



# NAVAL AIR STATION JOINT RESERVE BASE (NASJRB) WILLOW GROVE

## Restoration Advisory Board (RAB) Meeting Minutes

Meeting Date: 7 December 2023

Meeting Time: 2:00 p.m.

Meeting Place: Microsoft Teams and in-person at the Biddle Air National Guard Base

	<u>Name</u>	<u>Organization</u>
Attendees	Jonathan Harris*	Department of Navy (Navy) BRAC Environmental Coordinator (BEC)/Restoration Advisory Board (RAB) Co-Chair
	Dawn DeFreitas	Navy BRAC PMO
	Dave Barclift	Navy BRAC PMO
	Thuane Fielding	Navy BRAC PMO
	Jason Speicher	Navy LANT
	Lt Col Brian Silver*	Air National Guard (ANG)/RAB Co-Chair
	Lee DePersia	ANG
	Keith Freihofer	ANG
	Bill Myer	ANG
	Lt Col Steven Good	ANG
	Matt Machusick	Leidos (Consultant to ANG)
	Nick Sirek	Leidos
	Abhijit Modak	Leidos
	Sarah Kloss	U.S. Environmental Protection Agency (EPA) Region 3
	Linda Watson	EPA Region 3
	Kimberly Hudson	EPA Region 3
	Nathan Doyle	EPA Region 3
	Lisa Trakis	EPA Region 3
	Colin Wade	Pennsylvania Department of Environmental Protection (PADEP) Southeast
	Lisa Strobridge	PADEP Southeast
	Olivia Jenkins	PADEP Southeast
	Bonnie McClennen	PADEP Southeast
	Thomas Magge	PADEP Southeast
	Lisa Senior	United States Geological Survey (USGS)
	Tricia Moore	Tetra Tech (Consultant to the Navy)
	Steve Mitchell	Tetra Tech
	Eva Campbell	Tetra Tech
	Sue Herbert	Tetra Tech
	Jackie Boltz	Tetra Tech

Jennifer Byrd	Tetra Tech
Coleman Nelson	Tetra Tech
Tara Wilson	Blum-Moore Reporting Services
Martin Schy	Willow Grove Navy Caretaker Site Office
James Rugh	Willow Grove Navy Caretaker Site Office
Bill Gildea-Walker*	Horsham Township Manager
Tom Ames	Horsham Land Redevelopment Authority (HLRA)
Mike Shinton	HLRA
Larry Burns	HLRA
Mike Pickel**	Horsham Water and Sewer Authority (HWSA)/Member of the RAB
Toby Kessler	Gilmore and Associates, Inc. (Consultant to HWSA)
Laura Restrepo	U.S. Senator Fetterman's Office
Ashley Conaway	PA Senator Frank Farry's Office
Alex Myers**	PA Senator Frank Farry's Office/Member of the RAB
Hope Grosse**	Buxmont Coalition for Safer Water/Member of the RAB
Joanne Stanton**	Buxmont Coalition for Safer Water/Member of the RAB
Tracy Carluccio	Delaware River Keeper Network
Ed Rodgers	Delaware River Keeper Network
Joseph McGrath**	Member of the RAB
Samantha Slaff**	Member of the RAB
Alan McPeak**	Member of the RAB
Rick Newsome**	Member of the RAB
Danette Richards**	Member of the RAB
Ellen Zschunke	Horsham Council Elect
John Jackson	State Rep Maria Collett's Office
Carl Meixsell	Member of the public
Denise Boecklen	Member of the public
Michael Treacy	Member of the public
Guido Fetta	Member of the public
Eric White	Montrose Environmental
Seth Winkleman	Member of the public
Steve Moss	DLA Piper
Lesley Chuang	DLA Piper
Mark Higgins	Haley & Aldrich
John Bartos	Haley & Aldrich
Phone Caller 1	Member of the public
Phone Caller 2	Member of the public
Phone Caller 3	Member of the public
Mike P.	Member of the public
Beth	Member of the public
KL	Member of the public

\* Restoration Advisory Board (RAB) Co-Chair

\*\* RAB Member

Ms. Jackie Boltz opened the hybrid meeting by greeting the attendees. Ms. Boltz discussed Teams tools and features for the hybrid meeting, such as live captions, screen layout, view tool, and other tools. Ms. Boltz then turned the meeting over to Mr. Jonathan (Jon) Harris, the current Navy Base Realignment and Closure (BRAC) Environmental Coordinator (BEC).

