Spring Valley Partnering Meeting
April 11, 2019
Spring Valley Project Federal Property Conference Room

Name	**Organization/Address**	
Allyn Allison	USACE - Huntsville	**X**
Brenda Barber	USACE – Baltimore	**X**
Brian Barone	DOEE	
Todd Beckwith	USACE – Baltimore	
Bethany Bridgham	American University	
Sean Buckley	Parsons	**X**
Paul Chrostowski	CPF Associates, American University Consultant	
Chris Gardner	USACE – Corporate Communications Office	**X**
Alma Gates	Former RAB Member – Horace Mann Representative	**X**
John Gerhard	Weston Solutions	**X**
Whitney Gross	ERT – Community Outreach Team	**X**
Steven Hirsh	EPA –Region III	**X**
Bryan Hnetinka	Weston Solutions Project Manager	**X**
Holly Hostetler	ERT	**X**
Carrie Johnston	ERT - Community Outreach Team	**X**
David King	USACE - Baltimore	**X**
Carlos Lazo	USACE, Government Affairs Liaison	
Caitlyn Martin	Weston Solutions	**X**
Chris Moran	Weston Solutions	**X**
Dan Nichols	American University	**X**
Dan Noble	USACE – Baltimore	**X**
Steven Norman	ECBC	
Randall Patrick	Parsons	**X**

Tom Rosso	ECBC	
Dave Tomlinson	DOEE	**X**
Amy Walker	USACE - Huntsville	**X**
Bruce Whisenant	USACE – Huntsville	
Rebecca Yahiel	ERT – Community Outreach Team	**X**
Alex Zahl	USACE – Baltimore	**X**

Summary of 11 April 2019 Spring Valley Partnering Meeting

Consensus Decisions

- None

11 April 2019 Action Items

- Weston Solutions will continue to provide the Property-Specific Data Summary (PSDS) reports to the Partners prior to excavations.
- In response to a request from the Environmental Protection Agency (EPA) Region III, U.S. Army Corps of Engineers (USACE) Baltimore confirmed that soil samples will be collected from under any American University Experiment Station (AUES)-related munitions and explosives of concern (MEC) items. Civil War items will not be included in this revision.
- USACE Baltimore noted that if the team sends EPA Region III and Department of Energy and Environment (DOEE) PSDS reports that include Draft Field Variance Forms (FVFs) or Draft Root Cause Analyses (RCAs), USACE Baltimore will ensure that final approved versions of all the FVFs and RCAs will be sent to EPA Region III and DOEE.
- EPA Region III requested that when the team sends Final FVF or Final RCA emails to please point out in the email if there is an RCA or FVF that needs special attention.
- In response to a question from USACE Baltimore, EPA Region III and DOEE concurred that the 2-foot on center resolution is acceptable for the AU-05 mercury (Hg) sampling grid.
- In response to a suggestion from EPA Region III, Weston Solutions confirmed that if Hg is seen at the AU site sampling will be conducted.
- USACE Baltimore reminded Weston Solutions to submit a request for agenda time for future meetings.
- Parsons will email a copy of the 4825 Glenbrook Road presentation to the regulators.

Thursday 11 April 2019

A. Site-Wide Remedial Action (RA)

The goal of this segment of the meeting was to review the status of the Site-Wide Remedial Action.

Weston Solutions provided a brief update on the Site-Wide Remedial Action (RA).

1. Planning Documents

- Draft Community Outreach Package - Weston Solutions resolved a few of the Restoration Advisory Board (RAB) comments on the outreach brochure. Final RAB comments are due April 12. The final outreach package will be presented to the RAB at the May RAB meeting and distributed to the community once approved.
- Final Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) for Soil Remediation and Public Safety Building (PSB) - completed.

- Final Advanced Geophysical Classification Quality Assurance Project Plans (AGC-QAPP) - completed, revisions via Field Variance Forms.
- Property-Specific Data Summaries - provide information on planned targets of interest excavations. Weston Solutions sought feedback from Environmental Protection Agency (EPA) Region III and Department of Energy and Environment (DOEE) on the format and content of the data summaries.

2. Discussion of the RAB comments on the Draft Outreach Brochure

EPA Region III representative noted that he was not comfortable with some of the RAB members' recommendations for the Draft 3Rs (Recognize, Retreat, and Report) Safety Brochure.

U.S. Army Corps of Engineers (USACE) Baltimore District explained that any additional comments on the version of the brochure presented at the March RAB meeting will be received by the deadline tomorrow, April 12. USACE Baltimore will balance the RAB's comments with USACE's need to inform the public. USACE Baltimore will explain to the RAB at the May RAB meeting that USACE appreciates their feedback, but legally and ethically some language must be included in the brochure. The purpose of the brochure is to inform the public that they live in an area where there could be a munition hazard. The brochure must satisfy that need. Some of the language will stay the same and some of the language that informs about the possible hazards must be as clear as possible. USACE expects to present the final brochure at the May RAB meeting.

Alma Gates, Former RAB Member – Horace Mann Representative thanked USACE Baltimore for its comments, noting that she was at the March RAB meeting. She noted that there seemed to be an effort by the RAB to gloss over what is in Spring Valley, rather than confront the fact that there may be a hazardous situation. She observed that USACE Baltimore may take a little heat for adding in the hazard language. The reason A. Gates joined the project initially was because there was a concern that USACE was hiding information. Now USACE is planning to distribute the information and the community wants the situation glossed over.

EPA Region III suggested adding more information about what has been done to ensure the safety of the community, pointing out that only a week ago a cannonball was found.

Weston Solutions agreed, adding that the recovered cannonball was fuzed and could have exploded.

EPA Region III suggested putting in language such as, 'there is a possibility of these items being found, and if a member of the public should see an item that looks like the pictured munitions, that person should call 911.'

USACE Baltimore reiterated that language will be included that describes the primary purpose of the American University Experiment Station (AUES), to develop and test chemical weapons. USACE must include language that the hazards are real and may include serious injury or death. The public should not attempt to handle these items but call 911. This directive needs to be stated at least once in the brochure, along with an explanation why the residents are receiving the brochure in the mail. USACE will prepare the language for Weston Solutions to conduct the first mailing.

