NEW YORK STATE | Department of Health

KATHY HOCHUL
Governor

JAMES V. McDONALD, MD, MPH
Commissioner

JOHANNE E. MORNE, MS
Executive Deputy Commissioner

New York State Department of Health Decision Support Document

Recommended Preliminary Site-Specific Screening Value for Perfluoropropanoic acid (PFPrA)

East Hampton PFAS Investigation, July 17, 2026

Purpose

This document summarizes available scientific information on perfluoropropanoic acid (PFPrA) and provides the technical basis for a preliminary site-specific screening level of 3 parts per billion (ppb) (equivalent to 3000 parts per trillion (ppt)) to address detections of this novel PFAS in drinking water as part of the East Hampton PFAS investigation.

State Health Drinking Water Screening Level Recommendation

After considering screening levels derived by Federal agencies and available science on PFPrA and closely related PFAS, the New York State Department of Health (DOH) supports the use of the United States Geological Survey (USGS) Health-Based Screening Level (HBSL) for PFPrA of 3 parts per billion (3 micrograms per liter or 3000 ppt) as a **preliminary, site-specific screening value** to be applied for this situation at this time. The USGS Health-Based Screening Level is a health-protective value that makes maximal use of the available science and was calculated in a manner that aligns with state-of-the-art risk assessment practices performed by DOH.

PFPrA concentrations below the USGS Health-Based Screening Level may still be indicative of its occurrence above commonly detected levels and thus warrant additional investigation.

DOH will continue to monitor emerging research on PFPrA and other ultra-short chain PFAS and update our recommendation should new scientific information emerge that indicates such a change is warranted for the protection of public health.

Toxicological Information on PFPrA

The very limited information available on PFPrA toxicity indicates that it can affect the liver. This information comes from the only animal toxicity study available, which was an

unpublished study in rats (summarized in US EPA, 2023). In this study, male and female Sprague-Dawley rats were administered 0, 5, 20, 80, or 320 milligrams per kilogram per day (mg/kg-day) PFPrA in water by daily oral gavage for 28 days (6 rats per dose group and sex). Some control and high dose rats were maintained for a 14-day recovery period. This study evaluated clinical signs, body weight, food intake, hematology, blood chemistry, urinalysis, organ weights (liver, kidney, testes, ovaries, brain, spleen, adrenals) and histopathology (forestomach, glandular stomach, intestine, liver, heart, kidneys, and adrenals). This study found dose related enlargement of liver, increased liver weights, increased liver enzymes, hepatocyte hypertrophy, and effects to the forestomach in male rats at doses equal to or greater than 20 mg/kg-day. However, the severity of the liver effects was reduced following a 14-day recovery period. Other health effects observed (kidney weight changes, changes in clinical chemistry, decreased total cholesterol) either occurred only at the highest dose, did not appear to be dose-related, were not supported by other evidence of toxicity or were of unclear biological significance. The United States Environmental Protection Agency (US EPA) used benchmark dose modeling to derive candidate $BMDL_{10}$ values (i.e., values for the 95% lower confidence limit of a benchmark dose corresponding to 10% relative deviation from control). They selected the $BMDL_{10}$ for increased liver weights to derive a reference dose (more details below).

Epidemiological Information on PFPrA

Epidemiological evidence of health effects in humans from PFPrA exposure is similarly very limited. A few cross-sectional studies have investigated associations between PFPrA exposure and select health endpoints (glycemic indicators, thyroid, and reproductive). When US EPA reviewed these studies in 2023, they noted that none reliably identified effects of PFPrA on human populations. However, due to poor sensitivity of those studies, US EPA cautioned that the results should not be interpreted as evidence that PFPrA does not cause adverse effects in humans.

Toxicokinetic information on PFPrA

There is little to no toxicokinetic information available on PFPrA. However, based on information about closely related PFAS that are better studied, PFPrA is not expected to build up in the body from repeated exposure. These closely related PFAS have biological half-lives on the order of days, which are much shorter than long-chain PFAS, whose half-lives are on the order of several years (see the section below on similar PFAS for more details).

Information on Similar PFAS

PFPrA is an "ultra short-chain PFAS" that has limited toxicology and half-life information as described above. Very little is known about other short chain PFAS. However, there is a general continuum of half-life and toxicity in going from short chain to long chain PFAS. Short chain PFAS tend to have shorter half-lives (days) and be much less toxic than long-chain PFAS such as PFOA and PFOS, which due to slow clearance and long half-lives (years) can build up over time to toxic levels.

The closest structural analogue to PFPrA, the 3-carbon fully fluorinated acid, is perfluorobutanoic acid (PFBA), the 4-carbon analogue. PFBA has more toxicity and half-life information than PFPrA, with animal data suggesting it can affect the liver, thyroid, and development. PFBA's half-life is estimated to be around 3 days in humans. PFBA's information is further summarized below alongside PFPrA to bring the most relevant information together in forming a recommended preliminary screening level for PFPrA.

