



SPRING VALLEY FORMERLY USED DEFENSE SITE PROJECT
RAB Meeting

November 13, 2018
7:00 – 8:30 p.m.

UNDERCROFT MEETING ROOM
ST. DAVID'S EPISCOPAL CHURCH
5150 MACOMB ST. NW, WASHINGTON, DC

Agenda

- 7:00 p.m. I. Administrative Items**
Co-Chair Updates
 ▪ Introductions, Announcements
Task Group Updates
 ▪ TAPP Contractor
- 7:15 p.m. II. USACE Program Updates**
Project Funding
Site-Wide Remedial Action
Glenbrook Road
Groundwater Study
- 8:05 p.m. III. Community Items**
- 8:10 p.m. IV. Open Discussion & Future RAB Agenda Development**
Upcoming Meeting Topics:
 ▪ (Suggestions?)

 *Next meeting: January 8, 2019
- 8:20 p.m. V. Public Comments**
- 8:30 p.m. VI. Adjourn**

**Note: The RAB meets every odd month.*

SPRING VALLEY FORMERLY USED DEFENSE SITE

**Restoration
Advisory Board
Meeting
13 November 2018**

“The USACE Mission in Spring Valley is to identify, investigate and remove or remediate threats to human health, safety or to the environment resulting from past Department of Defense activities in the area.”

“The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”



AGENDA REVIEW

Co-Chair Updates

- Introduction, Announcements

Task Group Updates

- TAPP Contractor

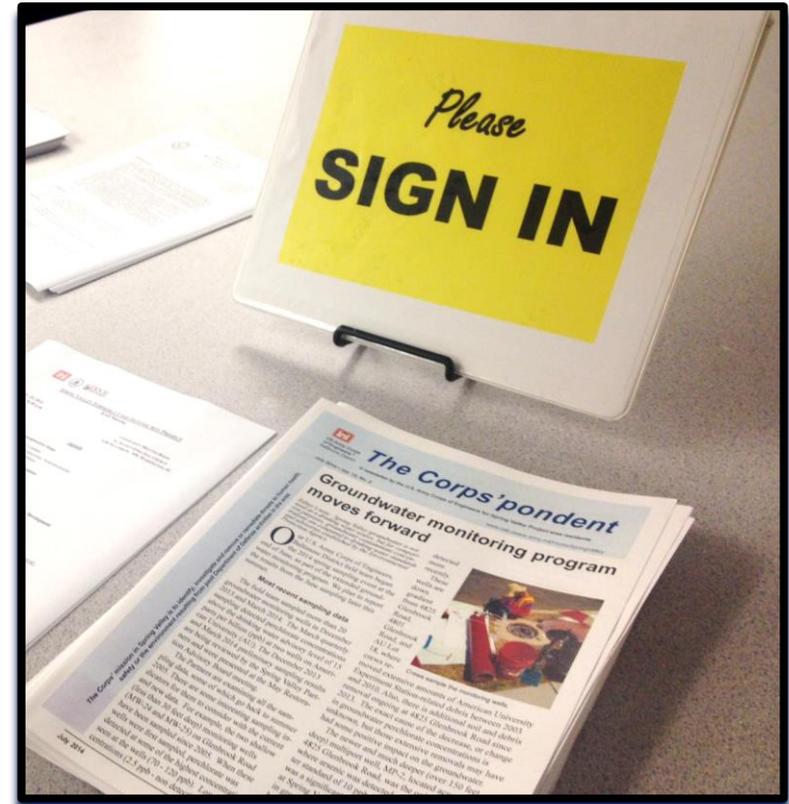
USACE Updates

- Project Funding
- Site-Wide Remedial Action
- Glenbrook Road
- Groundwater Study

Community Items

Open Discussion & Future RAB Agenda Development

Public Comments



US Army Corps
of Engineers.

CO-CHAIR UPDATES

Introductions



CO-CHAIR UPDATES

Announcements

Website Updates:

- September and October Monthly Site-Wide Project Updates
- Weekly 4825 Glenbrook Rd Project Updates with photos
- September RAB meeting minutes
- August Partner meeting minutes
- Update RAB member roster
- LUCIP *(also available in the Information Repository at the Tenley Friendship Library)*



HOME > HOME > SPRING VALLEY

Announcements

Next Restoration Advisory Board Meeting - May 8, 2018

The next RAB meeting is scheduled to be held on **Tuesday, May 8 at 7 pm**. These meetings are open to the public. Currently, the RAB meets every other month for 60-90 minutes in the 'Undercroft' meeting room at St. David's Episcopal Church, 5150 Macomb Street NW, D.C.

Final Site-Wide Decision Document Now Available:

The Final Site-Wide Decision Document is complete and is now available at the Information Repository and for download here on our site. The Decision Document outlines the selected remedies to address both unacceptable risks posed by soil contamination and unacceptable explosive hazards posed by the possible presence of munitions and explosives of concern (MEC).

