

Inter-Agency Partners Meeting

| Tuesday, February 25th, 2014 | | | | [**Upcoming Meetings: April ?**] |
|-------------------------------------|---------------------------------------|-----------------------------|--------------------|--|
| TIME | TOPIC | DISCUSSION LEADER | PREPARATION | OBJECTIVE |
| 9:15 - 9:30 | Check-in / Review Ground Rules | S. Anderson-Hudgins | | Introductions of new attendees / Personal check-in / Review Ground Rules |
| 9:30 - 9:45 | Groundwater | T. Beckwith | | New well installation discussion |
| 9:45 – 10:05 | Site-wide RI/FS Update | L. Reeser/ T. Bachovchin | | Discussion on the Table of Contents |
| 10:05 - 10:20 | BREAK | | | |
| 10:20 – 11:20 | 4825 Glenbrook Road | B. Barber/Parsons | | High probability work. Schedule review |
| 11:20 – 11:30 | Open Issues and New Data | S. Anderson-Hudgins | | Comfort Letters |
| 11:30 - 11:40 | Document Tracking Matrix for MMRP/HTW | L. Reeser/ Parsons | Partners Review | Review pending documents |
| 11:40 – 11:50 | Partners' Parking Lot | S. Anderson-Hudgins | Partners Review | |
| 11:50 - 12:00 | Agenda Building | S. Anderson-Hudgins | | ** Future Meeting Discussion |
| 12:00 | Adjourn | S. Anderson-Hudgins | | |

**Spring Valley Partnering Meeting
February 25, 2014
American University Administrative Offices Conference Room**

| Name | Organization/Address | X |
|-------------------------|---|----------|
| Sherri Anderson-Hudgins | CEHNC | X |
| Thomas Bachovchin | ERT | X |
| Brenda Barber | CENAB | X |
| Todd Beckwith | CENAB | X |
| Bethany Bridgham | American University | X |
| Janelle Boncal | Parsons | |
| Jessica Bruland | ERT | X |
| Sean Buckley | Parsons | X |
| Paul Chrostowski | CPF Associates, AU Consultant | |
| Tom Colozza | CENAB | |
| Jennifer Conklin | DDOE | |
| Kathy Davies | US EPA Region 3 | |
| Dr. Peter deFur | Environmental Stewardship Concepts/RAB TAPP Consultant | X |
| Diane Douglas | DDOE | |
| Bill Eaton | URS | |
| Brandon Fleming | USGS | |
| Clem Gaines | CENAB, Public Affairs | |
| Alma Gates | RAB Member - Horace Mann Rep. | |
| Steve Hirsh | US EPA Region 3 | X |
| Leigh Isaac | Environmental Stewardship Concepts | |
| David King | CENAB | |
| Carrie Johnston | RCAI - Community Outreach Team | |
| Dan Noble | CENAB | X |

| | | |
|---------------------|--|----------|
| John Owens | CENAB | |
| Randall Patrick | Parsons | X |
| Lan Reeser | CENAB | X |
| Amy Rosenstein | Risk Assessor (Independent Consultant) | |
| Allen Shapiro | USGS | |
| Don Silkkenbaken | Parsons | |
| Kent Slowinski | ANC3D Commissioner | |
| Jim Sweeney | DDOE | X |
| Andrea Takash | CENAB, Public Affairs | X |
| Tenkasi Viswanathan | CENAB-WA | |
| Cheryl Webster | CENAB | |
| Ethan Weikel | CENAB | |
| Nan Wells | ANC3D Commissioner | X |
| Maya Werner | ERT | |
| Kellie Williams | CEHNC | X |
| Laura Williams | Environmental Stewardship Concepts | |
| Bruce Whisenant | CEHNC | |
| Rebecca Yahiel | ERT - Community Outreach Team | X |
| Doug Yeskis | USGS | |

Summary of February 25 Spring Valley Partnering Meeting (Conference Call)

Consensus Decisions

- No consensus decisions were made.

February 25, 2014 Action Items

- USACE will continue coordination with homeowners to finalize the location (and to minimize damage to associated landscaping) where MP-5 will be installed.

Friday, February 25, 2014

Check-in

The Partners conducted their normal check-in procedure.

A. Groundwater Study Efforts

The goal of this segment of the meeting was to provide an update on ongoing and upcoming groundwater study efforts.

USACE provided a brief update on the status of upcoming groundwater study efforts.

Additional Deep Wells: Two additional wells are planned to provide additional vertical delineation of groundwater. MW-46 will be installed close to Sibley Hospital. MP-5 will be installed between MP-3 and MP-4 (tentatively on DC property, in the public space “island” at the intersection of Indian Lane and Rockwood Parkway).

[Preliminary details of the funding and planning process were provided at the August, October, and December 2013 Partnering meetings. Work plan addendum contents closely resemble those completed for previous deep well installations.]

Preparations for these new well installations are underway. The work plan addendum was recently reviewed by the Partners, with revisions, concurrence, and finalization anticipated upon final selection of the MP-5 installation location. Well installations will tentatively be conducted as early as Spring 2014, pending receipt of the public space permit and pending Partner concurrence.

Quarterly Sampling: Two existing groundwater monitoring wells and surface water monitoring locations were selected for more frequent quarterly sampling in addition to the semi-annual sampling events, based on historically high perchlorate detections.

PZ-4S/D and the Sibley Sump were both sampled in July 2013. [Details of the sampling effort were provided at the October 2013 Partnering meeting. The updated groundwater sampling map and the validated analytical data table were provided electronically to the Partners. Sampling results were generally consistent with previous sampling rounds, and these validated analytical results were shared with the RAB at the November 2013 RAB meeting.]

The next quarterly sampling event is tentatively scheduled for March 2014.

Semi-Annual Sampling: Selected existing groundwater monitoring wells and surface water monitoring locations are currently being sampled twice annually, as part of the extended groundwater monitoring program. These locations include a total of 20 shallow and deep wells and 10 surface water locations.

The first semi-annual sampling event began in late April 2013 and was completed by mid-May 2013. [Details of the sampling effort were provided at the May 2013 Partnering meeting. Hard copies of the updated groundwater sampling map and the validated analytical data table were provided at the August 2013 Partnering meeting. Sampling results were generally consistent with previous sampling rounds, and these validated analytical results were shared with the RAB at the November 2013 RAB meeting.]

The second semi-annual sampling event began in early December 2013 and was completed by mid-December 2013. Preliminary sampling results were generally consistent with previous sampling rounds, and selected results (for the AU campus) are summarized below. Data validation is currently underway. Validated sampling results will be shared with the Partners electronically in early March 2014.

- **AU Campus** – Three sampled wells represent five different depth intervals in front of Kreeger Hall. Perchlorate concentrations included 6.75 ppb at PZ-4S, 39.8 ppb at PZ-4D, and 40.2 ppb at MW-44 (all consistent with previous results). At MW-45S/D, which has been sampled three times to date, perchlorate concentrations were generally consistent (1.28 ppb and 5.3 ppb, respectively) compared with the initial sampling round (3 and 6 ppb, respectively).
- **Consistency of Results:** USACE is investigating the possibility that the May 2013 samples for PZ-4S/D and MW-45S/D may have been inadvertently switched prior to laboratory analysis, in which case the recent sampling results (perchlorate concentrations generally consistent with

previous results excluding the May 2013 sampling event) may be truly representative of the groundwater at these locations.

- As described at the August 2013 Partnering meeting, the May 2013 quarterly sampling results included an apparent increase in perchlorate concentrations at MW-45S/D as well as an apparent decrease in perchlorate concentrations at PZ-4S/D. These variations were unexpected when compared to the previously generally consistent sampling results.
- All prior sampling events were conducted by URS, while the May 2013 semi-annual sampling event was conducted by USACE's in-house field sampling crew. During the December 2013 semi-annual sampling event, USACE made sure their in-house crew correctly distinguished between PZ-4S/D and MW-45S/D.
- Upcoming sampling results (from the March 2014 quarterly sampling event and the June 2014 semi-annual sampling event) will provide additional data to assess whether groundwater at these locations truly vary or whether they remain consistent with all sampling events prior to May 2013.