Mr. Harris welcomed everyone to the Restoration Advisory Board (RAB) meeting for the former Naval Air Station Joint Reserve Base (NASJRB) Willow Grove and Biddle Air National Guard (ANG) Base. He stated this hybrid meeting is being held with both in-person and virtual options and that meeting minutes will be prepared and should be provided to the mailing list in approximately six to eight weeks. The minutes will also be available in the administrative record. Public notices for the RAB meeting were published in the newspaper on 22 November and 29 November, provided to the mailing list, and posted on the Willow Grove website. For those unable to participate in the virtual or in-person meeting formats, a copy of the presentation can be provided. The agenda for the meeting was provided by e-mail. Mr. Harris stated that following the per- and polyfluoroalkyl substances (PFAS) drinking water update, the Navy's presentation today will focus on questions raised by the public during the prior meeting regarding the Engineering Evaluation and Cost Analysis (EE/CA) for the planned groundwater extraction and treatment system (GWETS). As with previous meetings, there will be an opportunity to ask questions between presentations. Present today are members from the Navy, the ANG, the Pennsylvania Department of Environmental Protection (PADEP), and the Environmental Protection Agency (EPA). All meeting attendees, in-person and virtual, will be recorded on the meeting minutes. Previous community feedback requested that all attendees can be seen in Microsoft Teams. You should be able to see all the attendees and presenters. The Department of Defense (DoD) encourages community input at RAB meetings. Questions and comments were taken prior to the meeting via e-mail and telephone. Questions and comments may also be submitted today via the chat and hand-raise features in Teams for the virtual attendees. For in-person attendees, please form a line at the microphone in the center of the room once the question and answer (Q&A) session has been announced. The presenters will answer questions at the end of the presentations. As mentioned earlier, you can always contact the Navy, the ANG, or a regulatory agency representative with your questions. Their contact information can be found in the published agenda and at the end of today's presentation.

Ms. Boltz gave a brief overview of the Teams features and explained how to post comments and questions during the presentations.

Mr. Harris indicated that he will be presenting for the Navy and that Jennifer Byrd with Tetra Tech will also be presenting on behalf of the Navy. He stated that the Navy's presentation is available on the BRAC website and is provided in paper format for those attending in person. Mr. Harris also stated that a RAB is a stakeholder group that meets on a regular basis to discuss environmental restoration at a specific property that was either currently or formerly owned by the DoD, where the DoD oversees environmental restoration. RABs enable people interested in environmental cleanup at an installation to exchange information with representatives of regulatory agencies, the installation, and the community. RABs may only address issues associated with environmental

restoration activities. He stated that Mr. Bill Walker is the Horsham Township manager and RAB community co-chair. Health-related issues are not addressed by the RAB, but health agency professionals' contact information will be provided after the Navy and ANG presentations. Mr. Harris indicated that he is the new Navy co-chair and that the new ANG co-chair is Lt Col Brian Silver.

Lt Col Silver introduced himself and indicated that he was unable to attend in person but his deputy, Lt Col Steve Good, and Mr. Lee DePersia from the environmental office were there in person. He also indicated that Mr. DePersia will be presenting for the ANG.

Mr. Harris stated that the first two RAB meetings in 2024 will be returning to a 6 p.m. time slot, but the third meeting is targeted to be held at the Biddle ANG base and will include a tour.

Mr. Harris turned the floor over to Mr. Walker for the appointment of community RAB members. Mr. Walker stated that for a number of years, the community portion of the RAB has been inactive. For the last year, Mr. Walker and Ms. Dawn DeFreitas have been working on a plan to get the community involved again, which has included advertisements to the community requesting community volunteers and members. He stated they now have seven community members and three community organizations that have been appointed to the community side of the RAB. The community organizations with seats on the RAB include the Horsham Land Redevelopment Authority (HLRA), the Horsham Water and Sewer Authority (HWSA), and the Buxmont Coalition for Safer Water. The community members with seats on the RAB include Mr. Alex Myers, Ms. Samantha Slaff, Mr. Alan McPeak, Mr. Dave Craig, Mr. Joseph McGrath, Mr. Rick Newsome, and Ms. Danette Richards. Mr. Walker indicated that he will be reaching out to the aforementioned RAB members in the next couple of weeks, and there will be an orientation meeting before the March 2023 RAB meeting.

Mr. Harris indicated that he would now provide the update on the environmental restoration program. In January, Pennsylvania released maximum contaminant levels (MCLs) for the compounds perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), which are 14 nanograms per liter (ng/L) and 18 ng/L, respectively. In response, the Navy BRAC Project Management Office (PMO) evaluated the historic drinking water sampling data. It identified locations where either the PFOA and/or PFOS concentrations were above the Pennsylvania MCLs. Any locations that were identified as being over the MCLs and impacted by naval operations were offered bottled water in the interim. In addition, locations that were in question were resampled. In September, the Navy awarded an amendment to the cooperative agreement with HWSA to address connection to the public water system for residents with wells exceeding the Pennsylvania MCLs. Last month, the Navy began issuing offer letters for municipal water connections in the HWSA area. To date, the Navy has provided \$22 million to HWSA to address PFAS impacts via a cooperative agreement and subsequent modifications. This includes filtration systems on municipal wells and over a hundred public water connections for individual private wells. In March 2023, the EPA announced the draft national primary drinking water regulations for six PFAS, which includes both PFOA and PFOS at four parts per trillion (ppt) (ppt is an equivalent to ng/L). The Navy BRAC PMO is reviewing the existing data and will conduct additional sampling where necessary in preparation for the EPA's final drinking water standards. Mr. Harris then indicated he would provide an update on the Five-Year Review at NASJRB Willow Grove. He stated the purpose of the Five-Year Review is to ensure that the selected remedy for the sites is effective in protecting public health

and the environment. The Navy BRAC PMO, in cooperation with EPA and PADEP, completed our third Five-Year Review for the remedies at NASJRB Willow Grove. The final document was distributed to EPA, PADEP, and the HLRA on 2 October 2023, and the public notice for the completion of the Five-Year Review was published in November 2023. Since the previous RAB meeting, the Navy has continued to operate our pilot systems for the treatment of PFOS, continues to conduct surface water and sediment sampling, submitted the five-year review, and submitted a PFAS Remedial Investigation (RI) soil sampling and analysis plan (SAP) addendum for lysimeter installation for agency review. Actions the Navy plans to complete by the next meeting include submitting the draft Site 3 and Site 12 Land Use Control (LUC) Remedial Designs, finalize the Site 12 groundwater technical memo, continue private drinking water well sampling and providing bottled water as needed, continue issuing connection offers, continue operation of the pilot systems, finalize the EE/CA, and continue with surface water and sediment sampling.

