Spring Valley Partnering Meeting
October 17, 2019
Spring Valley Project Federal Property Conference Room

Name	**Organization/Address**	
Allyn Allison	USACE - Huntsville	
Brenda Barber	USACE – Baltimore	**X**
Brian Barone	DOEE	**X**
Matt Beatty	Weston Solutions	
Todd Beckwith	USACE - Baltimore	**X**
Janelle Boncal	Parsons	
Sean Buckley	Parsons	**X**
Paul Chrostowski	CPF Associates, American University Consultant	
Ed Fisher	American University	
Chris Gardner	USACE – Corporate Communications Office	**X**
John Gerhard	Weston Solutions	**X**
Ivanna Goldsberry	USACE - Baltimore	**X**
Whitney Gross	ERT – Community Outreach Team	**X**
Steven Hirsh	EPA – Region III	**X**
Bryan Hnetinka	Weston Solutions Project Manager	**X**
Holly Hostetler	ERT	
Carrie Johnston	ERT - Community Outreach Team	
David King	USACE - Baltimore	
Kevin Kingdon	Black Tusk Geophysics	
Carlos Lazo	USACE, Government Affairs Liaison	**X**
Caitlyn Martin	Weston Solutions	
Chris Moran	Weston Solutions	**X**
Dan Nichols	American University	**X**

Dan Noble	USACE – Baltimore	**X**
Steven Norman	ECBC	
Randall Patrick	Parsons	**X**
Steve Rembish	Parsons Risk Assessor	**X**
Tom Rosso	ECBC	
Dave Tomlinson	DOEE	
Amy Walker	USACE - Huntsville	
Bruce Whisenant	USACE – Huntsville	**X**
Rebecca Yahiel	ERT – Community Outreach Team	**X**

Summary of 17 October 2019 Spring Valley Partnering Meeting

Consensus Decisions

- None

17 October 2019 Action Items

- Weston Solutions will provide a revised Public Safety Building (PSB) schedule once the final approval is obtained.
- USACE Baltimore, Environmental Protection Agency (EPA) Region III, and DOEE will schedule a conference call to discuss the sampling data and next steps for Groundwater. Kathy Davies, EPA Region III will be included on the call.

Thursday 17 October 2019

A. 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.

1. Recent Activities

- Began final compaction of areas to existing grade on September 30. Laying-in 6" lifts of soil and compacting the soil to 95% compaction. Compaction not performed over the temporary sewer line.
- Will continue compaction of areas through the fall. Compaction completed for ~3/4 of the site areas.
- Activities in Area 4 on hold pending Area 4 plan.
- Continue to dispose of soil and water either as hazardous waste or to the subtitle D landfill:
  - A hazardous waste shipment including soil associated with agent or agent breakdown product (ABP) detections was sent out today.
  - Most of the drum yard will be cleared and the frack tank pumped out today. Some metal scrap and munitions debris remains for disposal.
  - Soil from Area 4 and Grid -10, -90 remains for disposal. Soil disposal is expected to occur in the winter.

2. Risk Assessment Objective

- Determine if any further excavation is required in the former High and Low Probability Areas.
- Based on the 4825 Glenbrook Road Decision Document (DD), the remediation goal for the 4825 Glenbrook Road Remedial Action (RA) is the removal of all soil with a concentration greater than 20 mg/kg for arsenic (As). The remedial action objectives for the site are:
  - Prevent direct contact with soil having a non-carcinogenic Hazard Index (HI) exceeding 1.
  - Prevent direct contact with soil having a cancer risk in excess of 1×10^{-4}.
  - Remove military munitions from the site allowing for Unrestricted Use/Unlimited Exposure (UU/UE).

In response to a question from Environmental Protection Agency (EPA) Region III, Parsons confirmed that the cancer risk limit of 1×10^{-4} was taken from the 4825 Glenbrook Road DD.

3. Remedial Method

- Remove all soil down to undisturbed/competent saprolite as determined by the Parsons geologist and confirmed by the U.S. Army Corps of Engineers (USACE) Baltimore District geologist.
- Collect confirmation samples in accordance with the Site-Specific Work Plan (SSWP). Confirmation samples analyzed for the full suite of agent and ABP parameters.
- If agent or ABPs are detected, continue excavation.
- Compare hazardous and toxic waste (HTW) compounds to screening criteria documented in the SSWP.
- If HTW compounds other than metals and/or As exceed screening criteria, continue excavation.
- After the above is accomplished, determine the residual risk associated with those metals that exceeded screening criteria in accordance with the remediation goals.
- If there is no residual risk from American University Experiment Station (AUES) activities as determined by the Risk Assessment, then no further excavation is warranted.