The third semi-annual sampling event is tentatively scheduled for June 2014.

Site-Wide Groundwater RI Report: USACE and the groundwater contractor URS have begun planning for the site-wide groundwater RI report. Receipt of the risk assessment draft work plan from URS is anticipated soon, to be followed by Partner discussion of RI report preparation details.

Discussion – Planned Installation Location for MP-5

USACE provided a brief update regarding the planned installation location for MP-5.

During a recent conference call (which served as the December 2013 Partnering meeting), the Partners discussed a recent homeowner concern regarding the planned installation location for MP-5 (in the public space “island” mentioned above). In summary, several neighboring residents have personally maintained the landscaping on the public space “island” using their own money, time, and efforts. The homeowners expressed concern about potential disturbance to the landscaping during the well drilling and installation process. USACE has communicated back and forth with these residents and continue to work with them on this topic, with the goal of minimizing damage to the landscaping.

Subsequently, an informal discussion was held on-site at the public space “island” among several interested parties, including a neighboring resident, USACE, DDOE, Nan Wells (ANC3D Commissioner), and Tom Smith (ANC3D Commissioner and RAB Member).

During the on-site discussion, USACE agreed to consider alternative installation locations for MP-5 that will still meet the project objectives. Potential locations were limited to an area between existing deep wells MP-3 and MP-4, as well as down gradient of the AU campus perchlorate plume and existing deep well MP-2. URS conducted an analysis of each residential property within this area to identify features that would interfere with well drilling, such as large trees, landscaping, retaining walls, and steep slopes. All unsuitable properties were eliminated from consideration.

USACE contacted a total of three residential properties that were identified as viable options for installation of MP-5. Of these property owners, two responded with an emphatic “no” while the third indicated they might be ok with this effort on the public space that blends with their lawn. Well installation would be conducted in the large grassy front yard, followed by landscape restoration which is unlikely to match the surrounding lawn and may result in complaints from neighboring residents. Community Outreach already contacted the homeowner to discuss this potential restoration issue, and follow-up resolution is pending.

USACE would agree to install MP-5 at this 4900 block of Indian Lane property, pending homeowner concurrence and resolution of the restoration concern described above. Alternatively, if the homeowner

does not wish to have the well located in front of their home, then USACE intends to pursue installation of MP-5 in the public space “island” as previously planned.

Nan Wells, ANC3D Commissioner, briefly described why the proposed well installation location is problematic. This is a very attractive location covered with grass and adjacent to large mature trees, and the entire public space “island” is regarded as a very nice feature in the neighborhood.

USACE further explained that the adjacent resident expressed concern regarding the difficulty of growing and maintaining grass in this location. The public space “island” is officially city space belonging to DC, but the residents have spent a significant amount of effort in maintaining and watering the grass to ensure continued growth.

EPA commented that the public space “island” appears to be a good spot for well installation. In response to EPA’s inquiry, USACE clarified that although landscape disturbance is not a greater concern for the public “island” grass compared with a residential front lawn, they had agreed to consider alternative locations for well installation. If the 4900 block of Indian Lane property owner concurs, then MP-5 will be installed in their front yard, as long as this location satisfies groundwater study objectives. Otherwise, USACE will default to installing MP-5 on the public space “island” grassy area, assuming DDOE grants the permit.

N. Wells noted that the surrounding homeowners paid for all of the curbing around the grassy portion of the public space “island” along with all of the grass maintenance and watering costs. Apparently this location is very difficult to restore, and based on the length of time required to establish the grass cover, it may take two years for the grass to reach its current condition. She expressed concern regarding USACE’s plan to stage the drill rig on the grassy portion of island, near the MP-5 installation location, instead of staging the drill rig on the adjacent street surface.

N. Wells mentioned that she had suggested another location for MP-5 installation within the area analyzed by URS. She briefly described this area as a complex site. This area is northwest of the public space “island” and is largely unoccupied by residents, with a steep grade and tunnels that shift the flow of surface water. A stream flows through tunnels underneath the roads and then surfaces again. There is an unoccupied residential property that may be appropriate for well installation.

N. Wells expressed her hope that MP-5 installation will not damage the roots of adjacent large trees. She was told by someone with landscaping knowledge that this could occur, but she is not qualified to support the accuracy of this statement. She emphasized the considerable amount of money, time, and effort spent by several neighbors in maintaining the landscaping.

USACE responded that as a result of URS’s analysis of potential alternative locations, and the subsequent contact with property owners of suitable well installation locations, only one property owner indicated they may be willing to allow access for well installation in their front yard. If the property owner chooses not to support this decision, then USACE would like to pursue the originally identified location on the public space “island.” Ultimately, the final decision regarding the public space “island” will be made by DC, who will either approve or reject the permit application for installing MP-5. EPA added that DC personnel may be willing to monitor and ensure regrowth of grass in this location.

N. Wells mentioned that the neighbors requested a convenient source of water to assist in the landscape restoration process. Specifically, the residents may be willing to support MP-5 installation and subsequent landscape restoration on the public space “island” if DC can provide a water source, due to the length of time previously required to cultivate and restore the grass in that location.

DDOE explained that in this scenario, DC Water would be the agency responsible for installing a water source on the public space “island,” but the appropriate department responded negatively for several reasons. Installation of a water source on the “island” would require significant logistical efforts including temporary street closure for several days, staging a backhoe on the grassy area, and excavation to connect to the water main utility that is on the other side of the street. This effort would damage the grassy area in

a similar fashion to the drill rig during MP-5 installation, and there are no guarantees that DC Water would attempt to restore the grassy landscaping. This scenario would also set a precedent that DC Water is unlikely to be satisfied with. If a water spigot is installed for one neighborhood, many other neighborhoods may request the same feature, thus introducing a public relations issue. The spigot would be metered, and the residents would almost certainly have to pay for water usage, and ultimately there is no guarantee that residents will use the water source.

N. Wells emphasized that residents must receive assurance that the neighborhood will not lose the enormous trees, as this landscaping is an important feature in the neighborhood, and she would need this assurance in writing.

USACE confirmed that MP-5 installation was planned in the small grassy portion of the park, outside of major root zones.

Dr. P. deFur noted that impacts to adjacent trees depend on what tree species are present. Based on the photographs, many (if not all) of the trees would have root zones extending outward to the same distance as the canopy. A tree with foliage extending 30 feet from the trunk would typically have a root zone that also extends 30 feet outward. N. Wells commented that she has learned more about horticulture from aspects of the Spring Valley project. DDOE suggested contacting an arborist to assess the potential impacts on mature trees, and EPA acknowledged the desire for assurances that these trees will be preserved.

In response to EPA's inquiry, USACE confirmed that MP-5 will be established as a multi-port well, with blank flute liner installation followed by down hole geophysics. The outer well diameter will be 8 inches.

N. Wells asked how long the well installation process will take to complete. EPA replied that the process is fairly lengthy. USACE explained that drilling will require approximately two to three days, and follow-up activities will require approximately one week, similar to activities completed at previously-installed deep wells. These activities include blank FLUTE liner installation and down hole geophysics, decision-making by the Partners and groundwater experts, and installation of the ported FLUTE liner, to be followed by sampling.

N. Wells asked how long the well installation process will take to complete. EPA replied that the process is fairly lengthy. USACE explained that drilling will require approximately two to three days, and follow-up activities will require an additional two days, including blank FLUTE liner installation and down hole geophysics. Once a final FLUTE liner design is approved by the Partners, the final FLUTE liner will be installed, approximately 45 days after the drilling is complete.

N. Wells noted that the neighbors would not mind temporary one-way traffic while one side of the split road is shut down. Commuters would likely use another route to cut through the neighborhood.

