

# Per- and Polyfluoroalkyl Substances (PFAS)

## Summary of State Regulation to Protect Drinking Water

### PFAS and U.S. Drinking Water

Per- and polyfluoroalkyl substances (PFAS) are a large group of environmentally persistent, man-made chemicals used in industrial and commercial household uses including firefighting activities, stain repellents, and non-stick cookware. Currently there are over 600 PFAS compounds that the EPA has approved for sale or import into the United States. Due to their widespread use, PFAS are being found at low ambient levels in the environment.

As concern over PFAS contamination grew, the United States Environmental Protection Agency (EPA) included six PFAS as part of the third Unregulated Contaminant Monitoring Rule and public water systems (PWSs) began monitoring these PFAS in finished drinking water supplies across the U.S. Two PFAS, perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), were found to be present in finished drinking water of approximately 1.3% of PWSs at levels that exceed the EPA's 2016 health advisory level of 70 nanograms per liter (ng/L) for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), individually or combined.

The EPA and Agency for Toxic Substances and Disease Registry (ATSDR) both report that the most consistent health effect from PFAS exposure is increased cholesterol levels. There are more limited findings related to effects on the immune system, cancer, and low infants birth weights. The EPA published Draft Interim Recommendations for Addressing Groundwater Contaminated with PFOA and PFOS in April 2019. The draft recommendations include a screening level of 40 ng/L for both PFOA and PFOS and a preliminary remediation goal of 70 ng/L (combined for PFOA and PFOS) for impacted drinking water supplies. The EPA also expects to make a determination late this year to regulate PFOA and PFOS under Safe Drinking Water Act, but the current pace of federal action has led to individual states taking regulatory actions individually.

### State Regulatory Activities

The following tables provide a summary of state regulation for PFAS to protect drinking water. Table 1 provides an overview of the relevant state policies applicable to finished drinking water; Table 2 provides an overview of the relevant policies to protect present or future sources of drinking water.

### Additional AWWA Resources

The following resources can be accessed on our [PFAS Resource webpage](#).

- Technical fact sheets covering "Overview and Prevalence", "Sampling, Monitoring, and Analysis", and "Treatment"
- AWWA's Testimony to United States House and Senate on PFAS
- Relevant Journal of AWWA articles or standards
- Other related resources

### Abbreviations

GenX – Hexafluoropropylene oxide dimer acid

PFBA – Perfluorobutanoic acid

PFBS – Perfluorobutanesulfonic acid

PFOA – Perfluorooctanoic acid

PFHxA – Perfluorohexanoic acid

PFNA – Perfluorononanoic acid



PFHpA – Perfluoroheptanoic acid

PFOS – Perfluorooctanesulfonic acid

PFHxS – Perfluorohexanesulfonic acid

PFDA – Perfluorodecanoic acid

**Table 1: State Regulation of PFAS for Finished Drinking Water (August 12, 2019)**

Type of Guidance	State	Status	Year	Drinking Water Limit (ng/L or ppt)											
				Combined PFAS	GenX	PFBA	PFBS	PFHpA	PFHxA	PFHxS	PFOA	PFOS	PFNA	PFDA	
Maximum Contaminant Level	Vermont (i)	Effective	May 2019	20					*		*	*	*	*	
	New Hampshire	Effective	July 2019								18	12	15	11	
	New Jersey	Effective	Sept 2018											13	
		Rulemaking Proposed	April 2019									14	13		
	Massachusetts	Pre-Proposal Development Phase	June 2019	20					*		*	*	*	*	*
	Michigan (ii)		June 2019		370		420			400,000	51	8	16	6	6
	New York (iii)		Dec 2018									10	10		
	Pennsylvania		Feb 2018	Specific PFAS Targeted Not Yet Announced											
Washington	May 2019		Specific PFAS Targeted Not Yet Announced												
Health Based Guidance Levels	Alaska	Effective	Apr 2019	70								*	*		
	California (iv)	Effective	June 2018	70								*	*		
		Effective	June 2018									14	13		
	Connecticut	Effective	Dec 2016	70					*		*	*	*	*	
	Maine	Effective	Jan 2017	70							*	*			
	Massachusetts	Effective	June 2018	70					*		*	*	*	*	
	Michigan	Effective	Feb 2019	70								*	*		
		Effective	Feb 2019				1,000				84	9	8	9	
	Minnesota	Effective	Apr 2017								47		15		
		Effective	May 2017								35				
		Effective	Aug 2017			7,000									
		Effective	Dec 2017				2,000								
	New Jersey	Effective	2007									40			
	North Carolina	Effective	Sep 2017			140									
Pennsylvania	Effective	2016	70								*	*			
Rhode Island (v)	Effective	Oct 2017	70								*	*			
Vermont	Effective	July 2018	20								*	*	*	*	

\* Compounds with this symbol shown are included in a group limit

(i) Interim drinking water maximum contaminant level mandated by state legislature.

