USACE SPRING VALLEY FUDS PROJECT **AGENDA**

Inter-Agency Partners Meeting

Tuesday, December 9, 2014				**[**Upcoming Meetings: February]**
TIME	**TOPIC**	**DISCUSSION LEADER**	**PREPARATION**	**OBJECTIVE**
9:15 - 9:30	Check-in / Review Ground Rules	D. Noble		Introductions of new attendees / Personal check-in / Review Ground Rules
9:30 – 9:45	Groundwater	D. Noble		Update
9:45 – 10:15	4825 Glenbrook Road	B. Barber/Parsons		High probability work progress.
10:15 – 10:30	Fordham Road	D. Noble		Update
10:30 – 10:45	BREAK			
10:45 – 11:45	Remedial Investigation Report	T. Bachovchin		Introduction to the Site-Wide RI Report
11:45 – 12:00	Open Issues and New Data	D. Noble		
12:00 – 12:10	Document Tracking Matrix for MMRP/HTW	L. Reeser/ Parsons	Partners Review	Review pending documents
12:10 – 12:20	Partners' Parking Lot	D. Noble	Partners Review	
12:20 – 12:30	Agenda Building	D. Noble		** Future Meeting Discussion
12:30	Adjourn	D. Noble		

Spring Valley Partnering Meeting
December 9, 2014
Spring Valley Project Trailers Conference Room

Name	**Organization/Address**	
Sherri Anderson-Hudgins	USACE - Huntsville	**X**
Thomas Bachovchin	ERT	**X**
Brenda Barber	USACE - Baltimore	**X**
Todd Beckwith	USACE - Baltimore	
Janelle Boncal	Parsons	
Bethany Bridgham	American University	**X (via phone)**
Sean Buckley	Parsons	**X**
Paul Chrostowski	CPF Associates, AU Consultant	**X**
Tom Colozza	USACE - Baltimore	
Jennifer Conklin	DDOE	
Kathy Davies	EPA – Region III	
Peter deFur	Environmental Stewardship Concepts/RAB TAPP Consultant	**X**
Diane Douglas	DDOE	
Bill Eaton	URS	
Alma Gates	RAB Member – Horace Mann Representative	
Steven Hirsh	EPA –Region III	**X**
Dawn Iovan	EPA – Region III	
Leigh Isaac	Environmental Stewardship Concepts	
Carrie Johnston	ERT – Community Outreach Team	
Julie Kaiser	USACE - Baltimore	
Dan Noble	USACE - Baltimore	**X**
Cliff Opdyke	USACE - Baltimore	
Jon Owens	USACE - Baltimore	
Randall Patrick	Parsons	**X**

Lan Reeser	USACE - Baltimore	**X**
Amy Rosenstein	ERT (Risk Assessor, Independent Consultant)	
Don Silkkenbaken	Parsons	
Jim Sweeney	DDOE	**X**
Andrea Takash	USACE – Corporate Communications Office	
Tenkasi Viswanathan	USACE – Washington Aqueduct	
Cheryl Webster	USACE - Baltimore	
Ethan Weikel	USACE - Baltimore	
Nan Wells	ANC Commissioner	**X**
Gretchen Welshofer	URS	
Maya Werner	ERT	
Kellie Williams	USACE - Huntsville	**X**
Rebecca Yahiel	ERT – Community Outreach Team	**X**

Summary of 9 December 2014 Spring Valley Partnering Meeting

Consensus Decisions

- USACE will brief the RAB on the Site-Wide Remedial Investigation (RI) document in January, and a more thorough RAB presentation in March on conclusions with P. DeFur.

9 December 2014 Action Items

- USACE will send out the rest of the RI document via DVDs, including the risk assessment tables.
- USACE will send the Groundwater RI summary, that will be included in an appendix of the Site-Wide RI, for Partner review
- USACE will re-visit the option to include homeowners' names on the comfort letters in the Site-Wide RI. If necessary, the names will be removed before the public review.
- Partners aim to submit their comments on the Draft Final RI to USACE by 9 February 2015, before the next Partnering meeting.
- The Partners plan to send their comments on the Groundwater Risk Assessment approach document before the holiday break.

Tuesday 9 December 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, the Groundwater Risk Assessment, and the Groundwater RI.

1. Groundwater Study Efforts

MP-5 is ready to be sampled, but the public space permit is expired. USACE is working to get another public space permit to sample the well.

USACE had planned on a December sampling event for MP-5, but the sampling event may be more likely in January. USACE will keep the Partners up-to-date via email.

2. Groundwater Risk Assessment (RA)

USACE sent the interagency Partners a Groundwater Risk Assessment (RA) approach document on November 21. At that time, USACE asked for a December 12 return date on the comments. USACE wanted to remind everyone about the pending document and to verify if this date was still feasible.

Since the document was resent after the last Partnering meeting in October, the Partners asked for more time to review the updated document. They plan to send their comments before the holiday break.

3. Groundwater Remedial Investigation (RI)

The Groundwater RI will not be included in the Site-Wide RI report. However, USACE wants to include some information on the groundwater study. To do so, USACE will add an appendix with a summary statement about what has been done with respect to groundwater at the site. This summary will at least name the groundwater contaminants of potential concern (COPCs). USACE plans to send this summary to the Partners before the holiday break.

USACE suggested holding a conference call in early January 2015 to discuss the Groundwater RI document, discuss the screening process of the COPCs, and gather Partner feedback. The main topic to be discussed is the compounds that exceeded the regional screening levels (RSLs), but were excluded from the Risk Assessment report and not proposed to be COPCs for various reasons.

EPA commented that the Partners probably would not be able to talk about the document in early January since they do not even have the draft document yet. Employees start taking off for the holidays around December 18 and return around January 5.

Peter DeFur, RAB TAPP Consultant, asked if there was a deadline for getting this document done. Does this affect the sampling, or just the paperwork?

In response, USACE explained that these responses affect the writing of the Groundwater RI report. USACE hopes to release a draft document later in spring 2015. However, in order to write the draft report, USACE would like the Partners to be aware of what the RA approach is and the proposed screening process of the data.