Ms. Jennifer Byrd indicated that she would be presenting on the EE/CA for the planned GWETS but that Ms. Tricia Moore would first give a brief overview of the Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA) process.

Ms. Moore explained the steps of the CERCLA process. The Navy and ANG are using the CERCLA remedial process, and both are currently performing RIs for PFAS. The next step would be a Feasibility Study (FS), followed by a Proposed Plan (PP). However, CERCLA also includes a parallel process for implementing a removal action prior to obtaining a Record of Decision (ROD) when an interim action is warranted, because the normal remedial process can take multiple years. It has been determined that the removal of groundwater in order to treat PFAS is necessary, and the EE/CA was performed to evaluate different options for treating the groundwater. Once the EE/CA is finalized, there will be a public comment period that will allow the document to be available for public review and comment. Comments and responses will be incorporated into the action memo along with a summary of the final selected removal action. An EE/CA is similar to an FS, and an action memo is similar to a ROD, and both action memos and RODs are legally binding. Once the action memo is final, then we can move forward with the construction and work associated with implementing the remedy.

Ms. Byrd indicated that a summary of the EE/CA was presented at the last RAB meeting in September and that, as previously mentioned, a couple of concerns were raised. The first is related to the impact of the GWETS on the capacity of the drinking water aquifer, and the second is the contribution of the GWETS discharge to flooding that occurs in Park Creek during heavy rain events. Therefore, the finalization of the EE/CA was paused so we could further evaluate these concerns, and this presentation will discuss the evaluation and provide an update on the status of the EE/CA. When the EE/CA is finalized, there will be a 45-day public comment period. A notification announcing the commencement of the public comment period will be provided in the local newspaper, on the Willow Grove BRAC PMO website, and through the Willow Grove e-mail list. The final document will be available electronically on the Willow Grove BRAC PMO website, and a hard copy will be available at the Horsham Public Library. Once the comment period is over, written responses to the public comments will be attached to the action memo, which is the next step in the process. As previously mentioned, an EE/CA is a document that develops and evaluates alternatives for implementing a removal action in accordance with CERCLA criteria. Any alternatives included in an EE/CA must be protective of human health and the environment and compliant with applicable, relevant, and appropriate requirements (ARARs). The alternatives

included in the EE/CA are evaluated based on their effectiveness, implementability, and cost. Then, all decisions related to the EE/CA are documented in the action memo. Just as a reminder, the removal actions evaluated in this EE/CA process are interim measures that could be identified and undertaken at any step in the CERCLA remedial process and are not necessarily reflective of the final remedy for this site. The GWETS is being implemented to reduce the mass of PFAS in groundwater around two primary source areas on site, Building 680 and Site 5. The groundwater extracted will be treated and discharged, and the discharge must meet the criteria established by the National Pollutant Discharge Elimination System (NPDES) permit equivalency that PADEP will issue. The groundwater treatment system is expected to generate about 400 gallons per minute (gpm) from around 29 extraction wells. We have included a safety factor, so the system has been designed to accommodate 125 percent of the flow or around 500 gpm. The EE/CA evaluated three aspects of the GWETS. The first was PFAS treatment technology, the second was different options for the layout of the systems, piping, and building locations, and the third was different locations to discharge the effluent. There were five alternatives evaluated for discharge of the treated effluent from the GWETS in the EE/CA. The first alternative evaluated was discharge to the existing recreational basin, located near Building 177. The second alternative evaluated was discharge to an existing storm sewer system outfall, Outfall 4. The third alternative evaluated includes reinjection of the treated groundwater back into the aquifer. The fourth alternative evaluated involves the discharge of the effluent directly to Park Creek via a new piping system that would be installed as part of the system construction. Last, the fifth alternative evaluated includes discharge to two other existing storm sewer outfalls, Outfall 3 and Outfall 8. There have been several agency meetings discussing the potential discharge options for the GWETS since the last RAB meeting in September. At the end of October, there was a meeting with the Navy, EPA, PADEP, and the United States Geological Survey (USGS), and a week later, another meeting was held with the Navy, EPA, USGS, PADEP, HWSA, and the Delaware River Basin Commission (DRBC). The purpose of the meetings was to discuss the objectives for the GWETS. The first objective for the GWETS is to remove the PFAS mass from groundwater in areas of the highest concentrations onsite and thus reduce the offsite migration of PFAS. However, this objective needs to be balanced with the need to maintain sufficient capacity of water in the drinking water aquifer, promoting future beneficial reuse of the base and avoiding contributing to the localized flooding that occurs in Park Creek during heavy rain events. The first concern identified was the impacts of the GWETS on the capacity of the drinking water aquifer. The solution is to set the GWETS system controls to limit the influence on the offsite water supply wells. The plan is to have extraction wells located in the two primary source areas and pull groundwater from areas with the highest concentrations of PFAS to not only remove PFAS mass from the groundwater but also to locally reverse the groundwater flow direction and attempt to keep the PFAS from leaving the base. Thus, we are going to work with HWSA during the design and implementation of the system to adjust the flow rate of both the system and the individual wells to make sure we do not negatively impact the water supply wells. Based on current modeling, it is estimated that we are only going to remove around three percent of the total aquifer thickness as a result of the system's operation. Once again, the goal is to remove low volumes of water with high concentrations of PFAS. As part of the evaluation, we did take another look at some of the reinjection alternatives that can be used to put the treated groundwater back into the aquifer. The first alternative evaluated was infiltration galleries. This alternative includes a perforated pipe installed below the ground surface but above the water table, similar to the drain field from a septic system, where you flood it with water, and the water will percolate into the dry soil and eventually make its way down to the water table. The second alternative is injection wells. There were a couple of design considerations that were challenging to overcome with the

