IMFD–SEE 2 DECEMBER 2020

MEMORANDUM FOR RECORD

SUBJECT: Fort Detrick Restoration Advisory Board (RAB) Meeting Summary,
2 DECEMBER 2020

1. Summary Contents

Items addressed at the meeting are listed below, with corresponding section numbers indicated in the column on the right.

Please note: PowerPoint presentations were utilized during the RAB meeting. A copy of the presentations is attached to these minutes and is incorporated into these minutes by this reference.

Text contained within brackets [] has been added for clarification purposes.

2. Attendees

Members Present:

Dr. Gary Pauly, Community RAB Member, Co-Chair
Mr. Joseph Gortva, Army Co-Chair, Fort Detrick, Chief, Environmental Program
Mr. Barry Glotfelty, Frederick County Health Department
Ms. Elisabeth Green, Maryland Department of the Environment
Ms. Jennifer Hahn, Community RAB Member
Mr. Cliff Harbaugh, Community RAB Member
Ms. Karen Harbaugh, Community RAB Member
Ms. Elizabeth Law, Community RAB Member
Ms. Jenna O'Brien, US Environmental Protection Agency

Others Present:

Ms. Shelly Morris, On-Site Contractor to Fort Detrick Environmental Restoration Program
Mr. Gary Zolyak, Fort Detrick, SJA
Mr. Paxton Wertz, US Army Corps of Engineers
Mr. Joseph Bieberich, US Army Corps of Engineers
Zack Kershner, DPW, City of Frederick
Tracy Coleman, Planning Commission, City of Frederick
Mr. John Cherry, Arcadis
Ms. Rosemarie Potocky, Arcadis
Ms. Jennifer Kunze, Clean Water Action
Ms. Joanne Horn, J Horn Bioservices
Ms. Lanessa Hill, Fort Detrick, Public Affairs Office
Ms. Katrina Harris, Bridge Consulting Corp.

Members Absent:

Mr. Rolan Clark, Community RAB Member
Mr. Eli DePaula, Community RAB Member
Dr. Henry Erbes, Community RAB Member
Mr. Barry Kissin, Community RAB Member

3. Meeting Opening / Remarks

Mr. Joseph Gortva, DoD Co-Chair, welcomed everyone to the virtual meeting and reviewed the meeting ground rules and agenda.

4. Meeting Minutes/Action Items presented by Mr. Joseph Gortva, Fort Detrick

Mr. Gortva noted minutes from the August 2020 meeting had been sent out in September and asked that any additional comments be submitted by Monday, December 7, so the minutes can be finalized and posted on the web site.

Mr. Gortva asked Ms. Shelly Morris to review the open action items. Ms. Morris reviewed each action item; an updated list is attached at the end of these minutes.

5. New Contract for Area A/B Groundwater Monitoring presented by Mr. John Cherry, Arcadis

Mr. John Cherry stated a new contract had been awarded in September to the team of Seres/Arcadis for continuing groundwater sampling, monitoring and reporting at Area A and Area B. He said the Army wanted to give the RAB an overview of what is included in this five-year contract. Mr. Cherry advised none of the work is new as it has been ongoing under different contracts for many years.

Mr. Cherry first discussed Area B and noted a key component is the landfill support for the capped landfills. He explained the contract includes inspecting the landfill caps on a semi-annual basis to ensure the integrity of the caps and monitoring wells, mowing, controlling invasive weeds, checking on the signage, and making any needed repairs. Mr. Cherry said the contract also includes monitoring the lysimeters that have been discussed at previous meetings; he reminded the Board the lysimeters are monitoring rain infiltration.

Mr. Cherry displayed a map of Area B and pointed out the network of 48 monitoring wells around the capped landfills. He advised the wells would be sampled semi-annually, and every two years there is an expanded list of parameters for which the samples will be analyzed.

Mr. Cherry next discussed a second groundwater monitoring program at Area B for a subset of 15 wells that the Army has been sampling on a quarterly basis; the wells are clustered around disposal area B-11 and a few other areas near Fort Detrick's boundary, including one off-site well. Mr. Cherry explained these are sentinel wells designed to monitor trends of the volatile organic compound (VOC) concentrations in the groundwater.

Mr. Cherry displayed a graphic of the tasks included in the contract. He noted reports will be compiled quarterly or semi-annually, depending on the task, and will be submitted to the regulators. He stated updates will also be given at RAB meetings.