USACE-Huntsville commented that grass growth and maintenance is likely difficult due to the amount of shade received by this portion of the "island" and suggested planting shade-loving ground cover, such as 'Variegated Pachysandra' which would not require mowing or other time-consuming maintenance.

EPA briefly summarized the current status of this issue. MP-5 may be installed at the 4900 block of Indian Lane property as long as this alternative is perfectly acceptable to the property owner and in the context of groundwater study objectives. If this alternative is not acceptable, then USACE will collaborate with the residents to ensure the public space "island" location is acceptable to all parties. Partner concurrence was obtained for this path forward.

USACE confirmed that they intend to install MP-5 directly between existing deep wells MP-3 and MP-4, if possible. EPA mentioned that if the location of MP-5 was offset from the straight line connecting MP-3 and MP-4, then groundwater elevation contours could be drawn or modeled after sampling the wells. These groundwater contours are not produced for a small set of wells established in a straight line.

In response to N. Wells' inquiry, USACE clarified that the well installation would be proposed somewhere in the front lawn of the 4900 block of Indian Lane property, but not necessarily in the center. Regardless of the location, a patch of grass will be temporarily damaged and require restoration.

N. Wells suggested that a tree could be planted in that location. USACE responded that the restoration details would be up to the homeowner.

USACE commented that at least one resident in the neighborhood will probably be unhappy regardless of the final location. EPA commented that in this scenario, at least the resident(s) will be unhappy about something that is not their own front lawn.

In response to N. Wells' inquiry, USACE explained that the opposite end of the public space "island" was ruled out as a possible well installation location due to the risk of damaging numerous utilities in that location, aside from the presence of mature trees.

Discussion – Semi-annual Sampling Results

Dr. P. deFur asked how much information is available with respect to the groundwater residence and renewal times in these AU campus wells, such as how long it takes for rainwater to percolate into the groundwater and how long it takes for upgradient water to flow through the well. USACE responded that PZ-4S/D and MW-45S/D are small wells with a 1-inch diameter, and it takes quite a while to obtain sufficient groundwater sample volumes. A couple of these intervals have larger fracture zones, and are thus a little more productive with slightly quicker recharge times. Detailed groundwater recharge information for these wells was not available for reference during the meeting. Dr. P. deFur added that different screened intervals would receive different pulses of groundwater with different perchlorate concentrations.

USACE commented that the primary problem is that these sampling locations represent two sets of nested wells (PZ-4S/D and MW-45S/D) which in turn are situated very close together. Some confusion between PZ-4S/D and MW-45S/D was noted during conversations with the in-house field sampling crews. It is entirely possible that separate groundwater pulses were measured in different screened intervals, as Dr. P. deFur suggested, but USACE also spoke with their in-house field crews to ensure everyone correctly distinguishes between PZ-4S/D and MW-45S/D during future sampling events.

USACE emphasized that only a single perchlorate detection at PZ-4S was above the 15 ppb perchlorate drinking water standard. This is considered an anomaly rather than a data point of concern.

In response to Dr. P. deFur's inquiries, USACE replied that the MW-45S and MW-45D groundwater samples were collected from depths of around 120 feet and 150 feet, respectively. PZ-4S and PZ-4D sampling depths are much shallower at around 40 feet and 55 feet deep, respectively. The sampling depth for MW-44 is around 90 feet deep, between the other well depths.

N. Wells inquired about the lack of an established standard for perchlorate in groundwater, and the range of allowable perchlorate concentrations. EPA replied that their agency's interim drinking water health advisory level of 15 parts per billion (ppb) only indicates perchlorate levels of concern in drinking water. USACE added that the 15 ppb advisory level was established around 2005.

Dr. P. deFur and EPA briefly described the range of perchlorate advisory levels across the country, in comparison to the federal advisory level of 15 ppb. Some states chose to establish levels as low as 1 or 2 ppb, which is not necessarily supported by good-quality scientific data, and is unlikely to be supported by some toxicologists. Other states have established levels approaching or exceeding 15 ppb.

In response to N. Wells' inquiry, EPA clarified that perchlorate is commonly found in the Potomac River and many other water sources. Tom Jacobus of Washington Aqueduct closely monitors the perchlorate levels in District drinking water, and existing perchlorate concentrations do not present a concern.

EPA asked whether USACE is planning to prepare a Feasibility Study (FS) for site-wide groundwater. USACE responded that the need for an FS will depend on the Groundwater RI report conclusions.

USACE confirmed that the HHRA (within the Groundwater RI report) will evaluate the hypothetical use of Spring Valley groundwater as a future drinking water source (focusing on risks of perchlorate and arsenic contamination in the groundwater). Based on elevated perchlorate levels documented to date, the HHRA conclusions and the RI report results may warrant evaluation of cleanup alternatives in a Groundwater FS.

Next Steps

USACE will continue coordination with homeowners to finalize the location (and to minimize damage to associated landscaping) where MP-5 will be installed.

B. Site-Wide RI/FS Update (HHRA Work Plan; RI Table of Contents)

USACE-Baltimore and ERT provided a brief update on the current status of the HHRA Work Plan and the draft structure of the RI Table of Contents.

Previous Documents: [This information was not presented during the follow-on meeting, and is summarized for reference purposes.]

- **Review of pre-2005 human health risk assessments (HHRAs)** is one of the key issues identified in the site-wide evaluation document, *Evaluation of Remaining Sampling Requirements*, which was finalized in July 2012. Details of the finalized site-wide evaluation document were described at previous Partnering meetings.
- The **Pre-2005 HHRA Review Document** was finalized in August 2013 and addresses the key issue mentioned above. Details of the document structure, contents, and associated maps were described at the August 2013 Partnering meeting, the July 2013 On Board Document Review meeting, and previous Partnering meetings. Using an elaborate step-by-step screening assessment process, the purpose of this document was to re-evaluate sampling results (from a total of 5 previously-completed HHRAs and subsequent AUES parameter sampling, more recent miscellaneous grab samples associated with anomaly investigations, and recent supplemental soil sampling) to determine whether the associated conclusions remain protective of human health, based on updated screening criteria. The report also identifies areas new Exposure Units (EUs) that may require additional risk screening (e.g., actions such as supplemental soil sampling) and possible risk assessment. Depending on the results of follow-on risk screening and evaluation, one or more EUs may require full separate HHRAs, which will be included in the site-wide Remedial Investigation (RI) report.
- **Final Addendum to the Pre-2005 HHRA Review Document:** This addendum was recently finalized and hard copies were mailed yesterday to the Partners, with receipt anticipated today (December 20). Details of the document structure, contents, and associated maps were described at the October 2013 and previous Partnering meetings. The purpose of this addendum is to ensure compatibility between EU size and the exposure scenario being evaluated. In summary, a follow-on screening process was conducted to address outlier locations (in order to ensure that the identified EUs do not dilute higher concentrations over a larger area) and to determine which EUs truly require further evaluation and formal risk assessment. Follow-on screening was conducted for a total of 13 EUs. Most EUs were not recommended for further action because the follow-on screen demonstrated that these areas will not pose future human health risks. A total of three formal HHRAs are recommended for the following EUs: AOI 9, Spaulding-Rankin, and Southern AU.
- **Final HHRA Work Plan:** This work plan was recently finalized and describes in detail the process for completing formal HHRAs for each EU (AOI 9, Spaulding-Rankin, and Southern AU). Details of the document structure and contents were described at the December 2013 Partnering meeting. In summary, the work plan contains standard USEPA risk assessment

activities and procedures, which include the “nuts and bolts” of performing a quantitative HHRA for each of the identified EUs. The work plan also elaborates on the connection and context in which each risk element (including the formal HHRAs for each EU) will be incorporated into the Site-Wide RI report; depending on the type of risk information, this may take the form of discussion, summarization, excerpts, and/or appendices. Along with the formal HHRAs for each EU, additional risk elements are listed briefly in the work plan, and include the **Ecological RA** (previously completed), the **Munitions and Explosives of Concern Hazard Assessment (MECHA)** (recently completed), **Groundwater RA** (to be prepared as a subset of the ongoing Site-Wide Groundwater RI report), **external health-related reports** (previously completed or in preparation by other agencies), **arsenic-contaminated soil that potentially remains underneath DC streets** (to be discussed as appropriate), and **historical derivation and protectiveness of the 20 ppm arsenic cleanup level** established for the Spring Valley FUDS (to be discussed).

