

**1. How are you sure replacement foams are PFAS free? Are you conducting additional testing from manufacturers?** *(From Andrea Amico, Testing for Pease)*

**Response:** We are currently developing a test method that is sensitive enough to measure 1 ppb or less of total PFAS in firefighting foam. Once developed, we expect the test method to become a requirement for qualification of PFAS-free foams in the new Military Specification (MILSPEC) that will be published in January 2023.

**2. What are fluorine free foams made of and what makes them effective?** *(From Andrea Amico, Testing for Pease)*

**Response:** The manufacturers of PFAS-free foams use a variety of chemistries to put out fuel fires. We are still conducting fire performance tests to determine which chemistries are most effective, and we are continuing to conduct basic research through DoD's Strategic Environmental Research and Development Program (SERDP) program.

**3. Are there any circumstances where foams with PFAS will always be used within DoD?** *(From Andrea Amico, Testing for Pease)*

**Response:** Yes, AFFF remains our only viable option currently for fire suppression aboard DoD vessels.

**Topic: ARARs**

**4. In a letter dated October 27, 2020, the Massachusetts Dept of Environmental Protection requested that the Massachusetts Maximum Contaminant Levels for the PFAS6 at 20ppt be accepted as Applicable or Relevant and Appropriate Requirements (ARARs) as defined under CERCLA. With whom does the authority to make the final decision reside? What are the remaining obstacles to granting this request? What can local residents do to help advocate during this process?** *(Kristen Mello, Westfield Residents Advocating for Themselves)*

**Response:** Each military installation identifies ARARs depending on the site-specifics of the cleanup. Section 121(d)(2) of CERCLA requires that the ARARs process for evaluating federal and state requirements as final cleanup standards is on a site-specific basis. Because ARARs are evaluated on a site-specific basis, DoD cannot identify in advance any State regulation as an ARAR at a specific military installation, as that decision is made during the Feasibility Study phase at each cleanup site. DoD follows CERCLA and its regulations to implement the ARAR process, and works with state and/or federal environmental regulators in this ARAR identification process.

**Topic: RAB / DERP / TAPP**

**5. After the formal establishment of a Restoration Advisory Board, what are the remaining required steps to obtain eligibility for DERP funding and Technical Assistance for Public Participation funding? To whom must a request for such eligibility be made? With whom**

**does the authority to make the final decision reside? What is the standard timeframe for such requests? What obstacles would prevent a RAB's eligibility for DERP and TAPP funding?** *(Kristen Mello, Westfield Residents Advocating for Themselves)*

**Response:** The request for eligibility of a RAB should be made to the local installation points of contact. The requirements for establishing and funding RABs and TAPPs are detailed in the code of federal regulations (32 CFR Part 202 and 203). The regulations lay out the steps required to receive funding for RABs and TAPPs, and provide a list of eligible expenses for each. See 32 CFR 202.12 which covers how the installation provides administrative support to establish and operate a RAB. See 32 CFR Part 203 for the TAPP process, funding eligibility, and the application form for TAPP.

**6. What, if anything, would prohibit TAPP funds being used to provide the local residents with a regular person's level of technical interpretation of data obtained from DoD sampling and site investigations from local and trusted academic experts?** *(Kristen Mello, Westfield Residents Advocating for Themselves)*

**Response:** DoD encourages RABs to submit an application for this type of TAPP project, and notes that the TAPP requirements are detailed in the code of federal regulations (32 CFR 203), including ineligibility requirements. If the project meets the regulatory requirements, subject to availability of funds, DoD would be able to provide funding.

**7. Can TAPP funds be used to help model the migration of PFAS contamination over time in order for locally affected residents to better understand the impact to their natural resources? What, if anything, would prohibit that use?** *(Kristen Mello, Westfield Residents Advocating for Themselves)*

**Response:** While the detailed requirements for an eligible TAPP project are laid out in the code of federal regulations, DoD can only approve a TAPP project under certain circumstances. Specifically, when the Federal, State, and local agencies responsible for overseeing the cleanup, and DoD personnel, do not have the expertise necessary to provide the technical assistance needed or the technical assistance is likely to contribute to the efficiency, effectiveness, or timeliness of the cleanup actions at the installation and to community acceptance of those actions.

