

PFAS Exposure Assessment Community Summary

Security-Widefield, El Paso County, Colorado, near Peterson Air Force Base

INFORMATION TO PROTECT OUR COMMUNITIES



The Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR) conducted exposure assessments (EAs) in communities that were known to have PFAS in their drinking water and are near current or former military bases. The EAs provide information to communities about levels of PFAS in their bodies and can provide guidance to help people reduce or stop exposure. This

document summarizes the exposure assessment results from the Security-Widefield area in El Paso County, Colorado, near Peterson Air Force Base (the Base). The full exposure assessment report is available at <https://www.atsdr.cdc.gov/pfas/activities/assessments/sites/el-paso-county-co.html>.

Why did we select the Security-Widefield EA site?

When selecting EA sites, ATSDR considered the extent of PFOA and PFOS contamination in drinking water supplies, the duration over which exposure may have occurred, and the number of potentially affected residents. The Security-Widefield EA site was one of several sites nationwide identified with PFAS drinking water contamination from use of products such as aqueous film forming foam (AFFF). As early as the 1970s, the Base used AFFF containing PFAS for its firefighter training. Over time, the PFAS from the AFFF entered the ground, moved into the groundwater to offsite locations, and affected nearby municipal wells. PFAS were first detected in municipal wells downgradient of the Base in 2013. The affected wells supplied water to customers from the Security Water District (WD), the western portion of the Widefield Water and Sanitation District (WSD), and the Security Mobile Home Park (MHP). Between January and November of 2016, Security WD and Widefield WSD took their contaminated groundwater wells offline and shifted to uncontaminated surface water sources.

In 2017, Widefield WSD installed an ion exchange system to treat PFAS in water from its contaminated wells. Security WSD currently uses uncontaminated surface water sources. Residents of Security MHP were provided bottled water beginning in the summer of 2016 until a treatment system was installed in November of 2017.

Based on the information ATSDR has reviewed, the public drinking water supply in Security-Widefield currently meets or is below the U.S. Environmental Protection Agency's (EPA) 2016 health advisory (HA). At this time, ATSDR does not recommend community members who get drinking water from Security WD, Widefield WSD, or Security MHP use alternative sources of water.

What are PFAS?

PFAS (or “per- and polyfluoroalkyl substances”) are a family of man-made chemicals that have been used in industry and consumer products since the 1950s.



PFAS do not occur naturally but are widespread in the environment. Most PFAS (including PFOA, PFOS, PFHxS, and PFNA) are either very resistant to breaking down or degrade into other PFAS that do not degrade further. Certain PFAS will therefore remain in the environment indefinitely. Some studies have shown that PFAS exposure may harm human health.

How was the testing conducted?

ATSDR invited randomly selected households to participate in the PFAS EA. To be eligible to participate, household residents must have (1) been served by the drinking water systems of WD, MHP, or the western portion of the WSD for at least 1 year before November 10, 2016 (these residents have the greatest likelihood of past exposures to PFAS via the drinking water supply), (2) been greater than three years old at the time of sample collection, and (3) not been

anemic or had a bleeding disorder that would prevent giving a blood sample. Households with private wells were not eligible for participation. Measuring PFAS in the blood of people from randomly selected households allows us to estimate exposure from consumption of public drinking water for the entire community in the affected area, even those who were not tested.

In September 2020,
ATSDR collected samples and other information from participants.

ATSDR analyzed data from

346 people, (318 adults and 28 children)



Everyone completed a questionnaire



most people provided blood and urine samples

ATSDR collected samples of tap water and dust from some homes



ATSDR sent each participant their individual results in May 2021.

Key Takeaways

- Levels of PFHxS and PFOA in the blood of the Security-Widefield EA participants were up to 6.8 and 1.2 times the national levels, respectively. Other PFAS were not higher than the national average or were detected too infrequently to compare to national averages.
- Elevated blood levels may be linked with past drinking water contamination.
- Some demographic and lifestyle characteristics were linked with higher PFAS blood levels.
- All tap water samples collected during the EA in 2020 met the EPA's HA for specific PFAS in drinking water.



What did we learn about PFAS levels in blood?