re injection alternatives. The first design consideration is the amount of land required for both re injection alternatives. The infiltration galleries take up a large amount of land, and injection wells less by comparison, but a decent amount of land would have to be set aside to operate these options. The second design consideration is interference with the operation of the GWETS, as there is a high probability of creating a short circuit where you end up extracting water, treating the water, re injecting the treated water, and extracting the same treated water and not accomplishing the goals of the system. The third design consideration is related to the reliability of accepting the system discharge. The soils on base and in the area do not accept water very well as there are a lot of clays and silts, and there is a limited amount of water that can be accepted before saturated soils and ponding occur. The same can be said of the geology beneath the water table, as it consists of fractured rock, which makes injection difficult. Thus, sustaining the flow rates that we need for system operation over long periods will be difficult based on the soil type and geology present in the area. The last design consideration, which is the most important, is the potential negative impact on PFAS migration. If we inject clean water back into the ground on the base, it could create a groundwater mound and change the pathway that PFAS takes away from the base and how fast it is migrating.

The second concern is related to the contribution of the GWETS discharge to the flooding that occurs periodically in Park Creek. The proposed solution is to turn the system off during flood events. Flow information from a Park Creek USGS stream gauge that is located near the site was obtained and analyzed. Looking at an annual average flow, the contribution of the GWETS discharge to the annual average flow in Park Creek is around six and a half percent of the total flow. During a major rain event, that number goes down dramatically and is less than one percent of the flow due to increased flow in Park Creek. Thus, although we do not think the discharge from the GWETS would noticeably impact the flow in Park Creek under any scenario, we do understand that when the area is flooded, any additional water is unwelcome. So, during flood events, the system will be turned off, and we will wait for the flooding to dissipate before turning the system back on.

The next step is to incorporate these decision into the EE/CA and finalize the document. Once the EE/CA is final, the public comment period will come into effect, and comments will be formally addressed in a written response as part of the action memo, which is the next major document that will be prepared. Once the action memo is finalized, we also need to finalize the NPDES permit equivalency application with PADEP and finalize the Docket with DRBC. At that point, we will be able to finalize our removal action work plan and then begin construction. Construction is anticipated to take around two years.

Mr. Harris stated that for additional information and resources, please visit the Willow Grove webpage.

Ms. Boltz gave a brief overview of how to ask questions for those attending virtually.

Mr. Harris indicated that he will be the moderator for the Q&A today, and all questions and comments, including those submitted prior to the meeting today, will be addressed in the RAB meeting minutes. He asked that those attending in person with questions make their way to the microphone in the center of the room.

Ms. Joanne Stanton indicated she is the co-founder of the Buxmont Coalition for Safer Water. She asked if the Navy will have to reapply for a discharge permit with the GWETS and if the discharge permit levels for PFAS will be lowered since there are new EPA draft MCLs for PFAS. She also asked if the previous discharge permit levels for PFAS of 70 ppt would also be changed. Mr. Colin Wade indicated this is something PADEP will re-evaluate when the application is received. He indicated that as part of their application, the Navy will submit sampling results for the groundwater they are looking to withdraw. PADEP will review the standards for various contaminants. Ms. Stanton asked if PADEP has a set standard for PFAS discharge. Mr. Wade indicated that PADEP has incorporated PFAS discharge limits into individual NPDES permits and permit equivalencies at different sites, but it is done on a site-by-site basis. Mr. Wade also added that, in general, limits in permits are reviewed when a new permit is requested or when a permit is renewed. Ms. Stanton asked if the Pennsylvania MCLs will be used as the standard in regard to providing bottled water or connections to municipal water. Mr. Harris stated the Navy has already started the resampling effort and is providing bottled water for locations that have exceeded the Pennsylvania MCLs. It has already funded the cooperative agreement that will eventually commence construction and connection for the affected properties. Ms. Stanton asked if the next step would be using the draft EPA MCLs of 4 ppt. Mr. Harris stated that first, the EPA needs to finalize the MCLs, and then the process would continue from there.

