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PFAS Detected in Kunia Well 4

Levels exceed DOH and proposed U.S. EPA standards

HONOLULU – Chemicals known as PFAS (perfluoroalkyl and polyfluoroalkyl substances) have been detected for the first time in water samples collected at the Kunia Village Well 4, which is part of the Kunia Village water system (Public Water System HI0000303) and serves approximately 650 individuals on the leeward side of the island of O'ahu.

As PFAS compounds were previously detected in Kunia Village Well 3, the Kunia Village water system has switched to be served through an emergency connection to another water system until a permanent solution is determined. Residents continue to be provided bottled water until water from the emergency source has a chance to fully disperse throughout the water system. Testing will be used to confirm that PFAS levels throughout the distribution system are below the U.S. Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs).

The detections of PFAS in Kunia Well 4 exceeded the following:

- Hawai'i State Department of Health Environmental Action Levels (EAL) for PFOS
- EPA-proposed MCL for PFOS and PFOA in drinking water
- EPA-proposed Hazard Index of 1.0 for the combined toxicity ratios of PFNA, PFHxS, PFBS and Gen X

The detected levels of PFAS at the Kunia Well 4 in March 2023 are listed in the table below.

PFAS Chemical	PFAS Chemical Abbreviation	Kunia Well 4 detected levels (ng/L) ^{1, 2, 3}	EPA Proposed MCL (ng/L) ^{1, 2}	DOH ⁴ EAL ⁵ (ng/L) ^{1, 2}
Perfluorobutanoic acid	PFBA	2.3		15,000
Perfluorobutanesulfonic acid ⁶	PFBS	2.21 – 2.7		11,700
Perfluoroheptanoic acid	PFHpA	2.54 – 3.4		77
Perfluorohexanoic acid	PFHxA	7.88 – 8.9		1,900
Perfluorohexanesulfonic acid ⁶	PFHxS	19.8 – 23		77
Perfluorooctanoic acid	PFOA	5.57 – 7.8	4.0	12
Perfluorooctanesulfonic acid	PFOS	11.7 – 14	4.0	7.7
Perfluoropentanoic acid	PFPeA	5.49 – 6.4		1,500
Perfluoropentanesulfonic acid	PFPeS	2.1 – 2.2		

¹ ng/L = nanogram per liter = parts per trillion (ppt)

² Boxes left blank indicate that a level has not been set for that chemical.

³ These PFAS chemical were also originally observed in the Kunia Village water system's Kunia Well 3 and news release issued on January 20, 2023 (article may be viewed here <https://health.hawaii.gov/news/files/2023/01/23-004-PFAS-detected-in-Kunia-Village-water-system.pdf>).

⁴ DOH = Hawai'i Department of Health

⁵ EAL = Environmental Action Level

⁶ This contaminant is considered in the proposed Hazard Index calculation.

According to the EPA, PFAS, which have been used since the 1940s, are fluorinated organic chemicals that have been used extensively in consumer products such as carpets, clothing, fabrics for furniture, paper packaging for food, and other materials (e.g., cookware) designed to be waterproof, stain-resistant, or non-stick. They are also a component of fire-fighting foam and have many industrial uses.

For more information on PFAS, please see <https://www.epa.gov/pfas> or <https://health.hawaii.gov/pfas>. Users may also contact their water purveyor.

This news release is issued in accordance with Hawai'i Revised Statutes (HRS) Section 340E-24(b).

Acronyms and Definitions

DOH – Hawai'i Department of Health, responsible for regulation and oversight of impacts to the environment and health of the people in Hawai'i. This includes regulated drinking water systems.

EAL – Environmental Action Levels set by DOH. EALs are concentrations of contaminants in soil, soil gas, and groundwater that are used in decision making throughout the Environmental Hazard Evaluation process. The EALs for 20 PFAS chemicals were last updated in April 2023. Exceeding DOH EALs require additional investigation and action under the DOH Hazard Evaluation and Emergency Response Regulations (HRS 128D). EAL guidance may be found online at <https://health.hawaii.gov/heer/guidance/ehe-and-eals/>

EPA – United States Environmental Protection Agency, responsible for the protection of human health and the environment on a national level.

HRS – Hawai'i Revised Statutes are laws enacted by the Hawai'i State legislature.

Hazard Index – A cumulative health risk to be considered when multiple compounds are present even if individual MCLs or EALs are met. The Health Index is the sum of the ratios of the respective contaminants. The proposed EPA requirement is to be less than 1.0 (unitless) to be in compliance.

MCL – Maximum Contaminant Level, set by EPA, is the highest level of a contaminant that is allowed in drinking water. Proposed MCLs are not enforceable. On March 14, 2023, EPA issued proposed MCLs for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) and Maximum Contaminant Level Goals (MCLGs) for four additional PFAS compounds. Final MCLs are anticipated in late 2023, at which time these values would become enforceable legal limits and public water systems would be required to test for these chemicals.

PFAS – Perfluoroalkyl and Polyfluoroalkyl substances, fluorinated organic chemicals that have been used extensively since the 1940s.

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