. You may also call the state at 303-692-2606 or email at cdphe_toxcall@state.co.us should you have questions about the toxicity of the chemicals.



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