4. Objectives Achieved

- All High and Low Probability Areas were excavated down to competent saprolite (which is evidence of undisturbed material):
  - Military munitions were possibly buried at the site.
  - All potential burial areas were removed down to undisturbed material; therefore, relative to military munitions the site now allows for Unrestricted Use/Unlimited Exposure (UU/UE).
- Relative to arsenic concentrations greater than 20 mg/kg, no areas remain that exceed this concentration for arsenic other than:
  - Area 4.
  - The north wall of Grid -10, -90.

5. Risk Assessment Assumptions

- Media Analyzed:
  - Surface soil (0-2 ft below original ground surface).
  - Combined surface and sub-surface soil (0-12 ft below original ground surface). This considered the possibility that the soil at the 12-foot (ft) depth could be brought to the surface and re-distributed around the site.
- Receptors/Exposure Pathways Assessed:
  - Unrestricted Use (assumes residential receptors: child and adult exposure scenario for non-carcinogenic exposure and combined child/adult exposure scenario for carcinogens, a conservative approach).
  - Potential exposure via incidental ingestion of the soil, dermal contact with the soil, and inhalation of ambient dust (particulates from the soil), inhalation of vapors in ambient air, and ingestion of homegrown produce grown on the soil.

- Exposure Area: the entire 4825 Glenbrook Road residential lot was considered the exposure area.
- The Risk Assessment evaluated existing sample points in the residual soil after excavation, not the clean backfill. This is a conservative approach; the addition of backfill will reduce exposure by adding a buffer between receptors and affected soil, which will reduce risk and HI estimates.

In response to a question from EPA Region III, Parsons explained that some 0-2 ft exposure areas remain at the 4825 Glenbrook Road site based on the topography of the soil at the time of the original grade excavation. The saprolite was so shallow that there is 0-2 ft of soil in those areas. The majority of the site is at the 0-12 ft depth. When there was any doubt about the depth of the sample, the Risk Assessment assumed a shallower depth to make the Risk Assessment more conservative.

In response to a question from EPA Region III, Parsons explained that a risk assessment was not performed on the backfill soil. The backfill soil is sampled in accordance with the backfill parameters; no soil with detections is brought onsite.

6. Chemicals of Potential Concern (COPCs) and Exposure Point Concentrations

- Chemicals of Potential Concern (COPCs):
  - Compared maximum detected concentration of each analyte to the USEPA Resident Soil Regional Screening Levels (RSL): Target Risk [TR] = 1x10-6 and Target Hazard Quotient [THQ] = 0.1.
  - Inorganic COPCs: aluminum (Al), antimony (Sb), arsenic (As), cobalt (Co), cyanide (CN), manganese (Mn), nickel (Ni), thallium (Tl), and vanadium (V). These metals were included in the Risk Assessment.
  - No other COPCs.
- Exposure Point Concentrations were calculated for each of the metals for each soil profile. Each of the metals had a concentration for 0-2 ft and a concentration for 0-12 ft. The concentrations were calculated by 95% upper confidence limits (UCL) on the mean as calculated by ProUCL 5.1. ProUCL 5.1 calculates UCLs by several statistical methods and provides a UCL recommendation based on the distribution of the data, number of non-detects, and the number of samples.

In response to questions from EPA Region III, Parsons explained that the 0-12 ft depth was selected based on the precedent set in the Risk Assessment for the 4825 Remedial Investigation (RI) performed in 2011. The 0-12 ft depth is the expected depth that a utility worker might excavate to lay utility lines. The depth is conservative, with 12 ft of fill expected on top of the excavation. Even with the conservative assumptions, no residual risk remains from the metals, including As.

In response to a question from USACE Baltimore, Parsons confirmed that sample data was left out of the Risk Assessment because the sample was from greater than the 12 ft depth.

7. Initial Risk Results

Without taking into account target organs the initial results are as follows:

- Surface soil:
  - Cancer Risk: 3×10^{-5}
  - Hazard Index - Child: 6
  - Hazard Index - Adult: 1
- Combined surface and sub-surface Soil:
  - Cancer Risk: 5×10^{-5}
  - Hazard Index - Child: 6
  - Hazard Index - Adult: 1

For carcinogens, all carcinogenic compounds are included in the risk estimate. Both the surface and sub-surface soil cancer risk is below 10^{-4}, so the objective was met for the cumulative carcinogenic risk estimate.