3. Property-Specific Data Summaries

In response to a question from Weston Solutions and USACE Baltimore, EPA Region III explained that he appreciates that the Property-Specific Data Summary (PSDS) reports describe percent accessibility and unusual items found during remediation. He wants to see how the team handles finding munitions-related items. What did the team expect to find? Did the team learn anything? What did the team think an item was going to be? For example, when the Livens was found at the surface of the soil, did the item show up as a Livens? If not, why not? Should something be done differently? When an anomalous event happens, such as the cannonball found last week or the missed blind seed, how does the team handle those events?

In the case of the missed seed; how could that happen? What was done to make sure it does not happen again, is it true that it has not happened again? EPA Region III is looking for resolution of scenarios that were not expected.

USACE Baltimore explained that the PSDS reports are usually delivered a day or two before the team begins excavation.

EPA Region III pointed out that he is relying on the geophysical team to operate according to the AGC-QAPP to obtain a good result. Beyond that assumption, EPA Region III is looking at what was different; what the team learned, what was missed, and what was different than expected.

USACE Baltimore explained that once an excavation is completed, the team compares the excavation sheets to the targets identified by the man-portable vector (MPV) magnetometer. The comparison results will be sent to EPA Region III with an AGC Intrusive Quality Assurance (QA) form that is signed off by either Amy Walker, geophysicist, USACE - Huntsville or David King, geophysicist, USACE - Baltimore.

A. Walker noted that USACE and Weston Solutions will discuss the results of the first several properties and training excavations with Black Tusk Geophysics (BTG) to review Lessons Learned.

EPA Region III reiterated that he relies on the geophysical experts to follow the Partner-approved method for the geophysical investigation. He reviews the PSDS reports sent from Weston Solutions but does not expect that the team is waiting to hear from him. If he sees something curious, such as limited data for a property, he will ask a question.

Weston Solutions will continue to provide the PSDS reports to the Partners prior to excavations.

EPA Region III pointed out that he may not always be able to provide a fast turn-around on the PSDS reports but understands the excavation team will not wait to proceed.

In response to a question from EPA Region III, A. Walker explained that to identify items such as a Livens or a Category 1 item in the ground, she reviews the curves from the magnetic signal to determine the shape and size of the item. Based on investigations so far, the blind seeds provide very clean curves. Some items meet conservative excavation requirements and turn out to be pipes with the same aspect ratio. Most of the items are clearly identifiable by the magnetic curves, such as cultural debris or a tiny piece of metal. Items of concern have distinctive and obvious characteristics. The plot from the cannonball was also clearly distinct from anything else encountered at the site.

4. Field Variance Forms (FVF)

There are 8 Field Variance Forms (FVs) on the project to update the AGC-QAPP so far:

- FVF-001 - as part of Weston Solutions' AGC accreditation, there is a requirement to review standard operating procedures (SOPs) annually and update as necessary. Edits to the AGC SOPs are intended to clarify processes and no major procedural changes have been made.
- FVF-002 - made a change to the way the team re-acquires cued target locations. The AGC SOP gave an option to use pin flags with a survey rod and the option to use the MPV to navigate to the cued locations. The AGC-QAPP did not include the second option to use the MPV. The FVF updated the AGC-QAPP to be in line with the SOP to give the option to use both the MPV and traditional survey methods.
- FVF-003 - discontinued the collection of background data with the G-858 Instrument Verification Strip (IVS) due to the IVS at the federal compound containing hot rock and background noise. The data was not useful to the project, so the decision was made with USACE approval to stop collecting the background lane data.
- FVF-004 - addressed one of the measurement quality objectives (MQOs) for G-858 data collection. Current guidance suggests that static spike responses for the G-858 should be within 20% of expected

response. Although most of Weston Solutions' data meets the 10% metric, Weston Solutions revised the static spike MQO to follow industry standards of 20%.

- FVF-005 - addressed inaccessible areas due to steep slopes, unsafe terrain, or saturated response areas encountered in the MPV data. A saturated response area is part of the data at a property where there may be too much metallic interference for the AGC data processes to accurately analyze data and determine if targets need to be evaluated. These areas will be investigated using analog detection and removal operations.
- FVF-006 - associated with a root cause analysis (RCA). Revisions were made to address a Quality Assurance (QA) validation seed that was not recovered from a saturated response area. The seed was placed before data was collected. Saturated response areas are unknown until the data is collected. As a result of the RCA, the team revised procedures to prevent missing a seed or other item again. Changes include the added use of a Schonstedt metal detector, tighter spacing when flagging, the addition of a 1-foot buffer overlap boundary beyond the saturated response area, placing seeding in saturated response areas before excavation, and relocation of metallic items. Weston Solutions believes interference from a nearby metallic dog statue may have caused interference, resulting in the missed seed. All polygons will be inspected for cultural metallic items to be relocated with the homeowner's consent.
- FVF-007 - with the approval of the G-858 White Paper, revisions were made to the AGC-QAPP to reflect that the G-858 will be used to identify potential burial pits and trenches and will no longer be used to identify individual anomalies.
- FVF-008 – updates to the Low Probability Contingency Plan procedures to be followed when munitions debris (MD) is encountered. The former procedure included stop excavation, cover the excavation hole with plastic, sand bag the excavation, and wait for headspace analysis from Edgewood Chemical Biological Center (ECBC) to determine next steps. The revisions direct the team to not wait for ECBC results but to clear the excavation hole, backfill the hole, and continue excavations.

In response to a question from Weston Solutions, USACE Baltimore confirmed that the FVFs are shared with EPA Region III and DOEE once signed by either A. Walker or D. King and USACE Baltimore.

In response to a question from EPA Region III, USACE Baltimore explained that FVF-008 was created because the team will sample the soil if soil staining, liquid, or chemical contaminant is encountered. The ~15 MD pieces recovered so far have been chunks of metal that do not exhibit soil staining surrounding the pieces. The pieces are individually bagged, labeled, and sent to ECBC for headspace analysis. If a contaminant is detected the team will go back to the hole for soil analysis.

EPA Region III pointed out that headspace analysis cannot be performed for arsenic (As).

