



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10**

1200 Sixth Avenue, Suite 155  
Seattle, WA 98101-3188

SUPERFUND &  
EMERGENCY  
MANAGEMENT DIVISION

March 25, 2024

Ms. Megan M. Riccobono  
Remedial Project Manager  
AFCEC/CZOM Fairchild AFB  
100 West Ent Street, Building 2450  
Fairchild AFB, Washington 99011

Dear Ms. Riccobono:

Thank you for sending the Revised Draft Final Fifth Five Year (FYR) Review for Multiple Sites at Fairchild Air Force Base, dated January 2024. The U.S. Environmental Protection Agency (EPA) received the response to our initial comments after the statutory deadline of September 20, 2023. The EPA made an independent protectiveness determination on September 19, 2023 based on the July 2023 Draft Report and provided our findings to the Air Force. The EPA disagrees with the Air Force's protectiveness determination at Operational Unit (OU)-2 and OU-3 due to the presence of Per- and Polyfluoroalkyl Substances (PFAS) in groundwater at these sites. The letter is attached as a reference and outlines the EPA's findings and recommendations.

The EPA reviewed the response to comments and disagrees with the Air Force's decision not to include recommendations related to PFAS in the FYR at existing OUs where PFAS is present. More information can be found in the EPA's independent protectiveness determination. Additionally, milestone dates should be provided in the FYR for the Air Force's recommendations at OU-1, OU-2, and OU-5. The EPA concurs with the remaining Air Force responses and revisions to the FYR.

The next FYR is due September 20, 2028. Please submit the draft FYR report at least six months in advance of the statutory deadline so that there is adequate time for the EPA provide comments to the Air Force, and to allow follow-up discussions and revisions. The EPA's goal is to be able to work with the Air Force to come to a resolution on issues, recommendations, and protectiveness determinations before the statutory deadline.

If you have any questions, feel free to contact me at [satira.jaclyn@epa.gov](mailto:satira.jaclyn@epa.gov) or 206-553-1423.

Sincerely,

A handwritten signature in cursive script that reads "Jaclyn Satira".

Jaclyn Satira  
Remedial Project Manager  
US EPA R10 SEMD

cc: Jason Cook, WA Department of Ecology, RPM



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September 19, 2023

Colonel Chesley L. Dycus  
Commander  
92d Air Refueling Wing Fairchild AFB  
1 E. Bong St., Building 2285  
Fairchild AFB, Washington 99011

Dear Colonel Dycus,

The U. S. Environmental Protection Agency Region 10 (EPA) has reviewed the draft Fifth Five-Year Review (FYR) Report for select Operable Units (OU) associated with Fairchild US Air Force Base Superfund Site, Washington. The conclusions in this letter are based on the unsigned draft FYR Report which is dated July 2023. It is EPA policy to make a protectiveness determination at federal facilities by the statutory due date. The Fairchild FYR due date is September 20, 2023. EPA received the draft FYR Report on July 17, 2023. Submitting the Report two months prior to the statutory deadline does not allow enough time for EPA and United States Air Force (USAF) to discuss and reach resolution on issues, recommendations, and protectiveness determinations before the statutory deadline.

The EPA reviewed the draft FYR Report for technical adequacy, accuracy, and consistency with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Contingency Plan (NCP), and EPA guidance. The draft report provides a summary of the status and protectiveness for OUs for which Records of Decision (RODs) have been issued and are not considered No Further Action. It also identifies actions to be taken that ensure protectiveness of the selected remedies and on-going remedial actions, and documents a schedule for completion of the recommended actions at the respective OU.

The following are the EPA's protectiveness determinations for these OUs and the overall site protectiveness that will be reported to Congress in EPA's annual report. Also included are additional recommendations and follow-up actions necessary to address issues raised in the draft FYR Report that affect or could affect protectiveness. Each OU is discussed below, with reference to the corresponding numeric OU designations assigned in EPA's Superfund Enterprise Management System database.

As discussed throughout this process, it remains the Air Force's responsibility to respond to EPA comments and complete the FYR in a timely fashion.

**OU1-LF002 Craig Road Landfill**

EPA concurs with the Air Force protectiveness determination of short-term protective for OU1. The remedy for OU1 is short-term protective through the implementation of institutional controls (ICs). There is not enough monitoring data to determine if groundwater will achieve the remedial action objective (RAO) for groundwater in a reasonable time frame. Furthermore, OU1 is being assessed for possible PFAS presence. Even if PFAS is detected, there are ICs in place at OU1 to prevent drinking

water exposures. To be protective of human health and the environment in the long-term, the following actions need to be taken:

- There needs to be continued monitoring of downgradient sentinel wells for the contaminants of concern (COC) to determine if the concentrations are increasing. The due date for this recommendation is March 30, 2024.
- Additional monitoring wells should be added to delineate the plume and define the paleochannel. The due date for this recommendation is March 30, 2025. Appendix E states: “There is not a downgradient well to define this plume as it is approaching a buried paleochannel. The exact location of this paleochannel has also not been defined.”
- PFAS can impact the efficacy of remedies like in-situ chemical oxidation (ISCO) and granular activated carbon treatment systems, both of which are part of the OU1 remedy. It is recommended that samples collected and analyzed for PFAS before and after treatment. The due date for this recommendation is June 30, 2024.

