LA FIRE HEALTH STUDY

DATA BRIEF

Preliminary Data Findings: Most homes had little to no VOCs in tap water samples taken in February – April in Palisades and Altadena.

Date Released: 5/9/2025

Why this is important: Volatile organic compounds (VOCs) like benzene were found early on in some drinking water after the fires, possibly due to partially burning plastic pipes (like PVC) and contamination from open pipes, which can generate and release these pollutants into the water lines. We aimed to test tap water for VOCs in water for updated and more localized data.

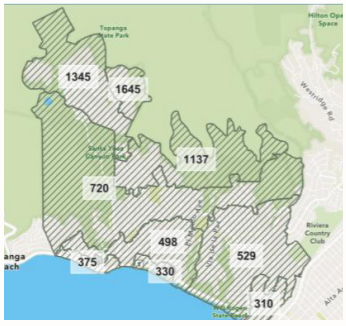
Methods: Tap water samples were collected from 53 homes in the Palisades and Altadena areas between Feb – April 2025. Prior to taking the water samples, the homes were "flushed" for 5 minutes to clear stagnant water from pipes.

Results: All but one water sample contained levels of VOCs below the safety threshold of California's EPA Maximum Contaminant Limit (MCL) for all compounds tested; only one out of 53 samples contained benzene above the MCL (1 parts-per-billion or ppb).

Summary: Most VOCs were at such low levels that they were either "not detected" or were below the EPA's Minimum Reporting Limit, meaning they were too low to get a reliable measurement. If you have concerns about the presence of VOCs or other chemicals in your home's tap water, flushing, filtering, and testing can all help.

Background

Tap water samples were taken in the vicinity of the Palisades and Altadena burn areas during the time period of February 1 to April 14, 2025. Do Not Use advisories were issued for many homes due to concerns over benzene and other VOCs in water. Those advisories were lifted on March 7, 2025.



What's next

Study teams will compare the presence of VOCs to samples from outside the fire zones, and from before the fires, to help determine if the presence of these VOCs was due to the fire or another environmental source. Researchers are in the process of evaluating microbial contents of the water samples, to determine whether the fires had an impact on microbes and bacteria in the water. (Drinking water is not sterile, meaning it typically contains bacteria, but most of these bacteria do not cause disease).

LA FIRE HEALTH STUDY

DATA SET 1: VOCs in TAP WATER

Preliminary Data Findings: Concentrations of VOCs in Tap Water

Data Type: Water Quality

Location: Palisades and Altadena

Key Takeaways:

- The average concentrations for all VOCs were below CA's Maximum Contaminant Limits (MCL), or the highest allowable concentration in drinking water.
- Most VOCs measured were just above the Limit of Detection (LoD); meaning that there were enough VOCs present to be detected, but the levels were so low that they are below the EPA's MRL (the smallest measured concentration of a substance that can be reliably measured by using a given analytical method).

VOC CONCENTRATIONS IN TAP WATER SAMPLES* IN 53 HOMES in parts per billion (ppb)

VOC	Avg. concentration (of homes with detectable levels)	California MCL	Number of detections
Benzene	0.27 ppb	1 ppb	8 of 53 homes
Toluene	0.15 ppb	150 ppb	23 of 53 homes
4-chlorotoluene	0.11 ppb	*Not regulated*	6 of 53 homes
p-isopropyltoluene	0.16 ppb	*Not regulated*	13 of 53 homes
1,1-dichloropropene	0.03 ppb	*Not regulated*	1 of 53 homes
1,1,2,2-tetrachloroethane	0.01 ppb	1 ppb	1 of 53 homes
1,2,4 -trichlorobenzene	0.04 ppb	5 ppb	3 of 53 homes
1,2,4-trimethylbenzene	0.07 ppb	*Not regulated*	3 of 53 homes
1,3-dichlorobenzene	0.05 ppb	*Not regulated*	8 of 53 homes
1,4 -dichlorobenzene	0.01 ppb	5 ppb	1 of 53 homes
Bromobenzene	0.02 ppb	*Not regulated*	1 of 53 homes
Carbon Tetrachloride	0.07 ppb	0.5 ppb	5 of 53 homes
2-chlorotoluene	0.02 ppb	*Not regulated*	2 of 53 homes
cis 1,2-dichloroethylene	0.01 ppb	6 ppb	1 of 53 homes
cis 1,3-Dichloropropene	0.01 ppb	0.5 ppb	1 of 53 homes
Ethylbenzene	0.04 ppb	300 ppb	2 of 53 homes
Isopropylbenzene	0.18 ppb	*Not regulated*	8 of 53 homes
m,p Xylene	0.36 ppb	1750 ppb	10 of 53 homes
Naphthalene	0.16 ppb	*Not regulated*	16 of 53 homes
n-butylbenzene	0.06 ppb	*Not regulated*	8 of 53 homes
n-propylbenzene	0.09 ppb	*Not regulated*	7 of 53 homes
o-xylene	0.1 ppb	1750 ppb	5 of 53 homes
sec-butylbenzene	0.01 ppb	*Not regulated*	1 of 53 homes
Styrene	0.12 ppb	100 ppb	6 of 53 homes
Tetrachloroethylene	0.09 ppb	5 ppb	3 of 53 homes

MCL = Maximum contaminant limit, or the highest allowable concentration in drinking water.