Path Forward: Preparation of the draft formal HHRAs for each EU (AOI 9, Spaulding-Rankin, and Southern AU) is underway. Submission of each HHRA for review is anticipated in early March 2014. Upon finalization, each HHRA will be incorporated into the risk assessment section of the Site-Wide RI report (Section 7: Risk Assessment).

Site-Wide RI Report: Preparation of the Draft Site-Wide RI report is underway, with submission for review anticipated in March 2014. An overview and discussion of the report’s table of contents (TOC) is provided below.

Table of Contents (TOC) for the Site-Wide RI Report: The purpose of this update was to share with the Partners what they should expect to see with respect to the overall organization and contents of the Site-Wide RI report. The detailed TOC for the Site-Wide RI report is currently being developed and was shared with the Partners electronically in January 2014. Most Partner comments were received, and feedback from EPA and DDOE is pending, to aid in further preparation of the Draft Site-Wide RI report.

Guidance for TOC Preparation: The document’s structure reflects USEPA and U.S. Army expectations for preparation of an RI/FS. These requirements are outlined in two primary guidance documents:

- The USEPA’s **Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA** represents the classic standardized guidance for RI/FS documents. This guidance was released by the USEPA with “interim final” status in October 1988.
- The U.S. Army’s **Military Munitions Response Program (MMRP) guidance** was developed relatively recently and was finalized in 2009.

During initial preparation of the Site-Wide RI report structure, ERT and USACE ensured that the report contents lined up with the expectations outlined in these guidance documents, while accounting for any differences between the two sets of expectations. A table summarizing these expectations and the corresponding sections of the draft RI report was briefly presented and provided to the Partners.

The introductory sections generally line up nicely with the expectations outlined in the guidance documents. One primary difference is the U.S. Army’s emphasis on incorporating language related to conceptual site models (CSMs), preliminary remediation goals (PRGs), remedial action objectives (RAOs), and associated information. Both the U.S. Army and the USEPA include discussion of RAOs in the final conclusions portion of the document.

Proposed TOC: All proposed sections, subsections, chapters (within subsections), and appendices were outlined in a table along with brief descriptions and comments pertaining to each section.

- **Section 1 (Introduction)** is one of the most important portions of the report because it will provide an overview of the Spring Valley FUDS project, including the site description, historical information, and delineation of the site into specific areas for investigation. These areas include the FUDS boundary, POIs, AOIs, the range fan, and munitions response sites (MRSs). Previous site activities will be presented in an activity-based narrative format, with a flowing discussion

that incorporates key activities such as the initial investigation and characterization, follow-on investigations and characterizations, geophysical investigations, and removal actions.

- **Section 2 (Physical Characteristics of the Study Area)** will provide a ‘big picture’ view of regional site characteristics with some emphasis on important local features and key tools that were used during investigations. The purpose of this section is to provide upfront descriptive information and terminology that will support site-specific discussions and conclusions later in the report. Components will include surface features (ground scars, cut and fill, and GIS usage), meteorology, surface water hydrology, geology, soils (particularly local saprolite), hydrogeology (local groundwater depth and flow direction, as excerpted from the Groundwater RI report), demography and land use, and ecology.
- **Section 3 (Remedial Investigation Objectives and Preliminary CSM)** will discuss project elements of particular importance to the U.S. Army MMRP personnel, including the RI objectives, the preliminary CSMs, and the data needs and data quality objectives (DQOs). Many discrete investigations with their own work plans, DQOs, and CSMs have been completed over the years, representing various portions of the Spring Valley FUDS.
- **Section 4 (Remedial Investigation Field Activities)** will discuss how field work efforts were conducted, with an activity-based format and with emphasis on key investigation and characterization activities. Examples include soil sampling, geophysical surveys, anomaly removals, groundwater sampling, excavation and backfill procedures, and phytoremediation. Topics of particular interest will be highlighted, such as the evolution of geophysical technology and geophysical data interpretation over time, including the replacement of previous geophysical data classifications and implementation of the current anomaly classification scheme.
- **Section 5 (Remedial Investigation Results)** is the core of an RI report. The overall purpose of this section is to describe the nature and extent of contamination as determined by numerous previous investigations at the site. Specifically, this discussion will summarize the investigation results drawn from a list of key finalized reports (as presented in Section 1, which provides an organized structure for tracking the investigation results). Other ‘big picture’ components will also be discussed, including disposal of finds (e.g., use of the Controlled Detonation Chamber and the Explosive Destruction System) and overall data quality assessment (e.g., data usability and data validation). This section will also explain whether the RI findings confirm the preliminary CSMs that were presented in Section 3 and, where applicable, introduce revised CSMs that more accurately depict the findings and any changes that may have occurred over time.
- **Section 6 (Contaminant Fate and Transport for MC)** will summarize potential contaminant sources, contaminant persistence (with emphasis on arsenic as well as significant chemicals other than arsenic), and contaminant migration (including potential routes, influential factors, and different environmental media). This section will focus on and discuss each major potential contaminant associated with the site, regardless of whether that particular contaminant presented concerns during remedial investigation activities. References will include the AUES Chemical Parameters Report, which was released in November 2008 and provides good information on chemical and physical properties of individual chemicals, as well as other published sources. Residual groundwater contamination will be discussed based on the contents of the Groundwater RI.
- **Section 7 (Risk Assessment)** will summarize all topics that are related to risk. These include previously-completed discrete standalone HHRAs (such as 4835 Glenbrook Road, the AU Campus Public Safety Building, and Lot 18) as well as newly-prepared quantitative HHRAs for a total of three EUs (AOI 9, Spaulding-Rankin, and Southern AU). Arsenic remaining in place (under city streets or by agreement with property owners) will be summarized, along with the derivation and protectiveness of the 20 ppm cleanup level, current information on bioavailability,

and the new USEPA toxicity value for arsenic. This section will also summarize other risk-related elements including the MEC HA, the Ecological RA, the Groundwater RA, and external studies completed by Johns Hopkins University (JHU) staff and the Agency for Toxic Substances and Disease Registry (ATSDR). The uncertainty portion of Section 7 will discuss sampling sufficiency, potential for remaining burial areas (such as the area beneath the AU Campus Public Safety Building), and DGM uncertainties.

- **Section 8 (Summary and Conclusions)** will summarize all information and results that were presented in Sections 1 through 7, with emphasis on HTRW/MC/CWM and MEC in the context of nature and extent of contamination, risk assessment, fate and transport, and hazard assessment. This section will also describe the overall conclusions of the RI report, including data limitations and recommended RAOs. Although both guidance documents include a suggested header focused on recommendations for future work, this section may satisfy reviewer preferences by limiting this discussion to generalized recommendations. The subsequent Site-Wide Feasibility Study document will elaborate on the detailed recommendations and individual remedial alternatives to meet the RAOs. For example, this section of the RI report may identify the need for additional geophysical surveys within the Spring Valley FUDS boundary, while the FS would identify specific areas or properties where further geophysical investigation is recommended.
- The list of **appendices** is still in development, and additional appendices will likely be identified during preparation of the draft RI report text. Components will include site figures that complement the text; a selection of risk assessments (including the previous HHRAs, Eco RA, current HHRAs, MEC HA, and Groundwater RI/RA); and documented agreements (such as signed AOI and ARB memoranda, comfort letters, and Partnering agreements). Additionally, key large reports will be made available electronically (via CD/DVD or a Google site link) as a separate volume of the appendices. The goal is to include all essential previously-completed reports without incorporating literally all of the hundreds of reports that have been produced over the past two decades.