In response to a question from EPA Region III, USACE Baltimore explained that a soil sample was not collected from under the recently-discovered fragment of a Livens projector. The item was not intact, so sampling was not performed. If the team saw any staining of the soil surrounding the fragment a soil sample would have been collected.

In response to a question from USACE Baltimore, Weston Solutions confirmed that the batch of MD including the Livens fragment was transferred to ECBC April 10 and results are expected April 12.

EPA Region III noted that FVF-008 has no effect on (MEC), intact items.

In response to a question from EPA Region III, Weston Solutions explained that no changes were made to the sampling plan. There was no requirement for soil sample collection prior to FVF-008. Soil samples are collected as directed by the AGC-QAPP. If a MEC item is found that appears to be cracked, leaking, or exhibits any other visible signs of contamination such as soil staining or odors, a sample will be collected under the MEC item. If the MEC item does not exhibit signs of contamination the plan does not require the team to sample that item.

In response to a question from USACE Baltimore, Weston Solutions confirmed that the soil was not sampled under the cannonball.

In response to a request from EPA Region III, USACE Baltimore confirmed that soil samples will be collected from under any AUES-related MEC items. Civil War items will not be included in this revision.

5. Root Cause Analyses (RCA)

Any time there is an MQO failure, the team will conduct an RCA to investigate the failure and present corrective actions to prevent the failure from occurring again:

- RCA-001 - at the beginning of project, it was brought to the team's attention by the G-858 data analyst that anytime there is a stop and start in the line of G-858 data processing, such as to go around a tree or begin a new line, those scenarios were showing up as data gaps, a failure in the line spacing MQO. There is no corrective action other than the team will keep an eye on all data gaps to ensure that all gaps are caused by trees or the end of a line.
- RCA-002 addressed a static spike MQO failure. This RCA was resolved by FVF-004, aligning the MQO requirement up from 10% to industry-standard 20%.
- RCA-003 - addressed the seed failure in the MPV data. One of the MQOs is that a seed must be classified both within a lateral distance and depth of where the seed was surveyed by the professional land surveyor. A Quality Control (QC) seed that was supposed to be at x was determined to have an offset of 39.8cm. The RCA determined that there were 2 seeds close to each other. Reporting routines were adjusted to allow for multiple Targets of Interest (TOIs) to be reported from a single cued location.

In response to a question from USACE Baltimore, Weston Solutions and A. Walker explained that before excavation, the x-y locations of the seeds are supposed to be within a certain distance of the actual location where the seed was surveyed when the seed was buried. The QC geophysicist for the contractor and the QA geophysicist for USACE are the only ones that know the QC and QA locations. The data analyst compiles the excavation list, which is then reviewed by the QC geophysicist and QA geophysicist to ensure the excavations locations are accurate. In this case, there were 2 seeds very close to each other that would have been recovered together. Because the seeds were close to each other the data was caused to have an offset issue. A change was made to ensure that 2 items in the same area would be excavated as 2 separate locations close to each other.

- RCA-004 - Seed RP-009 was observed in the cued data 48cm offset from location provided by the surveyor. The team contacted the professional land surveyor that surveyed the seeds. The land surveyor reviewed the data and realized that the surveyor did not convert the coordinates properly and provided incorrect coordinates for RP-009. Surveyor identified the mistake and provided corrected coordinates. The surveyor will use the corrected AutoCad template for all conversions.
- RCA-005 - Seed RP-011 was observed to have a predicted depth of 15.6cm. The MQO states that predicted depths will be within 15cm. Data indicated 2 additional anomalies close to this seed. The cued data indicates a multi-object scenario from which depths can be under or over-estimated. No observable impact on data.
- RCA-006 - QA Seed located in a saturated response area was not detected by the team during Mag-and-Dig operations. Added use of Schonstedt magnetometer, tighter spacing when flagging boundaries, 1-ft overlap into digital geophysical mapping (DGM) surveyed area, seeding of saturated response areas, and relocating metallic items.
- RCA-007 - Seed RP-029 observed a lateral offset of 48cm from location provided by surveyor. The MQO states that predicted locations will be within 40cm. The seed was in a saturated response area, which caused uncertainty with the seed location. No corrective action recommended. No impact to data quality.

- RCA-008 - Seed RP-021 was observed to have a predicted depth 16.9cm from the actual depth. The MQO states that predicted depths will be within 15cm. The other 3 blind seeds at the property were classified meeting the MQO acceptance criteria. No corrective action recommended. No impact to data quality.

In response to a question from USACE Baltimore, Weston Solutions explained that RCA-001 and RCA-002 were noticed early in the data in the Dalecarlia Woods, RCA-003 through RCA-006 were from the first 5 properties excavated in February, and RCA-007 through RCA-0010 were from the most recent 9 properties that are being excavated now.

In response to a question from USACE Baltimore, A. Walker confirmed that the rate of RCAs to the number of properties excavated so far is typical. The number of RCAs indicates that the QC program is working. Most of the RCAs are minor, such as offsets that were slightly too high or depth estimates that were not exact. This is the process anytime something is slightly out-of-spec; an RCA is performed to determine the cause of a problem, how to prevent the problem, and whether the problem affects the quality of the data. An offset may be something small that does not affect the overall quality. It is important to step through the process. The rate is normal, and more RCAs are expected as the project continues. The number of RCAs does not indicate a problem with the quality of the work being performed.

Weston Solutions noted that there are some stringent MQOs since this is an AGC project, and EPA Region III and A. Walker agreed this was by design for public safety.

- RCA-009 - at 4700 Quebec, a blind QC seed placed by Weston Solutions was selected during the dynamic survey to be part of the cued list. After analysis of the cued data that seed was not selected as a target for excavation. BTG conducted a conference call with USACE Baltimore, USACE Huntsville, A. Walker and John Jackson, AGC expert. The review determined that the missed seed was an isolated incident. BTG believes that either the coils of the instrument were not fully seated in position over the target or the field operator moved the instrument, causing the data to be distorted. To confirm that the incident was isolated, BTG reviewed all the QC function tests that were performed throughout the day, all the IVS data collected in the morning and the end of the day, and the other seeds buried at the property. No issues were found with the data from any of the other targets. The team determined that there were clear QC function tests before and after ~35 cued targets were collected. The issue was known to be in between the function tests, so the team re-cued 32 targets within that window to see how the re-cued data compared to the initial data from the same targets, and if there were any other instances where there were different results. BTG evaluated that data, which had a similar response to the initial cued results.