Click here to visit the Site-Wide section of the Spring Valley page where the Final Site-Wide Decision Document can be downloaded.



Caption



◀PREV NEXT▶



Spring Valley Overview

The Spring Valley Formerly Used Defense Site (FUDS) consists of approximately 660 acres in the northwest section of Washington, D.C. During the World War I-era, the site was known as the American University Experiment Station, and was used by the U.S. government for research and testing of chemical agents, equipment, and munitions. Today, the site encompasses

Project Efforts

- Project Update
- 4825 Glenbrook Road
- Site-Wide
- Groundwater

Project Documents



US Army Corps of Engineers.

TASK GROUP UPDATES

- New TAPP Contractor Update



ANNUAL PROJECT FUNDING

USACE Updates



**US Army Corps
of Engineers.**

SPRING VALLEY FUDS FUNDING SUMMARY

➤ **FY18, Actual Funding (\$25.228 M)**

▪ **Military Munitions Response Program (\$25.093 M)**

- Site-Wide Remedial Action (\$4.479 M)
- Conduct Remedial Action at 4825 Glenbrook Road (\$20.604 M)
- Stakeholder Outreach
- Site Security



▪ **Hazardous Toxic Waste (\$0.111 M)**

- Site-Wide Remedial Action (\$0.073 M)
- Groundwater RI/FS/PP/DD (\$0.038 M)

▪ **Technical Assistance for Public Participation (TAPP) (\$0.024 M)**

- RAB Cost



SPRING VALLEY FUDS FUNDING SUMMARY

➤ **FY19, Projected Funding (\$11.854 M)**

▪ **Military Munitions Response Program (\$11.596 M)**

- Site-Wide Remedial Action (\$5.832 M)
- Remedial Action at 4825 Glenbrook Road (\$5.745 M)
- Stakeholder Outreach
- Site Security

▪ **Hazardous Toxic Waste (\$0.178 M)**

- Site-Wide Remedial Action (\$0.072 M)
- Groundwater RI/FS/PP/DD (\$0.106 M)

▪ **Technical Assistance for Public Participation (TAPP) (\$0.080 M)**

- RAB Technical Consultant
- RAB Cost



**US Army Corps
of Engineers.**

SPRING VALLEY FUDS FUNDING SUMMARY

FY	1993	1994	1995	1996	1997	1998	1999	2000
\$\$ in M	11.859	8.861	1.744	0.087	0.292	1.164	8.874	10.892

FY	2001	2002	2003	2004	2005	2006	2007	2008 _a
\$\$ in M	9.824	19.819	11.000	11.471	20.362	11.063	13.843	20.871

FY	2009	2010	2011	2012	2013	2014	2015	2016
\$\$ in M	15.700	19.345	17.220	6.501	9.210	33.280	3.561	7.497

FY	2017	2018	2019 _b	2020				
\$\$ in M	13.900	25.228	11.854	--				

Spent through FY 2018: \$ 313.468M

a = FY08 includes \$3.2 M Congressional additional funding
b = Planned funding for FY19



SITE-WIDE REMEDIAL ACTION (RA)

USACE Updates



SITE-WIDE REMEDIAL ACTION

Munition Education and Awareness

The **'Land Use Control Implementation Plan,'** or **LUCIP** has been finalized. The **LUCIP** entails continuing the *3Rs* of the Explosive Safety Education Program (*Recognize, Retreat, Report*), and 5-year reviews to ensure that human health and the environment continue to be protected.



The team continues to prepare a FUDS information notice, along with a brochure about the 3Rs, to distribute to the community once the LUCIP is reviewed by the Spring Valley Partners and finalized. Initial distribution is anticipated this Fall. Then distributed annually every spring.

The informational notice and brochure will be sent to all property owners and institutions within the Spring Valley FUDS boundary. This includes Sibley Hospital, the Washington Aqueduct, American University, Wesley Seminary, and the local police department.



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WHAT IS A 5-YEAR REVIEW?

As part of the CERCLA process, five-year reviews provide an opportunity to evaluate the implementation and performance of a remedy to determine whether it remains protective of human health and the environment.

Generally, reviews take place five years following the start of a CERCLA response action, and are repeated every succeeding five years so long as future uses remain restricted.

Five-year reviews can be performed by EPA or the lead agency for a site. EPA retains responsibility for determining the protectiveness of the remedy.

(Reference: <https://www.epa.gov/superfund/superfund-five-year-reviews>)

The first five-year review is anticipated in 2023.