In response to Nan Wells, ANC Commissioner, USACE explained that COPCs are excluded for several reasons. For instance, some of the COPCs appeared in the laboratory blank. Thalate was present in some of the wells, as well as the blanks. Another reason could be that there were one or two low level detections at wells, but no further detections in subsequent sampling events. .

N. Wells asked how often were those wells sampled after thalate was present. USACE explained that it depended on which well. Zirconium was a compound that showed up once or twice in a couple of wells, but then did not appear in that area again. Thus, zirconium was proposed to be put aside.

Paul Chrostowski, CPF Associates, AU Consultant, suggested checking everyone's availability for a conference call once the document was given to the Partners.

The Partners agreed that the second half of January would be a better time for a conference call. D. Noble said he would take the information back to Project Manager Todd Beckwith, who would follow up to plan a date once the Partners received the draft document.

EPA commented that after the last Partners meeting, where the Partners debated the reasons why zirconium may be found in the groundwater, he was reviewing some munitions information which said that zirconium was included as a potential munitions constituent for some types of munitions at military munitions response program (MMRP) sites. P. DeFur added that zirconium was used in other military gear, as non-munitions uses.

EPA agreed that the Site-Wide RI should have a section about the groundwater study, to address the soil-to-groundwater pathways in the soil RI. Groundwater-to-drinking water is one pathway, but with the soil, you typically talk about the soil-to-groundwater pathway.

USACE confirmed that they could do this in the groundwater appendix in the Site-Wide RI.

B. 4825 Glenbrook Road Remedial Action

Parsons presented an update on the 4825 Glenbrook Road Remedial Action effort.

1. High Probability Excavation Preparations

Parsons completed the second tent location mobilization activities. The team had to build a new truck door since the tent is significantly higher than it was in the front yard. The team built two barn doors that are fabric sealed together and structurally sound.

The new personnel decontamination station (PDS), MINICAMS, medical monitoring, and dress-out tent locations were established in the front yard area. The team conducted and passed the smoke test, which ensured negative pressure in the tent. The waterline, which supplies the AU ball field, was turned off to withstand the low winter temperatures. The above-ground portion of the waterline was drained and heat traced to ensure there was no leakage. Tan colored fabric will be draped over the support equipment in the front yard area (including the PDS, the redress tent, and medical monitoring shed) to match the color of the tent and minimize the visual impact at the street level.

Since there is little space between the front of the tent and the retaining wall, the retaining wall must be torn down before a roll-off can be placed inside of the tent.

2. Recent Intrusive Operations

The first week of December was the first week the team dug in earnest under the second tent. The crews moved the staged soil and began excavating the high probability grids.

The low probability stockpiled soil was consolidated to allow room for the intrusive soil excavation. The crew moved pavers, expecting to start digging underneath them, but came across a reinforced concrete pad after 8 inches of soil. One glass debris shard was found in the soil between the pavers and the concrete pad, but nothing to indicate a disposal area. The pad extends over an approximate area of 60’ x 10’.

Discussion

In response to EPA’s question as to why that concrete pad was there, USACE-Huntsville conjectured that the original owners had a step down patio and the follow-on owners re-did the patio, leaving the concrete pad behind.

USACE added that the concrete may extend the length of the back of the house. It is just a lot of extra work, even if it ends up being nothing [contaminated].

DDOE asked if USACE was able to contact the former owners and find out if they did something in this area.

USACE explained that the former owners did build the steps, based on the documentation collected as part of the PRP investigation. The former owners hired a contractor to put in the steps at the back of the driveway that go up to the backyard, but there was no evidence indicating they also built the back patio.

EPA asked what the patio was like at 4835 Glenbrook Road when the house was first built. USACE explained that AU has done extensive landscape work at 4835 Glenbrook Road, so it would be hard to say.

P. Chrostowski explained that former AU president did extensive renovations at 4835 before the government did their investigations.

Parsons explained that the concrete slab could represent the original design before someone changed their mind after the concrete was already poured.

EPA asked how the team never found this big concrete pad when there were so many test pits in the area.

USACE explained that they did chop through the concrete during test pitting. However, the team did not do any other test pitting in that specific foot print, and therefore assumed it was the former back patio. USACE added that the team began investigating in what resulted in the high probability test pits and therefore did not complete the rest of the planned test pits. USACE noted that the 4825 Glenbrook Road Work Plan and RI report provide informational figures with the outline of the porch, and the test pit locations. The test pits were very close to the concrete pad; however only Test Pit 101 was in that exact area.

In response to P. Chrostowski, Parsons confirmed that there have been no chemical detections by the MINICAMS and no signs of a debris field. The glass piece was also cleared during headspace.

3. Future Activities

High probability excavations will continue. Next steps include removing the retaining wall to get a roll-off under the sealed tent.

In the event that space runs out under the tent to hold the concrete and perform work to take down the retaining wall, the contingency plan is to place the concrete in large sealable construction bags, which can hold about one ton of material. If used, the bags would be lined with roll-off liner, cut to size, and burrito wrapped to seal. The full bags would then be transferred to the roll-off outside of the tent with an excavator. Crushing the concrete to fit into drums is time prohibitive. However, if debris or contamination is found, the contaminated waste will be placed into drums. The team will inspect the slab as it is being broken into disposable pieces, to ensure it is not associated with any contamination.

P. Chrostowski asked if this topic was going to be discussed with President Kerwin and Mr. Wolfe. He would also like to review this plan before making a recommendation to the University. USACE confirmed this.

4. Schedule

The site will shut down on December 18 for two weeks for the winter holidays. The crews will resume intrusive operations on January 6. The planned completion date for this second tent location is one year from now (December 3, 2015). However, these are conservative assumptions based on the experiences during the first tent location.

P. Chrostowski asked if this schedule was a change to what had been previously shared with the Partners. The University is doing SIP refresher training based on the given schedule.