Ms. Tracy Carluccio introduced herself as part of the Delaware River Keeper Network. She asked if the Navy is committing to a timeline for providing water to those who have private wells that exceed the Pennsylvania MCLs of 14 ppt and 18 ppt. Mr. Harris stated that when the Navy samples a private well in its sampling area and determines there is a PFAS exceedance due to a Navy source, we will usually provide bottled water within approximately 24 hours and, in the interim until a connection to the public water system is enacted and constructed, which does take about a year or two. Mr. Harris stated that there are multiple steps in the process, one of which is the Navy providing funding and approval of a connection. Then, HWSA will take over the planning and connection process. Ms. Carluccio then asked if the NPDES permit equivalency application sent to PADEP was substantively different than a regular NPDES permit. Mr. Harris stated the vast majority of it is the same, and it is a permit equivalency because federal agencies need to comply with the substantive requirements but are not required to get simple permits like building permits and electrical permits. Ms. Carluccio asked if the equivalency permit can only be used on property that is owned by the discharger. Mr. Harris indicated he would need to look into it. Ms. Carluccio stated that the Navy indicated there was a meeting with DRBC about the NPDES equivalency application and asked if DRBC also has to approve the NPDES permit. Mr. Harris indicated that PADEP and the DRBC work together and that DRBC is a commission that involves all states within the Delaware River Basin area, so it is a docket done through DRBC. At the same time, the permit is issued through PADEP. Ms. Carluccio asked if there would be a docket even though this is a permit equivalency. Mr. Harris indicated that the docket process would still occur.

Mr. Alan McPeak asked if there is an expiration date on the offer letters for connections to public water. Mr. Harris indicated that there should not be, to his knowledge. Mr. McPeak stated that 400 gpm from the GWETS does not seem like a lot of water. He indicated that he was curious about the average gallons per minute for the HWSA and of all the private wells. He stated it has to be much greater than 400 gpm. Mr. Bill Myer indicated that it was likely much greater than 400 gpm.



Ms. Stanton stated that this is a large project and the base is divided into several sites. She asked if all of the sites were in the same step in the CERCLA process. Mr. Harris indicated that each site has to go through the CERCLA process, and all sites may not be in the same step. Ms. Stanton asked if a graphic could be created that shows where each site is in the CERCLA process. Mr. Harris stated that they could likely put something together.

Mr. Tom Ames stated he was with HLRA. Mr. Ames asked if draft documents could be posted to the administrative record and/or the BRAC PMO website when they are submitted to the regulators. Mr. Harris stated the administrative record is where the Navy posts final documents that have been submitted to the regulatory agencies and have received concurrence. Thus, draft documents cannot be placed on the administrative record. Mr. Harris did, however, indicate that since we now have community RAB members and community RAB organizations, the RAB will have the opportunity to review documents that are submitted to the regulators. Mr. Ames also stated that minutes for the RAB meetings in 2023 have not been posted and asked if meeting minutes have been discontinued. Mr. Harris indicated they are working on getting caught up on the RAB meeting minutes. Mr. Ames indicated the most recent surface water and sediment test results available on the administrative record are from Round 11, March 2022. Since then, six or seven additional sampling events have occurred. Past RAB presentations have talked about tech memos being submitted to the regulators, but nothing has been available to the public. Mr. Harris indicated there are a lot of steps to go from collection of data to a final document in the surface water and sediment sampling program. First, the Navy conducts the sample collection, followed by submittal to laboratory for analysis. After receipt of results from the laboratory the Navy needs to interpret the results and draft a document detailing the results and submit it as a draft to the regulators for a comment period. Mr. Harris reiterated that due to all of these steps, there is a lag between sample collection and addition to the administrative record, as only final documents appear in the administrative record. Mr. Ames stated that on the BRAC website, there are maps that show the test results, so there are two different issues. One is the actual results; the other is the tech memo. He stated that there should be a better, more responsive posting of the results to the community, as for almost two years, the public does not have any understanding of what is happening in Park Creek or Pennypack Creek. Mr. Harris stated he would have to look at the exact data presentation for the surface water and sediment sampling results and determine if it was a one-time data posting or if it was intended to be regularly updated. Mr. Ames proposed that when the draft tech memo gets submitted to the regulators, it also be provided to the RAB. Mr. Harris stated his concurrence. Mr. Ames asked that if, during one of the sampling events, there was a data point that was widely out of range, how would the RAB be advised. Mr. Harris stated that once we collect a water sample, it goes to a lab and through various analyses, some of which are making sure the analyses meet known criteria. If we receive an odd result, the lab should alert us immediately. Thus, we should know there is an issue right away and we could either have the lab rerun the sample or go and recollect the sample. However, if we did get a sample result that was verified and is still an outlier, it would be noted in the draft report provided to the RAB.

Mr. Guido Fetta asked if the design has been finalized on the remediation system and what technology is being used to remediate the PFOS in the surface water. Mr. Helland indicated that the contractor building the system had been selected. It is a design-build contract, and they have done some preliminary work on the proposed site location. They have also done some preliminary design work on the system, but the design will not be finalized until after the action memo is completed. Ms. Moore stated that as far as the technology, the EE/CA summarizes the technologies that were

considered for treatment, including a traditional granular activated carbon (GAC) and an ion exchange (IX) resin. Two types of IX resin are currently on the market: one is a single-use resin, and the second is a regenerable resin. The resins are the same types of media that are currently being used at the site for groundwater treatment of PFAS. These were evaluated in the EE/CA, and as far as the selection, the action memo will select or document what media is actually selected. The EE/CA includes a number of different factors that are evaluated in the selection of the treatment process.