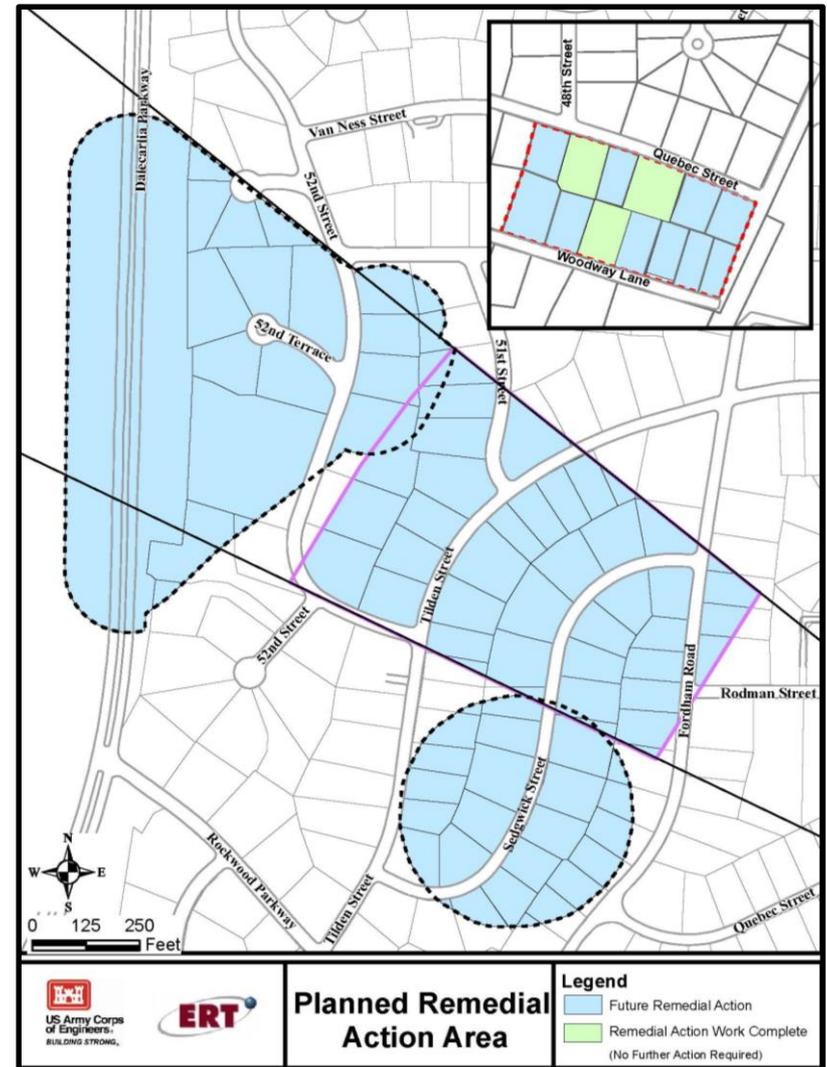


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SITE-WIDE REMEDIAL ACTION

Final survey effort at 91 residential properties and 13 Federal/City Lots:

- Rights-of-Entries received from 33 residential properties.
- 33 civil surveys and 29 arborist surveys have been completed.
- Geophysical clearing walkthroughs completed at 26 properties.
- Preparing 26 Vegetation Removal Plans for property owner approval.
- Vegetation removed from 4 properties and 7 City/Fed lots.
- Clearing completed and initial geophysical surveys ongoing with the MPV and G-858 at 4 private properties and 4 City/Fed lots off Dalecarlia Parkway.



SITE-WIDE REMEDIAL ACTION

Advanced Geophysical Classification (AGC) survey efforts underway



Once the landscape appraisal and removal plan is approved by the team and the homeowners, the approved plants are removed, tied or propped up.

If they are not trimmed, long tree limbs are temporarily held up by plastic piping in order to get as much geophysical coverage around the tree as possible, while smaller shrubs are removed with the homeowners' approval.



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SITE-WIDE REMEDIAL ACTION

Advanced Geophysical Classification (AGC) survey efforts underway



Once the approved landscape is removed, the Army Corps and Weston Geophysicists separately bury several blind seeds on each property (and each Dalecarlia Woods lot) for quality control and quality assurance measures.

These blind seeds are removed during the anomaly removal phase at each property/lot.