### **OU2-Priority One Sites**

EPA does not concur with the Air Force’s protectiveness determination of short-term protective for OU2. EPA is making an independent finding of deferring protectiveness for OU2. Only one protectiveness statement should be made per OU and priority one sites should be evaluated together.

The USAF is monitoring residential drinking water wells and providing alternative sources of water for households with concentrations over 70 parts per trillion (ppt) of PFOA/PFOS combined related to the groundwater plume at OU2 Subsite FT004, former fire training area. The EPA rescinded its 2019 memorandum “Interim Recommendations to Address Groundwater Contaminated with Perfluorooctanoic Acid and Perfluorooctanesulfonate” in August 2023 and EPA recommends practitioners use the Risk Assessment Guidance for Superfund (RAGS) to screen actual or potential sources of drinking water for PFOA and PFOS, develop risk-based preliminary remediation goals and establish final cleanup levels. OU subsite WP003, wastewater lagoons, has confirmed PFAS concentrations in the surface water and sediment. Protectiveness is deferred until a risk assessment for PFAS in OU2 is conducted. At this time OU2 subsite FT004 should continue to be evaluated in the FYR. EPA agrees that existing RAOs have been met, but the presence of PFAS prevents the site from achieving unlimited use/unrestricted exposure (UU/UE).

EPA does concur that the facility-wide ICs are in place that prevent exposures to the COCs in the ROD, or that off-base residential wells are below MCLs for COCs.

To be protective of human health and the environment in the long-term, the following actions need to be taken:

- EPA concurs with the recommendation to complete the proposed plan and ROD for OU2 subsite WP003 to address the TCE plume and add arsenic and vinyl chloride as COCs. The due date for this recommendation is June 30, 2024.
- To be protective of human health, EPA recommends conducting a risk assessment to screen actual or potential sources of drinking water for PFAS, develop risk-based preliminary remediation goals, and provide impacted residents with alternative sources of water. The due date for this recommendation is March 30, 2025.

### **OU3- Priority Two Sites**

EPA does not agree with the Air Force's protectiveness determination of protective for the OU3. EPA is making an independent finding of short-term protective. Exposure to COCs is currently prevented through the use of facility-wide ICs, however OU3 subsites FT032 and DP024 have confirmed PFAS impacts to soil and groundwater from the calibration area PFAS site, RS003P. To be protective of human health and the environment in the long-term, the following actions need to be taken:

- EPA concurs that facility-wide ICs should be clarified through an update of the Installation Development Plan and Comprehensive Planning Platform. The due date for this recommendation is December 30, 2024.
- PFAS contamination should be delineated at FT032 and DP024 to determine if additional ICs specific to OU3 are needed. The due date for this recommendation is December 30, 2024.

### **OU5- SS039 Orphan TCE Plumes**

EPA concurs with the Air Force's protectiveness determination of short-term protective for OU5 SS039. There are no known drinking water exposures above the MCL for TCE. PFAS has been found in soil and groundwater at SS039 at the two plane crash locations, RS001P and SS008P. There are no known impacts to drinking water therefore short-term protective is appropriate. For the remedy to be protective of human health and the environment in the long term the following actions should be taken:

- EPA concurs with the recommendation to install additional monitoring wells in the north area of the plume to delineate the TCE plume and update ICs as necessary. The due date for this recommendation is December 30, 2024.
- EPA concurs with the recommendation to install additional monitoring wells to delineate the distal TCE plume. The boundary of concentrations above the MCLs should be delineated and ICs added to be protective of human health. The due date for this recommendation is December 30, 2024.
- Groundwater should be sampled for PFAS to delineate the extent of the plume. The due date for this recommendation is March 30, 2025.

### **OU8- RW011 and WP036**

EPA agrees with Air Force's protectiveness determination of Will Be Protective for OU8. Removal of contaminated lagoon sediments, Imhoff tank sludge, and contaminated soil exceeding ecological cleanup levels will reduce the risk to human health and the environment. PFAS is being investigated at WP0036. The presence of PFAS could impact future protectiveness determinations.