**Topic: Rights**

**8. Does the Dept of Defense recognize the rights to clean air and water as granted to Massachusetts residents under Article 97 of our state's Constitution? What is the DoD willing to commit to do to honor and protect those rights?** *(Kristen Mello, Westfield Residents Advocating for Themselves)*

**Response:** The Department recognizes the rights to clean air and water for all Americans as reflected in the passage of the federal Clean Air Act in 1970, and 1974 with the passage of the Safe Drinking Water Act.

**9. At least in the northern and eastern parts of the US, many DoD facilities are surrounded by a buffer of federal or state land, and these buffer properties frequently support wetlands and other wild areas to which PFAS has migrated for decades. Does the DoD have a uniform procedure for evaluating the environmental impacts of PFAS releases to these areas to assess the ecological impacts of these bioaccumulative chemicals, and what is DoD's commitment to cleaning up these impacted areas to prevent the further spread of PFAS into state waterways?** *(Mark Henry, Wurtsmith AFB Restoration Advisory Board)*

**Response:** While DoD does have a procedure in place, the Department is working with EPA on the development of ecological risk assessment information for identified PFAS. Once developed and approved by EPA, DoD will incorporate this information into the CERCLA risk assessment process nationwide.

**10. Michigan and other states have promulgated state PFAS drinking water and cleanup criteria following established USEPA procedures. The USEPA will likely be developing national PFAS criteria that may be as restrictive as the state criteria for several of the PFAS compounds, not just PFOA and PFOS. I have been told by toxicologists that even more PFAS may be regulated in the future as they are studied in more detail to determine their effects on human and ecological receptors. Some of these PFAS chemicals are not captured very well by granular activated carbon (GAC) like PFOS and PFOA, pass through GAC treatment systems and are released to surface waters. In my experience the DoD seems to evaluate sites and remedial technologies based mainly upon on PFOA/PFOS, and not much attention is devoted to the myriad of other PFAS that were released at AFFF sites. Is DoD developing remedial technologies that target non-PFOA/PFOS perfluorinated chemicals that were released at DoD sites that can be implemented in series with GAC systems to achieve a better overall treatment for all PFAS from DoD pump-and-treat systems?** *(Mark Henry, Wurtsmith AFB Restoration Advisory Board)*

**Response:** Yes, the Department has one of the largest R&D programs in the Federal Government addressing these issues. DoD's Strategic Environmental Research and Development Program (SERDP) is funding the development of technologies to detect, quantify, and remediate a wide variety of PFAS. As analytical methods mature and more individual PFAS can be identified, they are incorporated into ongoing PFAS cleanup technology research. As these technologies mature they are being demonstrated at DoD sites by the Environmental Security Technology Certification Program (ESTCP).

**11. DOD has declined to accept responsibility for PFAS contamination caused by its use of AFFF to fight non-military fires in host communities. In my community of Oscoda, Michigan, the Air Force has claimed that it is shielded from liability in these instances**

**under the terms of one or more Mutual Aid Agreements with the local municipality. However, the Air Force has not produced copies of any of the Agreement(s) upon which it is relying. Will DOD produce those Agreement(s)? Why is DOD attempting to saddle local communities with the burden of cleaning up the contamination that DOD caused?** *(Tony Spaniola, National PFAS Contamination Coalition)*

**Response:** DoD provides firefighting assistance to local communities throughout the nation when civilian firefighter's request assistance. This may occur whether a formal Mutual Aid Agreement exists or not. When responding off-base, DoD firefighters are under the direction of the local (non-DoD) firefighting unit/incident commander. That non-DoD unit is responsible for any follow on actions needed after emergency firefighting actions are over. As to your specific MI request, since Wurtsmith AFB was decommissioned in 1993, the Department of the Air Force does not possess any copies of these mutual aid agreements. Additionally, a letter dated 31 May 2017 and signed by the Oscoda Township Fire Chief, which provided some details regarding a school bus barn fire in 1995, states that the Wurtsmith Caretaker Force, not the Air Force, responded to the school bus barn fire and used AFFF.