SITE-WIDE REMEDIAL ACTION

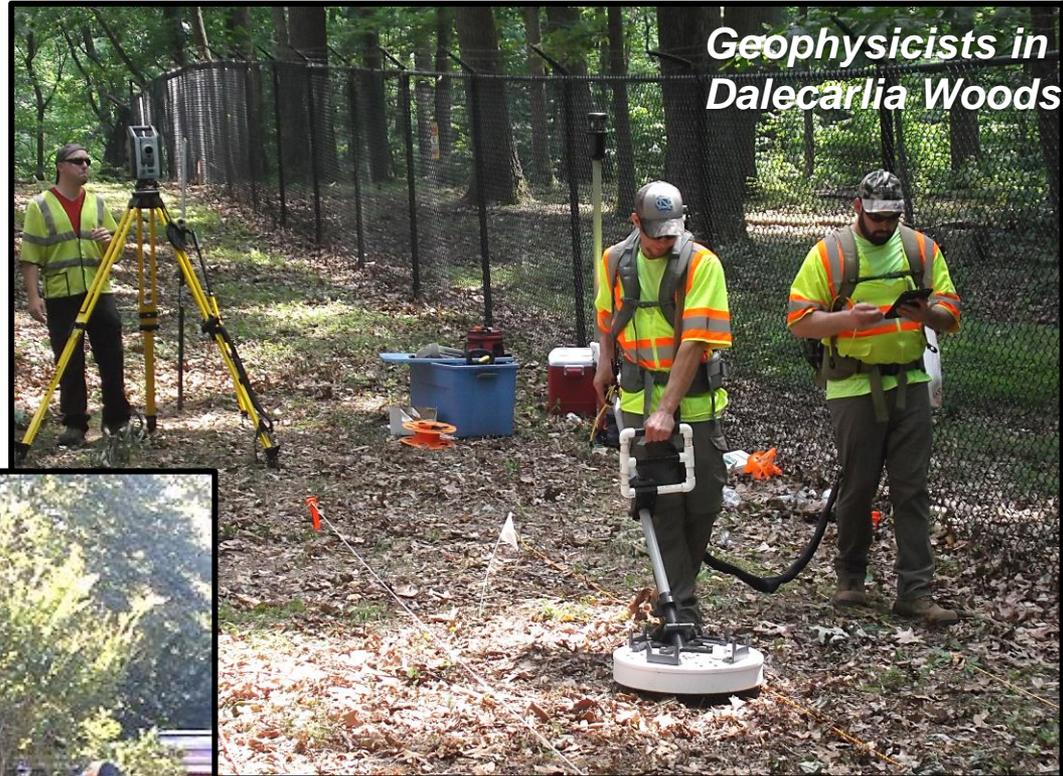
Activities at some of the 91 private properties



Right after blind seeding, a separate Weston geophysicist team begins conducting dynamic surveys with the MPV (man portable vector)

SITE-WIDE REMEDIAL ACTION

Geophysicists team conducting dynamic survey with the MPV



Geophysicists in Dalecarlia Woods



The geophysicists set up rope lanes to help collect uniform data and to ensure they cover all accessible parts of the property.



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SITE-WIDE REMEDIAL ACTION

Once the dynamic data collection with the MPV is complete, the geophysicists team conducts a dynamic data collection survey with the G-858.



Walkways and driveways are considered 'accessible areas' if they are not reinforced with metal rebar



SITE-WIDE REMEDIAL ACTION

Advanced Geophysical Classification (AGC)



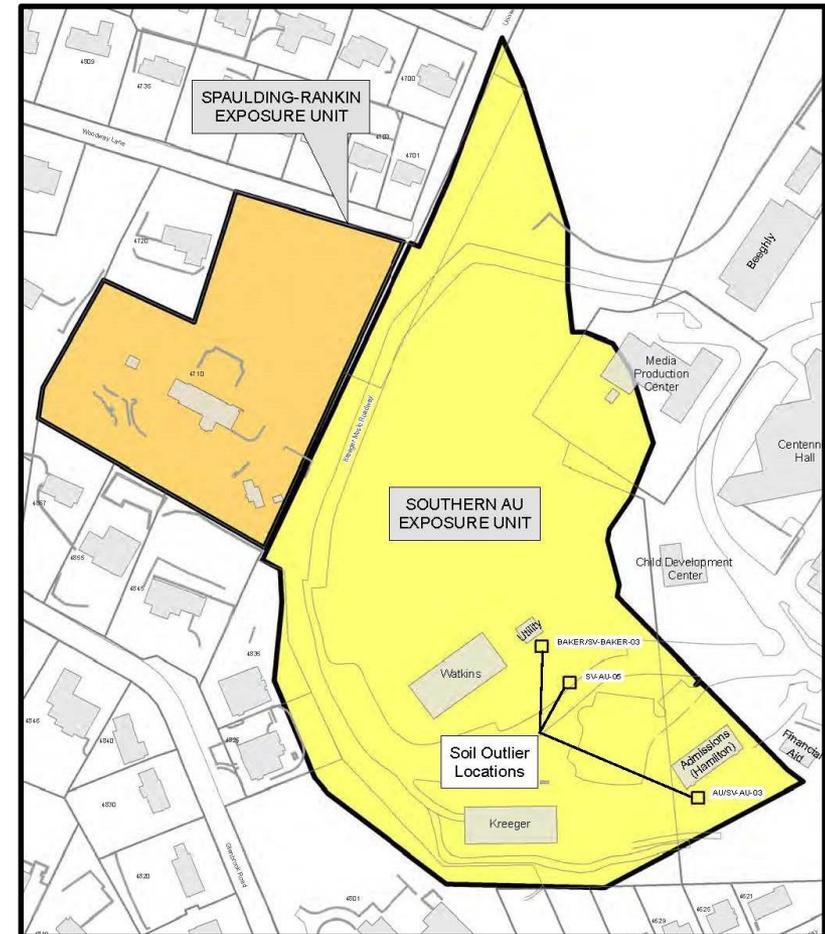
Geophysicists conducting Cued survey to characterize metallic anomalies