Mr. Cherry discussed a semi-annual sampling program at Area A which has been ongoing since the early 2000s. He noted the program consists of eight deep groundwater monitoring wells. Mr. Cherry said reports will be prepared on this sampling program and updates provided at RAB meetings.

Mr. Cherry reviewed the schedule of activities for the first year of the contract which includes the preparation of a number of documents.

Ms. Jennifer Hahn asked what is included in the Health and Safety Plan. Mr. Cherry explained a Health and Safety Plan is prepared by all contractors to outline the specific activities planned for the tasks in the contract, assess potential hazards related to those activities, and outline a safety plan for the contractor's staff and any subcontractors. He noted the plan is prepared in accordance with U.S. Army Corps of Engineers requirements, such as training for personnel and on-site monitoring.

Ms. Hahn asked that the minutes reflect that while this contract is only for five years, the monitoring will continue for many years after the contract ends. Mr. Cherry agreed that the monitoring will continue until EPA and MDE concur that monitoring is no longer needed.

6. Area B Groundwater/Surface Water Pilot Study presented by Mr. John Cherry, Arcadis

Mr. Cherry advised he would be providing an update on progress since the last meeting on Arcadis' pilot study work at Area B. He reminded the RAB that the pilot studies are looking at potential treatment options for the groundwater and surface water impacted by contamination from sources at Area B. He explained groundwater generally flows eastward to the primary discharge area. He stated the pilot study focuses on the source area and the discharge area.

Mr. Cherry explained the pilot study has three components: two tests focus on groundwater treatment and one test focuses on surface water treatment. Mr. Cherry stated for the groundwater component the two remediation technologies to be tested are pump and treat (system construction is underway) and enhanced reductive dechlorination (future project). He said the surface water component was completed at an off-post pond through pond aeration using several techniques to reduce VOC concentrations discharging to that pond; an extended evaluation project is being planned.

Mr. Cherry reviewed the pilot study schedule. He said construction of the pilot study pump and treat system is underway and the pilot study should begin in early January 2021; the extended surface water study is also underway and will extend into much of 2021. Mr. Cherry showed several photographs of the construction activities.

Mr. Cherry displayed a schematic of the temporary, comprehensive treatment system. He said two new pumping wells had been installed to pump water out at the rate of about 30 gallons per minute and the water will be piped into the treatment building. He explained the water will go through different treatment processes that were specifically designed to treat the compounds in the groundwater based on the extensive sampling which has been performed; the compounds include volatile organize compounds as well as 1-4 dioxane which is present at very low levels but was added in case levels change over time. Mr. Cherry said there will be a complex sampling and monitoring program in place for both influent and effluent concentrations to be sure discharge requirements are met; the water will be stored in tanks until it has been determined safe to be discharged.

In response to a question from Dr. Pauly, Mr. Cherry pointed out where the treated water will be discharged to Stream 2 which is on Fort Detrick property along the southern boundary. In response to questions from Ms. Hahn, Mr. Cherry said the discharge line will be fairly shallow—between 15 inches and 30 inches; if the pilot study is successful and becomes the selected remedy, it is likely the pilot study discharge line would continue to be used if the same discharge point is selected.

Mr. Cherry summarized the results of the surface water aeration study which has been completed. He reminded the RAB the first pilot test involved the use of five aeration fountains

in Robinson's Pond which operated for five months to volatilize the volatile organic compounds. He said during the pilot study samples were collected from the pond, in the spring that feeds the pond, in the outfall that leaves the pond and flows toward Carroll Creek, and in Carroll Creek. Mr. Cherry said the second technology tested were air diffusers. He explained the diffusers are a system of aeration devices typically in the shape of a tube placed along the bottom of the pond, similar to what is used in fish tanks. He explained water would flow across the bubbling transects to strip out the VOCs.

Mr. Cherry said the results from the surface water pilot study are being reviewed, and a report is being prepared. He showed a bar chart which summarized the interim evaluation and advised groundwater concentrations coming into the pond compared to what is leaving the pond showed the greatest reduction with the fountains, although reductions were also seen with the air diffusers. Mr. Cherry noted the fountains were also an easier technology to implement as the diffusers required a large treatment trailer and noisy blowers.

Mr. Cherry advised it had been determined that it would be advantageous to collect more data on the fountains over a longer period of time. He said the Army agreed to an extended pilot study of about eight months, perhaps up to 12 months, so data collected over different seasons can be evaluated. He said the first step in the extended study was to test different configurations of the fountains so three fountain configuration tests were conducted; he said baseline sampling was performed, the fountains were run for one week, and then another round of samples were collected. Mr. Cherry advised not all the data has been received yet, but the initial data shows about a 50 percent reduction in VOC concentrations in the pond and the outfall when the fountains are operating.