A. Walker noted that the team re-collected cued data on the missed seed and there was a very clear response. The curve did not look like the first time the seed was cued. BTG performed a thorough analysis of all the aspects of the data and QC tests, including the possibility of removing too much signal with the background corrections. USACE called in John Jackson, AGC expert to listen in to the meetings. There are at least 6 seeds per property. The curves for the other seeds all clearly matched curves for TOIs. The field team was re-briefed on the importance of no movement during cued data collection. The team contacted Dave George, manufacturer of the MPV, to discuss adding continuous recording of the inertial measurement unit (IMU) positioning information while the cued data collection is ongoing to record any movement. At this time, that movement is not recorded.

In response to a question from EPA Region III, Weston Solutions explained that early issues with the IMU were solved by utilizing an older model, Generation 4 MPV. This MPV was used during the Pilot Study.

In response to questions from EPA Region III, A. Walker confirmed that this is the largest-scale MPV production site. The MPV is stable on the ground, but if the instrument is bumped that movement will affect the signal.

In response to a question from USACE Baltimore, Weston Solutions explained that there are 3 people onsite during the cued survey. One of the corrective actions was to reiterate to the team the importance of keeping the instrument still and have someone watching the cued data collector to confirm nothing moved.

In response to a question from USACE Baltimore, A. Walker explained that a cued survey shot is ~30 seconds to a minute in duration.

- RCA-010 - Seed RP-038 observed a lateral offset of 28.9cm from location provided by surveyor. The surveyor reviewed their notes and data conversions and found no errors. Additional cued data collected predict the seed ~25cm from the location provided by the surveyor, suggesting there is an error in the coordinates provided by the surveyor. Corrective action pending excavation results.

USACE Baltimore noted that if the team sends EPA Region III and DOEE PSDS reports that include Draft FVFs or Draft RCAs, USACE Baltimore will ensure that final approved versions of all the FVFs and RCAs will be sent to EPA Region III and DOEE.

EPA Region III requested that when the team sends Final FVF or Final RCA emails to please point out in the email if there is an RCA or FVF that needs special attention.

6. Residential Properties Update

a. Recent Activities

- In December 2018 the team conducted intrusive investigations in Grids H-4 through H-7 West, indicated by the blue blocked-off areas on the far left of the map on slide #8 of the presentation.
- In February and March 2019, the team began intrusive work for the first time on the residential properties. There were 5 properties in the first group.
- Hardscape excavations remain at one property, indicated by the asterisk on slide #8 of the presentation. The team is in the process of obtaining public-space-use permits and construction permits for the hardscape excavations because at least one of the targets lies under the sidewalk. The permits will apply to removing part of the sidewalk and providing a walkable area for the residents of the area to go around that section of sidewalk.

In response to a question from A. Gates, Weston Solutions and USACE explained that an item under a sidewalk may have been missed during construction of the sidewalk because the item was deeper than the excavation necessary for installing the sidewalk, or the item may have been a piece of construction debris used as fill at the site during construction of the sidewalk.

If there is a target of interest that the data processors indicate is likely a munitions item, even if that item is under a hardscape such as a sidewalk or driveway, that item will be thoroughly investigated and removed if it is a munitions item.

EPA Region III noted that is part of why there is a need for the letter to the residents that explains there is always a possibility of finding a munition. The investigation is not conducted under houses, swimming pools, or driveways full of rebar.

b. February and March 2019 Intrusive Investigation Results

- The excavation results for the first 5 properties include ~100 lbs. of non-munitions related debris (NMRD) and 10 MD items.
- No MEC was found.
- One potential AUES item was discovered. The item was double-bagged, sent for headspace analysis, and determined to be a pipe filled with joint compound.
- Frag items were found in varying sizes. Some of the frag items were very small pieces of metal (as shown in the photo on slide #9 of the presentation).

- All blind seeds were recovered except for the QA seed missed within the saturated (mag & dig) polygon (RCA-009 previously discussed).
- All 10 MD items and the 1 potential AUES item were head-spaced by ECBC for mustard (HD) and Lewisite (L). All samples were non-detect for HD and L.
- Anomaly resolution deliverables comparing excavation results to AGC predictions are under review. Once approved by USACE, the deliverables will be provided to EPA Region III and DOEE for confirmation that remediation is complete, allowing USACE to issue Assurance Letters to the homeowners.
- Weston Solutions, BTG, and USACE are conducting detailed reviews of proposed hardscape excavations to evaluate the need to access targets. Some training excavations were selected under hardscape because the AGC indicated the presence of cylindrical items. The cannonball was selected as a training excavation. There are no cannonballs in the AGC library currently but will be added.

USACE Baltimore noted that USACE is also conducting a review of the anomaly resolution deliverables. Once that review is complete, EPA Region III and DOEE will receive an AGC Intrusive QA form signed by either A. Walker or D. King, indicating that USACE is satisfied that the excavations are complete. This means that Weston Solutions and the USACE Ordnance and Explosives Safety Specialist (OESS) have inspected every excavation hole. The AGC Intrusive QA forms are expected to be sent the week of April 15.

A. Walker explained that the analysis of the anomaly resolution deliverables includes reviewing photos of items coming out of excavation holes, re-checking offsets that are too high (in which the source item was further away than expected), and returning to properties in some cases to ensure the items expected were found. The reviews are documented and provided to EPA Region III and DOEE.

In response to questions from EPA Region III, USACE Baltimore and A. Walker confirmed that cannonballs will be added to the AGC library and will be included in the investigation. Cannonballs would have been selected as training excavations in previous investigations because of the magnetic signatures.

The figure on slide #12 of the presentation shows the 10 MD items and the 1 potential AUES item found during the February/March investigations. All MD found were associated with the Static Test Fire Areas.

In response to a question from USACE Baltimore, Weston Solutions explained that some, but not all, of the properties where MD was found were previously investigated with DGM.

USACE Baltimore noted that the project map on slide #12 of the presentation is a good map and suggested the map's continued use with additions throughout the whole effort.