**12. In a March 31, 2021 letter to Defense Secretary Austin, Michigan's Governor invoked Section 332 of the 2020 National Defense Authorization Act ("Section 332"), calling for the amendment of DOD's cooperative agreement with the State of Michigan to require that DOD's PFAS clean-up activities comply with Michigan standards. What is DOD's anticipated timeline for completing the required amendment? Will it be completed prior to the one-year reporting period specified in Section 332? Has DOD held discussions with the State of Michigan about the terms of the required amendment? If not, when does DOD expect to do so?** *(Tony Spaniola, National PFAS Contamination Coalition)*

**Response:** An amendment is not necessary, since the State of Michigan and the DoD already have in place a Defense and State Memorandum of Agreement and associated Cooperative Agreement that give DoD the ability to provide support to the State for its expedited review of environmental cleanup documents related to Defense Environmental Restoration Program sites at DoD installations in Michigan. This Cooperative Agreement allows DoD to pay for DoD-requested services provided by the State. DoD is already providing funding to staff from the Michigan Department of Environment, Great Lakes, and Energy (EGLE), formerly the Michigan Department of Environmental Quality, through this existing agreement for their support in addressing PFAS related cleanup activities surrounding Wurtsmith.

Concerning Michigan standards, DoD follows the existing Federal law, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), for our cleanup program. CERCLA addresses how state standards are used in determining the levels to be attained by the cleanup. DoD has reviewed the MI groundwater cleanup criteria [MI Rule 299] against the CERCLA requirements and has determined that these MI standards should be evaluated under this CERCLA process at all DoD and National Guard PFAS remedial actions in MI. While

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CERCLA requires this to be a site-specific evaluation, DoD is fully supportive of incorporating state standards consistent with CERCLA section 121’s “ARAR” process.

**13. DOD recently testified that DOD has a growing \$29.5 billion backlog of environmental restoration projects, yet DOD requested less funding in the FY 2022 Budget Request for environmental restoration. How much does DOD expect to request for environmental restoration projects for FY 2023?** *(John Reeder, Environmental Working Group)*

**Response:** The DoD annual budget request is based on a number of factors, including cleanup schedules, and how much work would be ready to award in a fiscal year. DoD has fully funded the initial assessments at 700 installations and needs to complete them before moving to the next step in the cleanup process, when additional funding may be needed. As DoD moves through the cleanup process, the Department will incorporate the required funding into future budget requests.

**14. You previously shared that you have 88 remedial investigations (RIs) underway and plan to have a total of 146 RIs underway by the end of the fiscal year. When will feasibility studies for these sites be completed? When will remedial designs for these sites be completed? What is the expected cost to complete the RIs? What is the expected cost to complete the feasibility studies? What is the expected cost to complete the remedial designs?** *(John Reeder, Environmental Working Group)*

**Response:** CERCLA takes time and each site has different characteristics that affect the timeframe of the cleanup (e.g., type of soil, depth to groundwater, amount of PFAS in the groundwater). At this point, we do not have an estimate for when the Feasibility Studies and Remedial Designs for these sites will be completed, nor the associated costs, as those timelines and costs are driven by what we find during the RI phase.

**15. You shared that you have 88 remedial investigations (RIs) underway and plan to have a total of 146 RIs underway by the end of the fiscal year. What is the clean-up status of *other* DOD sites where PFAS has been confirmed? When will DOD create a public facing website that allows the public to track the progress of clean up?** *(John Reeder, Environmental Working Group)*

**Response:** The complete list of DoD Installations being assessed for PFAS use or potential release, along with the current phase of investigation, is available on [www.defense.gov/pfas](http://www.defense.gov/pfas). In addition, installation specific drinking water information is available at <https://denix.osd.mil/dod-pfas/>.