Discussion – Table of Contents

ERT mentioned the importance of ensuring Partner familiarity with the proposed document contents and obtaining Partner concurrence on the proposed subsections during design of the draft RI report.

EPA suggested that Section 1 (Introduction) should discuss the relationship between upcoming decisions for the site (in the Site-wide RI, FS, and DD) and the previous decision outlined for the Spring Valley FUDS. This “no further action” determination was established (but never finalized) in the June 1995 Record of Decision (ROD). ERT agreed that this topic should not be glossed over, and confirmed that it will be discussed in Section 1 as part of the background information on previous site activities, findings, and conclusions.

EPA emphasized the importance of discussing the CSM for 4825 Glenbrook Road in Section 3 (Remedial Investigation Objectives and Preliminary CSM). Even though this property has been split out into a separate project within the Spring Valley FUDS, the associated information is an important piece of the Site-Wide RI report discussion and therefore must be included. ERT agreed to weave this topic into the text using a broad general context; for example, conditions at 4825 Glenbrook Road can be referenced when discussing the overall nature of a chemical release from burial pits. EPA provided another example, where a complete picture of local soil and groundwater conditions must include both the monitoring wells along Glenbrook Road and the arsenic soil removal completed at 4825 Glenbrook Road.

ERT confirmed that the CSM for 4835 Glenbrook Road will also be discussed in the RI report. Nothing of relevance will be left out of the text.

EPA and USACE agreed that the Site-Wide DD will serve as the decision-making document for both residential properties adjacent to the 4825 Glenbrook Road site (specifically, 4835 Glenbrook Road and 4801 Glenbrook Road).

Dr. P. deFur asked whether Section 4 (Remedial Investigation Field Activities) will include detailed discussion of some procedures highlighted during the presentation. For example, considerations were made for which signals the ground penetrating radar (GPR) equipment had to reject during data collection. ERT responded that the goal is to provide the reader with a basic understanding of how these efforts were conducted, including the use of different technologies and interpretation of geophysical data. Although the intention is not to reproduce or rewrite existing reports, the Section 4 discussion is largely a compilation of many efforts conducted over many years. This discussion will emphasize the rationale for using specific techniques and the rationale for revising and updating specific procedures over time.

ERT mentioned that discussion of groundwater risks within Section 7 (Risk Assessment) will heavily reference the full Groundwater RA (which will be included as an appendix to the draft RI report). The timing for integrating this information into the RI report will depend on the Groundwater RI report preparation schedule.

Discussion – Path Forward

USACE confirmed that the draft RI report text is currently in preparation, and comments on the proposed TOC were received from USACE-Huntsville, Dr. P. deFur, and AU. Feedback is requested from EPA and DDOE.

EPA noted that he does not have preferences regarding which section contains which information, as long as all of the pertinent information is included in the report.

Dr. P. deFur added that upon report completion and finalization, the public will rely on the RI/FS as the record of all Spring Valley project activities. He agreed with EPA's perspective that the document must be complete, not to the extent of including every single detail written previously, but to the extent that all information is included. If a particular aspect of the report or a previously finalized document is too large for the main text, then perhaps it can be included as an appendix to the report.

EPA suggested that the existing Administrative Record should include either an electronic or hard copy of the Draft RI report and the appendices. This is important because website links (such as the proposed Google site link) can be easily broken. In response to ERT's inquiry, EPA confirmed they would like to see a CD/DVD containing the appendices, to be included in the back of the official hard copies. A smaller simpler version could be prepared for the benefit of public members with a casual interest in the project.

ERT agreed with EPA's perspective and with USACE's point that a Google site link would not be useable for members of the public who do not have internet access. Current plans include providing all large key reports (which served as references for the Draft RI report) on CD/DVDs, which will be included with the Draft RI report hard copies (one disc per hard copy).

ERT also noted that two versions of the hard copy may be produced. One version would contain the Draft RI report and Appendix A (Figures), which comprise the information that most individuals would like to see. The other version would contain additional appendices, for the benefit of those who are interested in the details of previous activities at the site. The total number of CD/DVDs necessary to provide sufficient public accessibility remains to be determined.

Dr. P. deFur noted that official project documents are created in various electronic formats, and asked if USACE plans to update and transfer those documents into current formats when the existing formats are phased out of use. USACE confirmed that their agency maintains a centralized database called FUDSMIS (Formerly Used Defense Sites Management Information System), which contains up-to-date information on all FUDS projects and properties nationwide. The database is electronic but is physically stored at Rock Island Arsenal. All relevant documents must be stored in this database, and FUDSMIS personnel are responsible for updating the database as document formats change over time.

EPA added that their agency maintains a similar data management system to ensure all necessary information remains available and accessible. With respect to the Spring Valley project, EPA is primarily concerned with closeout documents rather than planning documents, and EPA does not have digital copies

of every document that has been generated for the site. Essentially, USACE should have every single project document that has been produced, while EPA should have every project document that led to a decision for the site. The Partners will continue to adapt to changes in document formats over time.

EPA commented that the overall TOC structure looks good. Everything that is considered really important is currently included in the TOC and accompanying notes. USACE responded that this was a good discussion that resulted in good feedback.

USACE stated that, with EPA's permission, the TOC review is now considered complete. EPA concurred.

DDOE emphasized the importance of mentioning their agency's independent review of the site, which was conducted after the 1995 Record of Decision (ROD) for Spring Valley, and the importance of including these documents in the Administrative Record. In their 1997 report, the DC Health Department and their contractor ATSDR identified a list of issues focused on four major areas, which prompted USACE to evaluate these results and conduct additional investigation as needed. ERT confirmed that although these previous reports will not be rewritten, the draft RI report is designed to lay each of them out in context and tell a story about where they fit into the overall picture. USACE further confirmed that these documents will be included in the Administrative Record as well as discussed within the RI report.

Dr. P. deFur commented that the Draft RI report will be substantial, and asked if the entire document will be submitted for draft final review (reflecting the typical review process) or will sections of the report be released separately over time for sequential draft final reviews. USACE replied that the internal draft review process will focus on a nearly complete, or as complete as possible, internal draft. USACE will then speak with the FUDS program chain of command to inquire how the document should be released to the Partners for review. The U.S. Army may prefer to release the entire report for Partner review only after they have concurred with the entire document. Alternatively, separate report sections may be released for Partner review as soon as U.S. Army concurrence is received for that particular section. Upon receipt of Partner concurrence on comment responses, a similar review schedule may be appropriate for the RI report's formal public comment review period.

USACE suggested that a separate review for Section 7 (Risk Assessment) might be appropriate since this section is on a slightly different track from the rest of the document. ERT confirmed that Section 7 will be provided separately, as early as next week. USACE and ERT confirmed that Section 7 will still be reviewed separately by the U.S. Army, including the Center of Expertise (CX) and the Public Health Command (PHC, formerly referred to as USACHPPM).

USACE briefly summarized the Partner consensus that no important information will be left out of the Draft RI report, and this will reduce disagreements during later stages of the decision-making process.

EPA inquired about the potential implications of the upcoming Draft ATSDR Health Consultation for 4825 Glenbrook Road. EPA asked how the ATSDR document conclusions will impact the RI report conclusions, if ATSDR recommends activities other than following up on health concerns, such as additional environmental monitoring. USACE explained that although they do review project-related documents released by outside agencies, the ATSDR document will not make recommendations for further sampling. Any decisions or recommendations made in the ATSDR document are not expected to impact the RI report conclusions.

USACE mentioned that ATSDR did not provide a helpful document status update during recent e-mail communication (earlier this week). ATSDR simply shared that the document is still under internal review and they have not established a schedule for completing the review process. Dr. P deFur noted that ATSDR is criticized nationwide due to this type of response and lack of planning. The Partners briefly reflected on the document's lengthy internal review status (exceeding one year) and the issues and delays associated with agency reorganization.