For the HI, which reflects the non-carcinogenic hazard associated with exposure to soil, EPA's protocol directs that target organs can be taken into account for an HI greater than 1. Target organs represent organs in the body that are affected by specific chemicals. Only the chemicals that affect the same target organ would be added up together. For example, all the chemicals that affect the skin would be calculated together. Without the target organ calculations, there was an HI for a child that was equal to 6, which is greater than 1 for both surface and combined surface and sub-surface soil.

8. Refined Hazard Index (HI)

- Since the total HI-Child is greater than 1 for both surface soil and combined surface and subsurface soil, the hazards were evaluated by target organ.
- Surface soil refined HIs:
  - Bodyweight, cardiovascular, nervous, neurological, reproductive, respiratory system, testes, thyroid, and whole body segregated HIs are all less than or equal to 1.
  - Dermal: 3 (including Tl); less than 1 (excluding Tl).
- Combined surface and sub-surface soil refined HIs:
  - Bodyweight, cardiovascular, nervous, neurological, reproductive, respiratory system, testes, thyroid, and whole body segregated HIs are all less than or equal to 1.
  - Dermal: 3 (including Tl); equal to 1 (excluding Tl).

In response to a question from EPA Region III, Parsons explained that the main drivers of the risk result of 6 for the child receptor prior to the separation of target organs were Tl, Co, and V. The risk result was the combination of all the metals added together. The Tl is ~3, Co and V were each ~1. That is why when the target organs are separated, the risk for each metal is less than or equal to 1.

In response to questions from Department of Energy and Environment (DOEE), Parsons explained that if Tl is excluded and all the target organs are considered, all calculations are less than or equal to 1. If Tl was taken out of the equation, and without taking into account the target organs, the risk calculation for the child receptor would be ~3 ½ to 4.

9. Remedial Action (RA) Conclusion

- Without including Tl no residual risk remains from the COPCs at 4825 Glenbrook Road.
- Tl drives the dermal HI:
  - However: the 95% UCLs for Tl (1.7 mg/kg for 0-2' and 1.5 mg/kg for 0-12') are less than the accepted background value for Spring Valley (2.2 mg/kg)
  - Conclusion: Tl is naturally occurring at the concentrations observed.
- The inclusion of As does not present an unacceptable risk at 4825 Glenbrook Road:
  - Though present in concentrations greater than 20 mg/kg in discrete samples taken from the north wall of -10, -90 and from floor and wall samples from Area 4.
  - The 95% UCL for As (the same approach for all the metals) presents no residual risk.

DOEE and EPA Region III agreed that the risk assessment includes worst-case scenarios that may overstate the actual risk at 4825 Glenbrook Road. The worst-case scenarios are valuable for determining risk and taking the most conservative approach, but a realistic scenario for the property would be valuable as well.

Parsons explained that the conservative risk assessment was an attempt to determine whether the Partners agreed that no further excavation is needed. Parsons could perform a more realistic scenario that would take the clean fill into account.

DOEE and EPA Region III suggested that the final risk assessment documents distributed to the public should avoid overstating the risk. The conservative risk assessment provides the worst-case scenarios and

the calculations still show the property to be safe. This is a nuance risk assessment that proves the remediation is complete and the property is safe for AU's use with no restrictions.

American University (AU) noted that AU appreciated the transparency of the conservative risk assessment.

In response to a question from AU, EPA Region III and Parsons explained that the property is sloped, so the final grade will include areas with more fill soil than others. The back of the property may have ~14 ft of fill on top of rock and the front of the property may only have ~2 ft of fill on top of rock. Most areas of the property will have a minimum of ~4 to 5 ft of fill.

In response to a question from AU, EPA Region III confirmed that the property at 4825 Glenbrook Road will be safe for any use when the remediation is complete, including building a new house on the property.

In response to a question from USACE Baltimore, Parsons explained that outlier analysis was not performed on the 2011 4825 Glenbrook Road RI data set.

10. RA Uncertainty Associated with Area 4

The Risk Assessment portion of the 4825 Glenbrook Road RI is under review by USACE.

- Area 4 (formerly Grid -10, -30) is an area of undisturbed saprolite where ABPs and odors where encountered while performing HTW excavations for As.
- An attempt was made to over excavate Area 4; however, a Lewisite (L) interferent on the Miniature Chemical Agent Monitoring System (MINICAMS) prevented further excavation.
- Mustard (HD) ABPs 1,4-Thioxane and 1,4-Dithiane were detected below the SSWP comparison values in confirmation samples. Therefore, it would be acceptable to leave those concentrations in the soil and still achieve the remedial objectives.
- Exposure to these contaminants in this particular area would be further mitigated by more than ~12 ft of clean fill on top these contaminants.