Ms. Hope Grosse stated she is with the Buxmont Coalition for Safer Water. She indicated she had a question in reference to how far out the Navy is testing for PFAS. She stated some people could be a mile beyond the sampling extent and have high PFOS levels in private wells and asked if there was any talk about expanding the sampling limits. Mr. Harris stated that the Navy prepared a SAP for conducting the private well sampling, and the regulators reviewed the SAP. They have the opportunity to provide input and questions. The Navy is in the process of updating the drinking water SAP that addresses both the former NASJRB Willow Grove facility and the former NAWC Warminster facility, and part of that is evaluating the data from the private wells. In response to a question about Warminster, Mr. Harris stated the sampling area associated with NAWC Warminster is being expanded, but any questions associated with Warminster should be discussed during public meetings for that facility.

Mr. Rick Newsome stated he has been a Horsham resident for 37 years and a Hatboro/Horsham resident for 65 years, and he grew up in close proximity to the Warminster facility, so he has spent his entire life geographically close to both of these areas. He stated he appreciates the opportunity of being a new board member. Mr. Harris acknowledged his comment.

Mr. Harris stated that since there are no more questions, we will transition over to the ANG presentation.

Mr. Myer introduced himself as the restoration program manager for the ANG. Mr. Myer also introduced Mr. Lee DePersia, the environmental manager; Mr. Matt Machusick, the Project Manager for their contractor Leidos; Lt Col Steve Good, the Deputy Mission Support Group Commander; and online Lt Col Silver, the Mission Support Group Commander.

Mr. Bill Myer provided a status update since the last RAB meeting. He indicated that the ANG completed a groundwater sampling event as part of a long-term monitoring program in October. He hopes to have the report to the regulators in January 2024. He also indicated the ANG is working on coordinating with the SAP IEE on signing the amendment to the Federal Facilities Agreement (FFA). He stated Air Force and Navy personnel at the general counsel level had an issue with some of the language that was outlined in the FFA, and they are waiting for the Navy's response on the new language. Pending receipt of that document, we are going to set up a meeting for all the different stakeholders to discuss the proposed language changes. Mr. Myer stated they completed all Phase 2 RI wells and 30 days of automated water level gauging, which provides water level data over one month and will be used for the RI and to support groundwater modeling. We also continued with the development of the groundwater model and hosted a few meetings. There was a meeting on 18 October 2023 to discuss the risk assessment and schedule issues, and there is a meeting planned for 19 December 2023 with the risk assessors to discuss the approach for performing the human health and ecological risk assessments. Mr. Myer indicated they completed

the 30-day pilot test in December and will now perform a post-groundwater sampling event for 15 wells near the pilot test. These 15 wells were also sampled as a baseline before the pilot test, and this will help determine if there have been any measurable changes in groundwater quality. Now that the pilot test is complete, the next steps will be to review and evaluate the test data. Planned activities for the next three months include getting the FFA signed. Once the FFA is signed, we will submit a surface water response action memo and a residential drinking water action response memo. These are decision documents for the work already performed under the Safe Drinking Water Act administrative order. Based on discussions with the EPA and PADEP, we will complete these documents as part of the FFA. These documents will go to the regulators and the RAB members once they are in the draft final stage. We also plan to continue with the drinking water response actions. In December 2023, the plan is to perform a large groundwater sampling event in which we plan to sample all the monitoring wells installed by the ANG as part of the RI. This will be the last sampling event for the RI Report we will be submitting. The next step is to plan and schedule activities for Phase 3 of the RI. Once the data from the December groundwater sampling event has been validated, we will meet with the EPA and PADEP to determine the next steps for Phase 3. The plan is to have a draft RI report by September 2024. Mr. Myer also stated they are finalizing the memos for surface water sampling events 15 and 16 and that they have already received regulator comments. We have continued stormwater treatment and will likely perform another long-term groundwater monitoring event for Site 1 - Privet Road in the spring. The draft pilot test report should be complete in February 2024.

Mr. Matt Machusick indicated that Leidos is contracted to perform the RI with the ANG. The goals for the RI are to delineate the nature and extent of PFAS contamination, evaluate the threat to human health and the environment, and summarize those findings into an RI report. As part of that scope, we are in the process of collecting soil, sediment, surface water, and groundwater samples around the Biddle ANG base and submitting them for PFAS analyses. Part of the evaluation for the RI includes a baseline risk assessment that works to evaluate the risks to human health and the environment based on the concentrations from samples collected and the different ways receptors can be exposed. One of the items we are looking into is the connection between groundwater and the tributary to Park Creek. Or, in more general terms, how does groundwater move through the subsurface and discharge to the creek, and how does that affect the observed PFAS concentrations? After the RI, an FS will be performed. One goal of the RI is to gather enough information to help determine how to solve the problem. The FS is not part of our contract, but the information we are gathering will help inform the FS. Our contract also includes quarterly surface water sampling, which Leidos did in coordination with the USGS and the Navy for 16 quarters. We also performed groundwater gauging, which is essentially checking water levels to determine gradients and which way the groundwater may flow. Our investigation was set up in three phases of field activities, and the idea was to gather information in Phase I and then use that information to help plan future phases. We are currently finishing up Phase 2, and once the data comes back, we will then plan and execute Phase 3. Our contract ends in September 2024, and the RI report will be finalized by then. After Phase 1, six data gap areas were determined through collaboration with the EPA and PADEP, which were investigated as part of Phase 2. To evaluate those six data gap areas, we installed a total of nine intermediate depth wells in Phase 2 that range from about 70 feet to 285 feet deep. We also installed six shallow wells that target the first encountered groundwater. The investigation included borehole geophysics and packer testing. The results of both the borehole geophysics and packer testing were reviewed with the EPA and PADEP to present our findings and interim conclusions and to plan the next steps. We also installed borehole liners to prevent any