B. Barber said this was just a reminder. We had planned one year under the second tent based on what we saw under the first tent. As we get closer to the end date, we will refine the schedule. Depending on how

long it will take to do the second tent move, we will decide then if we will suspend the SIP program or if it will remain on. Hopefully the second tent move will be faster than the first.

Parsons explained that they plan to use a smaller crane to bring the structure to the center of the house during for the next tent move. The crane is currently expected to be staged in the front yard.

In response to EPA's question, USACE explained that they would need a crane with a shorter arm for the second tent move since it will not have to reach as far to move the tent, as it did during the first tent move from the back of the property.

USACE asked if the excavations will start from the 4835 Glenbrook Road side and work towards the 4801 Glenbrook Road side and requested clarification on whether the back retaining wall footer would be removed in conjunction with the excavation.

Parsons explained that they are first trying to figure out how to get a roll-off inside of the tent. Then, the team will figure out how the excavation will move. Right now, they plan to work towards 4801 Glenbrook Road, but this plan may change based on what is seen as work progresses. The back retaining wall footer is planned to be removed as the excavation progresses across the backyard. Additionally, at some point the crews will have to add and remove lagging.

C. Fordham Road Arsenic Soil Removal Update

USACE presented an update on the Fordham Road properties. USACE has been working with a property owner on the 3700 block of Fordham Road regarding arsenic soil sampling performed in summer 2014. The property owner requested removal of a 10x10 foot area of arsenic contaminated soil in the backyard of the property, along the property line. USACE is planning to complete the removal action at this property in early 2015. USACE will be self-performing the work and plans to hand dig the area (i.e., no heavy excavation equipment will be used). The Work Plan and SSHP (Site Safety and Health Plan) have been completed (October 2014) and provided to the Partners for review. The designation of Site Safety and Health Officer and signatures on the SSHP is still pending. USACE plans to keep the Partners posted on the work, which should not take more than a week.

Discussion

In response to EPA's question on where the arsenic exceedances were, USACE explained that the whole grid is actually all on the one property. The grid was entirely delineated, and will be completely removed to a one foot depth. There is also an old bush stump in the grid, which will be ground down to one foot below grade as well. A couple panels of the old fence will have to be removed before digging. Once the panels are removed, the fence may fall apart. Thus, the team has lined up a fencing contractor to come in right after the excavation to replace a 72 foot portion of fence to the back property line.

In response to N. Wells, USACE explained why this removal was being done. USACE will remove an arsenic grid. This was a known grid when USACE sampled the neighbor's property. However, USACE wanted to see if this arsenic went on the neighbor's property and found that the fence was not on the actual property boundary, but about 4 feet into the northern neighbor's backyard. Thus, this grid is actually entirely on the one property.

In response to P. DeFur's questions, USACE explained that they have not received a ROE yet from the one property. There is also the same small number of properties that have not been screened for arsenic in soil. These properties are all reported in the Site-Wide RI report, including the work that USACE would like to do on Fordham Road.

EPA added that there will be less work to do on the one property on the 3700 block of Fordham Road now that this grid was identified as being fully on the neighbor's property.

D. Remedial Investigation Report

ERT presented an introduction to the Site-Wide RI Report, including the structure and the conclusions of the document, and highlighted the portions of the site that USACE concluded needs to proceed to the FS. The Partners were briefed on the RA and the munitions and explosives of concern hazard assessment (MEC HA) at previous meetings. There has been one change in the MEC HA since it was last presented to the Partners. Major changes to the MEC HA and why they have been done will be highlighted, per USACE instructions. The document has been extensively reviewed by the internal army, and can now be released outside of the army to the interagency partners, but not publically until the Partners have a chance to review the document.

USACE described the site boundaries consisting of the areas of American University Experiment Station (AUES) and Camp Leach areas.

USACE turned the presentation over to Tom Bachovchin, ERT.

ERT commented that the four hard copies that were handed out to the Partners at this meeting were partials. The RI documents will be printed with only three appendices and the DVD will contain everything, and will be sent to the Partners, along with the additional hard copies that were requested.

1. Table of Contents: The two primary guidance documents used in preparing the Site-Wide Remedial Investigation Report (RI) were: the Army MMPR RI/FS Guidance and the EPA Guidance for Conducting RI/FS. Both provide a suggested Table of Contents (TOC) to address the topics required for an RI report. The TOC was briefed to the Partners at the February 2014 Partner meeting.

2. Report Organization: The RI report is organized into the Executive Summary, 8 Sections, and Appendices [A-G].

- Executive Summary
- Section 1 - Introduction
- Section 2 - Physical Characteristics
- Section 3 - RI Objectives and CSMs
- Section 4 - Field Activities
- Section 5 - Investigation Results
- Section 6 - Contaminant Fate and Transport
- Section 7 - Risk Assessment
- Section 8 - Summary and Conclusions
- Appendices A through G

3. Executive Summary: The Executive Summary is 31 pages, which gives a fairly detailed overview of the whole RI report. Two subjects to note during review are that groundwater will have its own stand alone RI; however a summary of current groundwater sampling data will be provided in Appendix G once it is complete. Also, 4825 Glenbrook Road was designated as a separate site; however, the Site-Wide RI discusses 4825 Glenbrook Road as needed to provide the history and investigations in context.

Discussion

P. Chrostowski commented that he could not imagine many members of the public, or his clientele at AU, who would read 31 pages. Something a little shorter might be called for.

P. DeFur added USACE could call it a ‘public summary.’ EPA recommended a two page fact sheet.

4. Section 1 – Introduction: Section 1 lays out the important aspects of how the rest of the document is laid out. The purpose of an RI is to characterize nature and extent of contamination, including MEC hazards and chemical risks.

This RI is notably different than traditional RIs that reference a single set of objectives identified in a single RI work plan. For the SVFUDS, no singular set of objectives or work plan was established which created its own challenge in writing and organizing the document. While typical RIs follow the CERCLA sequence of events, this RI is an extremely complex site involving several ongoing and concurrent activities over many years, focusing on different potential hazards and/or investigation types or locations, as well as time-critical and non-time critical removal actions. USACE took a multi-pronged approach to investigate/remediate previously identified areas while concurrently reviewing site history to plan investigations in other areas, which has been occurring since 1993.