- Groundwater should be sampled for PFAS to delineate the extent of the plume. The due date for this recommendation is March 30, 2025.

EPA and the Air Force do not agree on all protectiveness statements in the draft Fairchild FYR Report. Below is a table summarizing the protectiveness determinations.

Operable Unit Name	USAF Draft Protectiveness Determination	EPA Protectiveness Determination
OU-1	Short-term Protective	Short-term Protective
OU-2	Short-term Protective	Protectiveness Deferred
OU-3	Protective	Short-term Protective
OU-5	Short-term Protective	Short-term Protective
OU-8	Will be Protective	Will be Protective

EPA agrees with all the recommendations identified in the Draft FYR and has additional recommendations. The table below summarizes both the Air Force and EPA recommendations.

Summary of Recommendations			
OU1	<b>Recommendation:</b>	Continued monitoring of down-gradient sentinel wells for the COCs to determine if the concentrations are increasing.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	EPA	3/30/2024
OU1	<b>Recommendation:</b>	Install additional monitoring wells to delineate the plume and define the paleochannel.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	EPA	3/30/2025
OU1	<b>Recommendation:</b>	Sample for PFAS before and after ISCO and GAC treatments.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	EPA	6/30/2024
OU2	<b>Recommendation:</b>	Complete the proposed plan and ROD for OU2 subsite WP003 to address the TCE plume and add arsenic and vinyl chloride as COCs.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	AF	6/30/2024

Summary of Recommendations			
OU2	<b>Recommendation:</b>	Conduct a risk assessment to screen actual or potential sources of drinking water for PFAS, develop risk-based preliminary remediation goals, and provide impacted residents with alternative sources of water.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	EPA	3/30/2025
OU3	<b>Recommendation:</b>	Facility-wide ICs should be clarified through an update of the Installation Development Plan and Comprehensive Planning Platform.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	AF	12/30/2024
OU3	<b>Recommendation:</b>	PFAS contamination should be delineated at FT032 and DP024 to determine if additional OU3 specific ICs are needed.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	EPA	12/30/2024
OU5	<b>Recommendation:</b>	Install additional monitoring wells in the north area of the plume to delineate the TCE plume and update ICs as necessary.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	AF	12/30/2024
OU5	<b>Recommendation:</b>	Install additional monitoring wells to delineate the distal TCE plume. The boundary of concentrations above MCL should be delineated and ICs added to be protective of human health.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	AF	12/30/2024
OU5	<b>Recommendation:</b>	Groundwater should be sampled for PFAS to delineate the extent of the plume.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>

Summary of Recommendations			
Air Force	EPA	EPA	3/30/2025
OU8	<b>Recommendation:</b>	Groundwater should be sampled for PFAS to delineate the extent of the plume.	
<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Recommendation made by</b>	<b>Milestone Date</b>
Air Force	EPA	EPA	3/30/2025

The August 1, 2011, Program Priorities memorandum also calls for a summary of the EPA Superfund Sitewide Environmental Indicator Status for Sites undergoing Five-Year Reviews. The Environmental Indicators for the Fairchild AFB are posted on the EPA website Superfund Human Exposure Dashboard (<https://www.epa.gov/superfund/superfund-human-exposure-dashboard>.)

The Sitewide Human Health Exposure Indicator status will be changed to “Insufficient Data to Determine Human Exposure Control Status”. Due to the uncertainty regarding the nature and extent of PFAS contamination in groundwater migrating to offsite residential drinking water wells, EPA cannot draw conclusions as to whether human exposures are under control.

The Superfund Sitewide Contaminated Groundwater Migration indicator status remain “Insufficient data to determine contaminated groundwater migration control status”. Due to the uncertainty regarding the nature and extent of PFAS contamination in groundwater sitewide, EPA cannot draw conclusions as to whether groundwater poses an unacceptable risk to human health and the environment.

The due date for the next FYR is September 20, 2028. It is my expectation that our staff will determine a timeline that would ensure EPA receives the draft report with adequate time to provide comments to the Air Force, and to allow follow-up discussions and revision of the next draft FYR Report. Our goal is to be able to work with the Air Force to come to a resolution on issues, recommendations, and protectiveness determinations before the statutory deadline.

If you have any questions, feel free to contact the Remedial Project Manager, Jaclyn Satira, at [saitra.jaclyn@epa.gov](mailto:saitra.jaclyn@epa.gov) or 206-553-1426.

Sincerely,  
**CALVIN  
TERADA**

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Calvin J. Terada  
Director

cc: Megan M. Riccobono  
Remedial Project Manager, Fairchild AFB

Jason Cook  
Remedial Project Manager, WA Department of Ecology

Kira Lynch  
Remedial Program Manager US EPA Region 10