SITE-WIDE REMEDIAL ACTION

Hot spot soil removal at one residential property (*Spaulding and Captain Rankin Area, or SCRA*):

- ✓ Completed excavating and backfilling of 4 out of 6 locations.
- ✓ Conducted a preliminary restoration site walk with SCRA homeowner, documented site conditions and damages.
- ✓ Safety training completed with crew due to continued rain and harsh excavation conditions.
- Continued soil removal in early winter.
- Restoration in the spring.

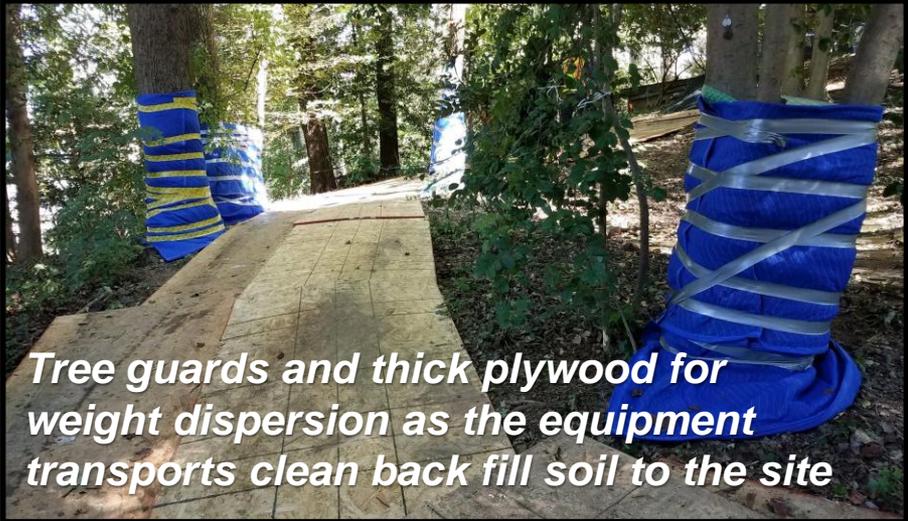


Soil Excavation Areas



SITE-WIDE REMEDIAL ACTION

Contaminated Soil Removal Activities at SCRA



Tree guards and thick plywood for weight dispersion as the equipment transports clean back fill soil to the site



Staged clean back fill soil covered for inclement weather



Hydro-excavating to minimize damage to tree roots in certain locations



Soil Vacuum Truck for Hydro-excavation

Remedial Action - Tentative Schedule

Right-of-Entry → Schedule civil survey & landscape appraisal → Geophysical surveying →
Data processing → Anomaly removal → Restoration

Fall

Continue to finalize plant removal plans for first groups of homeowners; start geophysical surveys at first group of properties; continue soil removal and begin restoration at Spaulding-Captain Rankin.

Late-Fall

Finalize and distribute the Munitions Education and Awareness packet (first of future annual spring mailings).

Winter

Continue finalizing plant removal plans with subsequent groups in preparation for geophysical surveys; begin to obtain Rights-of-Entry from the next group of homeowners. Begin soil removal preparations for the southern AU campus exposure unit.

FORMER PUBLIC SAFETY BUILDING

Excavate under the foundation of AU's former Public Safety Building (PSB):

- The team is working to shut off the gas line that passes along the edge of the PSB foundation and cinder block walls.
 - Before shutting off the gas line, the team had to provide an alternative source of heat for the Jack Child Building. These heat pumps are now installed and working.
 - The gas line shut off date is scheduled for late November.
 - Once the gas line is shut off, the team will construct a temporary access road (from Fletcher Gate) and complete the site set up around the December holidays.
- Mobilization for slab and soil removal is tentatively scheduled to begin in early January.



FORMER PUBLIC SAFETY BUILDING



Jack Child Hall



New HVAC system electrical connection in utility room of Jack Child Hall



Former Public Safety Building - Remedial Action Tentative Schedule

Fall	Complete Shut-off / Rerouting of Gas Utility Line.
Winter	Remove Concrete Foundation Slab. Excavate Contaminated Soils Underneath Removed Foundation Slab.
Winter/Spring	Take Confirmation Samples.
Winter/Spring	Backfill With Clean Soil. Restoration and Demobilization.