Weston Solutions confirmed this.

c. April 2019 Intrusive Investigation

- The third round of intrusive investigations began April 2. This round of excavations includes a group of 9 properties.
- Select properties in this group have remaining hardscape investigations, indicated by a single asterisk on slide #13 of the presentation.
- The last 4 properties in the group, identified by the double asterisks on slide #13, have pending PSDS and/or excavation list approvals.

A total of 33 properties have undergone some phase of the project. Properties indicated by green borders on slide #14 of the presentation are in the early phases of video survey and landscape inventory and will be close to the vegetation removal phase. Areas indicated by red borders on slide #14 are properties that have begun the intrusive phase, areas with blue borders indicate properties have either begun or completed the AGC phase, and areas with orange borders indicate properties that have been cleared and blind-seeded.

d. April 2019 Preliminary Excavation Results

- One MEC item recovered, a 3.5-inch, 6-lb. case shot cannonball, with fuze intact.
- Explosive Ordnance Disposal (EOD) Unit from Ft. Belvoir responded, x-ray confirmed fuze intact and cannonball filled with case shot.
- EOD transported cannonball to Ft. Belvoir for destruction.
- Cannonball was identified as a Civil War-era item, not in the Spring Valley Formerly Used Defense Site (FUDS) library.
- As of 4/9/2019, a total of 9 MD items have been recovered. One of the items was the partial Livens body shown in the top right photo on slide #15 of the presentation.

7. Public Safety Building (PSB)

- Weston Solutions coordinating with American University (AU) and Washington Gas to complete shut-off, purge, and capping of the gas line. The permits have been approved and Flippo Construction has been assigned by Washington Gas to conduct the gas line abandonment.
- Once the gas line is abandoned, 3 large trees near the PSB excavation area will be removed and 1 tree will undergo root pruning. Weston Solutions is working with USACE and AU arborists on appraisal and compensation for the trees to be removed. According to the contractor and AU arborists, the excavation work could damage the tree root systems.

In response to a question from USACE Huntsville, Weston Solutions explained that the term 'Pre-Operational Survey Plan' on slide #16 of the presentation was used to indicate that Weston Solutions plans to ensure that an evaluation of preparedness is performed when the team is ready to begin work.

USACE Huntsville suggested that the term 'Pre-Operational Survey Plan' may be misleading and cause confusion because 'Pre-Operational Survey' is a High Probability Remedial Investigation term.

Weston Solutions and USACE Huntsville agreed to discuss a different term to use after the Partner meeting.

In response to a question from AU, Weston Solutions explained that Weston Solutions worked with the AU arborist to obtain the permitting involved with removal of the large trees.

USACE Baltimore and Weston Solutions pointed out to AU that the team needs to know what AU's requirements are for the final site conditions at the former PSB. Currently the engineers are developing the surface elevation plan for the post-excavation fill. At this time the elevation plan is set up to use the current elevations on either side of the former PSB and bring the elevations across.

8. AU Soil Remediation

- There are 3 soil remediation locations were identified at AU in the UFP-QAPP based on soil analytical results at AU-02, AU-03, and AU-05.
- The AU-05 location was located on a sidewalk that existed in 1994 when the soil samples were collected. The project team believes that the correct location is just off the sidewalk in that area.
- The team proposes to conduct grid sampling to find the original AU-05 location. Mercury (Hg) was detected in the 1994 soil sample. Based on that location, additional deeper sampling will confirm the depth of the soil excavation. This represents a change in the plan from the QAPP because of the location being found on the sidewalk. The 1994 survey data was not as exact as data using today's methods.

In response to questions from EPA Region III, Parsons explained that the person that took the sample in 1994 was likely Sean Buckley himself. The teams were using Computer Aided Design (CAD) that pre-dated Geographic Information System (GIS) and the accuracy reflected the earlier technology. Sampling was not conducted through sidewalks.

In response to a question from USACE Baltimore, EPA Region III explained that if the grid sampling is conducted and no elevated Hg is found in the samples, the area should be considered remediated.

The samples will be collected from the former 1918 surface elevation at 2-2.5 feet below ground surface.

In response to a question from EPA Region III, Weston Solutions explained that the sampling will be for total Hg rather than species.

Parsons noted that the 1994 sampling performed an inductively coupled plasma mass spectrometry (ICP-MS) scan and another Hg scan but did not specie the Hg in 1994.

In response to a question from USACE Baltimore, EPA Region III and DOEE concurred that the 2-foot on center resolution is acceptable for the AU-05 Hg sampling grid.

In response to a suggestion from EPA Region III, Weston Solutions confirmed that if Hg is seen at the site sampling will be conducted.

9. Spaulding-Rankin Property/4710 Woodway Lane

- The final of 6 soil excavations was completed and backfilled on November 20, 2018.
- Landscape restoration activities began March 29, 2019, including soil de-compaction, re-planting of groundcover and bushes, removing and replacing lawn sod impacted by equipment operations, and installing mulch, soil fill, and tree fertilization to protect trees near equipment operation paths and the soil excavations where tree roots were pruned.

USACE Baltimore reminded Weston Solutions to submit a request for agenda time for future meetings.

Weston Solutions confirmed this.

B. 4825 Glenbrook Road

The goal of this segment of the meeting was to review the status of 4825 Glenbrook Road.

Parsons provided a brief update on 4825 Glenbrook Road. Parsons will email a copy of the presentation to the regulators.

1. Recent Activities

- Removed all retaining walls that were located at 4825 Glenbrook Road.
- Completed work in Area 1.
- Completed Parsons scope in Area 2.
- Completed work in Area 3.
- Continue to work in Area B and Area 4.
- Collected confirmation samples in 4 grids in the northwest corner of Area 1.

Impacts to the schedule include:

- High water table: work in previous years was not impacted by the water table due to consistent dry weather. This year, the water table has been high as a result of excessive rain events, causing the team to encounter groundwater when excavations reach saprolite.
- Detections in Area 4.