Ms. Hahn asked if the 50 percent reduction translates to a 50% reduction in the concentrations of VOCs entering Carroll Creek. Mr. Cherry said concentrations entering the pond are in the 5 to 6 parts per billion range compared to a drinking water standard for TCE of 5 parts per billion. He explained with the fountains, the concentrations in the pond are being reduced to 2 or 3 parts per billion so there are lower concentrations leaving the pond and moving into Carroll Creek. Mr. Cherry said there have been TCE concentrations detected at springs flowing at a very low rate into Carroll Creek in the 9 to 11 parts per billion range. Mr. Cherry said Robinson's Pond was selected for the pilot study as the rate of flow into Carroll Creek is much greater than the flow from the seeps and springs. Ms. Hahn asked if the VOCs would accumulate in the sediment or soils at the discharge area. Mr. Cherry responded that sediment sampling has been performed as part of the Remedial Investigation, and the results did not show VOCs accumulating in the sediment nor is this something that would typically be seen accumulating in sediments.

Mr. Cherry showed several photographs of the fountains operating and not operating.

In response to a question about using bioremediation, Mr. Cherry responded a number of meetings were held with EPA and MDE to evaluate very long lists of possible remediation approaches; the lists were narrowed down to the best options and several were selected for the pilot tests. He said the enhanced reductive dichlorination technology is part of the groundwater pilot study and will be tested after the pump and treat technology study. He explained this technology is intended to stimulate the microbial community in the sub-surface to help with the

degradation of the contamination which is achieved through the injection of a carbon source, in this case a dilution of molasses.

In response to a question about sampling within Carroll Creek, Mr. Cherry advised sampling in Carroll Creek is part of the surface water pilot study.

Area A Groundwater Well Sampling and Area A/B Backround Sampling presented by Mr. John Cherry, Arcadis

Mr. Cherry reviewed current activities under a contract awarded to Seres-Arcadis in 2019 for the Site Inspection (SI) work that has been discussed at previous meetings.

Mr. Cherry advised the contract includes three main tasks: a background soil study, a comprehensive Area A groundwater investigation, and an expanded SI of 2016 SI Sites which may require further assessment.

Mr. Cherry advised the background soil study field work has been completed; data has not yet been received. He noted the Area A groundwater investigation field work also has been completed. He advised once the data has been received, it will be assessed and reports prepared. He explained that the data from these studies will determine the scope of the expanded SI, followed by the preparation of work plans for regulatory review. Mr. Cherry said late 2021 is the targeted time frame for conducting any additional field work.

Mr. Cherry reminded the RAB a site inspection is one of the early steps in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process and precedes the Remedial Investigation phase. He explained these sites were identified from Archive Search Reports and potentially may warrant sampling to determine if there has been a release.

Ms. Hahn asked what is being looked for during an SI. Mr. Cherry responded that an SI looks at the potential for environmental impact based on historical activities; for example, a list of potential or likely contaminants can be identified for a site where a former auto repair shop operated, such as petroleum-based contaminants and solvents. He explained an expanded SI collects additional samples; the background study data will be used to compare the sampling data from the sites and help determine if the levels are at background or naturally occurring levels or are elevated due to historic site activities.

Ms. Hahn requested a list of the compounds included in the sampling analysis. Mr. Gortva responded that the list is in the work plan which outlined the types of compounds that would be sampled for at these sites. **[See Attached Follow Up Questions/Answers Clarifications]**

Mr. Cherry referenced the slides from the previous RAB meeting which showed how the sites were divided into groups based on the type of historic activities: herbicide test plots; incinerators; TCE sites (facilities where TCE was used for refrigeration purposes); petroleum, oil, and lubricant facilities; dispersion test areas (for testing dispersion of simulants); vehicle maintenance areas; and areas used for disposal, storage, or other purposes. He explained each of the sites had a tailored sampling and analysis plan based on the past activities

Ms. Hahn said she had requested Mr. Gortva send her a hard copy of the slides from the previous meeting so she will review them when received.

Mr. Cherry next discussed a comprehensive assessment of the Area A groundwater wells, some of which have not been sampled for a long time. He advised 49 wells were sampled for VOCs in October and November, and the samples are being analyzed.

