



ASSISTANT SECRETARY OF DEFENSE

3400 DEFENSE PENTAGON
WASHINGTON, DC 20301-3400

ENERGY, INSTALLATIONS,
AND ENVIRONMENT

August 24, 2023

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS,
ENERGY AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE NAVY (ENERGY,
INSTALLATIONS AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE AIR FORCE
(INSTALLATIONS, ENVIRONMENT AND ENERGY)
DIRECTOR, NATIONAL GUARD BUREAU (JOINT STAFF, J3/4/7)
DIRECTOR, DEFENSE LOGISTICS AGENCY (INSTALLATION
MANAGEMENT)

SUBJECT: Investigating Per- and Polyfluoroalkyl Substances within the Department of Defense Cleanup Program

The Department of Defense (DoD) conducts cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Defense Environmental Restoration Program (DERP). Our goal is protection of human health and the environment in a risk-based, fiscally-sound manner. This memorandum provides clarifying technical guidance on the investigation of eight per- and polyfluoroalkyl substances (PFAS): perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorobutanoic acid (PFBA), perfluorobutanesulfonic acid (PFBS), perfluorononanoic acid (PFNA), perfluorohexanoic acid (PFHxA), perfluorohexanesulfonic acid (PFHxS), and hexafluoropropylene oxide dimer acid (HFPO-DA, or GenX) based on recent U.S. Environmental Protection Agency (EPA) information. This guidance is applicable to investigating these chemicals at Environmental Restoration Account-funded, Base Realignment and Closure Account-funded, and federal Air and Army Guard Operation and Maintenance account-funded sites.

This revised memorandum accounts for the May 2023 EPA regional screening levels (RSLs) for PFBA and PFHxA in addition to the RSLs for the other six PFAS. The RSLs for PFOS, PFOA, PFBS, PFNA, PFHxS, and HFPO-DA remain unchanged since EPA's May 2022 update. EPA has provided screening levels for these PFAS compounds using updated, final, peer-reviewed information from the Agency for Toxic Substances and Disease Registry¹, the

¹ Agency for Toxic Substances and Disease Registry (ATSDR), May 2021. *Toxicological Profile for Perfluoroalkyls*.

EPA Office of Research and Development,² the EPA Office of Water,³ and the Integrated Risk Information System (IRIS).⁴

PFAS shall be addressed in the same manner as other contaminants of concern within the DERP. HFPO-DA has primarily been used as a replacement for PFOA in the manufacture of fluoropolymers, so it is not likely to have been released at the vast majority of DoD properties. As with all chemicals, the conceptual site model should be used to determine the necessity for addressing HFPO-DA.

CERCLA RSLs for these chemicals are shown in the EPA RSL Tables⁵ and are provided in the attachment. When multiple PFAS are encountered at a site, RSLs set at a hazard quotient of 0.1 are used for screening purposes. Consistent with the CERCLA process, DoD Components will incorporate these screening values into ongoing and future preliminary assessment/site inspections (PA/SI) and should be used to determine if further investigation in the remedial investigation (RI) phase is warranted or if no further action is required. Completed PA/SIs with determinations of “no further action” will be re-assessed based on the updated RSLs.

During the RI phase, the non-carcinogenic reference doses (RfDs) for PFOS, PFOA, PFBA, PFBS, PFNA, PFHxA, PFHxS, and HFPO-DA and the oral cancer slope factor (SFO) for PFOA of $0.07 \text{ (mg/kg-day)}^{-1}$ will be used to conduct site specific risk assessments in accordance with Risk Assessment Guidance for Superfund Volume I, Part A (EPA/540/1-89/002, December 1989).⁷ Site-specific risk assessment results will depend on the levels of PFAS found at each site, and will be used to determine if any necessary remedial actions are required in accordance with CERCLA, DERP, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This memorandum is effective immediately and supersedes and cancels the Assistant Secretary of Defense for Sustainment memorandum, “Investigating Per- and Polyfluoroalkyl Substances within the Department of Defense Cleanup Program,” July 6, 2022. In anticipation of changes and additions to RSLs, DoD will maintain future updates or additions to existing PFAS-related RSLs on its PFAS website at: <https://www.acq.osd.mil/eie/eer/ecc/pfas/tf/policies.html> instead of updating this memo.

² U.S. Environmental Protection Agency (EPA), April 2021. *Provisional Peer-Reviewed Toxicity Values for Perfluorobutane Sulfonic Acid (CASRN 375-73-5) and Related Compound Potassium Perfluorobutane Sulfonate (CASRN 29420-49-3)*.

