FINAL

Ravenna Army Ammunition Plant
Restoration Advisory Board (RAB) Meeting
19 April 2023

1. Call to Order

The Ravenna Army Ammunition Plant (RVAAP) Restoration Advisory Board (RAB) meeting for the Installation Restoration Program was called to order by the Community Co-Chair Ms. Sarah Lock, of Paris Township at 6:08 p.m. Wednesday, April 19, 2023, at the Charlestown Township Hall, Charlestown Township, 6368 Rock Spring Road, Ravenna, Ohio 44266.

Of the current 23 RAB members, meeting attendance was recorded as 8 members present, 6 excused absences, and 10 unexcused absences. There were 3 members of the public present. Please note, this was an in-person only meeting.

Ms. Lock announced that the meeting minutes would be recorded for note taking purposes only. Ms. Lock wanted the Board to be aware that as soon as the minutes are approved for that meeting the recording will be deleted.

Ms. Lock introduced Angela Cobbs who is the new RAB Administrator and welcomed her to the new position. Ms. Cobbs is replacing Rebecca “Becky” Shreffler. Ms. Shreffler has resigned from Chenega and will no longer be the RAB Administrator. Ms. Lock invited the RAB members to sign a provided card for Becky to congratulate her on her new position and thank her for her service to the RAB.

The approval of the previous meeting minutes from the April 20, 2022, and November 9, 2022, are being deferred because the RAB Administrative Support contract was inactive from May 2022 to late October 2022. The new RAB Administrative Support contract was renewed right before our November 2022 meeting and Ms. Shreffler resigned shortly thereafter. As a result, there was no administrative support and/or record-keeping for the RAB meetings. It was decided to defer the previous RAB meeting minutes until the next RAB meeting so that an accurate and complete set of minutes could be considered for approval. Three sets of meeting minutes will be presented to the Board for approval at the next RAB meeting: minutes for the April 20, 2022, November 9, 2022, and April 19, 2023, meetings. Ms. Lock asked if anyone had any questions regarding the deferral and the reasons behind it.

2. Presentation – Vapor Intrusion Study at Building 1037, Charles Spur, Leidos

Tonight’s presentation was presented by Mr. Charles Spurr from Leidos about the Vapor Intrusion Study at Building 1037. To request an electronic copy of the formal presentation (attached to these meeting minutes), please contact the RVAAP RAB Administrator at Angela.Cobbs@chenegars.com or visit the Public Participation page on the RVAAP restoration public website at www.rvaap.org.

Following the presentation, Ms. Lock thanked the speaker and opened the discussion for questions by RAB Members. Public members were asked to hold any questions until after all RAB member questions.

Mr. Kevin Palombo (Ohio EPA) had a question concerning Slide 18 and the construction and installation of the soil gas sample points. He asked if the sample point was sealed after the tubing was removed. Mr. Spurr answered after sampling a stainless-steel plug is installed and the hole sealed with an inert clay.

Mr. Adam Eskridge (Charlestown) complimented Mr. Spurr on his presentation and had a question concerning the map shown on Slide 6. He wanted to know if the black dots represented monitoring wells. Mr. Spurr replied that the black & blue dots are the unconsolidated wells that are located in the soils, sands, and clay. The pink dots show the location of wells installed to monitor the upper sandstone/bedrock called Homewood Formation. The yellow dots with a diamond are installed to monitor the Upper Sharon Sandstone. The green dots with a green x are deep wells installed to monitor the Basal Sharon Conglomerate.

Mr. Eskridge provided the location of his house and his neighbor's yard on the map (Slide 6), to the left of the red circle where the fence cuts in and stated that is where his family lives and drinks the water. He wanted the RAB to know how important it is to himself and other people in the area because we live right here. He stated that he has a garden in his backyard, and his family eats the food it produces. Groundwater flow direction is a big concern to him.

Mr. Eskridge also wanted to know about the status of the work plan for the vapor testing over the next year and an explanation of the process and procedures. Mr. Spurr stated that the investigation is not directly related to Building 1037, but related to the nearby location of the former fire station where contamination was detected. There are detections in the groundwater close to Building 1037 but there have been no detections in the wells located south and east of the building 1037. As an example, monitoring well 008 located southwest of Building 1037 did not have any detections. At this point, it is not known if the groundwater is migrating and/or if it is moving very slowly, inches per year, in the soils. Mr. Spurr stated that most people have their water wells installed in the bedrock formations, which is far away from the monitoring wells installed in the shallow unconsolidated deposits at this study area. Building 1037 is being studied because it is the closest occupied building to the former fire station.