In response to a question from DOEE and EPA Region III, USACE Baltimore and Parsons explained that chemicals such as lime or bleach could be introduced into the excavation holes to further break down the contamination, but any chemical treatment would prevent any future sampling due to the chemicals posing an interferent. Lime was likely used originally on the chemical agents before burial, resulting in the ABPs seen at the site during remediation. Bleach is used to break down HD to component breakdown products.

DOEE and EPA Region III pointed out that if there are residual contaminants present, this would be the last opportunity to add a chemical to the excavation to further break down the contamination. The area is unlikely to be sampled after remediation is determined complete, even if no chemical is introduced into the hole.

USACE Baltimore confirmed this.

Relative to agent and ABP detections (potential for concentrations of ABPs between areas of detection and no detection in Area 4):

- Contamination typically follows preferential pathways if being transmitted by perched water flowing past source material. Rain run-off either from directly above or flowing along a water confining layer (such as the top of the competent saprolite layer).
- Saprolite was originally encountered at ~10.5 ft with area transitioning to rock in places now at 12.5'.
- The competent saprolite generally dips southwest at 4825 Glenbrook following topography. No soil contamination was detected downgradient of any significant debris/intact container fields above the surface of the competent saprolite or within the competent saprolite.
- Contamination was detected within the fill and competent saprolite directly below source material until saprolite was achieved and confirmation samples were collected.

- The grid to the south (-10, -10) was excavated to bedrock due to contamination.
- The grids to the north (-10, -50), east (10, -30) and west (-30, -30) had no detections for agent or ABPs in confirmation samples.

In response to questions from DOEE, Parsons explained that work was not resumed in Area 4 after the L ring-off. Excavation was not complete in Area 4; the intent was to excavate another 2 ft and collect confirmation samples in accordance with the workplan. The confirmation samples would have included a center sample and various wall samples. The grab samples collected represent confirmation samples.

- Contamination on site does not spread, follow the topography, or follow the general dip of the site. Contamination was detected within the fill and competent saprolite directly below source material but not at any time in grids to the east or west.
- Site evidence then suggests contamination only exists below areas of extensive debris and source material and does not widely spread laterally at deeper depths. No debris fields were found or detected below the foundation of the former house.
- Further, concentrations should decrease as any contamination spreads from the source material that is now removed. Therefore, the ABP concentrations present would represent the highest existing currently.
- No source material or contamination was found east of Area 4 Sample 4.
- Based on the above no additional sampling for agent or ABPs is recommended.

In response to a question from DOEE, Parsons explained that the team believes there is no hazard relative to agent and ABPs, and nothing is being missed. Similar to the metals, the worst-case scenario is taken into account for agent and ABPs. All source material has been removed, so any contamination in the samples is residual left-over from the source material. The greatest concentrations would be directly underneath the source material and the concentrations decrease moving away from the source material. The residual concentrations represent the worse-case scenario and would not increase moving farther away. Therefore, the team believes there is no risk relative to agent or ABPs on site.

- A compound was detected as Lewisite (L) on the MINICAMS:
  - That compound is not L as confirmed by Depot Area Air Monitoring System (DAAMS) tubes and confirmation samples. Though not real-time monitors, DAAMS tubes provide a more definitive analysis.
  - In a past L interference event in Area 4 (March 2014), Dichloronaphthalene was determined to be a likely cause of the interference.
- Dichloronaphthalene does not appear on available lists of chemicals used at Spring Valley. However, the compound can be associated with Halo Wax, a chemical listed as being used at Spring Valley.
- Additionally, the compound is noted in an old journal article discussing smoke and arsenicals research.
- In the samples collected from Area 4, neither 2-Chloronaphthalene or Naphthalene were detected.
- For semi-volatile organic compounds (SVOCs), the lab reported the top 20 Tentatively Identified Compounds (TICs) and 1,4-Dichloronaphthalene was detected with a good quality match.
- There are no means to quantify the detection of 1,4-Dichloronaphthalene.
- There are no human toxicity values for 1,4-Dichloronaphthalene, though the compound has been shown to be toxic to ecological receptors.
- Though there is a level of uncertainty relative to Chlorinated Naphthalenes, potential exposures will be mitigated by >~12 ft of clean fill. Additionally, very low concentrations of the interferent compounds can register detections on the MINICAMS.
- At no time during the 4825 Glenbrook Road RA have we detected any volatile organic compounds (VOCs) or SVOCs in the soil that exceeded our risk-based comparison values. Therefore, it is unlikely that this one SVOC is present in any concentration that would present a hazard.

