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### Just Short of a Rule: Washington State's Recommendations on PFAS Cleanup Levels

The Washington State Department of Ecology (Ecology) recently released a [focus sheet](#) that provides Ecology's recommended soil and groundwater cleanup levels for a group of chemical compounds known as per- and polyfluoroalkyl substances (PFAS). This is the latest step by Ecology to require cleanup of PFAS at contaminated sites. With this step, Washington becomes one of the first to attempt to include these chemicals during cleanup actions.

#### **What Are PFAS?**

PFAS are a group of human-made chemicals identified by signature elemental bonds of fluorine and carbon, which are extremely strong and difficult to break down in the environment. As a result, PFAS are persistent and can withstand high temperatures and highly corrosive environments. While PFAS include the commonly known and used perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), and GenX, Ecology's focus sheet will regulate six total PFAS: PFOA, PFOS, perfluorononanoic acid (PFNA), perfluorohexane sulfonate (PFHxS), perfluorobutane sulfonic acid (PFBS), and GenX.

PFAS have been manufactured and used in a variety of industries around the globe, including the United States since the 1940s. Because of their ability to repel water and oil, PFAS are used in many different types of products, including firefighting foam known as aqueous film forming foam (AFFF), stain-resistant carpets, roofing materials, coatings, food packaging, water-resistant outdoor clothing and gear, nonstick cookware, and boots, among others.

#### **The Model Toxics Control Act and the Regulation of Contaminated Sites**

The Model Toxics Control Act, RCW 70A.305 (MTCA) is Washington's environmental cleanup law. MTCA governs the cleanup and prevention of contaminated sites in Washington. MTCA's Cleanup Regulations, WAC 173-340 apply to all contaminated sites, whether they involve contamination on land or in groundwater, or contaminated sediment in freshwater or marine environments.

MTCA defines a two-step approach for developing requirements for cleaning up contaminated sites. First, Ecology will establish cleanup standards that provide a uniform, statewide approach to cleanup. These standards have two primary components: (1) cleanup levels that determine the concentration at which a hazardous substance that remains in soil or groundwater no longer threatens human health or the environments, and (2) point of compliance where cleanup levels must be met. Second, an entity must evaluate options for cleaning up a site, and then decide which option would best achieve cleanup standards.

#### **Recommended Cleanup Levels for PFAS**

In its July 2022 *Site Register*, Ecology stated that it is currently working on PFAS guidance to provide direction on investigating and cleaning up PFAS. The agency anticipates releasing that guidance for public review and comment later this year. But instead of waiting to publish that guidance and receive public comment, Ecology released a nonbinding PFAS focus sheet that provides "recommended" cleanup levels for the six previously discussed PFAS. These closely follow the Washington State Department of Health State Action Levels (SAL)

for groundwater that contains PFAS. Ecology recommends using the SALs as the appropriate groundwater cleanup levels for PFOA, PFOS, PFNA, PFHxS, and PFBS. For the sixth PFAS without a SAL, (GenX), Ecology recommends using the peer-reviewed non-cancer reference doses (RfDs) developed by the U.S. Environmental Protection Agency (EPA) to calculate the appropriate cleanup level. This information is included in Table 1 below:

**Table 1: Recommended groundwater cleanup levels**

PFAS compound	Recommended groundwater cleanup level	EPA health advisory level
PFOA	10 ng/L	0.004 ng/L
PFOS	15 ng/L	0.02 ng/L
PFNA	9 ng/L	None
PFHxS	65 ng/L	None
PFBS	345 ng/L	2,000 ng/L
HFPO-DA (GenX)	24 ng/L	10 ng/L

Ecology also created recommended soil cleanup levels that are protective of groundwater for the same six PFAS compounds. This information is included in Table 2 below:

**Table 2: Recommended soil cleanup levels protective of groundwater**

PFAS compound	Vadose zone	Saturated zone
PFOA	6.3E-05 mg/kg	4.0E-06 mg/kg
PFOS	1.7E-04 mg/kg	9.9E-06 mg/kg
PFNA	8.0E-05 mg/kg	4.8E-06 mg/kg
PFHxS	4.1E-04 mg/kg	2.6E-05 mg/kg
PFBS	1.8E-03 mg/kg	1.2E-04 mg/kg
HFPO-DA (GenX)	1.0E-04 mg/kg	7.2E-06 mg/kg

## Conclusion

Under MTCA, cleanup levels must comply with applicable local, state, and federal laws, along with requirements Ecology has determined to be "relevant and appropriate" WAC 173-340-710(4). As of June 2022, there are no legally applicable state or federal laws to apply when developing PFAS cleanup levels, but based on its focus sheet, Ecology is "recommending" PFAS cleanup levels which suggests the recommended PFAS cleanup levels are likely to be deemed "relevant and appropriate" at cleanup sites overseen by Ecology, and potentially all MTCA sites. Of course, until Ecology makes a site-specific determination, the soil and groundwater cleanup levels Ecology has recommended are considered preliminary cleanup levels. But entities responsible for ongoing or planned cleanups in Washington should consider how these recommendations will affect the timing and cost of their cleanups going forward. So, too, should entities who have already completed cleanups in Washington consider whether they may need to revisit those cleanups (under reopener clauses in cleanup agreements or otherwise). Additionally, all potentially affected parties should consider commenting on whatever guidance Ecology eventually publishes on this topic.

## Authors

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