GLENBROOK ROAD

USACE UPDATES



RECENT ACTIVITIES – 4825 GLENBROOK RD



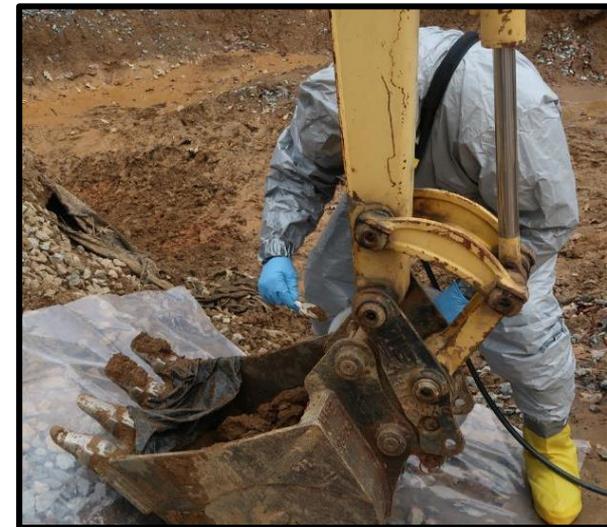
The MINICAMS shed, dress-out structure, and cascade system were put in place on leveled platforms.

Site work preparation was completed for the return-to-work operations.



RECENT ACTIVITIES – 4825 GLENBROOK RD

- Prepared all personal protective equipment (PPE) for our upcoming training sessions prior to resuming work.
- Completed all the required refresher training and final equipment tests, which also included training the ambulance and hospital staff.



A crew member taking a soil sampling from the excavator

- The crew will be in the necessary full Level B protective gear, and using mechanical digging equipment when possible.



RECENT ACTIVITIES – 4825 GLENBROOK

Crews finished removing the clean backfill that was placed at the site over the last excavation area, for mitigation during the site shutdown.

Crews filled drums with staged soils that had been previously excavated. No glassware was detected.

The excavation and drum filling will continue to be done in Level B protective gear with our additional weather restriction safety protocols.