- Based on the above and the previous information, no further excavation is recommended in Area 4 or 4825 Glenbrook Road as a whole.

EPA Region III noted that the detections were located in a small area. He suggested that all these factors should be communicated in the Risk Assessment.

Parsons confirmed this.

In response to questions from EPA Region III, Parsons explained that at the last Partnering meeting Parsons planned to include Area 4 in the Risk Assessment and determine whether excavation should continue in Area 4. This would have been if the Regulators did not agree with the Risk Assessment. The risk associated with Area 4 and the site as a whole (including -10, -90) was reviewed; there are no more munitions, metals and ABPs do not present a hazard, and 1,4-Dichloronaphthalene is not believed to present a hazard. Competent saprolite has been reached in all areas.

In response to questions from DOEE, Parsons and USACE Baltimore explained that the excavation hole is temporarily covered. The challenge of continuing excavation for As involves open air excavation with MINICAMS. While the team is confident the interferent is not L, the Regulators would have to be in agreement to ignore the MINICAMS L alarms or not sample for L. The alternative would be to return to a small High Probability operation with a tent. The High Probability option would add 6 months to a year to completion of the remediation.

In response to a question from EPA Region III, Parsons explained that Area 4 is 22 x 22 ft in area. There are no samples from further out that bound the 130 As detections.

In response to a question from USACE Baltimore, Parsons explained that Sample 14, the original sample, was 10 ft down from the original surface.

In response to questions from DOEE, Parsons explained that the difference between confirmation samples and the grab samples is that the confirmation samples would have been collected when the excavation was completed in Area 4. The confirmation samples would be collected in the center and the walls at various depths, depending on the depth of the excavation. After 2 ft of excavation there would be multiple samples, at 0-2 ft there would only be 1 sample for the walls. The excavation is a combination of temporary fill, rock, and competent saprolite.

In response to a question from EPA Region III, Parsons and USACE Baltimore explained that Area 4 is ~6 ft down from the current surface, 12 ft from the original ground surface. The clean fill would be taken up and compacted down in layers with a remote compactor. A plastic layer is in place now, the plastic can be taken up or left in place. The undisturbed transitional soil, rock, and competent saprolite would not be excavated. A machine with a long reach would be necessary to excavate further.

EPA Region III suggested that the Risk Assessment be submitted to the Regulators for review. He believes the goals of the remedial action have been achieved. Communication of the Risk Assessment will need to explain the conclusions and factors from the raw numbers.

Parsons commented that the objective of this presentation was to obtain concurrence on the Risk Assessment from the Regulators.

EPA Region III commented that he would like to have a toxicologist review the Risk Assessment before EPA Region III gives concurrence.

In response to a question from Parsons, EPA Region III and DOEE did not have a problem with Parsons' approach or the Risk Assessment methodology in this case.

11. Near and Midterm Schedule

- Continue to backfill to existing grade. Need agreement regarding final grading plan and utility placement.
- Need to drum soil from Area 4 and -10, -90.
- Determine final disposition of Area 4.
- Begin restoration of 4835 Glenbrook Road utilities. Area 2 must be resolved before utilities can be put back in place.

12. Tentative Long-Term Schedule

- Fall - continue limited backfill.
- Winter 2019/2020 - address remaining Area 4 and Grid -10, -90 roll-off soil. Begin restoration of utilities. Continue final backfill.
- Spring - final restoration of 4801 and 4825 Glenbrook Road.

In response to a question from USACE Baltimore, AU explained that AU will need a final report for 4825 Glenbrook Road and a letter stating that the property is cleared for unrestricted use.

In response to questions from AU, EPA Region III and USACE Baltimore explained that at the end of the remediation there will be a Remedial Action Completion Report (RACR) with concurrence from the Regulators. This report analyzes the requirements of the 4825 Glenbrook Road DD, documents all the remedial activities performed, and states that all the criteria and objectives from the 4825 Glenbrook Road DD have been achieved. A cover letter could be attached that states the remedial actions have been completed, potentially signed by the USACE Baltimore Colonel.

In response to a question from USACE Baltimore, Parsons explained that the RACR cannot be drafted until the Risk Assessment is approved. With approval, the draft RACR will likely be available in March 2020.

EPA Region III suggested that if AU should need assistance with selling the property to contact EPA Region III or DOEE.

B. 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.

The installed passive soil gas samplers in the basement of 4835 Glenbrook Road were removed last week and were sent to the lab for analysis. Preliminary data should be available in 4-6 weeks.

