OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
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WASHINGTON, DC 20301-3500

SUSTAINMENT

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, J8)
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 perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutanesulfonic acid (PFBS). This guidance is applicable to investigating PFOS, PFOA, and PFBS at Environmental Restoration Account-funded, Base Realignment and Closure Account-funded, and Operation and Maintenance accounts for the National Guard-funded sites.

This revised memorandum accounts for the updated PFBS screening levels and updates the Assistant Secretary of Defense for Sustainment (ASD(S)) memorandum, "Investigating Per- and Polyfluoroalkyl Substances within the Department of Defense Cleanup Program," October 15, 2019. The U.S. Environmental Protection Agency (EPA) reassessed the toxicity of PFBS in 2021.[1] One purpose of the assessment was to update and replace the existing 2014 Provisional Peer-Reviewed Toxicity Value (PPRTV) assessment for PFBS used by the EPA's Superfund Program. Based on studies published since 2014, the PFBS chronic reference dose (RfD) was reduced and use of the new value results in lower human health screening levels for this chemical.

PFOS, PFOA, and PFBS are part of a larger class of chemicals known as per- and polyfluoroalkyl substances (PFAS). PFAS shall be addressed in the same manner as other contaminants of concern within the DERP.

[1] U.S. EPA. Human Health Toxicity Values for Perfluorobutane Sulfonic Acid and Related Compound Potassium Perfluorobutane Sulfonate. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-20/345F, April 2021.

Under CERCLA, site-specific regional screening levels[2] (RSLs) for PFOS and PFOA are calculated using the EPA online calculator using the oral RfD of 2E-05 mg/kg-day. The RSL for PFBS is calculated using the EPA PPRTV RfD of 3E-04 mg/kg-day (old value was 2E-02 mg/kg-day), or it may be read off the tables available on the EPA RSL website. The values are provided in the attachment. These RSLs should be used for screening to determine if further investigation in the remedial investigation (RI) phase is warranted or if the site can proceed to site closeout. When multiple PFAS are encountered at a site, a 0.1 factor is applied to the screening level when it is based on noncarcinogenic endpoints. For example, in cases where there are multiple PFAS, the screening level for PFOS and PFOA individually in tap water is 40 parts per trillion (ppt) (0.1 x 400 ppt = 40 ppt) and for PFBS it is 600 ppt (old value was 40,000 ppt).

During the RI phase, the RfDs for PFOS, PFOA, and PFBS and the oral cancer slope factor (CSF) for PFOA of 0.07 $(mg/kg\text{-}day)^{-1}$ 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).[3] Site-specific risk assessment results 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 guidance is effective immediately and supersedes and cancels the ASD(S) memorandum, "Investigating Per- and Polyfluoroalkyl Substances within the Department of Defense Cleanup Program," October 15, 2019. The point of contact for this matter is Ms. Alexandria Long, Office of the Deputy Assistant Secretary of Defense for Environment and Energy Resilence, at 703-571-9061 or alexandria.d.long.civ@mail.mil.

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Steven J. Morani
Principal Deputy Assistant Secretary of Defense
for Sustainment (Logistics)
Acting Assistant Secretary of Defense for
Sustainment

Attachment:
As stated

[2] For sites on the National Priorities List, the DoD Components will use the EPA site specific screening levels, if provided.
[3] Currently there are only three PFAS – PFOS, PFOA, and PFBS – with established toxicity values that DoD can use to perform a baseline risk assessment to determine whether remedial action is needed under CERCLA.

Attachment: Risk Screening Levels Calculated for PFOS, PFOA, PFBS in Groundwater or Soil Using EPA's RSL Calculator

Chemical	Carcinogenic Slope Factor - Oral (SF) $(mg/kg\text{-}day)^{-1}$	Non-Carcinogenic Reference Dose (RfD) (mg/kg-day)	Residential Scenario Screening Levels Calculated Using EPA RSL Calculator								Industrial/Commercial Composite Worker Screening Levels Calculated Using EPA RSL Calculator			
			Tap Water (µg/L or ppb)				Soil (mg/kg or ppm)				Soil (mg/kg or ppm)			
			HQ = 0.1	HQ = 1.0	ILCR = 1E-06	ILCR = 1E-04	HQ = 0.1	HQ = 1.0	ILCR = 1E-06	ILCR = 1E-04	HQ = 0.1	HQ = 1.0	ILCR = 1E-06	ILCR = 1E-04
PFOS	NA	2.00E-05	0.040	0.40	NA	NA	0.13	1.3	NA	NA	1.6	16	NA	NA
PFOA	7.00E-02	2.00E-05	0.040	0.40	1.1	111	0.13	1.3	7.8	775	1.6	16	33	3,280
PFBS	NA	3.00E-04	0.6	6.0	NA	NA	1.9	19	NA	NA	25	250	NA	NA

HQ=Hazard Quotient
ILCR=Incremental Lifetime Cancer Risk
NA=Not available/applicable

NOTES:

- The table represents screening levels based on residential and industrial/commercial worker receptor scenarios for either direct ingestion of groundwater (residential scenario only) or incidental ingestion of contaminated soil (both residential and composite worker scenarios).
- All values were calculated using slope factors or reference doses for PFOS and PFOA published by EPA Office of Water in support of the LHA, and default exposure assumptions for each potential receptor scenario, contained in EPA's RSL Calculator on April 6, 2018.
- Peer reviewed toxicity values considered valid for risk assessment exist for PFBS, and the screening levels may be found in EPA's RSL table or EPA's RSL calculator used to develop them.
- 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 contaminated with PFOS, PFOA and/or PFBS. 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 for PFOS and PFOA in groundwater or soil that when exceeded should be considered a contaminant of potential concern in the risk assessment process and calculations of site-specific risk posed.