Mr. Eskridge additionally asked about the geology and mechanisms of soil gas leaching through the subsurface. Mr. Spurr answered that there are areas of perched groundwater underneath the site. The perched groundwater is subsurface water that forms a saturated horizon with a porous media at an elevation higher than the local or regional groundwater table and are not hydraulically connected to the underlying aquifers. During drilling operations, water may be encountered in certain zones, but then will not be encountered again until dozens of feet deeper.

Mr. Jed Thomas (Leidos) stated that they are currently doing groundwater sampling throughout the entire facility as part of the Facility-Wide Groundwater Monitoring program.

Mr. Eskridge asked another question concerning the process and/or procedure if positive contamination was detected at a monitoring well during a sampling event. He wanted to know how and when the residents and/or public would be notified in such an occurrence. Mr. Kevin Sedlak (ARNG) responded saying that samples are being collected and analyzed as part of the Facility-Wide Groundwater Monitoring Program, and additional monitoring wells are being installed as needed based on the analytical results. Once the sampling is done and all the information is scientifically reviewed, the information is gathered, and a report is compiled. The report is reviewed by the United States Army Corps of Engineers, Army National Guard and Ohio National Guard, and the Ohio EPA. Once the reports have been reviewed, commented on, and approved, they are then uploaded to the RVAAP public website. If there is an emergency, the Army will reach out to the Ohio EPA for their assistance. Mr. Sedlak emphasized that to date there have been no detections that have warranted that action.

Mr. Tom Tadsen (Franklin TWP) asked a question regarding the contingency plan for any wild cards and/or any unknown contaminants that might show up in the Building 1037 Vapor Intrusion Study when sampling is done. Mr. Spurr stated that there had been previous in-depth investigations done looking for any other contaminants and the results did not show any additional ones besides carbon tetrachloride and chloroform in the samples. If there is a need to conduct a more extensive sampling, it would be done but at this time, the evidence does not support it.

Mr. Tadsen asked an additional question regarding if they anticipated any pressure in the sub slab. Mr. Spurr responded that they do not anticipate any pressure in the sub slab.

Mr. Tadsen was the previous installation commander, and he was also stationed here during the 1970s. He wanted to let everyone know that the United States Army (U.S. Army) has made a commitment to follow the evidence regardless of where it takes them. The commitment to the public living and working around the installation, with distance not being a factor, is to find and fix the contamination. Mr. Bill Steiner stated that he lives outside the installation and has approached the U.S. Army with his concerns. He stated that they listened and replied in writing that they would take care of any contamination created by this installation.

Mr. Tadsen also reiterated that all the information that Mr. Eskridge was inquiring about was documented and is available on the RVAAP public website and at the local public libraries. He recounted the efforts of Mr. Mark Patterson, who worked tirelessly to assist the people that lived and worked in and around the installation. As an example, he briefly discussed the concerns about having a cancer cluster in the area. One of the county medical examiners gave a presentation and stated that no cancer cluster exists due to contaminants from the base.

Ms. Lock thanked Mr. Tadsen for his questions and his comments. She also stated that it is good to review the website for previous information for a recap for established members and for helping bring new members up to speed. The website is very well maintained and has a lot of good information.

Mr. Sedlak said there is also a GIS database with all of the groundwater sampling data, and it currently contains approximately 480,000 analyte samples. The Army is still actively doing sampling and will continue to do so until the Ohio EPA tells the Army that it is no longer necessary.

Mr. Dan Spicer (Paris Township) had a question regarding water levels in the wells and how deep the wells are. Mr. Sedlak responded that the groundwater is at a depth of 5 to 6 feet, which means the wells are shallow. Bedrock wells are installed to make sure the contamination didn't pass from the unconsolidated clays and gravels into the underlying bedrock. The carbon tetrachloride and chloroform were detected in 4 wells.

- Monitoring Well 001 - Carbon Tetrachloride is 960 parts per billion. It is located on the back west corner of the former fire station. It was probably a clean out valve of the former fire station.
- Monitoring Well 004 - Carbon Tetrachloride is 800 parts per billion and Chloroform is 250 parts per billion. It is located closest to the intersection.
- Monitoring Well 005 - Carbon Tetrachloride is 9 parts per billion. It is located directly west of Building 1037.
- Monitoring Well 002 - Carbon Tetrachloride is 22 parts per billion. It is located west of Monitoring Well 001.