In response to a question from AU, USACE Baltimore confirmed that the samplers include the full suite of analytes, including 1,4-Dichloronaphthalene.

C. 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. Public Safety Building (PSB)

a. Recent Activities

- Collected samples from the black tar-paper pipe uncovered at the northwest corner of the PSB foundation (EE04) for asbestos analysis. The results showed non-fibrous (non-friable) material with up to 2.7% Chrysotile. Developing an excavation plan for that area.

In response to a question from USACE Baltimore, Weston Solutions explained that loose asbestos, such as in old heating pipes, is considered fibrous (friable) asbestos. If the asbestos is embedded into the matrix of

a material, such as for flooring tiles, that is considered non-friable. Non-friable asbestos is considered a lesser hazard. In this case, the asbestos is embedded in the tar-paper. The Accident Prevention Plan (APP) will be updated.

- Collected water sample from the sanitary sump in the foundation to test for total and fecal coliforms. Fecal coliforms results were 248 cells/100ml - just exceeding the former EPA recreational water criteria of 200 cells/100 ml. The water and construction debris in the sump will be removed for disposal.

In response to a question from USACE Baltimore, Weston Solutions confirmed that the sump existed in the PSB when the building was in operation.

- AU provided temporary water to supply Jack Child Hall during the excavation work at the PSB. Weston Solutions is working with AU and their plumbing company, ACI, to install a heated water line for the winter months.
- Obtained DOEE approval of revised Erosion and Sediment (E&S) Controls for the Excavation Permit on October 3.
- Completed installation of the E&S Controls. On October 15 conducted initial meeting and inspection of the site. DOEE required additional silt fencing and a tree protection plan.

b. Current Schedule

- Complete additional E&S Controls requirements and inspection by DOEE - this week.
- Scheduled to start excavation of soil and benching on the slope above the PSB foundation this week, once the E&S Controls are inspected and approved.
- Pump water and debris out of the sanitary sump and transport offsite for disposal.
- Remove the asbestos-containing tar pipe, wrap in plastic, and transport offsite for disposal once plans are finalized.
- Current schedule has PSB demolition and excavation work taking approximately 12 weeks in October, November, and December followed by site restoration activities in January.

In response to a question from USACE Baltimore, Weston Solutions explained that the schedule includes Thanksgiving. Weston Solutions will provide a revised schedule once the final approval is obtained.

In response to a question from AU, Weston Solutions did not know the beginning and ending location or the purpose of the tar-paper pipe. The pipe will be removed to the edge of the property.

In response to a question from USACE Baltimore, Weston Solutions explained that the tree protection plan was required during DOEE's initial inspection. The original E&S Controls inspection was scheduled after the E&S Controls were in place. Concrete was pulled up, but no excavation was performed before the inspection.

c. PSB Planned Tasks

- Excavate and bench the soil on slope above the PSB to allow for safe excavation of soil below the PSB concrete foundation.
- Conduct magnetometer and visual inspection of slope soil and investigate metal or potential AUES items at 1-ft intervals/lifts. Collect soil analytical samples of slope soil for chemical warfare agent (CWA), ABP, metals, explosives, VOCs, SVOCs, and CN to characterize the soil for use as backfill.
- Load and move slope soil to Federal compound for temporary storage – soil to be reused to backfill the former PSB location.

In response to a question from AU, USACE Baltimore and Weston Solutions explained that perimeter and DAAMS tubes air monitoring will be utilized, but not MINICAMS. The monitors will be analyzed at the end of each work day and historical information will be available. The workers will also have hand-held monitors. Soil and material samples will be sent for headspace analysis.

2. Southern AU Exposure Unit

a. Recent Activities

- Probability Assessment has been finalized for Southern AU Soil Removals.

In response to a question from EPA Region III, Weston Solutions confirmed that the site was determined to be a Low Probability operation.

- Shallow soil sampling was conducted using a hand auger at RA1, RA2, and RA3 September 5-9, 2019.
- Preliminary results for pre-excavation characterization shallow soil samples:
  - RA1 (AU-03) - Co was detected above the cleanup goal (46.8 mg/kg) at the center point of the triangular sampling grid (max. of 79 mg/kg at 6 ft depth). None of the step-outs exceeded the clean-up goals. No V was detected (max. 104 mg/kg) above the cleanup goal of 390 mg/kg.
  - RA2 (AU-02) - no Co was detected (max. 8.7 mg/kg) above the cleanup goal (46.8 mg/kg). Location is near large tree within the drip line/root zone.
  - RA3 (AU-05) - no Mercury (Hg) was detected (max. 1.3 mg/kg) above the cleanup goal (11 mg/kg). Based on the previous sampling at AU-05, the location was on a sidewalk. The original soil sample of concern was ~9mg/kg. A 4x4 ft surface soil grid was implemented on the edge of the sidewalk.