(ii) Proposed limits also include a 6 ppt screening level recommendation for other long-chain PFAS measured under USEPA Method 537.1 including: perfluorodecanoic acid (PFDA), N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA), N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA), perfluorododecanoic acid (PFDoA), perfluorotetradecanoic acid, perfluorotridecanoic acid (PFTTrDA), and perfluoroundecanoic acid (PFUnA).

(iii) New York Drinking Water Resource Council recommended that Department of Health adopt the above standards. No further updates since December 2018.

(iv) California has a notification level and a more stringent response level.

(v) Guidance value targets contaminated groundwater or surface water that is used for drinking water.

Note: Alabama, Colorado, Florida, Idaho, Virginia, Washington, and West Virginia do not have policies but have advertised the EPA Health Advisory Level.

**Note**  
Please note that, due to the dynamic nature of this topic, this document is intended to serve only informational purposes. Interested parties are encouraged to contact appropriate regulatory authorities to verify current and application regulations for specific projects.



**Table 2: State Regulation of PFAS to Protect Drinking Water Sources (August 12, 2019)**

Type of Guidance	State	Status	Year	Drinking Water Limit (ng/L or ppt)												
				Sum of PFAS	GenX	PFBA	PFBS	PFHpA	PFHxA	PFHxS	PFOA	PFOS	PFNA	PFDA	Other	
Groundwater Clean-Up Target Levels	Alaska (i)	Effective	2016	400								*	*			
		Rulemaking Proposed	Oct 2018	70			400,000		*		*	*	*	*		
		Effective	Apr 2019	70									*	*		
	Colorado (ii)	Effective	Apr 2018	70								*	*			
	Iowa	Effective	2016	70								*	*			
	Michigan	Effective	June 2018	70								*	*			
	Montana	Effective	June 2019	70								*	*			
	Nebraska	Effective	Sept 2018	70								*	*			
	New Hampshire	Rulemaking Proposed	June 2019								18	12	15	11		
	New Jersey	Effective	Mar 2019									10	10			
	North Carolina	Effective	Dec 2006									2,000				
	Texas	Effective	Sept 2014			71,000	34,000	560	93	93	290	560	290	370	(iii)	
	Vermont	Effective	July 2018	20					*		*	*	*	*		
Wisconsin	Pre-Proposal	June 2019	20								*	*				
	Pre-Proposal	Apr 2019		*	*	*	*	*	*	*			*	*	(iv)	
Groundwater Guidance Levels	Delaware	Effective	Feb 2018	70							*	*				
	Maine	Effective	Oct 2018	400							*	*				
	Minnesota	Effective	Apr 2019							47		15				
	Nevada	Effective	July 2017				667,000					667	667			
	Rhode Island	Effective	Oct 2017	70								*	*			
	Vermont	Effective	May 2019	2					*		*	*	*	*		
		Effective	July 2018	10					*		*	*	*	*		
Wisconsin	Pre-Proposal	June 2019	2								*	*				
Groundwater Discharge Limits	Colorado	Effective	Apr 2018	70							*	*				
	New Hampshire	Rulemaking Proposed	June 2019							18	12	15	11			
	New Jersey	Effective	Mar 2019								10	10				
	Wisconsin	Pre-Proposal	June 2019	20							*	*				
Surface Water Discharge Limits	Michigan	Effective	2015								420	11				
	Montana	Effective	June 2019	70							*	*				
	Oregon	Effective	Sept 2017					300,000			24,000	300,000	1,000		(v)	
	Vermont	Pre-Proposal	May 2019													

\* Compounds with this symbol shown are included in a group limit

(i) Alaska currently has a groundwater cleanup standard and proposed revisions in October 2018. In April 2019, Alaska DEC issued guidance requiring responsible parties of groundwater contamination to provide alternative water supply or treatment for drinking water supplies affected by contamination.

(ii) Site-specific groundwater quality standard is applicable only to El Paso County.

(iii) Texas's groundwater clean-up target levels standard also includes a 93 ppt limit perfluoropentanoic acid (PFpTA) and a 290 ppt limit for each of the following PFASs: perfluorooctanesulfonamide (PFOSA), perfluorododecanoic acid (PFDoA), perfluorotetradecanoic acid (PFTa), perfluorotridecanoic acid (PFTrDA), perfluoroundecanoic acid (PFUnA), and perfluorodecane sulfonic acid (PFDS).

(iv) The complete list of PFAS groundwater standards requested includes over 30 PFAS, a complete list can be found Here

(<https://dnr.wi.gov/topic/Contaminants/documents/pfas/DHSLetter20190410.pdf>)

(v) Limits also include an individual limit of 200 ppt for PFOSA.

**Note**

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