perfluoropentanoic acid (PFPeA),[10] and perfluoroheptanoic acid (PFHpA),[11] is associated with many of the same health outcomes as exposure to PFOA and PFOS.

Given the recognized harms posed by PFAS compounds, on April 10, 2024, EPA made the historic announcement that it has finalized enforceable national drinking water standards for six PFAS compounds.[12] EPA is limiting concentrations of PFOA and PFOS to 4.0 ppt, with a maximum contaminant level goal of 0 ppt.[13] This maximum contaminant level goal recognizes that *no* level of PFOA or PFOS in drinking water is considered safe. Additionally, PFHxS, PFNA, and HFPO-DA (commonly known as GenX chemicals) have a maximum contaminant level (MCL) of 10 ppt each.[14] EPA also finalized a Hazard Index MCL to account for dose-additive health effects for mixtures that could include two or more of PFHxS, HFPO-DA, PFNA, and PFBS, recognizing that mixtures of PFAS can be harmful.[15]

While the harms to human health are extreme, PFAS are also detrimental to wildlife and the environment. The chemicals have been shown to cause damaging effects in fish,[16]

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[10] Xin Liu et al., *Structure-Based Investigation on the Association Between Perfluoroalkyl Acids Exposure and Both Gestational Diabetes Mellitus and Glucose Homeostasis in Pregnant Women*, 127 ENV'T INT'L 85–93 (2019), https://perma.cc/V86G-BP4R; Surabhi Shah-Kulkarni et al., *Prenatal Exposure to Perfluorinated Compounds Affects Thyroid Hormone Levels in Newborn Girls*, 94 ENV'T INT'L 607–13 (2016), https://perma.cc/VDR2-XAL6; Xiaofei Song et al., *Biomonitoring PFAAs in Blood and Semen Samples: Investigation of a Potential Link Between PFAAs Exposure and Semen Mobility in China*, 113 ENV'T INT'L 50–54 (2018).

[11] European Chemicals Agency, Committee for Risk Assessment RAC Opinion: Proposing Harmonised Classification and Labelling at EU Level of Perfluoroheptanoic Acid; Tridecafluoroheptanoic Acid (Dec. 10, 2020), https://perma.cc/3N4G-S4Q9 (finding PFHpA may cause liver and thyroid damage as well as a myriad of fertility and fetal development concerns including lower birth weight, delayed mammary gland development, low sperm count and mobility, and increased risk of miscarriage).

[12] 89 Fed. Reg. at 32,532, *supra* note 2.

[13] *Id.* at 2, 4–5.

[14] *Id.* at 4–5.

[15] *Id.* at 5.

[16] Chen et al., *Perfluorobutanesulfonate Exposure Causes Durable and Transgenerational Dysbiosis of Gut Microbiota in Marine Medaka*, 5 ENV'T SCI. & TECH LETTERS 731–38 (2018); Chen et al., *Accumulation of Perfluorobutane Sulfonate (PFBS) and Impairment of Visual Function in the Eyes of Marine Medaka After a LifeCycle Exposure*, 201 AQUATIC TOXICOLOGY 1–10 (2018); Du et al., *Chronic Effects of Water-Borne PFOS Exposure on Growth, Survival and Hepatotoxicity in Zebrafish: A Partial Life-Cycle Test*, 74 CHEMOSPHERE 723–29 (2009); Hagenaars et al., *Structure–Activity Relationship Assessment of Four Perfluorinated Chemicals Using a Prolonged Zebrafish Early Life Stage Test*, 82 CHEMOSPHERE 764–72 (2011); Huang et al., *Toxicity, Uptake Kinetics and Behavior Assessment in Zebrafish Embryos Following Exposure to Perfluorooctanesulphonicacid (PFOS)*, 98 AQUATIC TOXICOLOGY 139–47 (2010); Jantzen et al., *PFOS, PFNA, and PFOA Sub-Lethal Exposure to Embryonic Zebrafish Have Different Toxicity Profiles in terms of Morphometrics, Behavior and Gene Expression*, 175 AQUATIC TOXICOLOGY 160–70 (2016); Liu et al., *The Thyroid-Disrupting Effects of Long-Term Perfluorononanoate Exposure on Zebrafish (Danio rerio)*, 20 ECOTOXICOLOGY 47–55 (2011); Chen et al., *Multigenerational Disruption of the Thyroid Endocrine System in Marine Medaka after a Life-Cycle Exposure to Perfluorobutanesulfonate*, 52 ENV'T SCI. & TECH. 4432–39 (2018); Rotondo et al., *Environmental Doses of Perfluorooctanoic Acid Change the Expression of Genes in Target Tissues of Common Carp*, 37 ENV'T TOXICOLOGY & CHEM. 942–48 (2018).