



Oregon

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via electronic delivery

Aubrey Higginbotham
Environmental Restoration Program Manager, National Guard Bureau
3501 Fetchet Avenue
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RE: DEQ Review – Kingsley Field Air National Guard Base Draft Final Supplemental Site Inspection Report
ECSI #816

Dear Aubrey Higginbotham:

The Oregon Department of Environmental Quality (DEQ) has reviewed the May 2024 *Draft Final PFAS Supplemental Site Inspection Summary Report* (report). The Supplemental Site Inspection (S.SI) report describes investigation results completed for potential non-aqueous film-forming foam (AFFF) per- and polyfluoroalkyl substances (PFAS) sources at Kingsley Field Air National Guard Base in Klamath Falls, Oregon.

DEQ's comments are presented below.

General Comments

1. The report would greatly benefit from the inclusion of figures illustrating the lateral extent of contamination above project screening levels (PSLs), as defined by the combined SI and S.SI investigation efforts. Of greatest concern to DEQ is where detections are above PSLs at or near site boundaries. Isoconcentration contouring is recommended. This presentation will be useful in illustrating data gaps and the need for timely follow-up remedial investigation (RI) work.
2. We recommend that groundwater and surface water sampling results be presented in ng/L (ppt), and soil and sediment samples in $\mu\text{g}/\text{Kg}$ (ppb) in the report text, tables, and figures. These units are most intuitive considering how relevant screening values are typically presented. Moving forward, we recommend that data compilation and screening tables include exceedance ratios on both a contaminant-specific and location-specific (summed exceedance ratio) basis.
3. Please provide coordinates for the sampling locations in a table.
4. Generally, the study area is still in need of better defining and understanding of local and regional hydrology and hydrogeology, such as local versus regional groundwater flow, including any variations in shallow versus deep groundwater; the influence of drainage ditches and irrigation systems; and the characteristics of aquitards. Groundwater elevation data should be collected to support determinations of groundwater gradients throughout the study area, on a seasonal and long-term basis. Additionally, no deep groundwater samples have been analyzed for PFAS,

leaving a gap in understanding of how contaminants may be migrating to the deeper subsurface. Addressing these types of data gaps will be important for evaluating remediation strategies and should be incorporated into future investigations, such as the RI.

5. Some areas of investigation (AOIs) were screened out from inclusion in the S.SI, including AOIs 7, 8, 11, 16, 17, and 18. However, the Preliminary Assessment (PA) and Supplemental PA (S.PA) identified potential PFAS sources in these areas and the rationale for their exclusion was not clear. These AOIs, as well as off-site sampling locations, should be included in future investigations to assess their potential for PFAS contamination and fully delineate the nature and extent of contamination from the site.
6. Based on the relative ubiquity of PFAS detections in groundwater, some at very high concentrations, DEQ believes the site should be designated as a high priority for follow-up Remedial Investigation work. Further, given the presence of drinking water use (some shallow) in close proximity to the site, the closest private wells (or a subset of the wells) should be tested for PFAS independent of the RI process as soon as possible to prevent possible ongoing exposures.

Specific Comments

7. Section 1.2 Regulatory Overview and Screening Levels. This section should be updated to reflect current standards and screening levels, such as the U.S. Environmental Protection Agency's (EPA) finalized drinking water maximum contaminant levels (MCLs) and May 2024 revised regional screening levels (RSLs). It should also be noted that EPA issued draft aquatic life ambient water quality criteria for PFOA and PFOS in 2022, including surface water criteria.¹ Even if not approved for use by the Secretary of Defense office, the existence of newer regulatory levels or screening values should be discussed.
8. Section 3.2 Hydrogeology and Hydrology. There appears to be a period missing in the second paragraph after "...Joe Wright Road" and "Potable water to KFANG..."
9. Section 4.8 Waste Management and Waste Characterization Sampling. Investigation derived waste (IDW) sampling results should be presented in this section or referenced in data tables. DEQ notes disposal of IDW at the Chemical Waste Management (Subtitle C) landfill, consistent with our general recommendations when PFAS are detected.
10. Section 4.10 Work Plan Deviations. In the case of sampling that was not performed due to utility conflict (e.g., MW-AOI15-01, AOI14-04-SB), we recommend locations be adjusted and this work be completed during the upcoming RI investigation unless deemed no longer necessary.
11. Section 5.0 Supplemental Site Inspection Results. In some cases, samples had detection limits exceeding PSLs. These instances should be noted where relevant. For example, all groundwater HFPO-DA (or GenX) results had detection limits exceeding the PSL.
12. Section 5.1 AOI 9, Figure 5-1, and Figure 5-2. The second paragraph of section 5.1.1 indicates that Figure 5-1 includes three sediment samples; however, the sediment sample collected approximately 0.5 miles south of AOI 9 is not included in Figure 5-1. Similarly, the second paragraph of section 5.1.2 indicates that Figure 5-2 includes three surface water samples; however, only two surface water samples are shown. The figure areas should be adjusted to include the other sampling locations.

¹ <https://www.epa.gov/system/files/documents/2022-04/pfoa-pfos-draft-factsheet-2022.pdf>

13. Section 6.0 Conclusions and Recommendations. This section includes a recommendation for future remedial investigation to include AOIs 9, 10, 12, 13, 14, and 15. Given documented historical DoD use and sampling results, we agree with this conclusion for these AOIs.
14. Table 6-1, “Additional 5 Wells at AOIs 1-6”. Groundwater data are insufficient to support conclusions regarding contaminant trends. We recommend that sufficient contaminant data be collected during upcoming RI work, on a seasonal basis, to support Mann-Kendall analysis as generally recommended by EPA.
15. Figures.
 - a. As noted above, DEQ recommends presentation of water sampling results as ng/L and soil results as ug/kg. Accordingly, the table of PSLs cited in the Chemistry Notes portion of these figures should also be similarly presented.
 - b. Data tables in the figures include dashes for values that were non-detect; however, the figure legend defines dashes as indicating the sample was not analyzed for the listed constituent. Non-detect results should be denoted by the reporting limit and a “U” flag or similar.
 - c. Non-detect results with detection limits greater than PSLs should be identified.
 - d. All analytes with PSL exceedances should be included in the figures.
 - e. Some figures do not include results for samples where all constituents were non-detect. While we are comfortable with this, the figures should make a note of when this is the case to avoid confusion as to whether these samples were included in this sampling event.
 - f. Figures showing both groundwater and surface water results should clarify that the screening levels apply to groundwater only.
 - g. Figures 1-1, 2-1, and 5-1 through 5-3 appear twice, all immediately after the first instance of Figure 5-3. Figure 5-4 also appears twice in a row in the document.
16. Figure 5-2. Groundwater sampling results for MW-AOI09-02-GW-00-01 had PFNA, PFOS, and PFOA results exceeding PSLs and should have bold/red font.
17. Figure 5-9. PFOS results for AOI14-03-SB-00-01 in deeper soil samples did not exceed the PSL so should not be in bold/red font.
18. Figure 5-10. MW-AOI14-04-GW-00-01-D is not included on this figure. Other duplicate groundwater results were provided on other figures.
19. Appendix B, Attachment B-2. Soil sampling results for AOI13-06-SB-00-01 do not appear to be listed in the table in this attachment, though are displayed in Figure 5-7.

Please feel free to contact me with any questions at 503-709-8253 or at Sarah.VanGlubt@deq.oregon.gov.

Sincerely,

Sarah Van Glubt

Sarah Van Glubt

Project Manager & Data Analyst
DEQ Cleanup Program

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