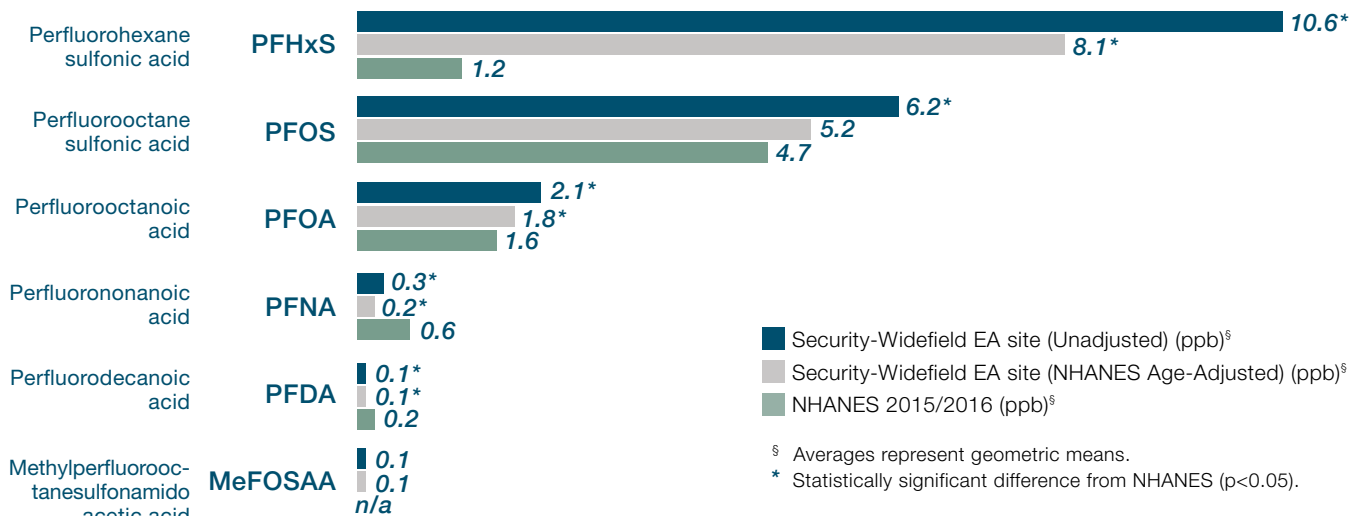
Of the seven PFAS tested at the Security-Widefield EA site, six PFAS were detected in more than 67% of the blood samples collected: PFHxS, PFOS, PFOA, PFNA, PFDA, and MeFOSAA.

Since 1999, the National Health and Nutrition Examination Survey (NHANES) has measured PFAS levels in blood in the U.S. population. PFAS levels are shown to be age dependent and tend to increase with age in part due to longer periods of exposure. ATSDR adjusted blood levels of study participants at the Security-Widefield EA site for age to enable meaningful comparison to the NHANES dataset. After adjustment, two PFAS were higher than levels nationwide, but slightly less so. Age-adjusted averages are more representative of the Security-Widefield EA site community.



The average blood levels of PFHxS and PFOA in the Security-Widefield EA site participants were higher than average levels nationwide.

Security-Widefield EA site average PFAS blood levels compared to national averages[§]





Elevated blood levels of PFHxS and PFOA in the Security-Widefield EA site participants may be linked with past drinking water contamination.

PFHxS, PFOS, and PFOA were detected in Security-Widefield water systems as early as 2013, though contamination likely began earlier. Blood levels of PFHxS and PFOA were statistically elevated compared to national averages. By November 2016, actions taken by the three affected water systems reduced PFAS levels in drinking water below EPA health advisory. There were over three

years and 10 months between the end of exposure via contaminated drinking water and the collection of the EA blood samples. Because of the long half-lives of PFHxS, PFOS, and PFOA in the human body, past drinking water exposures may have contributed to the EA participants' blood levels. Typically, participants who had elevated blood levels of one of the three PFAS also had elevated levels of the other two PFAS. This suggests a common source of exposure, such as the Security-Widefield public drinking water supplies. Other sources of exposure were not measured but could have contributed to PFAS concentrations measured in blood of the EA participants.

Additional observations:



Long-time residents had higher PFHxS and PFOA levels.



Adults who did not drink tap water at home had lower PFHxS and PFOA blood levels.

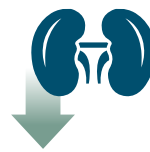
ATSDR used statistical models to study relationships between various demographic and lifestyle characteristics of the tested residents. The models showed that, in general:



Blood levels of PFHxS, PFOS*, and PFOA were higher in older participants.

In males, blood levels for these compounds **increased by 1% to 1.7%** for every year of participant age.

In females, blood levels for these compounds **increased by 1% to 2.5%** for every year of participant age.



Residents who reported a **history of kidney disease had PFHxS blood levels that were 39% lower than those who did not.**



Adults who reported **cleaning their homes an average of 3+ times per week had 24% higher PFOS levels** than residents who reported cleaning a few times per month or less.*



Males had higher blood levels of PFHxS and PFOS* than females.

Residents who reported **occupational exposure to PFAS in the past 20 years had lower PFHxS (28%).**



Residents who reported **consuming locally grown fruits or vegetables had 52% higher PFOS blood levels.***

* PFOS blood levels were not elevated in the community.

What did we learn about exposure in children?



The longer a child was breastfed, the higher their blood levels of PFOS and PFOA compared to non-breastfed children.

Infants born to mothers exposed to PFAS can be exposed in utero and while breastfeeding. However, based on current science, the benefits of breastfeeding outweigh the risks for infants exposed to PFAS in breast milk.