Mr. Palombo asked if there were any contamination hits in the bedrock well nearest Monitoring Well 001. Mr. Kevin Sedlak (ARNG) stated that there was not any contamination detected in the bedrock well closest to monitoring well 001.

Mr. Palombo stated that there is currently a work plan being developed for the Vapor Intrusion Study for Building 1037. The Ohio EPA will review and provide comments prior to that being done. The two adjacent wells to Building 1037 didn't have any carbon tetrachloride contamination and that is very encouraging. Many times, the Ohio EPA does not require vapor intrusion sampling if the wells that are right next to the buildings don't have any groundwater hits for contaminants. The Ohio EPA is being proactive.

Mr. Sedlak said that that the Department of Defense (DOD) has regulations and has procedures on how to proceed with environmental issues. It includes information such as what the chemical is, what the vapor potential is, the distance to the building, and what the concentration is. Based on that formula, Building 1037 qualifies for the Vapor Intrusion study. Building 1037 is not occupied 24 hours a day/7 day a week but is used as an office for range control. Occasionally, during busy training times, it is occupied 24 hours a day/7 days a week while soldiers are training in the field.

Mr. Palombo wanted to reiterate what Mr. Tadsen said that the Ohio EPA is also committed to the protection of human health and the environment on the border of the property. There are 300+ monitoring wells on the base and/or near the perimeter of the base, which is very important for the liability of the State of Ohio and this facility to protect the citizens. The Ohio EPA and Army are always looking at the property border to protect from potential contaminants. Low levels of contaminants have been detected but at concentrations well below any action levels or Maximum Contaminant Levels (MCLs).

Mr. Palombo wanted to know if chloroform is a byproduct of carbon tetrachloride. Mr. Spurr stated that chloroform is used to create carbon tetrachloride and is also a breakdown byproduct.

Mr. Palombo explained how the compounds for additional study were chosen. A Remedial Investigation (RI) was conducted, and two compounds were detected at levels that warranted additional study, one of which was carbon tetrachloride. The former fire station used carbon tetrachloride to put out fires and explains why the compound was found at that location. He explained that there are not a lot of vapor intrusion studies at the base because the groundwater detections, groundwater flow direction, space between buildings and low number of occupied buildings, do not cause many occupied buildings to be at risk of vapor intrusion.

Mr. Spicer inquired if most of the wells around Building 1037 are at the same depth. Mr. Palombo responded that the gradient for the wells is very shallow. They are sealed with clay on the outside riser pipe above the screen and grouted to just below the ground surface so that no surface water can get into the screened well. The wells installed at the former fire station are mostly screened in a silty clay, with some sand seams that don't recharge too quickly. During sampling, the pumps are only pulling groundwater out at a rate of approximately 100 milliliters per minute and sometimes wells go dry during sampling.

Mr. Palombo stated that if carbon tetrachloride was dumped on the ground from the moment the fire station was opened, it hasn't travelled in the groundwater very far. Mr. Spicer asked if a deeper well had been installed at the fire station location to see if the contamination has seeped to a deeper location. Mr. Palombo stated that a bedrock well was installed into the underlying bedrock aquifer and that no contamination was detected. He also explained that some contaminants sink through water and some contaminants float on water due to their chemical composition. They are always concerned about contaminants that sink.

Mr. Palombo explained the nature of the underlying unconsolidated sediments. It is typically moist and heavy. The wells are constructed with a PVC pipe installed in the ground to the desired depth. At the bottom of the pipe is a screened area that has a series of very narrow slots cut into them that will allow groundwater to enter the pipe but keep larger sediment particles out. Additionally, a sand pack is placed around the screened area to further limit the smaller-sized sediments from entering the well. After a couple of days enough water will accumulate in the well. Then another tube is sent down inside the

well to suck up the accumulated water. Once the groundwater is captured into a tube or a bottle, it is submitted for analysis. If there is water accumulated in wells installed in silty clay, it will typically not be a lot. However, if the well is installed and screened in a sand layer, there will be a lot more water in the well and it will flow faster into the well for collection. If the well is screened in sandstone, there may or may not be a lot of water. If there are cracks in the sandstone, it will allow water to flow faster thru the cracks. It is still based on the gradient or the tilt of the land. Wells are installed with topography in mind. When looking at a map, we observe where the streams are and know that the groundwater will be flowing from higher elevations towards the streams.

