

RESPONSE TO COMMENTS
DRAFT FINAL UFP-QAPP ADDENDUM
REMEDIAL INVESTIGATIONS FOR PER- AND POLYFLUOROALKYL
SUBSTANCES AT MULTIPLE AIR NATIONAL GUARD INSTALLATIONS
TRUAX FIELD, WISCONSIN

Comments provided by Stephen Ales, Wisconsin Department of Natural Resources, dated January 10, 2022.

Comment 1. Lines 1096 and 1127 - DNR is supportive of evaluating the hydraulic connection between the unconsolidated aquifer and the bedrock aquifer. This is especially important given the bedrock valley shown on Figure 10-5, the ability of high-capacity bedrock wells to induce downward gradients, and the presence of municipal wells and private wells that draw water from the bedrock and are shown to have PFAS compounds in them.

Response: Understood; If the RI results identify PFAS contamination in the unconsolidated aquifer that could potentially impact the bedrock aquifer (considering depth of detection(s), vertical gradients, or other information), environmental sequence stratigraphy (ESS) will be utilized to evaluate the nature of interaction between the aquifers and develop recommendations for bedrock investigation.

Comment 2. Line 1755 – The DNR disagrees that the source of PFAS compounds to Starkweather Creek is not yet confirmed. Data collected by Dane County have shown that numerous sources of PFAS on the WANG base are sources of PFAS to the airport stormwater system and that system empties into Starkweather Creek through numerous stormwater outfalls. Testing of those outfalls, and of Starkweather Creek while on airport property show PFAS is present in the creek.

Response: Understood. The goal of the RI is to identify all sources of PFAS to Starkweather Creek within the study boundary, currently identified as a data gap. No revisions to the text are recommended.

Comment 3. Line 1977 and Figure 10-13 – The DNR believes that the “Offsite Current and Future Recreational User” Ingestion and Dermal Contact pathways are complete for exposure to surface water and sediment meeting the four criteria outlined in Lines 1981 – 1988. DNR also believes the ingestion pathway is complete for fish consumption. Data currently exists that show PFAS is present in Starkweather Creek as it leaves the airport property. The WANG base is the primary source of PFAS to Starkweather Creek on airport property. DNR have tested fish from Starkweather Creek and downstream Lake Monona for PFAS and concentrations are such that DNR has issued a consumption advisory for certain fish species. Starkweather Creek and Lake Monona are well known recreational fishing locations. The text near lines 1977 and Figure 10-13 should be modified to reflect this completed pathway. The testing completed by DNR on the water and the fish have been “quantitative evaluated” as illustrated in Figure 10-12 and described in Figure 10-13.

Response: Citing the PFAS testing done by WDNR on surface water and fish tissue within Starkweather Creek and Lake Monona, sampling report, Text in Section 10.12.2.5

and Figure 10-13 will be revised to indicate the human exposure pathway is complete for fish ingestion and surface water dermal contact and ingestion. The exposure pathway for sediment within downstream has not been quantitatively evaluated and therefore will remain as potentially complete.

Comment 4. Line 2323 and Figure 17-1 – The presumed direction of groundwater flow at the WANG is thought to be to the southeast. However, the stormwater system at the airport is known to drain the water table when water levels are high enough to enter the stormwater system. Also, there hasn't been a series of water table wells consistently measured at the WANG base to be certain of the southeast flow direction. The DNR asks that you re-evaluate whether to place all the sampling locations southeast of known source areas on WANG and consider whether borings/sampling locations should also be placed southwest of known sources on the WANG base. This may require adding more sampling locations to the plan rather than re-locating borings from your current proposed locations.

Response: Additional sampling locations may be added (as step-out transects) to the southwest during the RI if data collected during Mobilization 1 indicates the groundwater flow direction or PFAS plume migration is to the southwest. Therefore, based on the proposed adaptive sampling design, no text or sampling plan revisions will be made.

Comment 5. Line 2340 – The DNR is supportive of sampling soil for total oxidizable precursor assay.

Response: Understood; No response required.

Comment 6. Line 2354 and 2373, and Figure 17-1 – Text under lines 2354 and 2373 refer to groundwater monitoring well installation and sampling. Figure 17-1 shows the location of offsite soil sampling locations. Are there plans to install any monitoring wells offsite? How will background/upgradient water quality be determined? Once installed would upgradient monitoring wells also be used when constructing a water table flow map? And a related question, do you anticipate installing upgradient piezometers (i.e.-wells installed with the well screen below the water table)? An additional comment, the DNR recommends that all water table wells and piezometers be installed in accordance with NR 141, Wis. Adm. Code.Text.

Response: Text will be revised to describe the process for selecting monitoring well locations and screen depths using a mass flux methodology. Text will be revised to state that MWs may be located on site and off site, including upgradient of identified source areas. All installed MWs, including those upgradient, will be part of a baseline synoptic event and the data will be used to construct potentiometric surface contour maps. MWs with wells screens below the water table may be installed based on initial data from the RI.

Comment 7. Line 2363 – This text indicates monitoring wells will be placed at 30'-50' bgs. Will all the wells be placed at this depth or will some also be placed at the water table? Water table wells (well screen is open across the water table), and piezometers (well screen is submerged) are needed to determine water table flow direction, to measure vertical gradients, and flow direction at depth in the aquifer to determine if that flow direction is the same as the

water table. DNR recommends this section provide a better description of the type of wells to be installed and the type of information to be gained by wells at various depths.

Response: MWs with wells screens open to and below the water table are anticipated to be installed, based on initial data obtained during the RI (Mobilization 1), to develop potentiometric surface contour maps.