In response to a question from DOEE and EPA Region III, Weston Solutions explained that the three locations were outliers sampled for the specific contaminants identified in the Site-Wide DD. For example, RA3 was identified as an Hg hotspot, so that location was only sampled for Hg.

b. Planned Remediation

- RA1 (AU-03) - Co detected above the cleanup goal. Sample location dug to 6 ft via hand auger. Geoprobe boring is planned to sample to 10 ft at center point to help determine the depth of soil removal. Soil removal will be conducted at the center point - no exceedance at the step-out locations.
- RA2 (AU-02) - No Co detected above the cleanup goal. Location is near a large tree. USACE recommends a 1 ft deep by 5 ft diameter (out to first 2.5 ft grid points) soil removal centered on the original 1994 soil sampling location AU-02. Weston Solutions proposes to use an air spade to loosen the soil and protect the tree roots - then remove the soil by hand-digging.
- RA3 (AU-05) - No Hg detected above the cleanup goal. During the April 2019 Partners Meeting, the Partners discussed that if no high (outlier) Hg soil locations were detected in the 4 ft by 4 ft sampling grid next to AU-05, then no excavation work would be required.

In response to questions from DOEE, Weston Solutions explained that the step-out locations for RA1 are at 2.5 ft and 5 ft, sampled at the 1918 surface soil elevation. Since the exceedances occurred at the 6 ft depth, Weston Solutions confirmed that the plan is to return to RA1 and sample the step-outs with the Geoprobe to the 10 ft. depth.

In response to a question from USACE Baltimore, Weston Solutions explained that soil removal for the step-outs at RA1 would not be performed until an excavation plan is presented to USACE and approved. Excavation permits for those areas would be required, so the extent of the potential soil removal is unknown.

In response to a question from EPA Region III, USACE Baltimore explained that no soil removal for Hg is proposed at RA3 because the original sample appears to be on the sidewalk. The 4x4 sampling grid was set up to find the Hg hotspot, but no Hg exceedances were found.

3. Residential Properties Update

a. Recent Activities

Intrusive Investigations:

- Dec 2018: 4 grids
- Feb 2019: 5 residential properties
- April 2019: 9 residential properties
- June 2019: 12 residential properties
- Sept 2019: revisited 3 previously investigated properties
- Oct 2019: 8 new residential properties and 1 previously investigated property.

b. September 2019 Intrusive Investigations Results

- Two (2) properties revisited to investigate targets located under hardscape (driveway and sidewalk) and one (1) property revisited to investigate target located under tree roots.
- No Munitions and Explosives of Concern (MEC), Material Potentially Presenting an Explosive Hazard (MPPEH), or munitions debris (MD) items recovered.
- All three targets investigated were non-munitions related debris (2 metal pipes, abandoned irrigation line with T-junction, hose clamp, and metallic sprinkler head).

In response to a question from EPA Region III, Weston Solutions confirmed that excavations on the property with the former targets under tree roots and driveway apron are complete. The new concrete driveway apron will be poured today, October 17.

c. October 2019 Intrusive Investigations Results

- Eight (8) new properties to be investigated.
- One (1) previously completed property to investigate property outside of the "area of focus." The property owner requested the entire property be investigated after an MD item was found in the "area of focus."
- Four (4) properties are being revisited to investigate targets located under hardscape & requiring District Department of Transportation (DDOT) permits.
- Intrusive operations began on October 7, 2019 and are expected to be completed the week of October 25, 2019. No MEC/MPPEH recovered as of October 17. Eight (8) MD items found as of October 16. All the MD items were transferred to Edgewood Chemical Biological Center (ECBC) for head-space analysis. Sample results are pending.
- The MD item found on October 15 under a driveway was initially thought to be a live MEC item. The team followed safety protocols and notified CENAB Site Operations Officer (SOO) and the Army EOD Unit at Fort Belvoir was notified by the SOO to be on standby in case they were needed. The item was determined to be empty by the CENAB SOO,, but caked in mud and rust. No explosive or chemical hazard was found, and the item was sent to ECBC for headspace analysis. Fort Belvoir was informed they did not need to respond.