Each of these discrete activities resulted in completed standalone reports, approximately 68 key reports document the findings. These reports are contained in their entirety in the appendices [provided on DVD]. The intention of this RI report is to present the rationale for each of those key activities, integrating the findings into a cohesive nature and extent characterization for the SVFUDS.

EPA added that the RI should talk about the things that are in the RI document that support the feasibility study (FS) and to set the framework for record of decision (ROD). ERT responded that they would get into the FS later in the presentation.

The RI report does not repeat the detail of those previously finalized reports or change any of their conclusions. They were updated or placed in a larger context as appropriate.

The RI describes previous efforts organized by the following key types of activities. All of the activities conducted at the SVFUDS to date fall under one or more of these activity types:

- Initial investigation and characterization
- Follow-on investigation and characterization
- Geophysical investigations
- Removal actions

Section 1 includes key tables listing the key finalized standalone documents that provide all of the detail associated with the subject activity types, and further provides a summary level review of previous site activities describing when and why they were performed. Some of the effort may overlap and fall under any of the 4 main categories. The point is not to keep the information inside only one of the categories, but to have an organizational structure to present a lot of information.

The tables in Section 1 list the key reports described in initial investigation characterization, follow-on investigation and characterization, geophysical investigations, and removal actions and show how they reference forward to Section 5, the results section.

Discussion

P. DeFur wanted to confirm that the RI report does not show the individual property reports in the appendices, since there are a large number.

ERT explained that the individual reports are all presented. They all fit on a single DVD. Only three appendices will be presented in hard copy. The rest of the appendices will only be on DVD.

In response to EPA, ERT explained that the three appendices that will be supplied in hard copy are Appendix A, Figures; Appendix E, the Risk Assessment tables; and Appendix F, the MEC HA and MRSPP score sheets.

P. DeFur asked if this report compilation is going to include any of the materials generated for 4825 Glenbrook Rd., or will it remain separate?

ERT explained they will remain mostly separate; 4825 Glenbrook Road will be included in discussions because of its history and relation to its neighbors.

P. Chrostowski asked if there will there be a close out report for 4825 Glenbrook Road. USACE confirmed this. The RI/FS report for 4825 Glenbrook Road was already written.

In response to P. Chrostowski, ERT confirmed that the findings at the Area of Interest (AOI) Task Force will be presented in Appendix B. The appendices' title sheets are included in the provided hard copy to show what is included in each appendix, but the complete appendices are on the DVD.

Activity Types was a necessary organizational device to track all of the information and integrate into the conclusions of the document:

- Initial Investigation and Characterization (4 key investigation reports), including the 1995 ORS FUDS RI and the 1996 Spaulding-Rankin RI.
- Follow-on Investigation and Characterization (18 key investigation reports), including the 2000 HHRA for AU by the EPA, and the 2003 EE/CA for Arsenic in Soil.
- Geophysical Investigation (26 key investigation reports), including Site- Specific Anomaly Investigation Reports.
- Removal Actions (10 key investigation reports), including 2003 TCRA Post Removal Action Report for AU CDC, and various Phytoremediation reports.

Definitions and Primary Units of Investigation, and how they are related, are defined with detailed tables providing background and history of each area.

- Operable Units (OUs)
- Points of Interest (POIs)
- Areas of Interest (AOIs)
- Range Fan
- Munitions Response Sites (MRSs) – relatively new for Spring Valley. Each one is described and defined in Section 1.

Discussion

EPA commented that the text needs to be clear about what is *not* part of this RI report, including the groundwater study and 4825 Glenbrook Road. It should describe that these decisions are being handled separately in other RIs.

ERT clarified that the RI does distinguish this fact. The Partners are welcome to comment about the length and detail of those sections once reviewed. Many items were not brought up during the presentation due to its sheer length. The RI also talks about terminology usage. Any project of this length is going to have some terms that are used often in older reports that are not used any more. There is an explanation in Section 1 as to how these terms are used for this document.

EPA asked if the timeline poster was included in the report. ERT clarified that the specific poster was not included, but everything on it is included. However, it is a good idea to include the timeline as a figure.

5. Section 2 - Physical Characteristics: Section 2 describes the basic physical characteristics and surface features of the regional geology. And the tools used to support and plan investigation and characterization activities in the SVFUDS. Key topics include: Geographic Information Systems (GIS), Ground scars (how they were mapped and used to guide some of the investigations), Cut and Fill Maps (how they were determined and used to help determine topography changes relative to circa 1918 conditions), and Environmental Setting (regional to local topography and why it is relevant).

Discussion

In response to P. Chrostowski, ERT confirmed that most of the discussion on hydrogeology will be deferred to the Groundwater RI.

6. Section 3 - RI Objectives and Conceptual Site Model (CSM): Section 3 describes the RI objectives of characterizing nature and extent of any potential hazardous and toxic waste (HTW)/munitions constituents (MC)/chemical warfare materiel (CWM) contamination or MEC hazards within the SVFUDS resulting from the past Department of Defense (DOD) activities.

CSM communicate the current knowledge about risks at the site. They generally were developed prior to each primary investigation effort. They have taken many different forms over the years. These CSMs discuss the primary sources, release mechanisms, interactions, and receptors within the SVFUDS.

Two CSMs are presented and discussed in Section 3; one being for HTW/MC/CWM and one for MEC. One of the key things talked about in this section are release mechanisms and why they are important. For example, the report discusses open air testing, disposal and burial, and activities inside and outside the AUES fence line and why investigation objectives were designed based on this information.

Section 3 also describes the data needs, including the background and development of the analytical parameters tested for the SVFUDS investigations. This report is presented in its entirety in one of the appendices.

Data Quality Objectives are presented, including general and activity-specific, and site-specific investigation objectives (based on POIs and/or AOIs).