water from entering the borehole while we were making decisions. Still, through the process of installing the liner, we also gained a significant amount of hydraulic data. Part of Phase 2 also included a comprehensive gauging event where we gauged the depth of water in over a hundred wells on the base so we could determine the groundwater gradients and flow directions. We are also in the process of completing a comprehensive groundwater sampling event where we will sample all the wells on base, and we hope to have that completed by next Wednesday. We also completed an automated groundwater level monitoring event during Phase 2, in which data logging transducers recorded pressure every 15 minutes, which was then translated into water levels. Data logging transducers were installed in 30 wells for a month to provide additional data for the groundwater model. The USGS developed a regional flow model to help the townships and communities understand how groundwater flows in the region. Leidos used the model as a starting point for creating a much more detailed model of the ANG base. We are currently updating the model to evaluate different scenarios in groundwater flow to help understand where PFAS may be going and where it may be coming from. Next slide, please. Mr. Matt Machusick gave a brief overview of how the borehole geophysics, packer tests, and borehole liners were used to gather information, including locating fractures, where water was entering the borehole, building cross sections, understanding the subsurface, determining hydraulic properties, and determining contaminant concentrations at specific depths. The next big step is to compile the Phase 2 results, work with the EPA and PADEP to present our findings, recommendations, and conclusions, and plan the Phase 3 activities. We have a 19 December meeting with the EPA and PADEP to talk about our process for completing the risk assessment. With regard to the quarterly surface water sampling, the 16<sup>th</sup> round was completed in June in collaboration with the Navy and USGS. Leidos and the ANG have submitted the quarterly reports for Rounds 14, 15, and 16, but I believe we are still waiting on comments before we finalize some of them. The previous rounds of surface water sampling data and the reports that are finalized should be posted on the ANG administrative record. Discussions were held with the Navy, ANG, EPA, PADEP, and USGS regarding additional surface water monitoring. The ANG submitted a letter to the EPA indicating their stance that sufficient data has been collected, and they are not proposing additional surface water sampling at this time. In addition to the RI at the Biddle ANG base, we are also performing a pilot study to look at different ways to treat groundwater. The goal of the pilot study was to provide information that would help design a hydraulic control to pump water out of the ground and prevent migration of the plume from the area near Building 201. The pilot study included a 30-day pumping test and a series of pumping tests that targeted the area near Building 201. As part of the planning for the pilot test, we conducted several scoping sessions to review the scope of work and the plans with the EPA and PADEP, and the work plan was submitted as an addendum to our Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), which EPA and PADEP approved in July. The pilot study included three extraction wells installed in close proximity but at different depths, and they were able to produce a combined total of about 50 gpm. The pilot study included both step tests on the individual wells and a series of constant rate tests on all the wells simultaneously. Chemical monitoring was performed throughout the tests, including sampling for PFAS and other parameters as well. The 30-day test was conducted between 1 November and 30 November, and the initial results indicated the shallow well produced about 8.5 gpm, the intermediate well produced about 24 gpm, and the deep well produced about 16 gpm. The extraction wells were 10-inch boreholes, the shallow well was 40 feet deep, the intermediate well was 90 feet deep, and the deep well was 150 feet deep. The next steps for the pilot test will be removing the data logging transducers used to monitor water levels, evaluating the data, and determining properties of the aquifer that will help design a full-scale system. We will also be using the groundwater flow model to simulate what

was observed in the pilot study and to project alternate scenarios. All those factors will be compiled into a memo and submitted to the ANG for review by approximately the end of February. Once comments are reviewed and finalized, the memo will be submitted to the regulatory agencies.

Mr. DePersia indicated that one of the concerns at Biddle ANG was the discharge of surface water contaminated with PFOS and PFOA offsite. The ANG constructed a 500-gpm surface water treatment plant in 2021, and to date, we have treated about 260 million gallons through the end of November. For the discharge of surface water, we have a NPDES permit that requires monthly sampling. We have collected a total of 29 samples thus far, and 14 of the months, we did not detect any PFOS or PFOA in the samples. Detection limits are typically around two ppt. For another 14 months, we had an average of six ppt. We have only exceeded our discharge limit once in April 2023, as an algae bloom disrupted our treatment process. We reported the exceedance to both PADEP and EPA. In addition, we sample our treatment plant twice a month for operational purposes at several points within the treatment process. We also just began a 6-month pilot test of a material called Dextorb (made by Cyclopure) that is supposed to be better for treating water-containing algae. The pilot test utilizes a small stream coming off one of the treatment trains. Dextorb is a resin-tight material made of corn starch, and we started the 6-month pilot system to see if that would improve the issues with the algae. If it looks promising, then in the spring, we may convert one of our treatment trains to Dextorb and see how that compares to our other treatment train, which consists of a more conventional GAC and Purolite IX resin. The construction, operation, and maintenance of the treatment plant is performed through the Warminster municipal authority. We installed GAC treatment systems on five of the North Wales wells; however, four of the five wells have not been put back into service because of elevated total dissolved solids. We are not exactly sure what caused it, but we think the increase in total dissolved solids was due to a lack of use. Recently, North Wales pumped the wells while treating the water and discharged it instead of using it, and the total dissolved solids have since resolved, and they are working on getting permits from PADEP to bring all five of those wells back into service. We have a cooperative agreement with North Wales should we need to do any main extensions or additional service line construction for private wells that are determined to exceed the new PADEP MCLs.