Comment 8. The DNR asks whether monitoring well locations were selected with consideration of previous, and current high-capacity water supply wells from this area. For many decades Oscar Mayer had a meat processing plant located southwest of the airport. These wells were known to cause downward gradients from the water table into the bedrock. When Oscar Mayer stopped using the wells there was a dramatic change in groundwater flow direction, and likely in vertical gradients between the unconsolidated aquifer and the bedrock aquifer. More recently the Madison Water Utility has stopped using well #15 located less than a mile east of WANG. Currently there is a seasonal irrigation well used at the golf course located immediately south of the airport. These high-capacity wells likely had an influence on the movement of PFAS from WANG. This is a difficult task to consider but one that should be kept in mind when trying to determine the extent of PFAS contamination in groundwater from WANG.

Response: The work plan explains consideration for these factors as a fate and transport mechanism in Section 10.10.1.2. Many factors, including high-capacity wells near the site, may have impacted groundwater flow patterns. This uncertainty is what drives the decision to evaluate preliminary RI data (obtained during Mobilization 1) prior to selecting MW locations, design, and depths later in the RI (Mobilization 2).

Comment 9. Line 2461 – This section outlines the study area as being the spatial boundaries of the Truax Field installation (the WANG base boundaries?) and the downgradient extent of PFAS plumes to delineation of the screening levels. This section does denote that vertical delineation may be required to bedrock and the DNR agrees and supports this as water supply wells located within 1 mile of Truax and open to bedrock formations have been tested and found to contain PFAS compounds. There has been a groundwater flow model conducted on one of those wells, Madison municipal well #15, that indicates PFAS source locations at WANG are within the capture zone of that well.

Response: Understood. The text will remain as stated, as the intent is clear that a goal of the RI is to delineate the groundwater plume to the screening levels, as indicated by data collected during the RI.

Comment 10. The workplan contains Figure 17-2. The DNR was unable to find where in the text of the document it states that this location, the site is an F-16 crash, is to be sampled. Yet this figure indicates that soil and groundwater are to be sampled. The DNR is supportive of sampling at this location.

Response: Section 10.9.2.1 states that further evaluation is required during the RI and Table 17-1 provides rationale for soil and groundwater sampling at the F-16 Crash Site.

Comment 11. The DNR is seeking some clarity about other sampling locations. As noted in Line 2461 the study area is to be the WANG base and downgradient extent of the PFAS plumes.

If that is the case, then why is the F-16 crash location included with this RI? This location is outside the WANG boundaries. The DNR is supportive of sampling at this location but is seeking clarity as to why this location is included but other locations that WANG had operations were not included. Specifically, the former fire training areas (FFTAs) near Darwin Road and near Pearson Street. WANG conducted training activities at both locations, yet this RI doesn't include testing at these locations. Please clarify why this RI includes one off Base location (the F-16 crash location) yet doesn't include other off Base locations (Pearson St. and Darwin Road FFTAs). All these locations include activities involving PFAS containing fire-fighting foam conducted by WANG. Why is the F-16 crash included but the FFTAs are excluded? The DNR recommends the RI be expanded to include the FFTAs.

Response: The FFTAs are not solely owned by WANG and, to date, it has not been identified as a RP with sole responsibility for investigation and cleanup in those areas. Therefore, sampling and characterization within the FFTA boundaries is not specifically included in the RI and no revisions are recommended to the RI Work Plan.

Comment 12. Figure 17-3: This figure shows surface water sampling locations for Starkweather Creek both on and off airport property. The off-airport property location shown, SFW25, is proposed just south of Anderson Street. Previous work completed by Dane County indicates that this location may be too close to the pipes under Anderson Street to allow mixing of the water coming from the west side of the airport, and water coming from the east side of the airport. Past sampling has indicated much higher PFAS concentrations of PFAS in the surface water coming from the east side of the airport and previous sampling near proposed location SFW25 indicates the water may not be sufficiently mixed after passing through the pipes. Dane County completed a dye test of the water coming from the east side of the airport and concluded that proper mixing occurs a few hundred feet to the south. The DNR recommends you contact Dane County and review their work and conclusions regarding the best location to sample Starkweather Creek south of Anderson Street. This location is likely to be further south than the location shown on Figure 17-3.

Response: The surface water/sediment sampling location SFW25 south of the confluence will be revised to be farther south, approximately 700 feet south of the confluence point as suggested in the dye test mixing report provided by DCRA.

The following comment provided by Stephen Ales, Wisconsin Department of Natural Resources, dated January 19, 2022.

Comment 13. Text near lines 1755 and Figure 17-3 describe surface water sampling locations. My previous comment suggested moving SFW25 further south to a sampling location that is more representative of the water leaving the airport in the branches coming from the southeast and southwest sides of the airport. In addition to my previous comments. I would like to add that additional sampling locations are needed further south along the path of Starkweather Creek to where it joins Lake Monona. Previous sampling of Starkweather Creek clearly shows PFAS leaving the airport property and entering Starkweather Creek. It is clear that activities at WANG are the predominant source of PFAS to Starkweather Creek on airport property. The degree and extent of concentrations of PFAS in downstream surface water from the WANG/airport need to be defined as part of this investigation.

Response: As with soil/groundwater step-out transects, the RI provides the flexibility to step out surface water and sediment sampling as required to determine the extent of migration away from WI ANG property. This is described primarily in under Line 2990 as a potential activity to take place in Mobilization 2 and described indirectly in Line 2286 and Line 2290 as a goal of the RI to determine the concentration of PFAS in pathways of migration.