7. Section 4 - Field Activities: Section 4 provides a description of the technical procedures used to perform the RI field activities. It describes what was said in any number of work plans for specific efforts throughout the project telling the reader how the work was done. For example, it will describe the soil sampling procedures (e.g. screening vs. grid vs. confirmations sampling), a comprehensive discussion on geophysics (e.g. general procedures, what instruments were used and why, the timeline of geophysical activities, geophysical data interpretation, and the classification scheme for prioritization of properties for geophysical surveying). Details on data interpretation include information about the Anomaly Review Board's (ARB) role and how they guided geophysical investigations.

Other field activity processes covered include, high and low probability intrusive investigations, removal operations, soil excavations, and phytoremediation efforts.

8. Section 5 - RI Results: Section 5 summarizes the results of the investigation, characterization, and removal actions conducted since the inception of the SVFUDS, and place them into the context of the nature and extent of contamination discussion. Section 5 presents the rationale for each key event and summarizes their findings to provide a more complete characterization of the SVFUDS.

The investigations' details are discussed in the RI, and further references are provided in the appropriate RI appendix. Section 5 is organized per the four previously discussed activity types.

Section 5.5 summarizes nature and extent results. The centerpiece of this section is a 14-page table that presents POI and AOI specific investigation objectives, investigation summary, and nature and extent determinations for all 54 POIs and 28 AOIs, as well as the Range Fan.

Other key topics covered in Section 5 include revised CSMs (did the preliminary findings support the original CSM of the site, or did the findings result in any revisions to the site CSM); and disposition of waste streams (discussion on the removal of everything found at the site).

9. Section 6 - Contaminant Fate and Transport: Section 6 discusses the fate and transport mechanisms potentially affecting releases and distribution of constituents and examines how these mechanisms affect migration of the constituents.

Key topics include: Potential contaminant sources; routes of migration; migration and persistence; and the focus on SVFUDS constituents, including arsenic, mustard, lewisite, CWM agent breakdown products, metals, and PAHs.

Discussion

EPA asked if the RI considers those things that you characterize as industrial compounds, such as arsenic trichloride and phosgene.

ERT explained that the RI speaks generally about everything that was found at the site. There is no call out for individual industrial compounds. If the chemicals were 4825 Glenbrook Road specific, they were not included in the Site-Wide RI.

In response to EPA's question, ERT confirmed that information about 4835 Glenbrook Road was included in the Site-Wide RI.

10. Section 7 - Risk Assessment: Provides multiple risk-related issues on a site-wide basis as a critical step to a comprehensive understanding of risk remaining within the SVFUDS. The centerpiece of this section, representing information not previously reviewed by stakeholders, is a quantitative Human Health Risk Assessment (HHRA) conducted on the three residential (two exposure units) and AU (one exposure unit) Exposure Units.

The overall risk assessment strategy has previously been presented at Partner and RAB meetings.

Section 7 addresses other risk-related elements that contribute to understanding risk within the SVFUDS, including previously completed HHRAs and risk screening procedures, arsenic (particularly the 20 ppm clean up goal), external health-related studies, MEC HA and Munitions Response Site Prioritization Protocol (MRSPP), Screening Level Ecological Risk Assessment, and understanding discussion focusing on the sufficiency of the existing sampling to characterize risk, DGM (geophysics) limitations, and the potential for remaining disposal areas or burial pits.

P. Chrostowski asked if any of this information is going to be quantitative.

ERT explained, other than the HHRAs, this section gives a good quantitative discussion of the protectiveness of the 20 ppm value for arsenic; however, the MEC HA and the MRSPP, the Johns Hopkins health studies, and the ATSDR reports are qualitative.

Risk Assessments

The overall risk assessment strategy focused on two objectives:

- Evaluation of the risk evaluation document, which evaluated the older (pre-2005) standalone HHRAs to see whether their conclusions were still protective in light of updated EPA guidance.
- Supplemental sampling based on AOI Task Force recommendations (potential AOIs not previously addressed, or potential data gaps, etc.)

The result was identification of exposure units (EUs) that integrated those older HHRA samples with the more recent supplemental samples, and re-screening the EU based on the combined single data set.

Findings

For some of the areas that were reviewed, we found that some of the COPC were identified. It was concluded that the three EUs (the AOI 9 EU, the Spaulding-Rankin EU, and the Southern American University EU) warranted a full quantitative HHRA.

Findings - AOI 9 EU:

For AOI 9, which is many private residents, we found that the non-cancer hazardous index (HI) was greater than 1 for cobalt for a future child resident. However, cobalt is natural occurring and an essential element in the diet and there is considerable uncertainty associated with the provisional toxicity value used to estimate the cobalt non-cancer hazards. Based on these considerations, no further action was recommended based on cobalt. With regard to cancer risks, all estimated incremental cancer risks are

below the level of concern. Therefore, for the AOI 9 EU, no COCs were identified and no further action [for soil] is proposed.

Discussion

EPA asked if there was to be any groundwater monitoring in this area.

ERT explained only if there are groundwater wells, but he was not familiar with the exact locations of the wells in proximity to AOI 9, if any. USACE said there are no wells within AOI 9.

Findings - Spaulding-Rankin EU:

Spaulding-Rankin EU is where the firing point of the Range Fan originates and where the bunkers are located (POIs 21, 22, 23). A lot of work has been done at this site. The comparison value for cobalt lowered significantly over the years since samples were first taken and therefore many samples that did not exceeded it in the past, now exceed it. For the Spaulding-Rankin EU, the HI was greater than 1 for cobalt for the current and future resident child scenarios. However, as discussed above, further action based on cobalt was not proposed.

The estimated cancer risks for the future adult resident exceed EPA's acceptable cancer risk range, based on arsenic in soil. This was driven by a pipe drain sample from beneath the concrete bunker floor (POI 20 greenhouse) of 131 ppm, which was not removed. There are no current completed pathways and the future risk scenario would require demolition and removal of the greenhouse and bunker. In this case, a statistical comparison to background for arsenic at this EU showed that site concentrations are less than or equal to background, and further action based on arsenic is not proposed.

