



REGION 9

SAN FRANCISCO, CA 94105

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VIA ELECTRONIC MAIL ONLY

Jocelyn Tamashiro
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Subject: U.S. Environmental Protection Agency Comments on the *Revised Draft Remedial Investigation Work Plan Per- and Polyfluoroalkyl Substances, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii*, February 2026

Dear Ms. Tamashiro:

Thank you for submitting the *Revised Draft Remedial Investigation Work Plan Per- and Polyfluoroalkyl Substances, Red Hill Bulk Fuel Storage Facility, Joint Base Pearl Harbor-Hickam, Hawaii*. The Remedial Investigation (RI) is essential to developing a comprehensive understanding of the nature and extent of per- and polyfluoroalkyl substances (PFAS) and comingled petroleum hydrocarbons in soil and groundwater at the Red Hill Bulk Fuel Storage Facility (RHBFSF). The Work Plan focuses on two areas: Area A, including Building 313 and the Adit 6 entrance, and Area B, including the westernmost portion of the Red Hill facility around Adit 3 and the Oily Waste Disposal Facility (OWDF). EPA is committed to working with the Navy to expedite the sampling efforts in Area B. Please find attached EPA's comments on the RI Work Plan. We look forward to the Navy's revisions and commencement of field work.

If you have any questions regarding this letter, please contact Tonya Russi at russi.tonya@epa.gov or (415) 972-3706.

Sincerely,

John Chesnutt
Manager, Superfund Pacific Islands Section
U.S. Environmental Protection Agency, Region 9

Tonya Russi
Red Hill Coordinator
U.S. Environmental Protection Agency, Region 9

Attachment: 1. EPA Comments on Revised Draft Remedial Investigation Work Plan Per- and Polyfluoroalkyl Substances

cc: (email only)
CAPT Gregory deWindt, NCTF-RH
CDR Benjamin Dunn, NCTF-RH
Joshua Stout, NCTF-RH
Charlotte Rangel, NAVFAC
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Gracelda Simmons, Hawaii Department of Health
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Kelly Ann Lee, Hawaii Department of Health

Attachment 1 – EPA Comments on Revised Draft Remedial Investigation Work Plan Per- and Polyfluoroalkyl Substances

Comments:

1. EPA understands the proposed data collection effort described in this work plan is the first phase of the investigation of PFAS impacts at the Red Hill Facility. EPA appreciates Navy's commitment to fully investigate the PFAS impacts at Red Hill in this and future phases. Accordingly, we have limited our comments to matters most relevant to this initial phase of investigation.
2. Construction projects around the facility are ongoing. Active construction may limit access to potential areas of concern. Please provide all known construction and grading timelines in identified areas of concern. Please describe how you will alert EPA/Hawaii Department of Health in advance of any planned or changed construction that could affect PFAS investigation/cleanup activities (i.e. written notification to EPA project manager, etc.)
3. If additional sampling methods or protocols are implemented, please submit a quality assurance project plan addendum, minimally including project quality objectives, reference limits, sampling design/rationale, and field and laboratory quality control processes.
4. **Page 23 (PDF page 29), Worksheet #6, Communication Pathways:** For Regulatory Agency Interface procedures, please update the language as follows: *The Navy RPM will forward all project documentation. The Navy will ensure EPA Region 9 and DOH are notified of major changes or corrective actions. While input on corrective actions will be sought beforehand whenever possible, notification will occur within 24 hours of implementation.*
5. **Page 43 (PDF page 49), Worksheet #10, 10.1 Overview (objectives of the RI):**
 - a. The work plan states, "Characterize the nature and extent of PFAS in Area B..." Please update to "...characterize the nature, extent, and sources of PFAS in soil and groundwater in Area B..."
 - b. For the objectives of the RI, please add Area B remedial investigation will include developing a hydrogeologic and contaminant conceptual site model (CSM) for the perched aquifers in the vicinity of the former OWDF facility and beneath Adit 3.
6. **Page 69 (PDF page 75), Worksheet #11, 11.1.2 Step 1 – State the Problem, Area B:** The work plan presents the following conclusion: *"Initial assessments of the monitoring data indicated that PFAS detected in NMW32 probably does not originate from the Facility (DON 2023o)."* The cited reference does not provide this global conclusion. Rather, it states the PFAS found in NMW-32 was not related to aqueous film forming foam (AFFF) product released in November 2022. However, the PFAS detected on the former OWDF represents a different and unknown source. Please remove this statement and reevaluate the connection with NMW-32 following delineation of OWDF impacts.
7. **Page 70 and 71 (PDF page 76), Worksheet #11, 11.3 Step 3 – Identify the Information Inputs to the Decision:** The seventh bullet indicates that the: *"Results from DoD-approved methods to*

assess the potential for COPCs to migrate from soil and perched water measured in the valley fill sediments to the underlying basal groundwater that is a drinking water resource.” Please identify project screening levels (PSL) for specific PFAS protective of the leaching-to-groundwater pathway and provide a description of the method for EPA review.