C. 4825 Glenbrook Road Remedial Action Update

The goal of this segment of the meeting was to discuss the decision-making process and the ongoing remedial action for the 4825 Glenbrook Road site.

USACE-Baltimore and Parsons provided an update on the high-probability remedial activities in progress at the 4825 Glenbrook Road site. Site progress photographs and maps were briefly reviewed.

Overview of Completed Efforts to Date:

- Details of previously-completed efforts, including house demolition and low-probability site preparations, were presented at the December 2012 and January 2013 Partnering meetings.
- Details of initial low-probability efforts, during which no AUES-related items were found, were provided at the March/April 2013 Partnering meetings.
- Details of high-probability site preparations were provided at the March/April/May/June/August 2013 Partnering meetings. Details of recent AUES-related debris findings during these site preparations were presented at the May 2013 Partnering meeting.
- Details of final high-probability site preparations (personnel training, tabletop activities, and pre-operational surveys) were provided at the October 2013 Partnering meeting.
- High-probability excavation began in Area F once all of these preparations were completed, and is currently underway. December 19 marked the last day of intrusive work during calendar year 2013, and high-probability excavation resumed on January 8, 2014, immediately following the winter holiday season.

High-Probability Excavation (Area F): Removal of high-probability soil continued in Area F, in the front yard of the site, and is currently progressing southward toward the neighboring 4801 Glenbrook Road property. Completed excavation depths to date range from 2 to 6 feet below ground surface (bgs). Upcoming excavation will continue to reflect a depth of 6 feet to prevent unintentional creation of sloping or benching hazards within the ECS footprint. Remaining hardscape such as the front foundation wall will also be removed as excavation progresses.

To date (as of February 19), a total of 288 cubic yards of soil were removed. This volume represents compressed soil below the ground surface, but upon accounting for the above ground air fluff, the total volume placed in the roll-offs was greater than 240 cubic yards of soil. Composite soil samples are collected as the roll-offs are filled.

This volume of removed soil comprises approximately 68 percent of the total soil volume projected for Area F. When placed in the overall context, however, this percentage does not reflect the actual completion rate for the entire Area F. Slower progress is anticipated as the excavation extent continues to clear the former chimney area and the adjacent debris field (where AUES-related glassware and lewisite-contaminated soil were encountered during the previous high-probability site investigation), and during installation of lagging near the property boundary with 4801 Glenbrook Road.

Hardscape removal completed to date includes the corner of the former basement foundation, the two front yard retaining walls, the front sidewalk footers, and large cinderblocks that were positioned underneath the front porch. Hardscape rubble will continue to be placed in roll-offs.

Findings to Date (Area F): AUES-related debris findings in Area F to date were mostly limited to glassware fragments. Almost 147 pounds of glassware have been recovered, and all of this glassware has been cleared for headspace.

Additionally, about 7 pounds of metallic debris have been cleared for headspace. These debris fragments are unidentifiable and are not categorized as AUES-related.

[Details of previous AUES-related items found during high-probability soil removal in Area F were provided at the December 2013 Partnering meeting. In summary, a total of three (3) 75 mm scrap items were classified (and will be disposed of) as scrap. These included a total of two (2) 75 mm projectiles

with hex-plugs found in the soil excavated from underneath the former front porch steps (within Grid -10, -30), and the single empty 75 mm projectile previously found during high-probability site preparations. No agent or ABP was detected in soil, pending receipt of analytical results for the greenish and whitish discolored soil, which was encountered in the same area (Grid -10, -30) as the two 75 mm projectile scrap items described above. Additional AUES-related findings are summarized below.]

Since January 10, 2014, a total of five AUES-related items were found in the soil excavated from underneath the former front porch steps (within Grid -10, -30).

- Two (2) 75 mm projectiles with hex-plugs were recovered on January 10 and January 27, respectively. These items were assessed inside the ECS by CARA Explosive Ordnance Disposal (EOD) via X-ray and found to be empty, with no liquid or energetic fill. Both items were cleared for headspace and were classified (and will be disposed of) as scrap.
- One (1) MK IV Adapter/Booster (also referred to as a hex plug adapter) was recovered on January 13. This item was assessed inside the ECS by CARA with inconclusive results, and could potentially contain energetics. This item was classified as Material Potentially Presenting an Explosive Hazard (MPPEH) and was double-bagged, transported in a DC Department of Transportation (DOT) container to the Federal Property, and placed in the HE Bunker for storage and future disposal. (This item is designed to fit inside a 75 mm projectile like the ones described above, and was found intact because hex plug adapters were typically taken in and out of 75 mm projectiles during research activities.)
- One (1) intact 75 mm shrapnel round was recovered on January 13. This item was assessed by CARA via X-ray and found to contain a solid fill. This item was further assessed by the Materials Assessment Review Board (MARB) via PINS and found to contain a riot control agent (magnesium arsenide), with no energetics (the black powder that would have been required to expel the solid fill out of the item). **This information is considered preliminary and will not be discussed in detail until receipt of the final Materials Assessment Review Board (MARB) findings and report.** The item is currently packaged in a multiple round container (MRC) and stored in a tent within the Interim Holding Facility (IHF) holding area.
- One (1) intact small glass bottle, with a diameter of 2 inches and a height of 4.5 inches, was recovered on January 17. This item was approximately 15 percent full and observed to contain two distinct liquid layers (clear on top and darker on the bottom), and capped with a 1 inch glass stopper. The glassware item was sent to Edgewood's Chemical Transfer Facility (CTF) for analysis and found to contain Lewisite of an unknown purity. Disposal of this item was conducted at Edgewood.
- [CARA refers to the chemical, biological, radiological, nuclear and high-yield explosives (CBRNE) Analytical and Remediation Activity, which is a subordinate unit of the U.S. Army's 20th Support Command.]

Contamination was also identified in the soil excavated from underneath the former front porch steps (within Grid -10, -30).

- A total of three (3) disposal characterization samples, representing a total of 9 drums of soil, were found to contain Lewisite. All three detections were above the method detection limit (MDL) of 24 to 25 µg/Kg but were below the limit of quantization (LOQ) of 100 µg/Kg. These levels were low enough to prevent determining precise concentrations, with estimated detections ranging from 41 to 45 µg/Kg. All 9 drums were classified as hazardous waste, and additional analytical data will be provided by the Edgewood Chemical Biological Center (ECBC) in preparation for shipping these drums to an approved incineration facility.

In summary, there are a total of five (5) 75 mm scrap items and three (2) intact items planned for future disposal, and the glassware item was already disposed at Edgewood. No agent or ABP was detected in

soil, with the exception of the Lewisite detections in three disposal characterization samples. No air monitoring detections for chemicals of concern (e.g., chemical agents or industrial compounds) were observed. A total of 34 roll-offs of soil and 8 roll-offs of rubble have been removed, along with 126 drums of soil, most of which have been cleared, and all disposal characterization results from the roll-offs and drums have been deemed non-hazardous (except for the lewisite detections).

Tentative Remedial Action Schedule: [This information was not presented at this meeting, and is included here for reference purposes.] Three phases of remedial action are planned: demolition (completed), initial low-probability efforts including the remaining low-probability test pits in the back yard including the utility trench (completed), and all planned high-probability and low-probability soil removal areas. Site preparations for high-probability efforts were completed in September 2013. High-probability soil removal began in early fall (September 23) 2013.

[This information reflects the revised schedule updated as of February 2014. This schedule accounts for weather-related delays and recent debris field excavations by hand.] Completion of high-probability soil removal is anticipated in early spring (mid-March) 2015. The remaining low-probability soil removal actions (the remainder of excavation area A, along with excavation area B) will be conducted as early as spring 2015, followed by site restoration. The remediated property will be returned to AU, the property owner, as early as spring/summer 2015 (early to mid-June).