Therefore, for the Spaulding-Rankin EU, no COCs were indentified and no further action is proposed.

Discussion

EPA asked if the RI recommends any land use control for the future risk. USACE said no.

USACE explained that this sample came from some soil in a pipe drain. The contamination could have all been removed with the sample, but cannot say that for sure. The pipe is now below 10 feet of gravel and a concrete slab.

EPA asked how USACE got the sample in the first place. USACE explained that the soil was removed under the EE/CA in 1994 before the bunker was filled with gravel and concrete, per the homeowner's request to have a usable structure, not a large pit.

P. DeFur asked if this information was described in this RI section. The gravel is a large barrier to exposure pathways – it would be good to note that there is 10 feet of gravel.

USACE replied that they did state that there is no completed pathway. If it is not elaborated now, USACE/ERT can certainly do that.

EPA agreed that this would be a more compelling argument than it is just background.

Findings – Southern AU EU (excluding other outlier locations):

Based on the results of the HHRA for the Southern AU EU (excluding outlier locations), non-cancer risk were greater than one for the future resident child for both mercury and cobalt in soil. Mercury was statistically less than or equal to background, and therefore action based on mercury is not proposed. For reasons previously indicated, further action based on cobalt was not proposed. With regard to cancer risks, all estimated incremental cancer risks are below the level of concern. Therefore, for the Southern AU EU (excluding outliers), no COCs were identified and no further action is proposed.

Discussion

P. Chrostowski added that cobalt is a very critical element and asked if EPA will review the cobalt issue. With all three EUs, there was a hazard index greater than 1.

EPA noted that their risk assessor will review the results. Cobalt is not just a Spring Valley issue. EPA has cobalt issues at a lot of sites.

ERT added that they did have some discussions with EPA's risk assessor on this subject. EPA's risk assessor made a point of referencing provisional toxicity values, etc. These arguments are now ready for the Partners to review.

Findings – Southern AU EU (outlier locations only):

The separation of the outlier locations was based on a suggestion by EPA's risk assessor. We did a detailed effort to define an outlier as a concentration ten times higher than the average of the remaining concentrations, so as not to dilute a given high sample across the entire geography of the Southern AU EU footprint. This is information the Partners have seen before in Addendum 1 and during the review of the older HHRAs. Those documents give more detail on how these outliers were defined. In general, these were areas where we found concentrations of a chemical that were ten times higher than the average of the remaining concentrations and were called out as an outlier location. There were six outlier locations across AU assessed for risk as individual areas.

Several outlier locations at the Southern AU EU are associated with unacceptable future residential risks:

- Mercury at the SV-AU-05 outlier location results in a HI greater than 1, based on future adult and child residential use.
- Vanadium at AU-03 and SV-AU-03 outlier location results in a HI greater than 1, based on future adult and child residential use.
- Cobalt and iron results in HIs greater than one at the AU-03 and SV-AU-03 outlier locations, but both are essential elements, and for these and other considerations, further action at these outlier locations based on cobalt or iron is not proposed.
- At the BAKER-03 and SV-BAKER-03 outlier locations, for the future resident child, the total estimated cancer risk exceeds EPA's acceptable range, with only one carcinogenic PAH (dibenz(a, h)anthrancene) exceeding $1x10^{-4}$.
- Therefore, for the outlier location of this EU, mercury, vanadium, and dibenz(a, h)anthrancene are COCs that pose unacceptable risks, and follow-on actions are required to address them.

Discussion

In response to P Chrostowski's question, ERT said the outlier locations on AU are limited, but they will be analyzed in a feasibility study (FS). The RI does not recommend actions; an FS with determine that.

Bethany Bridgham, AU, requested a description of the outlier locations. ERT noted that maps are provided in the RI and are enlarged to show the details more clearly.

In response to B. Bridgham's request for the location of the outlier location in reference to Lot 18, ERT noted that none of the outlier locations were within Lot 18. The southernmost outlier is northwest of Lot 18 proper. The outliers do not represent soil that has already been removed. This is soil that remains in these small discrete areas.

MEC HA Hazard Assessment Summary: In Section 7, the MEC HA is a qualitative hazard assessment that provides an assessment of the acute exposure hazards associated with MEC remaining at a site by analyzing site-specific conditions that affect the likelihood that a MEC accident will occur. The MEC HA is a score-based assessment. At the SVFUDS, the MEC HA was organized around 3 primary activities; the Range Fan's ballistically fired testing, statically firing testing at the two circular trenches, and the potential disposals [known and possible].

MEC HA Scoring Summary

One is the worst score, while four is the best score. There are no zero hazards once it is scored. There is no score unless MEC that has been found there.

The livens safety buffer in Dalecarlia Woods scored a 4, which means low potentially exposed hazard conditions. The impact areas of the range fan scored a 3, where various MEC have been found over the years. The impact areas are separated by livens and the 3 inch and 4 inch stokes mortars. A MEC HA score was developed for the possible disposal areas as a generic scenario. The previously identified disposal areas have been investigated and remediated. The possible disposal areas under the Public Safety Building and on Fordham Road are not specifically scored individually as there is no specific recovered munition to base the score upon. Section 7 is the summary of the findings, while Section 8 has the formal recommendations based on these findings.

11. Section 8 - Summary and Conclusions:

ERT summarized the MEC HA findings.

Conclusions – Hazard Assessment (MEC)

- The impact area for both the Livens and the Stokes mortars received a MEC HA score of 3. The MEC HA is not intended to drive remediation or further action. However, the moderate potential explosive hazard condition that this score represents suggests that follow-on activities may be required to mitigate unacceptable explosive hazards that could exist on the properties within the impact areas (See Figure 8-1 Areas for Evaluation in the FS).
- Static testing activities were not scored through the MEC HA because they were better controlled and monitored, but may suggest the presence of munitions burial pits near the testing locations (similar to 52nd Court). The potential for remaining munitions burial pits with discarded military munitions suggests that follow-on actions may be required to mitigate unacceptable explosive hazards associated with possible munitions burial pits in the buffer zones around the known static fire test areas (e.g. POI 2 on Fordham Road). A 150 ft area was placed around the static testing area representing a reasonable distance that the AUES soldiers might have carried waste from the static testing area to bury.
- The generic MEC HA score for the possible disposal areas (AU PSB, AOI 13, and POI 2 / Fordham Road area) was a 3. Unknowns associated with the these possible disposal areas and the moderate potential explosive hazard conditions they represent suggest that follow-on actions may be required to mitigate unacceptable explosive hazards that could exist in these three areas.