7. RAB Member Open Discussion and General Community Comments

Mr. Gortva invited open discussion from the RAB members.

Ms. Hahn asked if the gas vents on top of the capped disposal areas would allow VOCs to be released. Mr. Gortva responded that vents are part of the standard design for a landfill cap, and their purpose is to allow methane to escape. He explained methane is produced by the degradation of certain types of materials in landfills; the landfills at Area B generally do not contain the type of waste that would generate methane. He continued explaining that sampling of these types of old landfills shows that methane is not being released; if there were VOCs percolating through the landfills, the vents would allow the safe discharge of the gases.

Ms. Hahn expressed concerns about the process for applying to build homes that would be within 100 feet of the groundwater plume and where within that process would a planning commission, builders and buyers be alerted to the presence of an adjacent groundwater plume. Mr. Gortva responded that when a developer is interested in building on a property or there is a property transfer, there is a requirement to do a records search to see if there are any potential liens or issues. Mr. Gortva cited an example of MDE recently being contacted by a developer regarding property north of Area B and inquiring about any environmental concerns or potential impacts on that property; Mr. Gortva said this is a standard step for these types of real estate transactions. Ms. Elisabeth Green of MDE advised this developer has contracted with a consultant to do a Phase I Environmental Investigation which is typically done prior to development to look at the property in question as well as surrounding properties and identify any reasons for concern. **[See Attached Follow Up Questions/Answers Clarifications]**

Ms. Hahn stated the process did not seem to work with respect to the Waverly View property as contamination was not identified when they went through the MDE Voluntary Cleanup Program. She expressed concern for the need for vapor intrusion barriers for any homes constructed on the property. Mr. Gortva advised that the Army's sampling on the Waverly property found concentrations in the range of 100-140 parts per billion. He explained that EPA guidance requires an evaluation for the potential for vapor intrusion when buildings are within 100 feet of VOC detections above 5 parts per billion; however, detections above 5 parts per billion do not automatically result in vapor intrusion issues as there are many other factors that need to be evaluated; typically concentrations need to be much higher than 5 parts per billion before there is a risk. Mr. Gortva stated MDE has a restriction on the Waverly property that groundwater cannot be used as a drinking water source so any buildings have to be connected to a public water source. Mr. Gortva advised it is possible to install a passive vapor barrier during construction of a building but it is not very common. He noted there is no regulation to require a developer to install a passive vapor barrier, but a developer may choose to do so.

Ms. Hahn referenced an email she had received in the past from Mr. Rob Thomson of EPA that suggested Ms. Hahn might want to request the City recommend that sub-divisions being built near Area B have vapor intrusion barriers. Ms. Hahn stated there is a need for some type of protocols to be in place so entities such as EPA, the Army and City are directly communicating on these issues versus her attending all the different meetings and relaying communications from the different agencies.

Ms. Hahn said Mr. Gortva had advised her the vapor intrusion testing could not be done until the structures are built. She expressed concern that once the City's Planning Commission approved a plan, it did not have to be revised even in light of new data such as new data being gathered from further environmental investigations at Fort Detrick. Ms. Hahn stated she was concerned there is insufficient communication between the City and Fort Detrick regarding these issues; she requested a map be provided to the Planning Commission prior to voting on the Comprehensive Plan so they could see how close the contamination is to off-post areas. Mr. Gortva said it is not as easy as just providing a map as it depends on what is being proposed and the location; he noted many more factors are taken into consideration during these decision processes. Ms. Hahn stated it would be helpful to provide some preliminary information as a start as it might help potential buyers make a decision on whether or not they wanted to live or recreate close to a contaminated area. Mr. Gortva said there are disclosure requirements when a property is being sold.

Mr. Gortva said he could only speak to the Army's responsibilities under CERCLA. He explained that if the Army identifies any risk due to Army contamination, the Army is required to take action. He said the Army cannot identify any risk until the homes are constructed as vapor intrusion testing can only be done after the homes are constructed. He explained that since Fort Detrick has characterized the location and movement of the groundwater plume, it could go to potentially impacted property owners and offer vapor intrusion testing. He continued explaining that if a risk was identified, the Army would be responsible for taking an action; a possible action would be installing equipment similar to that which is used in homes where there is a potential for a radon issue. He reiterated that until there are buildings, vapor intrusion testing cannot be performed. **[See Attached Follow Up Questions/Answers Clarifications]**