Ms. Lock thanked Mr. Kevin Palombo for his questions and comments. She noted that she was hearing a lot of questions coming back to the basic geological principles, so perhaps the RAB could consider if that would be a good agenda item for a future meeting to reinforce some of those foundational things that are related to a lot of topics that come to the floor.

Mr. Eskridge asked about the location of Route 5 on the map shown on Slide 9 in relation to where Building 1037 was located. Mr. Spurr responded by saying it was it was about a quarter of a mile from the George Road and South Service Road intersection.

Ms. Lock asked if there were any further questions or discussion from the board. There were no responses.

Ms. Lock acknowledged that time for the meeting was almost up but wanted to open the floor for questions from the public. There were no responses.

Ms. Lock then moved onto the RAB general business.

3. General RAB Business

1. Ms. Lock opened the general RAB business by discussing the scheduling of the next RAB meeting. Ms. Lock explained that the typical RAB meeting is typically the third Wednesday of the month at 6:00pm. The next meeting is being proposed to be earlier in the month and time because we would like to have a site tour. September 6th or 13th are the two dates selected for the site tour. The final decision has not been made as to the tour at this time. The time change and running out of daylight may be factors in deciding an earlier date in September for the site tour. The board was polled and there were no issues with the meeting and possible site tour on September 6, 2023. If the site tour is not an option, we will schedule a meeting at one of our township member locations.

2. Ms. Lock did an analysis of RAB Board Member attendance back to April 2016. There are 5 board members that have 50% or higher absenteeism within the board. Ms. Lock would like to officially schedule a meeting of the RAB Membership Subcommittee to convene and address attendance as well as the lasting impact that the pandemic has had on board members' availability and participation in meetings. The Membership Subcommittee includes Mr. Tadsen, Mr. Spicer, Mr. Shackleford, Mr. Woloski and the

alternates are Mrs. Spicer and Mr. Steiner. There will be emails sent to the subcommittee to work out details for the upcoming meeting that will take place before the September 6, 2023, RAB meeting. The subcommittee will provide an update to the full board on their findings.

3. Ms. Lock reminded all board members to sign the card for Ms. Shreffler, if they choose to do so.

4. Ms. Lock requested that all RAB Board members review and update their contact information on the sign-in sheet on the back table.

5. Ms. Lock requested that Ms. Katie Tait (OHARNG) speak on behalf of LTC Robinson, who was unable to attend this meeting. Ms. Tait spoke about the loud noise (booms) coming from the demo range. She confirmed that the Army is doing demolition training on the range, and they will usually put a notice in the newspaper, so the public is informed. She also noted that training is picking up over the next 2 to 3 weeks. There will be all-terrain military vehicles on State Route 5 as well. She informed the Board that a new Environmental Office Building is being constructed by the Main Gate. They are hoping to be in the building by winter 2023. The new building is about the same size as the current Environmental Office Building. All Administrative Record documents (files) are currently housed in a trailer outside of the current Environmental Office building. The Administrative Record documents will be stored in the new Environmental Office Building when it is ready. Mr. Eskridge requested further information about the loud booms heard from the facility. Ms. Tait explained that outside units come to the installation with their own munitions and carry out their training exercises in a specified area. There are no munitions stored on the installation at this time. There are two clean-up actions occurring over the next year at two of the munition response sites. A video is available on the RVAAP.org site that shows munitions being detonated. A multi-purpose machine gun range is currently being installed and is expected to be completed this summer. The range is located right in the middle of the facility in the area formerly known as Winklepeck Burning Grounds and the Mark-19 Range.

6. Mr. Eskridge wanted to know if there are tours available for the general public. He said he has people asking him if there are public tours of the facility. Ms. Tait stated that at this time there are not any general public tours available due to the security standards that the installation must adhere to. However, there have been tours for schools, political representatives, and Boy Scouts. RAB site tours must be related to the installation restoration program, and it must be value added. Mr. Eskridge wanted to know about the long skinny buildings visible from Route 5 by the Paris-Windham Road intersection. Ms. Katie Tait replied that most of those buildings are former storage buildings no longer in use and some are slated to be demolished in FY24 due to their disrepair/eyesore. A few of the storage buildings are used for dehumidified storage.

7. Ms. Lock then asked the Board for any additional topics or questions, and hearing none thanked the Board for their participation and attendance and adjourned the meeting at 7:36 PM.

Respectfully submitted,

Angela Cobbs, RAB Administrator