**16. Does or will the DOD proceed with remedial investigations (RIs) at installations where PFAS has been detected in groundwater but is below the EPA’s LHA of 70 parts per trillion (ppt)?** *(John Reeder, Environmental Working Group)*

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**Response:** Yes, when groundwater is used for drinking water, DoD uses a value of 40 ppt for PFOS and PFOA individually to determine whether to proceed to an RI. This is the screening number EPA provided in its “Interim Recommendations for Addressing Groundwater Contaminated with PFOA and PFOS,” released on December 19, 2019. DoD follows the federal cleanup law, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) when addressing its PFAS releases. Under CERCLA, site-specific regional screening levels for PFOS and PFOA are calculated using the EPA online calculator. The Department uses these values to determine if further investigation in the RI phase is warranted.

**17. We understand DOD is prioritizing the cleanup of PFAS at DOD installations. However, we would like to know which installations are “high,” which are “medium,” and which are “low” priority for clean up? Can DOD share this information? (John Reeder, Environmental Working Group)**

**Response:** DoD follows the same process for PFAS sites as it does for all the other sites in its cleanup program. It is called the Relative Risk Site Evaluation (RRSE). It is a risk-based process to assist DoD in prioritizing the start of Remedial Investigations across the Military Departments entire cleanup program. The Military Departments evaluate each cleanup site, to include PFAS sites, and generate a result of “high”, “medium”, and “low”. DoD is evaluating how the Military Departments could separate out this information for PFAS at installations that have completed the PA/SI.

**18. We estimate that DOD must still confirm the presence of PFAS at 294 installations. DOD has previously told us that these site investigations will be completed by 2023. What is the status of these site investigations? How will you alert nearby communities? (John Reeder, Environmental Working Group)**

**Response:** Yes, we remain on track to complete these investigations by the end of 2023. If there is exposure to PFOS and PFOA in drinking water above the EPA HA, DoD notifies the community and takes immediate action to address that exposure. It will take much longer to address PFAS in the groundwater. We are working to do a better job with our transparency regarding our cleanup progress and are currently updating our PFAS website to include installation specific information for all 700 installations and Guard facilities.

**19. Based on a review of the July 2021 report, “Status of Notifications to Agricultural Operations Pursuant to Section 335 of the Fiscal Year 2021 National Defense Authorization Act,” the Department had not yet sent notifications to many of the installations with the highest detections of PFAS in groundwater. Several of these installations, including Vance AFB in Oklahoma, Ellsworth AFB in South Dakota, Minot AFB in North Dakota, and Niagara Falls Air Reserve Station in New York are all nearly surrounded by agricultural land and operations. As of October 2021, pursuant to section 335 of the fiscal year 2021 National Defense Authorization Act, have all notifications to agricultural operations been sent out? So far, how many in total have been sent, which bases are they associated with,**

**and how did the Department prioritize installations for notification?** (*John Reeder, Environmental Working Group*)

**Response:** As of the end of March 2021, the Department has sent 2,143 notifications to agricultural operations downgradient of 97 military installations and National Guard facilities. There are a number of reasons why the number of these agricultural notifications is less than the total DoD inventory of 700 potential PFAS installations. In some cases there are no agricultural operations near a DoD facility. At others locations, DoD may not have had PFAS detections in groundwater above the required levels or groundwater did not flow toward an agricultural operation. DoD is continuing thorough investigations of our installations with potential PFAS releases and will make further notifications to agricultural operations if new information is determined to warrant an update or new notification.