8. **Page 103 (PDF page 109), Worksheet #14, 14.13.1 Data Management Tasks:** Please provide field notes/data sheets to regulators. This should include all information necessary to understand the results (example: water quality collected via a flow-through cell). EPA requests this information be uploaded to the Navy’s Environmental Data Management System or other equivalent database accessible to regulators.
9. **Page 138 (PDF page 144) 17.6, Worksheet #17, 17.6 Area B Groundwater Sampling Design and Locations:** EPA recommends installing pressure transducers in Area A and Area B perched wells and temporary wells in Adit 3 to collect continuous groundwater elevation measurements. This information will be important for identifying sources of perched aquifer recharge, temporal response to precipitation events, saturated thickness of the perched zone and the direction and rate of groundwater flow.

Expectations for Future Submittals

10. As part of future phases, when updating the CSM, evaluating fate and transport, and choosing sample locations, please consider pipelines, utility conduits, and other infrastructure that may cause preferential pathways for contaminant migration.
11. EPA acknowledges there is a Department of Defense (DoD) Office of the Secretary of Defense memorandum that stipulates which screening levels the Navy will use. EPA recommends that DoD use the updated regional screening level that reflects the latest science. Rescreening may be needed as new scientific information emerges.
12. Releases to the environment have occurred from the collection, holding and transfer tank (CHT) and holding tank-leach tank (HT/LT) and are currently being investigated for petroleum impacts. These release locations also represent possible PFAS release locations. Future project phases may require PFAS soil and groundwater sampling at CHT and HT/LT locations.
13. PFAS was detected in the perched aquifer beneath Adit 3 (OWDF-08B). EPA expects that future phases of the project will include sampling in Adit 3 to improve our understanding of the distribution of PFAS contamination in the perched aquifer.
14. **Page 63 (PDF page 69), Worksheet #10, 10.4.3.2 Area B:** The report states; *“PFOA is defined in the basal aquifer below the PSL to the west and south of Area B; however, it is not fully defined to the east, or to the north along the Facility boundary toward the Halawa Industrial Park (Figure 17).”* As presented in Figure 20, perfluorooctanoic acid results from OWDFMW-04A, RHP-05 and RHP-06 exceed the PSL in the basal aquifer, suggesting that in future phases of the project, further definition will be necessary to the south and west of the OWDF. The results of the initial phase of soil and groundwater investigation and an updated hydrogeologic CSM should be used to optimize the locations of these basal wells.

15. **Page 77 (PDF page 83), Worksheet #12, Field Quality Control Samples:** From previous Navy responses, EPA understands that the high relative percent difference (RPD) shown for field duplicates are standard for Navy sites on Joint Base Pearl Harbor Hickam (JBPHH). However, the limits in DoD Module 6: Data Validation Guidelines are used as an example of what may be considered a major exceedance. Results with high RPDs may require additional sampling.
16. **Page 96 (PDF page 102), Worksheet #14, 14.7.3 Groundwater Sampling:** EPA requests four quarters of groundwater sampling after all monitoring wells are installed. EPA requests a meeting to discuss groundwater monitoring frequency and the included wells.
17. **PDF page 321, Table B-4, Summary of Area A Perched Groundwater Quarterly Expedited Sampling Analytical Data:** EPA notes PFAS data collected between December 2022-December 2023 at Red Hill monitoring wells after the November 2022 release outside Adit 6 is missing from the analytical data summary. EPA requests this data be reviewed and considered for both the CSM development and the evaluation of impact on basal groundwater quality.
18. At minimum, the CSM in the final report should include the following:
 - a. Characterization of seasonal variability in perched aquifer conditions including saturated thicknesses, flow directions and flow rates.
 - b. An evaluation of basal groundwater flow direction in the vicinity of the OWDF.
 - c. Identification of sources of water recharging the perched aquifers.
 - d. Identification of areas where perched aquifers are recharging the basal aquifer.
 - e. An estimate of the net mass of PFAS contamination released to the environment in November 2022 that was not recovered through removal activities.
 - f. An evaluation of PFAS weathering, transformation, and mobility in the environment.
 - g. An evaluation of PFAS mass loading rates to the basal aquifer resulting from individual (impacted) perched aquifers and to the basal aquifer in the vicinity of Adit 6.
 - h. An evaluation of the concentration and mass flux of individual PFAS and total PFAS migrating onto Red Hill, and the mass of individual and total PFAS migrating off the facility.
 - i. An evaluation of the relationship between PFAS contamination detected at the former OWDF and Red Hill Facility and PFAS contamination detected in offsite wells including NMW-24, 25 and 32.
19. In the final report please include:
 - a. A description of the geostatistical methods used to support the development of all plume maps.
 - b. A description of previous soil excavations, site grading, and other work that may have affected contaminant occurrence and distribution at or adjacent to the OWDF.
 - c. Details about the 2025 removal of the AFFF Retention Tank and ongoing trenching, excavation, and grading near Area B, including locations where soil movement activity occurred.
 - d. Cross-section and plan-view figures of soil excavations and site grading.
 - e. Figures identifying the footprint of the proposed permanent water treatment facility relative to features on the OWDF such as the former AFFF storage tank, the temporary GAC treatment system infrastructure, existing wells, and soil borings and temporary well

- locations.
- f. Description of the water releases from Tank 316 in May 2025 and Tank 685 in September 2025, focusing on their impact on potential contaminant transport.
 - g. A figure showing proposed sampling locations in proximity to the Tank 685 washout area.
 - h. Discussion of any impact the erosion control project may have on the sampling schedule.