Children who drank formula with tap water had lower blood levels of PFHxS, PFOS, and PFOA than children who never drank formula with tap water.



Because of the small sample size, results should be interpreted with caution.

ATSDR will gather the data from children across all exposure assessment sites and provide a detailed analysis.

What did other testing find at the Security-Widefield EA site?



Only one PFAS (perfluorobutanoic acid [PFBA]) was detected in urine; it was detected at low concentrations.



All tap water samples collected during the EA in 2020 met the EPA's HA for PFAS in drinking water.



PFAS contamination in house dust was similar to that reported in other studies (with and without PFAS contamination) and likely contributed to PFAS levels in the blood.

What do these results mean for community members?



This PFAS EA provides evidence that past exposures to PFAS in drinking water have impacted the levels of some PFAS in people's bodies.

These PFAS are eliminated from the body over a long period of time. This allowed ATSDR to measure PFAS even though exposures through drinking water were mitigated, or lowered, years ago.

Although the exposure contribution from PFAS in drinking water in Security-Widefield has been mitigated (reduced), there are actions community members and city officials can take to further reduce exposures to PFAS and protect public health.

Based on the PFAS drinking water test results from drinking water wells in Security-Widefield, ATSDR does not recommend an alternate source of drinking water at this time.

What can community members do?



Become familiar with Consumer Confidence Reports for information on water quality in Security-Widefield (Security WD, <http://securitywdsd.com/water-quality/>; Widefield

WSD, <https://www.wwsdonline.com/consumer-confidence-report/>).



Private well owners living in the area affected by PFAS should consider having their wells tested for PFAS if testing has not been conducted before. To learn more about testing

wells for PFAS visit <https://www.elpasocountyhealth.org/news/news-release/2019/resources-for-pfc-water-contamination-and-testing>.

Global public health organization NSF International has developed a test method to verify a water filter's ability to reduce PFOA and PFOS to below the health advisory levels set by the EPA. NSF International-approved devices can be found at: <https://info.nsf.org/Certified/DWTU/> Click on "reduction devices" at the bottom of the page for PFOA and PFOS. Error! Hyperlink reference not valid.



Nursing mothers should continue breastfeeding. Based on current science, the known benefits of breastfeeding outweigh the risks for infants exposed to PFAS in breast milk.



When possible, eliminate or decrease potential exposure to PFAS in consumer products such as stain-resistant products and food packaging materials. To learn more visit <https://www.fda.gov/food/chemical-contaminants-food/questions-and-answers-pfas-food>.



Pay attention to advisories about food consumption, such as local fish advisories.



Discuss any health concerns or symptoms with your health care provider. Share results of PFAS blood testing with your health care provider and make them aware of ATSDR resources for clinicians, <https://www.atsdr.cdc.gov/pfas/resources/info-for-health-professionals.html>. Follow the advice of your health care provider and the recommendations for checkups, vaccinations, prenatal care, and health screening tests.



Consider joining the ATSDR-funded multi-site health study, which includes the El Paso County area. The study is called the Colorado Study on Community Outcomes from PFAS Exposure (CO-SCOPE). If you are interested in participating, or want further information, please visit www.co-scope.org.



Follow the advice of your child's health care provider and the recommendations for well child checkups, vaccinations, and health screening tests. Consult <https://health.gov/myhealthfinder> to help identify those vaccinations and tests.



For additional information about environmental exposures and children's health, contact the Pediatric Environmental Health Specialty Units, a nationwide network of experts in reproductive and children's environmental health, <https://www.pehsu.net/>.

What can Security WD, Widefield WSD, and Security MHP do?



Operators of these three public water systems should continue to monitor concentrations of PFAS in drinking water delivered to the Security-Widefield community to ensure that concentrations of PFAS remain below the EPA's HA or other applicable guidelines for specific PFAS in drinking water.



Results of PFAS monitoring should be shared with community members through appropriate communication channels (Consumer Confidence Reports for Security WD, <http://securitywsd.com/water-quality/>; Consumer Confidence Reports for the Widefield WSD, <https://www.wwsdonline.com/consumer-confidence-report>).



All treatment systems to remove PFAS from the municipal drinking water in Security-Widefield should be maintained appropriately to ensure that PFAS concentrations remain below the EPA's HA for specific PFAS in drinking water.

What will we do next?



ATSDR will hold a meeting to discuss the results and is available to answer questions from the community at any time.



When all of the exposure assessments are complete, we will prepare a report describing the data across all sites.



We are also reaching out to doctors, nurses, and other health care providers in your area to provide PFAS information. PFAS clinician guidance and continuing medical education can be found at <https://www.atsdr.cdc.gov/pfas/resources/clinical-guidance.html>.

About ATSDR

The Agency for Toxic Substances and Disease Registry (ATSDR) is a federal public health agency of the U.S. Department of Health and Human Services. <https://www.atsdr.cdc.gov/>

For More Information

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