**20. In July 2019, NAS JRB New Orleans published a factsheet detailing that the Navy was testing off-base private wells for PFAS chemicals. As of October 5<sup>th</sup>, 2021, the results of that testing or any other on-base testing, at NAS JRB New Orleans, have not been published in the NAVFAC PFAS Reading Room or in the Navy’s Environmental Administrative Records. Was the off-base testing completed, and additionally was there any on-base testing done at NAS JRB New Orleans? If so, will these PFAS testing results be made public without a FOIA request?** (*John Reeder, Environmental Working Group*)

**Response:** A single Off-base sample, which was below the EPA Health Advisory (HA), was collected on August 8, 2019 at NAS JRB New Orleans. The sample was submitted to the Navy Database on September 5, 2019 but was incorrectly flagged as a QA/QC sample and was therefore never included in the NAVFAC PFAS Reading Room information. The sample designation was corrected in the NAVFAC PFAS Reading Room update in November 2021.

**21. We understand that DOD is evaluating the option of establishing separate MilSpecs for firefighting foam applications, including non-PFAS foam for land-based uses. What is the timing and process for that evaluation?** (*John Reeder, Environmental Working Group*)

**Response:** We are required to publish a new Military Specification (MILSPEC) for PFAS-free foams for our military installations by January 2023. The process of developing this new standard began several years ago, and includes hundreds of fire performance tests at different scales along with other criteria such as shelf-life and compatibility with other firefighting agents that might be used. The draft standard will be subject to a rigorous internal stakeholder review process before it is ready to be published.

**22. According to DOD records, a portion of DOD’s legacy AFFF has been sent to fuel blending facilities instead of directly to an incinerator for disposal. Does DOD know which facilities accept this AFFF-blended fuel for destruction and how much legacy AFFF or other PFAS materials have been sent to fuel blending facilities? Can you describe how the fuel blending facilities ensure the destruction of PFAS so that the practice of transferring**

**PFAS to such facilities isn't exacerbating the spread of PFAS into other media?** (*John Reeder, Environmental Working Group*)

**Response:** No legacy AFFF has been sent to fuel blending facilities for treatment through DLA Disposal contracts. We would be happy to review any site-specific information you have that indicates that a military installation sent AFFF to a fuel blending facility.

**23. How many pounds of legacy AFFF has DOD incinerated since 2011 when the Air Force Civil Engineer Center initiated an informal plan for Air Force fire chiefs to dispose of “excess” legacy AFFF?** (*John Reeder, Environmental Working Group*)

**Response:** While the military services may be in the best position to advise on how much AFFF has been incinerated since 2011, the Defense Logistics Agency (DLA) can provide the following information: DLA did not have contracts specific to AFFF incineration until 2016, so DLA is unable to accurately track whether AFFF was incinerated between 2011-2016. From 2016-2018, DLA had three AFFF-only incineration contracts, and destroyed 10,008,643 pounds at permitted hazardous waste incinerators under those contracts.

**24. How many pounds of legacy AFFF has DoD sent for deep well injection?** (*John Reeder, Environmental Working Group*)

**Response:** DoD is not aware of any of its legacy AFFF being sent for deep well injection.

**25. Pursuant to EO 12898, how has the Department incorporated the impacts of PFAS on Environmental Justice populations?** (*John Reeder, Environmental Working Group*)

**Response:** DoD follows the CERCLA federal cleanup law and takes cleanup actions to address PFAS nationwide based on risk. This process is followed at all of our PFAS cleanup sites, regardless of community demographics, and includes early action to quickly address drinking water over the EPA health advisories for PFAS from DoD activities. In addition to a nationwide risk-based approach, one of the fundamental Environmental Justice tenants is communicating with affected communities using accessible and effective communication practices. While DoD regularly aims for effective communications about our cleanup activities, we recognize that improvements can be made in this area, especially in our PFAS cleanups. That is why the DoD PFAS Task Force has added a new goal on public outreach and is conducting quarterly public outreach meetings and site-level public meetings, and updating our PFAS website to make cleanup information more accessible.

