

Per- and Polyfluoroalkyl Substances Cleanup: Schedule, Status, and Cost Estimates



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TABLE OF CONTENTS

TABLE OF CONTENTS i
FIGURES..... i
APPENDIX..... i
I. INTRODUCTION 1
II. BACKGROUND 1
III. CLEANUP SCHEDULE AND STATUS 2
IV. COST ESTIMATES..... 3
V. CONCLUSION..... 3

FIGURES

Figure 1: Typical CERCLA Timeline.....2
Figure 2: Status of Installations Being Assessed for PFAS Use or Potential Release*3

APPENDIX

Per- and Polyfluoroalkyl Substances Cleanup: Schedule, Status, and Cost Estimates by DoD Installation

I. INTRODUCTION

This report, *Per- and Polyfluoroalkyl Substances (PFAS) Cleanup: Schedule, Status, and Cost Estimates*, contains the following information:

- A proposed schedule for the completion of remediation of PFAS, and the associated cost estimates to perform such remediation, at military installations,¹ facilities of the National Guard, and Formerly Used Defense Sites (FUDS) in the United States that are identified as of March 31, 2021, as having a release of PFAS, in accordance with Section 348 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2022 (Public Law 117-81);
- The status of efforts to remediate PFAS at certain military installations, in accordance with Section 349 of the NDAA for FY 2022; and
- A proposed schedule for the completion of remediation of PFAS at military installations, FUDS, and State-owned National Guard facilities in the United States and the associated cost estimates to perform such remediation; and the status of efforts to remediate PFAS at certain military installations, in accordance with House Report 117-118, pages 112 and 113, accompanying the NDAA for FY 2022.

PFAS are a national issue that requires national solutions. The Department of Defense (DoD) is taking cleanup actions to address PFAS from DoD activities nationwide. DoD's cleanup program follows the federal cleanup law (i.e., the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [CERCLA], also known as "Superfund") to address DoD releases of PFAS and determine the appropriate cleanup actions based on risk.

II. BACKGROUND

DoD is committed to protecting human health and the environment by conducting cleanup under CERCLA. DoD follows the CERCLA process to fully investigate releases, prioritize responses, and determine the appropriate cleanup actions based on risk to human health and the environment. The steps in the CERCLA process include the following:²

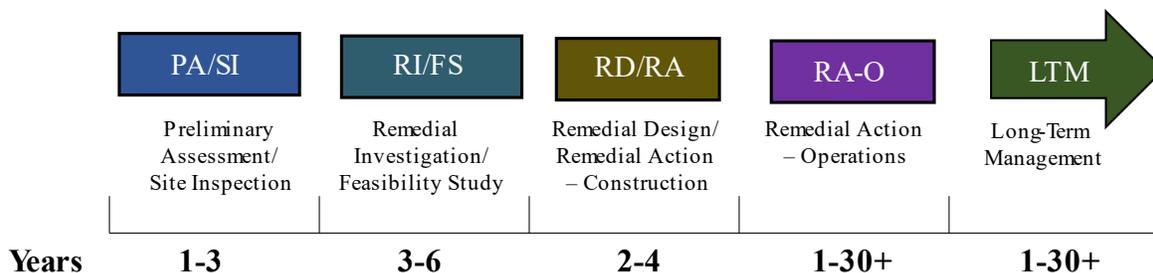
- Preliminary Assessment (PA)/Site Inspection (SI)
- Remedial Investigation (RI)/Feasibility Study (FS)
- Remedial Design (RD)/Remedial Action-Construction (RA-C)
- Remedial Action-Operation (RA-O)
- LTM

¹ In accordance with Section 2801(c)(4) of title 10, United States Code, "military installation" means a base, camp, post, station, yard, center, or other activity under the jurisdiction of the Secretary of a military department or, in the case of an activity in a foreign country, under the operational control of the Secretary of a military department or the Secretary of Defense, without regard to the duration of operational control.

² Sites do not have to progress through all CERCLA phases. For example, no further action may be required at the end of the RI/FS phase. In addition, some sites may not require an RA-O or LTM phase if response actions completed during the RD/RA-C phase are sufficient to clean up the sites.

Figure 1 shows the typical amount of time it takes to complete the CERCLA phases listed above.

Figure 1: Typical CERCLA Timeline



In addition to these phases, CERCLA can include short-term actions called “removal” or “interim” actions, which DoD conducts to address contaminants quickly to prevent, minimize, or mitigate damage to public health or welfare or to the environment. Removal actions can occur at any time during the CERCLA process. For example, if there is drinking water exposure to perfluorooctane sulfonate/perfluorooctanoic acid above the EPA’s lifetime drinking water Health Advisories (HAs) of 70 parts per trillion combined on or off base resulting from DoD activities, the Department initiates short-term actions (e.g., providing bottled water, point-of-use water filters) and long-term actions (e.g., municipal connections, filtration systems) so that no one – on or off base – is drinking water that is above EPA’s lifetime HAs. Typically, a removal action does not provide a final response action, and the site will continue through the CERCLA remedial process after completion of the removal action.

DoD tailors the actual sequence, timing, and scope of cleanup actions to site-specific conditions. Additionally, the Department prioritizes resources and addresses sites where risk to human health is the highest. As DoD moves through the CERCLA process, it works in collaboration with regulatory agencies, communities, and other stakeholders to ensure open and transparent information sharing.