Weather Delays: Approximately 8 planned work days were lost due to winter weather conditions, which limited or prevented transportation to the site. Weather impacts also included mechanical issues at the site, during which the air regulators and pressure valves would freeze open and drain the associated supplied air tank. This issue had not been previously encountered by Parsons, and a temporary solution was devised where foot warmers were taped onto the manifolds to ensure they remained open.

Debris Field Delays: During January and February 2014, most high-probability soil removal was excavated by hand due to the presence of AUES-related material. Site personnel hand-dug the soil, staged and drummed it as appropriate, and waited for analytical data before resuming excavation of known debris areas. Additional lagging may need to be added to soldier piles in this area as debris field excavation progresses.

Funding Shortfalls: All funding issues for the current fiscal year (FY) 2014 have been resolved, and all requested funding was received. Funding has been requested via multiple avenues for FY2015, including the baseline budget and plus-up funding, but not all of these funds have been awarded. Funding constraints present another potential schedule delay for the site cleanup and restoration. Receipt of all FY2015 funding is not guaranteed and currently depends on decisions to be made by Congress.

Weekly Schedule (Working Days): Site personnel continue to work five ten-hour days each week because this is helpful for the site teams.

Upcoming Tent Locations: Based on high-probability excavation progress to date, completion of the first (current) tent location is anticipated in mid to late April 2014. This may change depending on potential delays and slower soil removal rates associated with the debris field in Area F. The first (current) tent location will be demobilized, followed by moving and mobilizing the tent in the second location, concurrently with completion of a small area of low-probability soil removal in the backyard.

Discussion – High-Probability Excavation Findings to Date

USACE emphasized that information about the 75mm shrapnel round solid fill (described earlier) is considered preliminary and will not be discussed in detail until after receipt of the final Materials Assessment Review Board (MARB) findings and report. Dr. P. deFur added that the fill cannot be positively identified as magnesium arsenide until a sample of the fill is collected and analyzed. USACE further explained that a sample of the solid fill cannot be safely collected from an intact munition, and the MARB's final determination of the item's contents will be based on the best possible interpretation of the PINS chemical analysis data. During a phone conversation, the MARB verbally indicated that the fill

analysis revealed a strong arsenic peak, but the strength of the magnesium peak was not shared or not known at that time, with an identification of a riot control agent. USACE expressed interest in seeing the MARB's final determination in writing before fully considering and discussing the implications of the solid fill.

N. Wells commented that there had been some discussion of potential riot control agents in one of the AUES-related items, and asked if the riot control agents have been identified at this point. USACE responded that the referenced item is the 75mm shrapnel round described earlier. Based on preliminary MARB findings, this item contained a solid fill, which was identified as a riot control agent (magnesium arsenide) from the World War I (WWI) time frame. EPA noted that riot control agents may not have been used during the 1918 and 1919 time frame; instead, fills from that time period may have been considered non-lethal chemical agents. USACE added that "riot control agent" is the term currently used for those non-lethal fills.

USACE mentioned that this type of fill may have been used to herd enemy soldiers in desired directions or used on enemy trenches in the combat zone. Also, since wearing gas masks affects troop efficiency, this type of fill may have been used to require gas mask usage by enemy soldiers, followed by battlefield activities that could not be safely conducted otherwise. Dr. P. deFur added that these non-lethal agents can affect a lot of soldiers at once.

N. Wells mentioned that she has a list of riot control agents and would be glad to send this list to the Partners, if desired.

USACE emphasized that this information may not be discussed during the upcoming March 2014 RAB meeting if the MARB findings and report have not been finalized by that time. Dr. P. deFur added that the RAB and audience members would likely ask questions about the magnesium arsenide and how this riot control agent would act on human health. EPA noted that this riot control agent is an arsenical compound, and Dr. P. deFur responded that this information doesn't necessarily provide the type of response desired by the community.

USACE added that they don't fully understand the preliminary MARB designation of this munition fill as a riot control agent. As stated earlier, they look forward to seeing the MARB's final report and designation in writing.

Discussion – High-Probability Excavation Progress

Parsons agreed to provide an electronic copy of the presentation to EPA, DDOE, and Dr. P. deFur, as requested.

In response to USACE's inquiry, Parsons replied that the field team did not encounter any signs of groundwater in the excavation to date. Dr. P. deFur mentioned that discolored soil was documented. Parsons clarified that discolored soil associated with the debris field was observed, but there was no soil discoloration associated with moisture such as perched groundwater layers.

USACE clarified that the depths of 2 feet and 4 feet indicated on the excavation progress maps refer to previous arsenic soil removal depths, where arsenic hot spots were removed except for under hardscape. The purpose of this information is to show different arsenic removal areas completed by 2010 in relation to recent AUES-related findings.

USACE and Parsons mentioned that soil removal is currently focused on the debris field area, where gradual excavation of the surrounding area provides a level working surface where all soil can be removed until saprolite is reached.

EPA asked whether Grid -10, -30, in which recent AUES-related items were recently found, has been completed. USACE replied that this grid has not been fully excavated or cleared to date.

USACE and Parsons noted that underneath the former front porch steps, the field team encountered large empty cinderblock chambers that sat on top of the front step footers. Nothing was found in these

structures, and although soil was present between the last chamber and the basement foundation wall, all AUES-related items were recovered from below the chambers.

N. Wells inquired about the existing 'debris field' within the high-probability excavation area. USACE explained that AUES-related debris was previously encountered near the front porch area, at which time the effort was temporarily suspended (in 2010), and further debris field cleanup resumed as part of the current high-probability excavation.

N. Wells asked for clarification on a nearby arsenic contamination hotspot that had been cleared in 1996. USACE explained that this area of soil contamination at the 4835 Glenbrook Road property was handled by AU, investigated by Apex Environmental, Inc. (Apex) under contract with AU, and documented in the 1996 Apex report.

N. Wells asked if an arsenic hotspot is still present at the 4825 Glenbrook Road site. USACE explained that the remaining small area of arsenic contaminated soil will be removed during low-probability excavation, after completion of the remaining high-probability areas.

In response to EPA's inquiry, USACE replied that the anticipated completion date for the first tent location was originally February or March 2014, and is now mid to late April 2014.

Dr. P. deFur asked whether there are any time periods between now and March 2015 (the anticipated high-probability excavation completion date) during which work cannot be conducted, other than during tent moves and holiday breaks. USACE replied that those two scenarios are the only anticipated time frames during which high-probability progress cannot be made.

USACE noted that potential worker heat stress during summer activities will be monitored carefully, and decisions whether to continue work each day will be made accordingly. Although large protective tents can be air conditioned, the working conditions inside the tent get very hot, and depending on heat stress monitoring it may be necessary to shut down the site for several weeks during extreme summer heat. EPA mentioned that the workers can be outfitted with personal air conditioning. USACE acknowledged this and clarified that the heat chiller vests do not last very long.

USACE mentioned that switching personnel in and out of the tent during extreme temperatures is neither very productive nor efficient. Currently, site workers are engaged in high-probability activities within the tent for approximately 1.5 hours before switching. In the summer heat, site workers typically accomplish 15 minutes of work during a single shift and must spend far more time preparing to enter the tent and leaving the tent. The clock starts as soon as the worker enters the tent.

USACE added that the Partners already knew about the presence of the Area F debris field under the first tent location before the current site cleanup began. Soil removal in the remaining two high-probability tent locations may be faster, and mechanical excavation may be appropriate instead of hand-digging.

In response to AU's inquiry, USACE responded that the anticipated schedule for the first tent move (including staging the crane) will be provided to AU as soon as possible. At this time, USACE anticipates knowing this schedule approximately four weeks in advance.