Ms. Hahn said it is important to let potential homeowners know about the risks, and there are only two areas of Fort Detrick where off-site property could be impacted—the east and west ends of the plume. Mr. Gortva responded that Fort Detrick has identified areas that are potential risks and nearby off-post properties that could be impacted, such as when vapor intrusion testing was done at a County building along the southern boundary. Ms. Hahn noted this was a good example as she was present at a County meeting where the movement of County personnel into the off-post building was being discussed prior to the planned vapor intrusion testing; she stated once the issue became known, the Army prioritized the vapor intrusion testing. Mr. Gortva stated the vapor intrusion testing did not show any risks requiring action, and further vapor intrusion testing would not be done unless the Army's monitoring program identified a change in groundwater concentrations. **[See Attached Follow Up Questions/Answers Clarifications]**

Mr. Gortva said it is unlikely the City would sell or build along Carroll Creek where the groundwater discharges. He said it is unlikely the scenarios Ms. Hahn is discussing would happen. Ms. Hahn asked Ms. Tracey Coleman from the City of Frederick to address information in the City's draft 2020 Comprehensive Plan regarding future building in those areas. Ms. Coleman responded the area around Montevue Lane discussed by Mr. Gortva is a floodplain area so there is very little area which can be built upon until the intersection of Montevue and Rosemont.

Ms. Betty Law asked about a development along Kemp Lane and wells along Kemp Lane that were impacted by groundwater from Fort Detrick. Mr. Gortva explained there were five homes along Kemp Lane where the Army provided hook-ups to the City's water supply system. Mr. Gortva said the Army had been testing these wells for many years, and the concentrations never exceeded levels above EPA's drinking water standards. He advised the Army decided to connect these private wells to the City's water supply system to ensure protectiveness during drought conditions and to be able to discontinue the monitoring program and provision of bottled water. **[See Attached Follow Up Questions/Answers Clarifications]**

Mr. Gortva stated the Army has been and will continue for a long time to be monitoring the groundwater plume and taking actions as needed. He advised even after a permanent remedy is selected for Area B, there will still be monitoring, and at a minimum, legally required five-year reviews will be conducted in coordination with EPA and MDE to ensure the remedy continues to be effective. Mr. Gortva invited EPA and MDE to add any other comments, and both indicated they had nothing else to add.

Mr. Gortva invited comments from the community members in the audience.

Ms. Joanne Horn asked why the background studies are not collecting samples from off-post for the baseline natural occurring conditions. Mr. Gortva responded that the locations were very carefully selected to minimize any chance they would have been impacted by past activities. He added that the locations selected were reviewed by EPA and MDE. Mr. Cherry added there were a number of criteria used in selected background locations; aerial imagery was reviewed, streams and floodplains were factored in, the locations of incinerators. He noted many of the locations were around the outer edges of Fort Detrick, undeveloped areas, where there was no obvious indication of past use or construction. Mr. Cherry said the assessment of sample locations did include examining off-post areas, but nearby areas are fairly highly developed with residential communities as well as farmlands which pose the possibility of residual chemicals from the use of herbicides, pesticides and fertilizer. He stated it was a challenging task, and a substantial level of effort was expended to make the best decisions about where to collect samples. Mr. Cherry explained the samples were also being collected at some depth—from 0 to 2 foot intervals and then down to about 4 feet which also helps avoid impact from aerial deposition.

Ms. Jennifer Kunze asked about any updates to the PFOS investigation discussed at the August RAB meeting, particularly any update on when a report will be released. Ms. Rosemarie Potocky of Arcadis responded that sampling is still ongoing, and results should be available to discuss at the April RAB meeting.

8. Other Updates

Mr. Gortva advised that bow hunting is currently occurring near Area B, and hunters may be seen in the woods near Kemp Lane. He stated the hunting is allowed only during daylight hours on Saturdays and Sundays. He explained that the hunters need to comply with Fort Detrick's hunting program process which includes applying for permission to hunt.

9. Future Meeting Dates

Mr. Gortva said proposed future meeting dates are:
04/07/21
08/04/21
12/01/21

Mr. Gortva said all the dates are tentative and invited anyone who had conflicts to let him know.

Mr. Gortva invited Board members to let him know about topics of interest for future meetings.

The meeting adjourned at approximately 8:24 p.m.

Reviewed by:

Approved/Disapproved

Enclosures:

Presentations (Power Point Slides)

DISTRIBUTION:
Each RAB Member (w/enclosure)
Each Meeting Attendee (w/o enclosure)