In response to a question from EPA Region III, Parsons explained that Area 5 in the figure on slide #4 of the 4825 Glenbrook Road presentation indicates the area around stairs that were set into a notch cut into the slope of the property. Glassware was discovered on the surface in that area due to erosion behind the steps, designating the location as Area 5 for investigation. There was a test pit near Area 5 prior to this remedial action. Glassware was found but no evidence of a disposal pit. The team will investigate Area 5 to ensure there is no disposal pit in that area.

2. Area 1 Summary

- Started Area 1 November 14, 2018.
- Removed all the retaining walls located in Area 1.
- Collected confirmation samples in 4 grids in the northwest corner of Area 1.
- Moved on to the next areas until a solution could be developed to resolve standing rain water issues.
- To solve the rainwater issue, the Project Delivery Team (PDT) agreed to install a stone-lined sump in an area of former As grid removal where no further action is required. The sump collected the rain water from rain events as well as high groundwater.
- Resumed Area 1 operations on April 2, 2019.
- Area 1 completed April 8, pending saprolite confirmation and confirmation sampling.
- The team may continue excavating in the cooler weather and wait for a larger completion area before collecting confirmation samples.
- No agent or agent breakdown products (ABPs) detected to date.

3. Area 2 Summary

- Started Area 2 February 27.
- Completed planned area extent March 1.
- Area 2 is 7 feet wide at its open end and extends 6 feet, 7 inches past the corner of the house.
- The floor is ~ 6 feet below landscape ground surface.
- Removed ~53 pieces (or ~ 5lbs) of glass. No detections of agent in headspace samples.
- Removed 38 drums of soil.
- All 3 disposal characterization samples cleared headspace and low-level analysis.
- Glassware continues to be sporadically found in the northwest facing sidewall.
- No confirmation samples collected to date.
- Additional Area 2 work to be completed by ECBC and USACE Baltimore.

The red box in Area 2 on slide #7 of the presentation indicates the planned excavation and the green box indicates the actual excavation performed.

Slide #8 shows photos of glassware found in Area 2. Some of the glassware found was covered in concrete, suggesting that the glassware may have been present when the foundation of the house was poured.

4. Plan to Complete Area 2

- Work with ECBC to complete remedial actions in areas USACE Baltimore believes are not within scope (consistent with the sampling approach at 4835 Glenbrook Road).
- Hand-excavate an additional 2 feet of depth and 2-4 feet laterally in both directions of the excavation area (towards the front porch and towards the street) without impacting the footer. The goal is to assess if the glassware debris is localized and continues to dissipate as the excavation continues or if there may be a larger issue that may require more significant efforts.
- ECBC and USACE Baltimore will complete the effort as a stand-alone operation.
- USACE Baltimore provided all Parsons data from the area to ECBC to assess the health and safety issues associated with the work:
  - The work will be conducted open air.
  - May lift the temperature constraint for the area based on data for the area.
  - Assessing personal protective equipment (PPE) requirement based on data. The team may utilize Level B or Modified D PPE with slung mask.
  - Hand-excavation will be performed because there is glassware debris in the area.
- The team estimates the work will take 2-3 weeks to complete once the plans and funding are approved.
- If the levels of glassware remain consistent, the team will consult the partners to discuss next steps.

In response to a question from EPA Region III, USACE Baltimore confirmed that sampling will be conducted once Area 2 is completed. Depending on the excavation results, confirmation samples may be taken at that time in Area 2. At that point the excavation will be ~8 feet into 4835 Glenbrook Road at the front corner of the property.

In response to a question from EPA Region III, USACE Baltimore confirmed that the air monitoring will stay the same for the Area 2 excavation, to include perimeter, A-point, and excavation air monitoring. The operation will not have ambulance on-site but will utilize the 911 protocol established for the 4835 Glenbrook Road basement sampling. USACE Baltimore will reach out to the local hospital to be prepared that USACE Baltimore is starting another operation.

5. Area 3 Summary

- After completion of the previous low probability operations in Area 3, sidewall sampling detected Dithiane.
- Completed removal of clean backfill from Area 3 March 4.
- Began intrusive work March 5; work took ~1 day to complete.
- In accordance with the workplan, the excavation was extended 2 feet past the original excavation the length of that grid and confirmation samples collected.
- No agent or ABPs detected.

6. Work Remaining Aside from Area 4 and Area 5

- This includes areas that have not had confirmation sampling and areas outside the newly-created numbered areas.
- Without the confirmation samples, the exposure point confirmation samples for metals (other than As) cannot be calculated. The goal is to ensure there are no remaining contaminants in the soil, such as agent or ABPs, As, hazardous and toxic waste (HTW), vanadium (V), and cobalt (Co). Confirmation samples will be reviewed to calculate exposure point concentration for the property to identify unacceptable risk and review hotspots.

7. Proposed Confirmation Sampling Plan

The original sampling plan included removing the wall and footer without clearing everything behind the wall. Because of the way the wall was initially poured, the team had to use plunging cuts into the walls. The area behind the wall will need to be cleared before using plunging cuts with the concrete chain saw. There is now no wall for collecting wall samples.

The proposed confirmation sampling plan intends to collect confirmation samples from the center of each 20-foot grid at the property line, as indicated by the yellow circles on slides #14, #16, and #17 of the presentation. Samples will be collected to test for agent and ABPs, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and tentatively identified compounds (TICs).

In response to questions from A. Gates, Parsons confirmed that test pitting was conducted previously at 4825 Glenbrook Road. In accordance with the 4825 Glenbrook Road Decision Document, the excavation is cleared down to competent saprolite to ensure nothing is missed. Test pits have gaps in between certain areas. Clearing the excavation to saprolite removes any uncertainty in high or low probability areas.

In response to a question from A. Gates, USACE Baltimore explained that the team test-pitted the entire property line at 4835 Glenbrook Road and cleared the property line to depth.

8. Area 4 Summary

- Began setting up for Area 4 on March 7.
- Level B intrusive operations began on March 19.

- Filled 131 drums of soil (~23 cubic yards) up to March 26.
- The plan was to excavate down 2 feet and sample the newly-created floor and the walls not bordering Parsons-installed fill. The team excavated deeper than the depth of the Parsons-installed fill to create walls. Confirmation samples will be collected to ensure there is no horizontal extent of the contamination in the undisturbed saprolite. This is complicated by the saprolite surface, which is undulating and not a flat, even floor.