AU mentioned that the revised schedule indicates a potential time frame overlap between staging the crane and annual graduation activities. AU requested that USACE provide as much notice as possible, and if possible, requested that the crane be brought in no earlier than the day after graduation events are held at the 4835 Glenbrook Road property. The university president's house is traditionally used for dinners, barbecues, and Board of Trustees meetings during the graduation time frame. USACE acknowledged this and recapped that the upcoming speed with which the first tent location can be completed, as well as the schedule for the first tent move, are both unknown at this point.

USACE and AU briefly discussed the window of time focused on low-probability and/or non-intrusive site activities, during which AU's athletic teams will have the flexibility to practice at their convenience. They also discussed the anticipated athletics schedule with respect to high-probability site activities.

Depending on AU's athletics schedule, the 4825 Glenbrook Road site may be shut down slightly early or up to half a day.

USACE confirmed that high-probability excavation will conclude approximately one hour before an athletics game begins. Site personnel will exit the protective tent, followed by completion of standard site activities and maintenance that do not require Shelter-in-Place or impact AU's athletics games.

USACE inquired about the April 2014 schedule of athletics. AU replied that they are hosting playoffs for one sport but the specific dates and times have not been established yet. The AU athletics director provides notification of any athletics issues that could potentially impact the high-probability cleanup schedule, and these issues are passed along from AU to USACE.

D. Open Issues and New Data

The goal of this segment of the meeting was to share issues not on the agenda for possible placement on a future agenda and to share new data that became available since the last Partnering meeting.

Two open issues were brought forward as brief status updates.

Status Update – DC Water (formerly DCWASA) Sampling Underneath Streets

USACE briefly shared recent soil sampling results from underneath DC streets, comprising approximately 24 sampling locations from three or four residential streets. These samples were collected by DC Water (formerly referred to as DCWASA, or the District of Columbia Water and Sewer Authority) during preparations for upcoming waterline upgrade activities. All sampling results were below the Spring Valley cleanup level of 20 ppm arsenic, with the highest arsenic concentration at about 14 ppm. USACE will prepare and distribute a summary of these results for the Partners.

EPA suggested it would be interesting to compare DC Water's sampling results (beneath streets) to previous Spring Valley project sampling results in the vicinity of those samples (near or adjacent to streets). Although some uncertainty is involved, it would be interesting to know if there is a correlation among samples, and whether nearby samples provide a reliable estimate of arsenic concentrations beneath adjacent streets. USACE agreed that this is a possibility. USACE added that although DC Water sampling results revealed low arsenic concentrations underneath Glenbrook Road, high arsenic concentrations were detected and removed at the 4825 and 4835 Glenbrook Road properties, and these elevated concentrations evidently did not extend beneath the adjacent street.

EPA asked whether these paved streets were originally dirt roads. USACE clarified that no roads were present prior to street construction, and the construction process required digging into the saprolite before pouring the pavement. Dr. P. deFur recalled discussing this topic a while ago, when he inquired about the possibility of AUES-related contamination or debris extending beneath Glenbrook Road, and the consensus based on cut and fill data was that the street was constructed directly on top of saprolite.

EPA summarized that these DC Water sampling results are good news, as the arsenic concentrations turned out to be low rather than high.

USACE mentioned that DC Water is also writing an article focused on these sampling results, which can be included in the next issue of the Corps' pondent newsletter.

Status Update – National Park Service Sampling at Fort Totten Metro Station

USACE briefly described the National Park Service (NPS)'s ongoing interest in potentially sampling soil at the Fort Totten Metro Station. This area is of interest based on information gathered by a reporter, who visited the Glenbrook Road area, spoke with DC personnel, and spoke with former NPS personnel. One former NPS employee suggested that Spring Valley soil may have been shipped from Glenbrook Road (during 4825 Glenbrook Road house construction in 1992) to the construction site for the Fort Totten Metro Station, for use as backfill underneath the parking lot. Many truckloads of soil were deemed

contaminated and unacceptable for use as backfill, and the soil was removed and shipped elsewhere. Some areas of backfill soil remained in place to prevent disturbance to adjacent trees. NPS is currently focusing on locating archived documents that support this story, but some provided dates do not match up with the 4825 Glenbrook Road house construction time frame. As requested, USACE provided NPS with the list of Spring Valley analytes. USACE will continue to communicate with NPS regarding this topic and will provide an update to the Partners once NPS makes a decision whether or not to conduct soil sampling at the Fort Totten Metro Station.

EPA commented that reports of more recent soil disposal dates and locations almost never pan out and are rarely accurate. USACE responded that NPS hopes to locate memorandums that were reportedly focused on the receipt and disposal of backfill soil during Fort Totten Metro Station parking lot construction.

USACE clarified that this sampling effort would be conducted by the NPS, not by USACE.

EPA mentioned that NPS was previously unable to provide sampling capabilities at Fort Reno, and clarified that NPS has limited funding for sampling their CERCLA sites (with a relatively small budget of approximately three million dollars).

In response to Dr. P. deFur's inquiry, EPA and USACE confirmed that the NPS has the infrastructure to conduct soil sampling in their National Capital Region of parks and other historic and natural sites.

USACE-Huntsville suggested speaking with Ken Shott (of the U.S. Army Engineering and Support Center in Huntsville) about historical information related to Fort Totten, as he has previously conducted research and pulled historical records for the site.

The Partners briefly discussed the distinction between the Fort Totten FUDS (in New York), the Fort Totten Park (in DC, which includes remains of the Civil War fort that provided the park's namesake), and the Fort Totten Metro Station (in DC, which is named after the Civil War fort).

On a related note, DDOE mentioned that he recently spoke with Ginny Durrin regarding information she recently obtained from a former 4825 Glenbrook Road construction site worker. She last spoke with this worker in January 2014. The worker reported the presence of a crawl space and items buried underneath the neighboring 4835 Glenbrook Road house. As a result, Ginny has been wondering why USACE has not addressed this topic yet, and why this topic cannot be investigated concurrently with the 4825 Glenbrook Road site cleanup. DDOE shared the status of this topic with her; the Partners have not discussed this issue yet, and although the Partners are also concerned about this anecdotal information, they need to focus on one major cleanup concern at a time. In summary, this concern will likely be voiced again in the near future, as a heads up for the Partners.

E. Document Tracking Matrix for Hazardous Toxic Waste (HTW) and Military Munitions Response Program (MMRP)

The goal of this segment of the meeting was to review the comment due dates on HTW and MMRP draft reports and the status of the documents.

USACE briefly summarized the status of the Site-Wide RI Report (including the Site-Wide HHRA) and the Groundwater Investigation Work Plan Addendum. Details of both documents were provided earlier during the meeting.

Discussion – Groundwater Investigation Work Plan Addendum

The Groundwater Investigation Work Plan Addendum for installing additional deep wells will be finalized pending resolution of the MP-5 installation location and any remaining comments. DDOE noted that their hydrogeologist is unlikely to respond to the document and sign the well installation permit until she receives the final work plan addendum.

F. Partner's Parking Lot

The goal of this segment of the meeting was to review and update the Parking Lot list.

The "Partners Parking Lot" is an informal list designed to assist the Partners in tracking ideas, collaborations, research and tasks. The list is not a formal document specifying actions that must be taken.

The Parking Lot list will be reviewed and updated at an upcoming Partnering meeting.

G. Agenda Building

The next meeting is tentatively scheduled for Tuesday, April 29, 2014. [The meeting date was originally tentatively scheduled for Tuesday, April 22, 2014, but was subsequently postponed by one week. An e-mail confirming the rescheduled meeting date was sent to the Partners in late February 2014.]

Discussion – Upcoming Meetings

The next RAB meeting is scheduled for Tuesday, March 11, 2014.

The Partners briefly discussed conducting a short site visit to the 4825 Glenbrook Road site just prior to the March 2014 RAB meeting, before site personnel depart the property at the end of the work day. EPA and Dr. P. deFur both expressed interest in a site visit, depending on their schedules.

H. Adjourn

The meeting was adjourned at approximately 12:01 PM.