Mr. Myer provided an update on the ANG private well sampling. He indicated that they have been sampling residential wells since 2016 and connecting residents with wells that are above the standards of the municipal water supply. The ANG has identified 16 well locations that were at or near the PADEP MCLs, and five letters were sent to residents with concentrations that were at or above the MCL. Two of the five residents responded, and we are providing them with bottled water. During the week of 18 September, Weston went out and sampled six residential wells in the area, and there were no exceedances of the MCL. The contract with Weston expired on 25 November, and we started a new contract through the US Army Corps of Engineers Philadelphia District with a contractor called Verina-PARS. They will now be performing the drinking water response actions for the ANG for the next four years. In Horsham, six wells were sampled, and we had five wells that were above the health advisory, but none exceeded the PADEP MCLs. In Warrington, we have sampled a total of 156 wells, 53 of which were above the 2016 health advisory of 70 ppt, and six of which are below the state MCL, but we are planning on performing quarterly monitoring on these six wells. We have also provided 68 connections to the North Wales Water Authority. Mr. Myer indicated that Mr. Eric White with Verina-PARS is the new contact for the residential well sampling. In July 2023, we awarded a contract to Dawson (a Native 8A Hawaiian firm) to update the community involvement plans for 25 ANG bases, one of which is Biddle. Dawson will work

with the ANG, the regulators, and different stakeholders in the community to update the plan. Another part of the scope was to perform RAB assessments and to provide six Tier 1 facilitation meetings with the ANG, EPA, and PADEP. We also awarded a \$1.7 million contract to Allonnia to perform a 6-month foam fractionation pilot test using our groundwater extraction wells that Leidos installed. This contract was awarded through the Defense Innovation Unit (DIU) environmental security technology security program. Mr. Myer then invited attendees to ask questions.

Ms. Boltz gave a brief overview of how to ask questions for those attending virtually.

Mr. Ames indicated he was from the HLRA. He stated he had a question about the ANG's interim groundwater action. He wanted to clarify that the ANG's interim action is in response to the EPA's direction under a surface water act and is not being performed under CERCLA. He further asked if the interim action would be implemented without an action memo or public comment. Mr. Myer indicated that the pilot test was the first part of the process, and once the pilot test report is final, we are going to do a non-time critical removal action through an EE/CA. When the draft final EE/CA is ready, we will submit it to the RAB members and the regulators at the same time, but we will also have a public comment period.

Ms. Stanton indicated she was with the Buxmont Coalition for Safer Water. She stated that for the private well sampling that took place in Horsham, there were six wells sampled; five were above the action level, four were connected to municipal water, and Wood abandoned one well. Mr. Myer indicated the resident had abandoned the well as they no longer wanted to use it.

Ms. Boltz indicated there were a couple of comments from Mr. McGrath in reference to Mr. Machusik's presentation. Mr. McGrath stated that he spent 34 years in Building 201. He also asked if the ANG's contractor, Dawson, would be in touch with RAB participants. Mr. Myer indicated that Dawson would reach out to different cross-sections of the community and will perform surveys and outreach to determine how best to communicate with the community regarding restoration activities.

Ms. Boltz indicated that Mr. McGrath also had a comment on the Navy's presentation. Mr. McGrath expressed concern about health issues not being conveyed up the Navy chain from the RAB meetings. Mr. Harris indicated the RAB does not address health issues, but we do invite health professionals; however, they were unable to attend today's RAB.

Mr. Myer handed the meeting over to the EPA and PADEP.

Mr. Wade introduced himself as part of PADEP. He also introduced Ms. Lisa Strobbridge, Ms. Bonnie McClennen, and Ms. Olivia Jenkins with PADEP.

Ms. Sarah Kloss introduced herself as the Remedial Project Manager for the EPA. She also introduced Mr. Nathan Doyle, Ms. Kimberly Hudson, and Ms. Linda Watson with the EPA. She indicated that the final MCL for PFOA, PFOS, perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), perfluorobutanesulfonic acid (PFBS), and GenX is expected sometime in early 2024. In addition, there was a November 2023 update to the regional screening level (RSL) table, which included an update to the RSL for GenX and the addition of five new

PFAS due to toxicity value development. She also stated the RSL table is used for assessing risk at superfund sites, and they are not drinking water standards or cleanup levels.

Mr. Harris thanked everyone for attending and shared the contact information for the RAB co-chairs from the different agencies and also the regulatory partners. He stated that if anyone was unable to ask questions, please feel free to reach out to any of these individuals through the information posted. As a reminder, our next RAB meeting is scheduled for 14 March 2024, which is a Thursday at 6 p.m. So once again, we are cycling back to the evening time slot in March, and the meeting will be held at the community center. Once again, we will be providing the virtual option for those unable to attend in person. Mr. Harris also shared the contact information for Ms. Susan Wood from the Pennsylvania Department of Health and Dr. Linda Brown from RTI International. The meeting concluded at 4:18 p.m.