The following VOCs were also tested, and all were below the detection limit (not detected):
1,1-dichloroethane; 1,1-dichloroethylene; 1,1,1,-trichloroethane; 1,1,1,2-tetrachloroethane; 1,1,2-trichloroethane; 1,2-dichlorobenzene; 1,2,3-trichlorobenzene; 1,2,3-trichloropropane; 1,3-dichloropropane; 1,3,5-trimethylbenzene; 2,2-dichloropropane; bromomethane; chlorobenzene; chloroethane; dibromochloropropane; dichlorodifluoromethane; hexachlorobutadiene; methyl-tert-butyl-ether; tert-butylbenzene; trans-1,3-dichloropropene; trichloroethylene; trichlorofluoromethane; vinyl chloride

LA FIRE HEALTH STUDY

DATA SET 2: BENZENE IN TAP WATER

Preliminary Data Findings: Tap Water Samples Containing Benzene

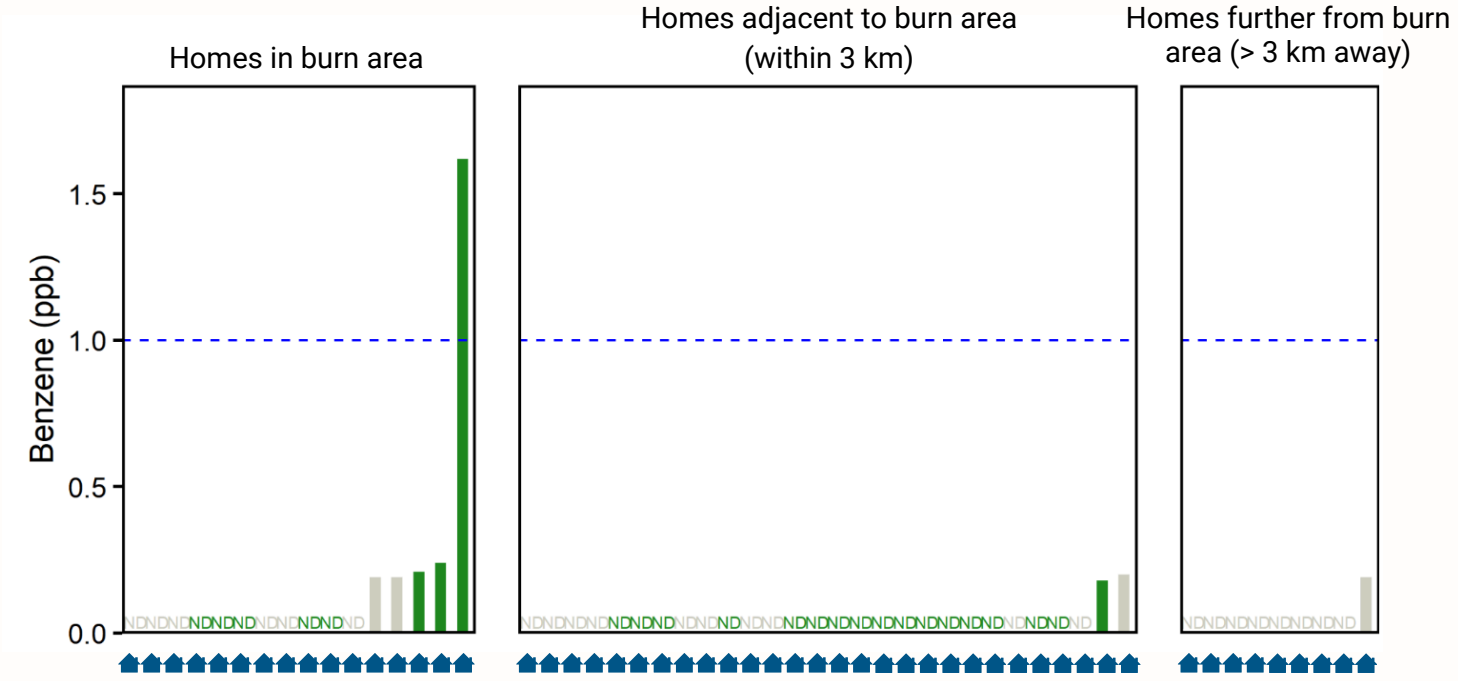
Data Type: Water Quality

Location: Palisades and Altadena

Key Takeaways:

- Benzene was detected at 8 homes out of the 53 homes tested.
- Only 1 sample of the 53 tested had benzene above the CA Maximum Contaminant Level (MCL) of 1.0 ppb.
- All other samples were below the CA MCL (California's maximum contaminant level, or the highest allowable concentration in drinking water).

