

Ryan Mathews

Please see attached file with comments from Fulcrum Environmental Consulting, Inc.

March 2, 2023

Washington State Department of Ecology
Attn: Mark Gordon, Environmental Engineer
P.O. Box 47600
Olympia, Washington 98504-7600

**RE: Public Comments
Draft PFAS Guidance for Investigating & Remediating PFAS Contamination in
Washington State**

Dear Mark,

Thank you for the opportunity to review and provide comments to the Washington State Department of Ecology's (Ecology) *Draft PFAS Guidance for Investigating & Remediating PFAS Contamination in Washington State*.¹

Ecology's draft Per- and polyfluoroalkyl substances (PFAS) guidance is likely to have a significant impact on residents of the state of Washington socially, economically, and environmentally. We request that the guidance be withdrawn and that a robust public process involving representatives of business, industry, and agriculture; banking and finance; environmental, risk, and health professionals; and others be used to develop guidance that is both protective of human health and the environment and implementable while considering the anthropogenic background signature of this class of chemicals.

As proposed, the guidance is likely to adversely impact the redevelopment of every site in the state of Washington, pushing economic progress, affordable housing, environmental justice, and family wage jobs into the distant future.

We have identified three primary questions that we do not believe are sufficiently addressed in the guidance, areas Ecology should conduct future evaluation, and conditions where we do not believe MTCA provides a flexible framework to utilize this guidance.

Question 1: What are the Area-Wide Background Levels of PFAS?

A key hallmark of Washington Administrative Code (WAC) 173-303: *Model Toxics Control Act* (MTCA) is that the permanent remedy often requires the removal of every trace of a compound to the naturally occurring or background level. As a synthetic compound, there are no naturally-occurring levels of PFAS compounds in the environment. However, PFAS compounds have commonly been found in rain and snowfall precipitation. The ubiquitous nature of nonpoint sources of PFAS means that PFAS contamination

¹ 2022. Washington State Department of Ecology, Toxics Cleanup Program, *DRAFT Guidance for Investigating and Remediating PFAS Contamination in Washington State*, Publication No. 22-09-058, Draft December 2022.
<https://apps.ecology.wa.gov/publications/documents/2209058.pdf>

will not be geographically limited to areas with known releases, as with the localized impact of an onsite release of a common petroleum, solvent, or metal contaminant, but is instead best considered an area-wide background issue. Background studies of surficial soil completed in other states have consistently detected PFAS in shallow soils across the states, including at properties that have no commercial or industrial development history.

MTCA provides the framework to establish a site-wide background concentration. However, given the low cleanup criteria under the proposed guidance, especially for the soil – protective of groundwater pathway, a site-specific background study would become necessary for every site. The methods and costs of PFAS investigations are extensive and expensive. Given the high costs of PFAS analysis, a simple site, with no historical site use which is likely to have utilized PFAS, would have to spend tens of thousands of dollars on a PFAS investigation and even more to determine the background level of PFAS impact from offsite non-point source releases.

Rather than burden individual sites to study and understand an area-wide concern, Ecology should spend the time necessary to evaluate the regional background levels of PFAS in Washington State before adopting PFAS cleanup levels. This public effort would improve the understanding of the current background nature of PFAS contamination across Washington to distinguish localized contamination that may require cleanup action from area-wide background contamination.

Question 2: What Assumptions are Made in the Leaching Pathway Calculations?

The mobility of PFAS compounds generally, and the relative mobility of each PFAS compound specifically, have not been sufficiently evaluated. Compound mobility is affected by soil type and composition, including soil moisture, organics, and the presence of other compounds. Absent a clearer understanding of the effect of mobility through the soil column, there is an insufficient basis to calculate a groundwater level from a measured soil concentration. Ecology’s PFAS Chemical Action Plan states on page 434 that:

“Use of hypothetical leaching models with unrealistic input parameters may calculate unachievable soil contaminant concentration limits. Several states are currently considering a variety of PFAS threshold values for soil based on such modeling. Some of these values for PFAS concentrations in soil may exceed local background levels making them unrealistic and to implement as a regulatory standard. Setting unrealistic (and potentially unenforceable) contaminant thresholds undermines public support for regulation.”²

Question 3: What is the Effect of Changing Standards?

PFAS is a developing issue with an incomplete understanding of the sources of PFAS compounds, the relative hazard of PFAS compounds, and the ubiquitous nature of PFAS in the environment, including in

² 2022. Washington State Department of Ecology, Hazardous Waste and Toxics Reduction Program, *Per- and Polyfluoroalkyl Substances Chemical Action Plan*. Publication No. 21-04-048, Revised September 2022.
<https://apps.ecology.wa.gov/publications/documents/2104048.pdf>

atmospheric deposition. The National Institute for Occupational Safety and Health (NIOSH) reports that there are over 9,000 different PFAS compounds.³ As more is learned about PFAS, a hierarchy of risk, similar to that employed under MTCA for carcinogenic polyaromatic hydrocarbons (PAHs), should be considered to holistically understand the entire PFAS burden, rather than focusing on individual compounds.

As Ecology's draft PFAS guidance states on page 12:

“The chemical-by-chemical approach to developing action levels for PFAS should be considered an interim solution due to the number of PFAS chemicals and the frequent detections of PFAS mixtures in environmental media. As more information becomes available, it may be possible to evaluate PFAS as a complex mixture according to subclasses based on key characteristics such as chemical structure, bioavailability, bioaccumulation potential, toxicity, or mechanism of action (DOH, 2021a).”

A Need for Additional Evaluation and Legislative Action

The draft PFAS guidance should be withdrawn until a robust public process, fully evaluating the social, economic and environmental impact of this guidance, can be completed. It is also apparent that legislative review and potential amendment to MTCA should be considered to address this emerging contaminant and better address the presence of and response to PFAS compounds that have become ubiquitous in our environment through nonpoint source pollution.

Thank you for the opportunity to provide comments on the draft guidance.

If you should have any questions, I can be contacted at 509.574.0839.

Sincerely,



Ryan K. Mathews, CIH, CHMM
Principal

³ 2022. The National Institute for Occupational Safety and Health, *Per- and polyfluoroalkyl substances (PFAS)*, Last Reviewed: September 15, 2022, January 27, 2023. <https://www.cdc.gov/niosh/topics/pfas/default.html>