Toxicity Values and Drinking Water Guidelines from Authoritative Bodies

In 2023, US EPA reviewed the limited toxicity information on PFPrA and derived a toxicity value based on liver effects in laboratory animals of 0.0005 mg/kg/day. US EPA acknowledged that they have low confidence in this value. US EPA has previously reviewed PFBA and derived a toxicity value based on liver and thyroid effects in laboratory animals, at 0.001 mg/kg/day. This value has higher confidence due to a larger toxicity database that is available for PFBA. The similarity between these toxicity values supports the notion that these chemicals have similar potency. A comparison of these two toxicity values is included in table 1 below:

Table 1. US EPA Reference Doses for PFPrA and PFBA

Chemical	Basis of Reference Dose	Point of Departure (Human Equivalent Dose) mg/kg/day	Uncertainty Factor	Reference Dose (mg/kg/day)
PFPrA	Increased relative liver weight in adult male rats dosed via gavage for 28 days. Hepatocellular hypertrophy was also observed.[a] (US EPA 2023)	1.6[b]	Total = 3000 UF_A=3 UF_H=10 UF_S=10 UF_{DB}=10	0.0005
PFBA	Hepatocellular hypertrophy and decreased total T4 in adult rats dosed via gavage for 90 days (US EPA 2022)	1.27[c]	Total = 1000 UF_A = 3 UF_H = 10 UF_S = 10 UF_{DB} = 3	0.001

mg/kg/day = milligrams per kilogram body weight per day; UF_A = uncertainty factor for interspecies extrapolation; UF_H = uncertainty factor for intraspecies extrapolation; UFS = uncertainty factor for the use of a subchronic study for a chronic reference dose; UF_{DB} = uncertainty factor for database deficiencies

a - Hepatocellular hypertrophy was also observed histologically for PFPrA but the point of departure based on that observation was slightly higher.

b- The point of departure (human equivalent dose) for PFPrA was derived by using allometric body weight scaling ($BW^{3/4}$) to convert the $BMDL_{10}$ calculated from liver weight data in male rats.

c- The point of departure for PFBA was derived by adjusting a No Observed Adverse Effect Level (NOAEL) using a dosimetric adjustment factor (based on a ratio of serum clearance between male rats and humans) and a molecular weight adjustment factor to account for molecular weight differences between PFBA and its ammonium salt.

Table 1 shows similar toxicity across these two PFAS in the only study available for PFPrA for which such comparisons can be made. It should be pointed out that the PFBA rat study involved longer dosing (90 day instead of 28 day) and more endpoints evaluated (e.g., thyroid) than for PFPrA. These factors contribute to the lower human equivalent dose found for PFBA across these two studies. The lower reference dose for PFPrA is a result of the greater amount of uncertainty applied to the PFPrA analysis by EPA, and this stems from the fact that there are more gaps in the PFPrA database than for PFBA (see Uncertainty Factor column in Table 1).

US EPA used the PFPrA reference dose to derive a tap water regional screening level of 9.8 parts per billion (or micrograms per liter) for PFPrA. The USGS, another authoritative body

in the Federal government, used standard risk assessment procedures and the US EPA's reference dose to develop a Health-Based Screening Level (HBSL) for PFPrA equal to 3 parts per billion (or micrograms per liter) in water.

In general, the derivation of a health-based drinking water value based on noncancer health effects involves a reference dose and drinking exposure assumptions for a relevant population to determine a drinking water concentration that would result in exposures that would not exceed the reference dose under the assumed exposure parameters. A comparison of the derivations of the US EPA Regional Screening Level (RSL) and USGS Health-Based Screening Level (HBSL) for PFPrA is found in table 2 below.

Table 2. Available PFPrA Drinking Water Screening Values from Authoritative Agencies[a]

Agency	Reference dose (mg/kg/day)	Exposure assumptions	Drinking water value (micrograms per liter or parts per billion)
US EPA RSL[b]	0.0005	Child drinking water ingestion rate: 0.052 L/kg body weight/day Exposure occurs 350 days per year. Minor contributions from dermal exposures are included in this calculation. Assumes PFPrA exposure is only from drinking water.[c]	9.8
USGS HBSL[d]	0.0005	Adult drinking water ingestion rate: 0.034 L/kg body weight/day Daily exposure (365 days/yr) Assumes only 20% of PFPrA exposure comes from drinking water (i.e., 80% from other sources)	3

[a]Hawaii has a screening level of 1.8 ppb for PFPrA but its methodology appears to include a default approach in which bathing and showering exposures are included; however, this is not a meaningful pathway for PFPrA.