9. Area 4 March 26 Miniature Chemical Agent Monitoring System (MINICAMS) Detection

- 09:29 - 1st alarm for L at the drum-filling location at 0.49 stel. Team 2 was filling drum #2853 at the moment the MINICAMS alarmed. Team 2 secured the lid to the drum.
- 09:40 - 2nd alarm for L at the drum-filling location at 0.58 stel. Parsons Site Safety and Health Officer (SSHO) initiated mitigation of the other drums (to fasten the lids to the drums), the drum funnel, and covering the excavation area with a tarp and sandbags.
- 09:48 - 3rd alarm for L at the drum-filling location at 0.43 stel for L.
- 09:54 - the depot area air monitoring system (DAAMS) tubes are pulled from the drum-filling A-point location and the team began to process through the personnel decontamination station (PDS).
- 09:59 - 4th alarm for L at the drum-filling location at 0.31 stel for L.
- 10:08 - 5th alarm for L at the drum-filling location at 0.20 stel for L.
- 10:09 - the downrange team finished processing through the PDS.

In response to questions from EPA Region III, Parsons confirmed that the protocol chart for required actions at the first, second, and third alarm ring-offs is in use during this operation. The occurrence of 3 alarm ring-offs is considered 'probable agent detection' so the team began mitigation protocols at the first alarm.

EPA Region III noted that was a good plan since there is no tent over the excavation.

- There were no other detections or alarms on any of the other downrange instruments or MINICAMS positions.
- The soil being drummed was not discolored or unusual. There were no fuel spills.
- The temperature outside was ~43 degrees F.
- L was not detected in any of the DAAMS or soil analysis.

In response to a question from EPA Region III, Parsons and USACE Baltimore explained that the soil analysis refers to the analysis performed on the drum material. Composite samples are collected as the drums are being filled. L was not detected in any of the drum samples. On this day there were only alarm ring-offs at the drum-filling location. The second set of ring-offs was at both locations.

- The grid is adjacent to the location where the interferent Dichloronaphthalene was found previously detecting as L.
- The PDT met on March 26 after the MINICAMS alarms. Based on the DAAMS results that did not confirm L, the PDT decided to continue excavations in Area 4 and would reconvene if additional MINICAMS detections occurred. The PDT also decided to collect a specific grab sample from the drum being filled at the time of the alarm in addition to the disposal characterization sample.

10. Area 4 March 28 Miniature Chemical Agent Monitoring System (MINICAMS) Detection

- 08:50 - alarm for L at excavation location at 0.40 stel for L and alarm for L at the drum-filling location at 0.45 stel for L.
- 08:54 - Team 2 performed visual inspection of the soil; no discoloration of soil or anything unusual was noted.
- 08:55 - detection readings began going down to 0.30 stel for L at the excavation location and 0.31 stel for L at the drum-filling location. All drums were closed at this time.

- 08:57 - the photoionization detector (PID) at the excavation location read 2.3 parts per million (ppm) and the PID at the drum-filling location read 1.5 ppm. The action level for PID is 10 ppm. Monitors for arsine (SA), Hydrogen cyanide (HCN), and Hydrogen chloride (HCl) read 0 ppm.
- 09:12 - 0.23 stel for L at the excavation location and 0.24 stel for L at the drum-filling location.
- 09:15 - Team 2 was instructed to mitigate the excavation location, excavator bucket, and drum funnel and collect the DAAMS pumps from the excavation and drum-filling locations. The perimeter DAAMS were left in place.
- 9:21 - completed mitigation of the excavator bucket, waste sample kit, and drum funnel.
- 9:25 - the excavation area was mitigated. Team 2 headed for the PDS with the 2 DAAMS pumps.
- 12:44 - Team 1 went downrange to place 2 DAAMS pumps; 1 under the plastic covering drum #2903 and the other under the mitigation tarp in the excavation area.
- 12:49 - DAAMs pump in place for drum #2903 (tubes inserted through the mitigation tarp).
- 12:55 - DAAMS pump in place in the excavation area (tubes inserted through the mitigation tarp).
- 14:02 - Team 1 collected the DAAMS pump from drum #2903.
- 14:03 - Team 1 collected the DAAMS pump from the excavation area.
- 14:04 - Team 1 entered the PDS.
- 14:10 - all Team 1 members processed through the PDS.
- 14:26 - Mod D Team collected all 4 perimeter DAAMS pumps.

11. Area 4 DAAMS Results During and After March 28

- The excavation and the drum-filling position A-points DAAMS tubes qualitative analysis for March 28 were both positive for L. The collection run-time was from 0800 to 0935.
- The quantitative analysis of the DAAMS tubes collected on March 28 from the excavation and drum-filling A-points and all the perimeter historical/background were negative for L. The collection run-time was from 0800 to 1420. If the qualitative analysis has a detection, then the quantitative analysis is reviewed. The quantitative analysis is more sensitive.

In response to a question from EPA Region III, Parsons confirmed that the volume of air pumped through the DAAMS tubes forms the qualitative analysis.

- The quantitative analysis of DAAMS tubes also collected on March 28 from the headspace of the mitigation and drum were negative for L. The collection run-time was from 1255 to 1355.
- The quantitative analysis of DAAMS tubes collected on March 30 and 31 from adjacent to the excavation location and the perimeter were negative for L. The collection run-time was 1100 to 1900 each day.
- The quantitative analysis of DAAMS tubes collected on April 1 from under the mitigation and the perimeter were negative for L. The collection run-time was 0750 to 1240.

12. Area 4 DAAMS Full Scan Results March 28 0800-1420

The results of the ECBC DAAMS full-scan qualitative analysis for the excavation area, drum-filling location, and perimeter DAAMS are shown in the tables on slides #27 and #28 of the presentation.

In response to a question from EPA Region III, Parsons explained that the chemicals detected by the ECBC analysis are likely part of the ambient air background. There were no HD breakdown products or other AUES-associated chemicals detected.

13. Area 4 DAAMS Full Scan Results March 28 1250-1350

The DAAMS tubes located underneath the covered area of the excavation location and drum area detected HD breakdown products. The results are shown in the table on slide #29.