BENZENE DETECTED IN TAP WATER SAMPLES*



Notes

ND = not detected, no Benzene was found.

CA MCL = California's Maximum Contaminant Limit: The highest allowable concentration in drinking water. The CA MCL is 1.0 ppb for benzene.

LA FIRE HEALTH STUDY

FREQUENTLY ASKED QUESTIONS ABOUT WATER

What are VOCs?

VOC stands for volatile organic compound. VOCs are invisible gases and vapors that are released into the air from solids. This can happen after structures burn during wildfires, but VOCs are also commonly emitted in homes from an array of everyday sources like cleaning products, air fresheners, paint, new furniture, etc.

VOCs can also be found in water: VOCs generally enter drinking water sources from pollution from factories and processing plants, where they are used as industrial solvents and degreasers. Chemical spills and improper disposal of industrial waste can release VOCs into the ground, and from there, they can leach into the water supply. Some VOCs are harmful to human health.

VOCs like benzene were found early on in some drinking water after the fires, possibly due to partially burning plastic pipes (like PVC) and contamination from open pipes, which can generate and release these pollutants into the water lines. Another reason could be that during firefighting, there are vacuum points in the drinking water system that pull in VOCs from the air (in fire smoke) into the drinking water system.

What is benzene ?

Benzene is a carcinogen (known to cause cancer) that is associated with the burning of fuels, and is commonly present after fires. Benzene can have many sources, including car exhaust (from internal combustion engines) and household products such as detergents, dyes, and pesticides. The CA limit for benzene in drinking water is 1.0 ppb. It is important to note that the World Health Organization states that because benzene is carcinogenic to humans, no safe threshold of exposure exists.

What can I do if I am concerned about VOCs in tap water?

There are a few steps you should take if you live in or near the areas affected by the fires and/or the Do-Not-Drink water advisories.

After Advisories are lifted:

1. Flush your pipes
2. Have your water tested
3. Install/change water filters

How do I “flush” pipes in my home?

To thoroughly flush pipes and in-building components (water heater, ice maker, etc), follow the below steps:

1. **Cold water:** allow each water tap (sinks, showers, outside hose-bibs, etc.) to run for about 5 minutes with vigorous flow. Start from outside taps (outside hose-bibs), then continue with indoor taps (sinks, showers).
2. **Hot water:** allow each hot water tap to run until the water turns cold.
3. **Refrigerators and other water dispensers:** run the water for several minutes, and then replace the filter if it has one.
4. **Ice makers:** follow the manufacturer’s instructions for cleaning ice maker water lines, dispose of any existing ice, and dispose of the ice from three refills.

How can I have my tap water tested?

Contact an Environmental Laboratory Accreditation Program (ELAP) certified laboratory and let them know that you would like to have your drinking water tested for benzene in accordance with US EPA Method 524.2. This method also includes other volatile organic compounds (VOCs). For this study we used a direct-to-consumer testing kit from SimpleLab Advanced Home Water Test, which you can purchase here: bit.ly/LAFHWaterTest

LA FIRE HEALTH STUDY

FREQUENTLY ASKED QUESTIONS ABOUT WATER

(continued)

What type of water filter should I use to filter Benzene and other VOCs from my water?

VOCs can be effectively removed by using activated carbon filters. If you have an existing filter, it is recommended to change the filter following a fire or Do Not Drink order.

This database is a great resource to check whether your water filter is effective on VOCs: https://info.nsf.org/certified/dwtu/

Also going forward, be sure to change filters within their expected lifetime (see manufacturer recommendation).

IF YOU HAVE QUESTIONS:

- Email us: info@lafirehealth.org
- Visit the website: www.LAFireHEALTH.org

The Los Angeles Fire Human Exposure and Long-Term Health Study is a 10-year study of the Los Angeles fires to evaluate which pollutants are present, at what levels, and where, and to assess the respiratory, neurological, cardiovascular, reproductive, and immune system impacts of the wildfires.

The data shared in this brief are preliminary in nature and are being made available to the public in an effort to provide data as soon as possible. Research is a process and results can change over time based on new data input. The data shared on this site is for informational use only and should not replace the advice of a medical professional. This is a study run by a consortium and as such, no one university or institution is responsible or liable for the data or recommendations presented.