In response to a question from EPA Region III, Weston Solutions confirmed that the MD item was identified as a 75mm target before excavation.

d. Progress Since the August Partner Meeting:

- Seven (7) property owners approved landscape plans, two (2) of which are included in Oct 2019 excavation phase.
- Advanced Geophysical Classification (AGC) Surveys completed at 5 properties (Oct 2019 excavation) and 6 grids in Dalecarlia Woods.
- Began site preparation phase (HD video, planimetric surveys, and landscape appraisals) at 13 new properties.
- Work initiated at 80 of 92 properties.
- Obtaining approvals of landscape plans has been challenging; property owners have not given approvals as quickly as the first group of 26 properties.

e. Current Status of Properties

- Property Availability: due to the lack of available properties, the geophysics team demobilized on Sept 27, 2019. As of Oct 15, 2019, five (5) properties have approved landscape plan. Awaiting additional property approvals to begin next round of vegetation removal/blind seeding and subsequent geophysical surveys.
- Hardscape Excavations: hardscape digs requiring DDOT permits remained at four (4) properties. All permits approved; investigation completed at the properties October 15.
- RA Property Summary (RAPS) Memos: RAPS Memo delivered to USACE/EPA/DOEE. Several RAPS in Draft/Draft Final production.
- Root Cause Analyses (RCAs)/Field Variance Forms (FVFs): no new RCAs/FVFs.

In response to a question from USACE Baltimore, Weston Solutions explained that the total number of completed properties in the Site-Wide Remediation is 34.

USACE explained the team's attempts to engage with a homeowner who refused the removal of vegetation, resulting in 77% pre-calculated survey coverage. The homeowners are pretty adamant that the team can't touch the vegetation. In response to USACE's questions about the comfort level in issuing assurance letters, EPA Region III explained that USACE writes the assurance letters.

USACE Baltimore explained that if a property owner refuses the removal of vegetation, which hinders the property from being thoroughly investigated, a USACE assurance letter cannot be issued. The property owner will have to wait for the Site-Wide RA Closure Report, which will document the entire Site-Wide RA. Some property owners may not allow any investigation on their property at all; the Site-Wide Closure Report could still state that all accessible areas were completed.

USACE Government Affairs Liaison pointed out that all communication with the homeowners concerning agreements with homeowners about the coverage of their properties should be kept on record.

ERT Community Outreach Team confirmed that they are communicating with the homeowners via email.

In response to a question from ERT Community Outreach Team, USACE Baltimore explained that if a homeowner allows less than approximately 85% of the property to be remediated and the house is sold, USACE Baltimore will not go back to the property to remediate the remaining areas.

D. Groundwater Feasibility Study (FS)

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

The U.S. Geological Survey (USGS) conducted purging and sampling of the wells near Kreeger Hall and along Glenbrook Road in August and September. The sampling results were received last week and were distributed to the Partners. The As along Glenbrook Road is no longer above the maximum contaminant level (MCL). The highest detection was 8 parts per billion (ppb). Perchlorate is still present in PZ-4D and MD-44 in front of Kreeger Hall in similar concentrations as in the past.

USACE Baltimore, EPA Region III, and DOEE will schedule a conference call to discuss the sampling data and next steps for Groundwater. Kathy Davies, EPA Region III will be included on the call.

E. Open Issues and New Data

1. Restoration Advisory Board (RAB)/Technical Assistance for Public Participation (TAPP) Consultant:

USACE Baltimore sent one additional candidate resume to the Partners for review. At the last RAB meeting, the RAB expressed concern about the candidate traveling from Wyoming to attend the RAB and Partner meetings. The RAB requested that the firm suggest an alternative candidate, and that the other candidate firm submit a resume for a candidate.

The firm with the Wyoming candidate suggested an alternative candidate that lives in Potomac, MD. The other firm has not submitted a resume yet. USACE Baltimore sent the firm a reminder that a resume was requested by October 14. When the firm responds, USACE Baltimore will forward both resumes to the Partners.

2. Spaulding/Rankin Report:

In response to a question from USACE Baltimore, EPA Region III explained that he received a property report but did not receive a hard-copy of the Spaulding/Rankin report. USACE Baltimore noted that he received the hard-copy Spaulding/Rankin report and requested that EPA Region III notify USACE Baltimore if EPA Region III does not receive the report. A mistake was discovered in a table of the report, so a page-drop will be sent to the Regulators.

3. EPA Region III announced that he will be training a replacement for EPA Region III and bring the replacement to the meetings. EPA Region III expects a 6-month transition phase.

F. Future Agenda Items

1. Groundwater
2. 4825 Glenbrook Road/4835 Glenbrook Road
3. Site-Wide RA

G. Agenda Building

The next meeting was scheduled for Thursday, December 5, 2019.

H. Adjourn

The meeting was adjourned at 12:00.