**26. The DOD Inspector General Report (No. DODIG-2021-105, July 2021) recommended that DOD develop a plan to track, trend, and analyze DOD firefighting perfluoroalkyl and polyfluoroalkyl substance blood test results at a DOD-wide level. What is the status of DODIG's recommendation to: (1) collect PFAS blood test clinical examination results, (2)**



**collect work-place exposure and illness outcome data, and (3) analyze this data in accordance with DoDI 6055.05?** *(John Reeder, Environmental Working Group)*

**Response:** DoD continues providing robust annual firefighter medical surveillance exams for assessing health from firefighter hazards. Firefighter blood test results are provided to each firefighter with a medical fact sheet and PFAS blood testing results are recorded in each firefighter’s medical record. The Navy and Marine Corps Public Health Center (NMCPHC) is compiling test results from electronic health records for statistical analyses. DoD continues to track the outcomes from PFAS health effects research/studies being conducted by the Agency for Toxic Substances and Disease Registry and the Centers for Disease Control and Prevention National Institute for Occupational Safety and Health. DoD workplace exposure assessments, exposure management, and occupational medicine policies will be informed by the outcomes/results of Health and Human Services research.

**27. The FY 2019 NDAA required DOD to “conduct an assessment of the human health implications of PFAS exposure.” DOD planned to issue the required report by 4th Quarter 2021. What is the status of the report?** *(John Reeder, Environmental Working Group)*

**Response:** The report is going through final coordination within the Department and we expect it to be released in the near future.

**28. The DOD Inspector General Report (No. DODIG-2021-105, July 2021) stated that installation officials initiating Federal cleanup response action for PFAS-containing materials had not received consistent policy directives concerning all sources of exposure because of a focus on AFFF. As a consequence, DoD did not apply an enterprise-wide approach to mitigate all sources of PFAS exposure and, according to the DODIG report, “people and the environment may continue to be exposed to preventable risks from other PFAS-containing materials.” What is DoD’s plan to address unnecessary exposures to PFAS?** *(John Reeder, Environmental Working Group)*

**Response:** We are working to address the DoDIG’s recommendations to include reviewing and updating our current DoD instruction on Emerging Chemicals. The Department plans to issue a policy memorandum by the end of January 2022, that more clearly articulates how DoD addresses the points raised above.

**29. Can you provide an update on efforts to phase out the use of PFAS in MRE packaging carpets, and cookware, as required by the last two NDAs?** *(John Reeder, Environmental Working Group)*

**Response:** We are working on the requirements in both NDAs, although the challenge is knowing whether a product does in fact contain any one of the over 600 PFAS in commerce. Section 329 of the FY20 NDAA required the Defense Logistics Agency to ensure that Meals Ready-to-Eat (MREs) do not contain PFAS. Section 333 of the FY21 NDAA restricts DoD from

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acquiring cookware, furniture, and carpets with PFOS and PFOA after April 2023. DoD is working on implementation of these provisions through Defense Financial Acquisition Regulations.

**30. Is DoD working with the Veteran's Administration and ATSDR to determine impacts to the health of veterans and their families that were contaminated by PFAS while serving at Wurtsmith Air Force Base? Is Mr. Richard Kidd aware of the seriously high exposures that the veterans and their families from drinking very high level PFAS contamination while serving at the base? (Bob Delaney, The PFAS Alliance)**

**Response:** DoD works closely with our partner agencies, particularly in areas of human health where we rely on the expertise of ATSDR, VA and others. We do our best to study all aspects of PFAS issues, focusing on best available science and technical advice. Concerning Wurtsmith, the Department of the Air Force works directly with and relies upon the Agency for Toxic Substances and Disease Registry (ATSDR) to conduct public health assessments. On June 26, 2019 ATSDR responded to a private entity request dated July 29, 2018 that ATSDR evaluate public health implications of historical on-base PFAS in drinking water at Wurtsmith. ATSDR declined to conduct any public health activities due to a lack of information regarding when the on-base drinking water became impacted with PFAS or the levels of PFAS in the on-base drinking water. The DAF provides regular updates to the Office of the Secretary of Defense on the status of PFAS in drinking water at its Active, Base Realignment and Closure (BRAC) and Air National Guard installations. The DAF is not aware of data which would support the assertion that veterans and their families at Wurtsmith were drinking water with very high levels of PFAS.