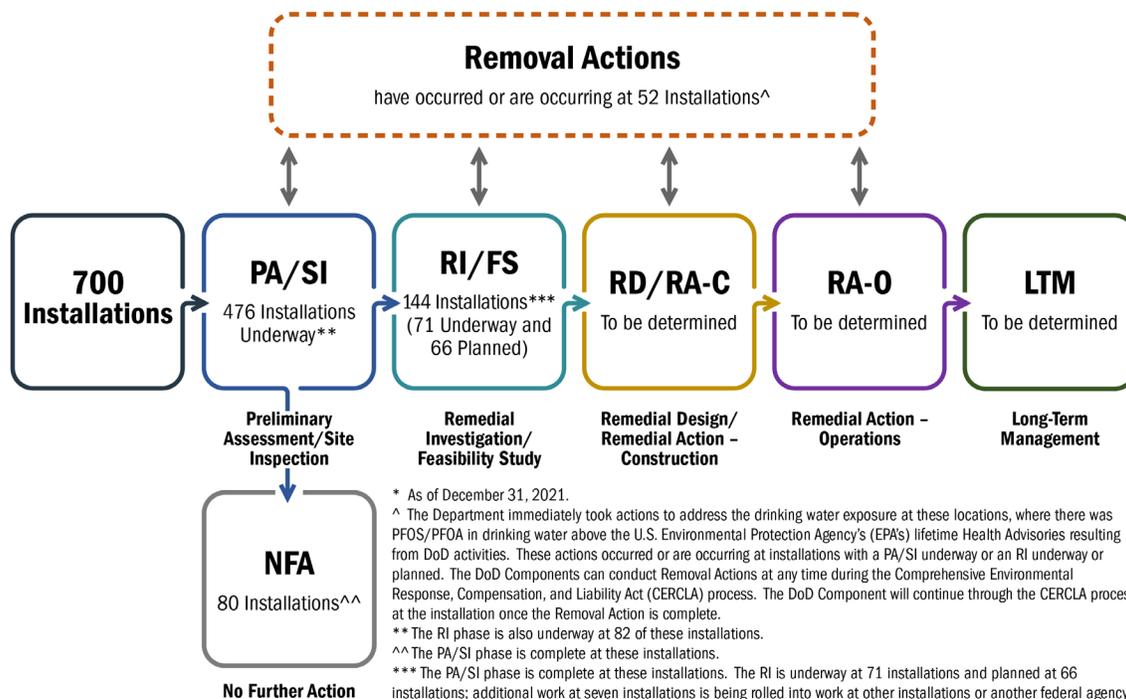
III. CLEANUP SCHEDULE AND STATUS

As of December 31, 2021, DoD has determined that 700 active military installations, Base Realignment and Closure (BRAC) locations, National Guard facilities, and FUDS properties require an assessment of PFAS use or potential release. These installations, along with their cleanup status, are identified in the appendix; the 50 installations listed in Section 349 of the NDAA for FY 2022 and in House Report 117-118, page 112, accompanying the NDAA for FY 2022, are shaded blue. The appendix also provides the current proposed schedule to complete PFAS cleanup, including the estimated completion dates for the PA/SI and RI/FS phases. Once DoD completes the RI/FS and learns more about the cleanup required, it will plan and program for requirements beyond this phase.

Figure 2 provides a summary of the cleanup status at the 700 installations DoD is assessing for PFAS use or potential release. As of December 31, 2021, DoD has completed the PA/SI phase at 224 installations (32 percent). The Department has determined that no further

action is required at 80 of these installations, while 144 are proceeding to the next step in the CERCLA process.

Figure 2: Status of Installations Being Assessed for PFAS Use or Potential Release*



IV. COST ESTIMATES

Through September 30, 2021, DoD has obligated \$1.46 billion to investigate and clean up PFAS. DoD anticipates obligating \$409.4 million in FY 2022 and an additional \$2.12 billion after FY 2022 to continue these efforts. The appendix provides these obligations by DoD installation.

The funding data presented in the appendix represents a snapshot in time of the obligations and estimated costs to investigate and clean up PFAS as of September 30, 2021. DoD does not track funding by contaminant, and the cost data in the appendix represents the DoD Components' best estimates of the funding obligated through FY 2021, and to be obligated in FY 2022 and beyond, for investigations and cleanup of DoD releases of PFAS. The Department expects the cost estimates to increase as the DoD Components complete the initial assessments and learn more about the extent of the cleanup required. The DoD Components will plan and program for these requirements as they are defined.

V. CONCLUSION

DoD is taking action under CERCLA to address PFAS releases from DoD activities. As of December 31, 2021, the Department has identified 700 active military installations, BRAC locations, National Guard facilities, and FUDS properties that require an assessment of PFAS

use or potential release. DoD has obligated \$1.46 billion through FY 2021 and plans to obligate \$409.4 million in FY 2022 to address its PFAS releases. DoD plans to obligate an additional \$2.12 billion after FY 2022 to address PFAS releases, based on information available as of the end of FY 2021. DoD expects this estimate to increase as the DoD Components complete initial assessments and determine what cleanup actions are required. The Department will plan and program for these requirements as they are defined.