RI Recommendations

Recommendations to address unacceptable HTW/MC risks are to conduct a FS for the risks in soil at the 3 outlier locations in the Southern AU EU.

Recommendations for addressing unacceptable explosive hazards posed by potentially remaining MEC include:

- Conduct an FS to address munitions possibly remaining within the impact areas of the Function Test Ranges for the 3" Stokes, 4" Stokes, and the 8" Livens;
- Conduct an FS to address possible munitions burial pits in the buffer zones of the Static Test Fire areas; and
- Conduct an FS to address possible munitions disposal burial pits associated with the Possible Disposal Areas (AU PSB, AOI 13, and POI 2 / the Fordham Road area).

Discussion

In response to P. Chrostowski's questions on AOI 13 details, USACE explained that it is the area outside of the fence line where shacks and storage facilities were located. There was a series of ground scars or trenches in that area as well.

In response to N. Wells' inquiry, USACE explained that AOI 13 was located in the vicinity of University Avenue, in between Quebec and Woodway Lane, and north of the Spaulding-Rankin area.

Remedial Action Objectives (RAOs): Based on the quantitative HHRAs, the COCs are mercury, vanadium, and dibenz(a,h)anthracene in soil. Combining the COCs, the affected media, the exposure pathways, and the project goals, the RAOs include:

- Prevent direct contact with soil having non-carcinogenic HI exceeding 1.
- Prevent direct contact with soil having a cancer risk in excess of 1×10^{-4}.
- Reduce the potential for encountering MEC.
- The specific nature of the follow-on actions will be determined through the FS alternatives analysis conducted to identify how best to achieve these RAOs.

The specific nature of the follow-on actions will be determined through the FS alternative analysis on how best to achieve these RAOs.

Appendices: Appendices B, C, D represent the 68 key documents that are entirely on the DVD only. Appendix A, Figures; Appendix E, the new Risk Assessment tables; and Appendix F, the MEC HA and the MRSPP score sheets will come with the hard copy. The Appendix G/The Groundwater Summary/Data Report is not available yet. The Groundwater RI will be a separate, stand alone document.

Discussion

In response to P. DeFur, L. Reeser confirmed that the AOI reports are in Appendix B-4.

EPA asked how the USACE team was dealing with the places where arsenic was not remediated. Are we looking at land use controls for the streets, or places where we went up to the curb and still exceeded 20 or 43 ppm, or the Fordham Road property?

USACE explained that the Fordham Road area will be addressed. The USACE team has already formally said that they want to do a removal action. The streets and roads will have to be handled under the Proposed Plan. We will have to explain for the person who occasionally goes under the road to do work that has to be aware of the potential risk based on the known data. The conclusion is that the arsenic under streets does not appear to present an unacceptable risk to construction workers. To complete this, we have to discuss it in the [Proposed Plan] and state that it is an issue that the city has to be aware of.

In response to P. DeFur's question of if this information will have to be in the [Feasibility Study], ERT explained that while there is some uncertainty in cases where we have not sampled, if you went up to 100 ppm for soil currently in the streets based on no receptors, with the data that we have, it is apparent that there are not many areas like this. There are currently none that we know of that exceeds that. We also added the recent DC Water sampling data they collected for their water line work. All of those samples came into play during the analysis.

USACE added that this subject would not have to be in the FS if the RI says there is no unacceptable risk.

ERT added that the locations of the areas of elevated arsenic that were left in place are all described in the RI.

P. DeFur commented that this is not about current risk, but future risk. Excavating the roads would be DC's call if there was some level of arsenic above 100 ppm. They would want to have some sort of control actions. In that case, USACE would put this information in the FS and say there is no current but future risk if you excavate the soil.

USACE explained that there is an explanation in the RI that establishes that nothing exceeds 100 ppm.

P. DeFur added that it would be up to DC to confirm this limit is acceptable. If there is nothing over that, then that is fine. USACE confirmed that there is nothing over that.

N. Wells asked how much of the roads have been sampled. USACE explained that the roads were not sampled directly, but when the team did soil removals and hit side walls, the side walls were sampled and tested for arsenic. ERT read a paragraph from the RI to help answer these questions:

> A review of the 68 properties where one or more samples were collected adjacent to a city street indicates that of 228 soils samples, only 14 contained arsenic greater than 20 ppm, and only 3 of those concentrations were greater than 43 ppm, with the highest being 46.6 ppm. In addition, recent sampling investigations associated with DC Water indicated that of the 46 samples collected from 23 separate locations, none of them exceeded 11 ppm arsenic.

ERT noted that the RI explains the uncertainly associated with the arsenic in the soil under the roads because they were not sampled. However, based on sampling results in multiple locations leading up to the street, the existence of areas of arsenic over 100 ppm, under the streets, is not likely. We have laid out a risk assessment calculation of the protectiveness of 100 ppm based on a construction worker receptor scenario.

EPA commented that he will give the RI to his risk assessor once the risk assessment tables are included, because he does not like to give her partial documents. He wondered what the time line for their release would be. ERT noted he expected to mail the remainder of the documents within a few days of the Partnering meeting.

USACE added information on the changes to the previously presented MEC HA. The MEC HA currently does not score an area that was previously scored. ERT explained that the Stokes buffer area previously scored a 3 and was recommended for further work. We relooked at the score because it was based on an item [found on Quebec St.] that we realized did not arrive there as a result of ballistic firing. Once this non-ballistically fired MEC items were removed from the MEC HA, there was no MEC item to score for that area through the MEC HA. USACE added that at one time they presented a score for that portion of the range fan, but now the RI says it is not being scored because there was no item found to fit the CSM. The item that was found was associated with another small test area, also classified as a known disposal area, which has been completely investigated and remediated.