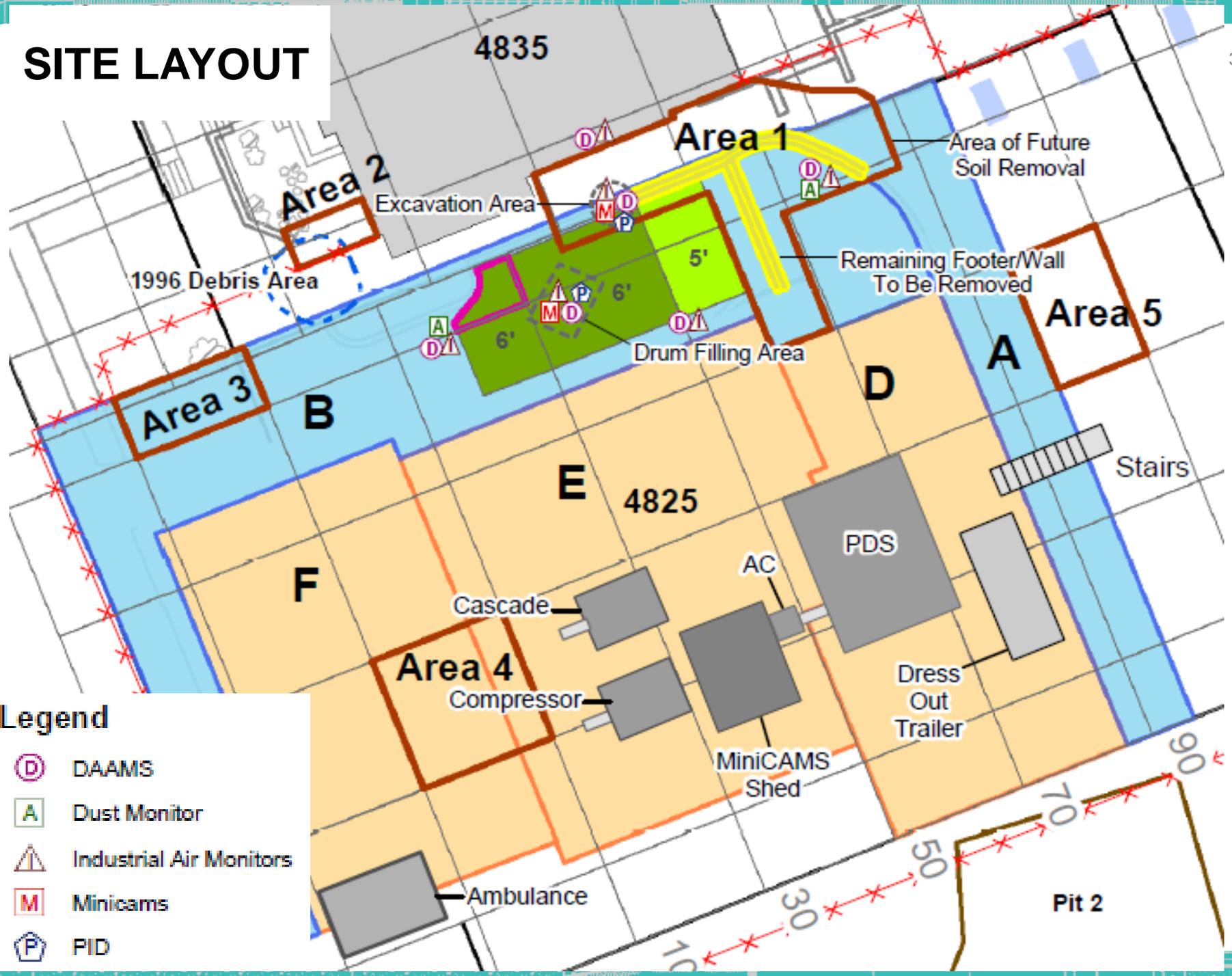


Crew working in Level B gear using a mini-excavator to load soil into drums



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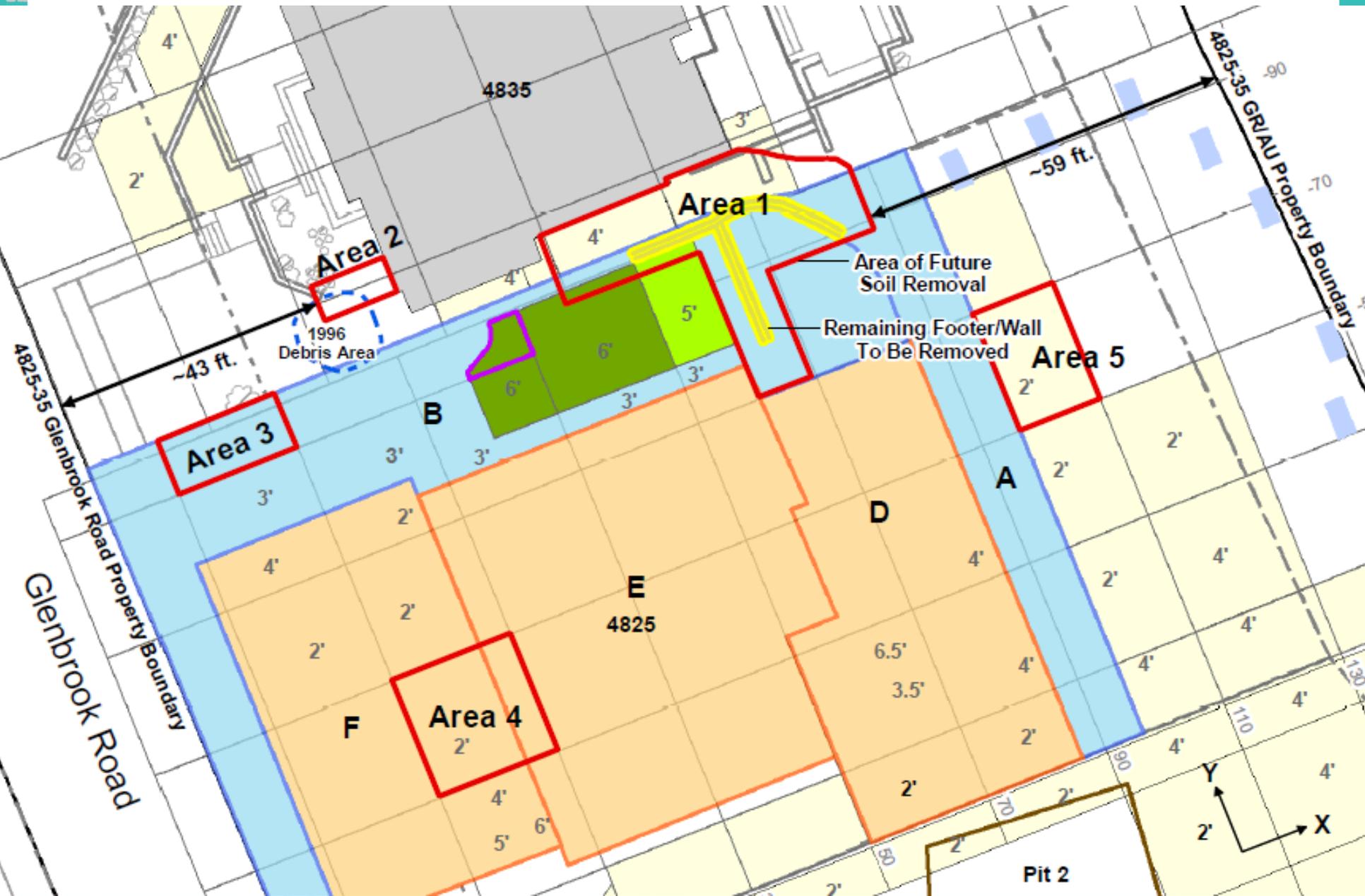
SITE LAYOUT