In response to questions from EPA Region III, USACE Baltimore explained that the samples were collected in the afternoon of March 28 from under the mitigation tarps. No L breakdown products were detected but HD breakdown products were detected.

14. Area 4 Soil Sample Results On and After March 26

A grab sample collected from the drum associated with the March 26 MINICAMS detection did not clear MINICAMS headspace analysis but did clear DAAMS headspace and low-level agent and ABP analysis. This indicates that an interferent is likely present. The grab sample was sent to a commercial lab. The preliminary results determined that no SVOCs or TICs were detected. There was a detection of VOC acetone (common lab contaminant) slightly above the limit of quantification (LOQ) and methyl acetate below the LOQ, no other analytes were detected, and no VOC TICs detected.

A sample intended to be a waste disposal sample characterization sample collected on March 27 did not clear MINICAMS headspace analysis but did clear DAAMS headspace analysis. The team believes the interferent is present in that sample.

- The low-level agent and ABP analysis detected 1,4 Dithiane, known to be present in the excavation from the findings during the summer of 2018.
- The commercial lab that normally carried out analysis of the samples took issue with accepting a sample from a different project that was expected to contain ABP but was determined to contain agent. The lab was reluctant to accept the sample containing 1,4 Dithiane. Another commercial lab, RTI, was found that accepted the sample.
- The sample was sent to RTI for Grab Sample Parameters. The sample was not containerized in the correct bottles for a grab sample analysis but RTI was able to analyze the sample.
- The preliminary results determined there were no polychlorinated biphenyls (PCBs) and no significant detection of any VOC (Methylene Chloride was detected at 2.6 micrograms per kilogram).
- Awaiting remaining results.

In response to a question from USACE Baltimore, Parsons confirmed that if Dichloronaphthalene was detected it would most likely be detected in the SVOC analysis.

15. Area 4 Current Preferred Options

- Collect confirmation samples of the Area 4 excavation as it stands now and compare the results to comparison criteria for agent and ABPs and the Spring Valley list of VOCs, SVOCs, and metals.
- To continue excavations, utilize modeling and hazard distances. ECBC is working to eliminate false positive alarm ring-offs but cannot guarantee the removal of all false positives. The L detections are assumed to be the result of an interferent, but hazard distances would address the concentrations detected.

In response to a question from EPA Region III, Parsons and USACE Baltimore explained that the largest hazard distance circle was created by L. Under that option, if the hazard distance falls into any of the adjacent residences, limited evacuation during excavation hours would have to be implemented. The team would be requesting temporary relocations.

In response to questions from EPA Region III, USACE Baltimore and Parsons explained that these are the 2 working options at this time. There are other options available, including the use of an environmental control structure. The option to stop the excavation now would be possible if the team can illustrate to the Partners that all contaminants are below screening criteria and the Partners agree to leave the material in the ground. Confirmation samples would be collected, and the site would be completed. The excavations are now very near mechanical refusal, ~2-3 days away from completion.

In response to a question from USACE Huntsville, Parsons confirmed that 131 drums of soil (~23 cubic yards) have been removed and ~60 cubic yards are left to remove.

16. Near and Mid-Term Schedule

- Complete the remaining areas along the foundation this week/early next week and collect confirmation schedules.
- Finish Area B west and south of the former As grid next week and the week after; collect final confirmation samples.

In response to a question from EPA Region III, Parsons explained that the team needs to obtain all the confirmation samples to perform the exposure point concentration analysis. That would enable the team to clarify that, except for Area 4, there is no agent or ABPs present and the operation is for HTW in all areas except for Area 4. The team would then focus on metals, hotspot, and exposure point reduction efforts through the summer and by fall be able to go back to excavations in cooler temperatures. This would also allow time to determine a plan to address Area 4.

- Excavate apron area three weeks from now (possibly seeking a waiver from Level B operations and temperature restrictions) and collect confirmation samples.
- Complete Area 5 (possibly seeking a waiver from Level B operations and temperature restrictions).
- Either before or after Area 5, ECBC complete their scope in Area 2.
- This summer begin determining select metals (aside from As) exposure point concentrations for those metals that exceed the comparison values:
  - Determine if there is an unacceptable risk in accordance with the 4825 Glenbrook Road Decision Document (DD).
  - Select grids that are the likely sources of unacceptable risk and further excavate.

In response to questions from EPA Region III and AU, USACE Baltimore confirmed that the operation schedule no longer projects a December 2019 completion date. If the Partners come to an agreement regarding Area 4 that does not require an additional structure or engineering controls, the operation could be completed by the summer of next year. If a consensus is not reached and the engineering controls are brought back to the site, the schedule could extend a couple more years. The team would prefer to obtain enough data for the Partners to come to a consensus on a path forward for Area 4.

Currently, the ABPs detections are well below the screening limit. The challenge is that the screening limits for Dichloronaphthalene are not available. The compound is only detected on the MINICAMS, not in the soil samples. Additionally, MINICAMS always have the chance for a false positive if there is an interferent. Any MINICAMS alarm must be treated as an agent detection.

In response to a question from EPA Region III, USACE Baltimore explained that the challenge with in-situ treatment of the soil is that any in-situ treatment would impact ECBC's ability to collect confirmation samples post-application of the treatment. This option has been eliminated from further consideration.

C. 4835 Glenbrook Road

The goal of this segment of the meeting was to review the status of 4835 Glenbrook Road.

USACE Baltimore provided a brief update on 4835 Glenbrook Road.

Work in Area 2 will be addressed when there is downtime for the Parsons team.

D. Groundwater Feasibility Study (FS)

The goal of this segment of the meeting was to review the status of the Groundwater Feasibility Study.

USACE Baltimore noted that USACE Baltimore and DOEE are in discussions about adding an additional round of groundwater sampling and possibly additional wells for groundwater sampling.

DOEE confirmed this.

E. Open Issues and New Data

None

F. Future Agenda Items

1. Groundwater FS
2. 4825 Glenbrook Road/4835 Glenbrook Road
3. Toxicity determination for 4835 Glenbrook Road
4. Site-Wide PP
5. Site-Wide RA

G. Agenda Building

The next meeting was scheduled for Thursday, June 27, 2019.

H. Adjourn

The meeting was adjourned at 12:24.