[b]Source: Resident Tap Water RSL November 2024 HQ10 PDF,

[c]Source: https://www.epa.gov/risk/regional-screening-levels-rsls-users-guide

[d]Source: https://water.usgs.gov/water-resources/hbsl/index.html

The approximately 3-fold difference between the US EPA and USGS drinking water screening values is a result of the two authoritative bodies using different equations and exposure scenario assumptions. The US EPA's child-specific exposure scenario uses a more conservative drinking water ingestion rate that is 1.5 times greater than the adult drinking water ingestion rate used by USGS. US EPA also considered the very minor

contributions from dermal exposures to drinking water in their Regional Screening Level (RSL).

Unlike US EPA, USGS accounted for the fact that people can be exposed to PFPrA through multiple sources, besides drinking water. To that end, they included a 20% relative source contribution factor in their calculations, further reducing their drinking water screening level by 5-fold from about 15 ppb to the final 3 ppb value. Further support for this decision comes from other scientific studies; for example, Zheng et al., 2023 showed that ingestion of PFPrA-containing house dust can be a significant source of exposure, and Huang et al., 2026 concluded that the diet may be a major source of exposure to ultra-short chain PFAS including PFPrA. This decision by USGS more than counterbalances the conservative exposure scenario decisions that US EPA used for the Regional Screening Level (RSL), and results in a more health-protective screening level.

For additional context and comparison, several states and federal agencies have derived drinking water screening levels for PFBA. These values range from 1.8 to 24 µg/L, which encompasses the range of screening levels that have been derived for PFPrA. A list of these values is included in Table 3 below.

Table 3. PFBA Standards and Guidance Values developed by other States and Authoritative Agencies

Location	Type of Standard/Guidance for PFBA	Year Last Updated	Value (all in microgram per liter)
U.S. Environmental Protection Agency[a]	Regional Screening Level (Drinking Water) – 2024	2024	18
Connecticut[a]	Action level (Drinking Water/Groundwater)	2023	1.8
Delaware[a]	Screening Level (Groundwater)	2024	1.8
Hawaii[a]	Environmental Action Level (Groundwater)	2024	15
Illinois[b]	Health Advisory Guidance Level	2025	3.8
Iowa[a]	Statewide standards (Protected groundwater)	2025	7
Maine[a]	Remedial Action Guideline (Groundwater-Residential)	2023	19
Minnesota[a]	Health Risk Limit (Drinking Water/Groundwater)	2023	7
North Carolina[a]	Interim Maximum Allowable Concentration (Groundwater)	2024	7
Texas[a]	Tier 1 Protective Concentration Level (Groundwater)	2025	24
USGS[c]	Health Based Screening Level	2024	6
Washington[a]	Method B Cleanup Level (Groundwater/Drinking Water)	2024	8
Wisconsin[d]	Drinking Water Health Advisory	2020	10

[a] Source: Data Tables – PFAS — Per- and Polyfluoroalkyl Substances

[b] Source: Health Advisory Update for Perfluorobutanoic Acid (PFBA)

[c] Source: https://water.usgs.gov/water-resources/hbsl/index.html

[d] Source: Chemicals: Perfluoroalkyl and Polyfluoroalkyl (PFAS) Substances | Wisconsin Department of Health Services/Cycle 11 response letter from DHS to DNR: Summary of Cycle 11 Recommendations - November 6, 2020

Conclusion

DOH understands the need for guidance to inform actions related to concerns about PFPrA contamination of groundwater and drinking water in the Town of East Hampton, Suffolk County. After considering the above-mentioned screening levels derived by Federal agencies, DOH supports the use of the USGS Health-Based Screening Level for PFPrA of 3 parts per billion as a **preliminary, site-specific screening value** to be applied for this situation at this time. The USGS Health-Based Screening Level relies upon the USEPA reference dose and this in turn relies upon a well-designed toxicology study showing adverse liver effects. The reference dose also appropriately takes into consideration the limitations and uncertainties present in the PFPrA database. The USGS Health-Based Screening Level of 3 ppb is the more health-protective value when compared against the USEPA Regional Screening Level of 9.8 ppb. Further, the Health-Based Screening Level was calculated by USGS in a manner that aligns with the way DOH has derived similar values previously.

We also recognize that PFPrA concentrations below the USGS Health-Based Screening Level may still be indicative of its occurrence above commonly detected levels and thus warrant additional investigation.

Scientific understanding of PFAS continues to evolve rapidly and the public health implications of environmental contamination by ultra-short chain PFAS, including PFPrA, represent an area of uncertainty and research interest. Due to this uncertainty, DOH is recommending use of the USGS Health-Based Screening Level as a preliminary screening level in a site-specific manner to compare results against when making drinking water decisions in the current East Hampton PFAS investigation. Thus, DOH recommends that the public's consumption of drinking water with levels of PFPrA at or above 3 ppb is minimized to the greatest extent possible, while levels detected below 3 ppb may still merit further investigation. We will continue to monitor emerging research on PFPrA and other ultra-short chain PFAS and update our recommendation should new scientific information emerge that indicates such a change is warranted for the protection of public health.

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