Personal Identifiable Information (PII) Discussion

EPA asked if the assurance letters generally have the name and addresses in the admin record. Is that considered PII, or is that ok? Should we redact the names on the comfort letters in the RI appendices, and just have the addresses? No one really needs the name of the resident, just the information in the letter.

USACE explained that some of these comfort letters are in the appendices, but we do not name property owners in the RI document itself. This would be a question for legal counsel and may need to be answered before the public release. For the sake of release to the Partners, it is ok.

USACE will resolve the PII topic with our legal counsel. However, council did review the RI and did not have objections. EPA thought the comfort letters may have just not caught council's eye. USACE added that these documents are meant to be shared and passed around. Eventually the person who holds the letter will not be the final owner. EPA explained that when they do sampling, what EPA gives to the homeowner is not the same as what is in the admin record.

12. RI Review Timeline Discussion

The December 9 Partners' meeting starts the 60-day Partner review period, which means comments would be due on February 9, 2015. However, USACE is open to extend this timeframe a bit since the holiday break falls during this time, per the Partners request. The Partners also discussed the level of information to provide at the January RAB meeting.

P. DeFur suggested that USACE speak with RAB Co-Chair, Greg Beumel about this as well. He cannot attend the January RAB meeting to make a presentation. He suggests that, in January, USACE inform the

RAB where they are in the review process, information about what USACE has done, and how they have done it, in the past 22 years, and the next steps.

EPA would like the Partners to be in agreement over the RI recommendations before they talk about it to the RAB. It is preliminary to say what the results are before the toxicologist and those who will look at the calculations and have a chance to review. The Partners may have an issue with the current draft which could result in a change before the document is publically released. In January, USACE should tell the RAB that USACE briefed the Partners on December 9, and the RI is now under Partner review with comments expected in the middle of February. Once those comments are received, USACE will have a more robust discussion with the RAB in March about the RI content and conclusions. At that time, P. DeFur can make his presentation as their representative. P. Chrostowski agreed and requested to brief Linda Argo before the meeting.

USACE confirmed that at the January 13 RAB meeting, USACE will describe the organization of the RI, and how and what USACE has accomplished at the site. The March RAB meeting presentation will have a more detailed briefing on the RI conclusions, with P. DeFur's help.

EPA added that his team at EPA will aim to have comments back to USACE by the next Partnering meeting in February. P. Chrostowski and P. DeFur agreed.

Informal Public Review Discussion

The Partners discussed the approach to contact properties owners whose properties are identified as having potentially unacceptable MEC risk.

EPA wondered if there was a way to not identify those properties. USACE explained that yes they could leave out the specific properties, but at some point they would have to start because it will be in the final document one way or another.

N. Wells asked how these decisions affect comfort letters. EPA explained that the comfort letters do not speak to munitions, only arsenic and chemical contamination.

USACE requested Partner input for determining how much effort is needed to contact these homeowners about the RI results.

N. Wells added that this information will also interest the neighbors.

EPA suggested getting together with the USACE Corporate Communications Office and the Outreach team to help make that decision. If their property is going to show up on a map, you should tell them ahead of time and explain what it means.

P. DeFur added that USACE could start making phone calls and conceptualize what the homeowners will ask, and if you will meet them one-on-one, etc. USACE stated that they would start planning this effort and keep the Partners informed.

USACE added that these potential actions could take 2-3 years to actually occur. [The work will be after the FS, PP, and DD have been finalized, and then the remedial design.] P. DeFur agreed that this process would not take less than 18 months.

EPA added that this information is important for disclosure. He noted that some of these properties have already been looked at and may be called off the list. Maybe these properties can be painted green instead of blue on the map, like the other properties that have not been investigated at all.

USACE explained that originally the figure just highlighted properties where nothing had been done, but felt it was premature to identify this area and say that not all of these properties may need a second look or additional work. If the work that has been completed is valid, then the 100 properties could go down to 50 properties. However, these decisions must wait until the Proposed Plan stage.

EPA did not think this was necessarily true if the RI looked at the work that has been done on the 50 properties and determined the work was reasonable and appropriate. And for those 50 properties, the MEC HA would be much lower because they were geophysically and intrusively investigated where warranted. We should tell the property owners what has been done on their properties, but we have to go through these report motions, even if we think it is unlikely there will be additional work performed.

EPA commented that USACE could approach the homeowners anytime between February and March, since the Partners will look at how risk was calculated for chemicals, not at the MEC HA again. Comments from EPA will most likely be about the Stokes area, not the areas chosen for further evaluation in the FS. USACE added that the Partners still have to look at AOI 9 and cobalt, which is all in the same areas.

The Partners discussed the timeline for starting the public review period in relation to the March RAB.

USACE noted that a public review period is being considered right after the Partner's review period in February. However, the RAB will not be briefed on the recommendations until March. P. DeFur and EPA concurred that USACE can release the public document for the March RAB.

In response to N. Well's question, the Partners explained that this is a possible sequent of events only. The release of the draft final RI is subject to change based on Partner review comments.

USACE explained a 45-day public review period is planned. During this time, USACE will host a public meeting to brief the RI document and answer any questions. There will be multiple weeks after the meeting for the community to look further into the document and submit comments for USACE review.

P. DeFur agreed with EPA and recommended that USACE call Greg Beumel about this potential schedule.

E. 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.

No open issues or new data was provided.

F. 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 noted that the document coming up for Partner review is the Groundwater RI. The Draft-Final Site-Wide RI was made available to the Partners at this Partnering Meeting.

G. Partner's Parking Lot

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

No updates to the Parking Lot were provided.

H. Agenda Building

The next meeting is scheduled for 10 February 2015.

I. Adjourn

The meeting was adjourned at 12:35p.m.