³ EPA, October 2021. *Human Health Toxicity Values for Hexafluoropropylene Oxide (HFPO) Dimer Acid and Its Ammonium Salt (CASRN 13252-13-6 and CASRN 62037-80-3), Also Known as “GenX Chemicals”*. EPA, May 2016. *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)*

⁴ EPA, *IRIS Toxicological Review of Perfluorobutanoic Acid (PFBA) and Related Salts* (Final Report, 2022, EPA/635/R-22/277F). EPA, *IRIS Toxicological Review of Perfluorohexanoic Acid (PFHxA) and Related Salts* (Final Report, 2023 EPA/635/R-23/027F)

⁵ The EPA RSL Tables are located at: <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables>.

⁷ Currently there are eight PFAS – PFOS, PFOA, PFBA, PFBS, PFNA, PFHxA, PFHxS, HFPO-DA (GenX) – with established toxicity values that DoD can use to perform a baseline risk assessment to determine whether remedial action is needed under CERCLA.

The point of contact for this matter is Ms. Cristina Harvey at 703-571-9067 or marcia.c.harvey2.civ@mail.mil.

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Brendan M. Owens

Attachment:
As stated

Attachment: Risk Screening Levels for PFOS, PFOA, PFBA, PFBS, PFNA, PFHxA, PFHxS, and HFPO-DA in Groundwater and Soil Based on EPA’s RSL Tables Dated May 2023

Chemical	Carcinogenic Slope Factor - Oral (SFO) (mg/kg-day) ⁻¹	Non-Carcinogenic Reference Dose (RfD) (mg/kg-day)	Residential Scenario Screening Levels Based on EPA RSL Tables Dated May 2023								Industrial/Commercial Composite Worker Screening Levels Based on EPA RSL Tables Dated May 2023			
			Tap Water (ng/L or ppt)				Soil (mg/kg or ppm)				Soil (mg/kg or ppm)			
			THQ = 0.1	THQ = 1.0	TR = 1E-06	TR = 1E-04	THQ = 0.1	THQ = 1.0	TR = 1E-06	TR = 1E-04	THQ = 0.1	THQ = 1.0	TR = 1E-06	TR = 1E-04
PFOS	NA	2.00E-06	4.0	40	NA	NA	0.013	0.13	NA	NA	0.16	1.6	NA	NA
PFOA	7.00E-02	3.00E-06	6.0	60	1,100	111,000	0.019	0.19	7.8	780	0.25	2.5	33	3,300
PFBA	NA	1.00E-03	1,800	18,000	NA	NA	7.8	78	NA	NA	120	1,200	NA	NA
PFBS	NA	3.00E-04	600	6,000	NA	NA	1.9	19	NA	NA	25	250	NA	NA
PFNA	NA	3.00E-06	5.9	59	NA	NA	0.019	0.19	NA	NA	0.25	2.5	NA	NA
PFHxA	NA	5.00E-04	990	9,900	NA	NA	3.2	32	NA	NA	41	410	NA	NA
PFHxS	NA	2.00E-05	39	390	NA	NA	0.13	1.3	NA	NA	1.6	16	NA	NA
HFPO-DA	NA	3.00E-06	6	60	NA	NA	0.023	0.23	NA	NA	0.35	3.5	NA	NA

THQ=Target Hazard Quotient

TR=Target Risk

NA=Not available/applicable

NOTES:

- Default exposure assumptions for each receptor scenario shown above are from EPA’s RSL Calculator on May 2023. The RSLs may be found in EPA’s RSL table or by using EPA’s RSL calculator
- Final peer reviewed toxicity values considered valid for a CERCLA risk assessment and the screening levels may be found in EPA’s RSL table or EPA’s RSL calculator. (The 2022 interim health advisories for PFOS and PFOA are based on draft toxicity values and are not used in CERCLA risk assessments.)
- Other potential receptor scenarios (e.g., recreational user, site trespasser, construction worker) are not included in the above table, but could be relevant receptors at a site potentially containing PFAS. These receptors, and their associated exposure scenarios, should be further considered in the scoping phase and completion of the Baseline Human Health Risk Assessment typically completed during an RI.
- The shaded values represent conservative screening levels in groundwater or soil that when exceeded should be considered a contaminant of potential concern in the Remedial Investigation’s risk assessment process.