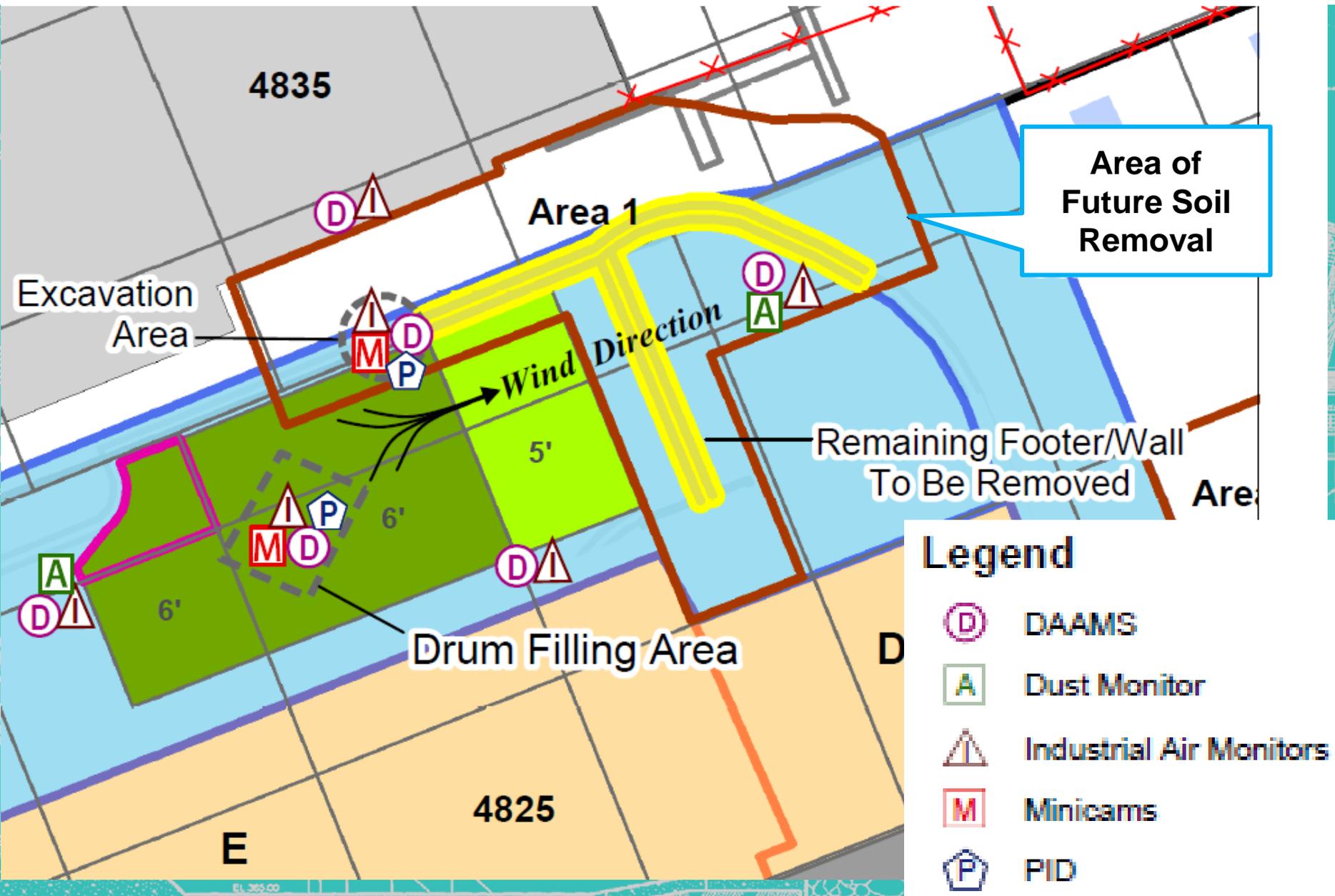
Legend

- DAAMS
- Dust Monitor
- Industrial Air Monitors
- Minicams
- PID

AREAS TO BE EXCAVATED



AIR MONITORING LOCATIONS



HOLIDAY SCHEDULE: GLENBROOK RD PROJECT AREA

Current Holiday Schedule	<p>Working until November 21st, and resume work on November 26th.</p> <p>Working until December 21st, and remobilize on January 3rd, with intrusive operations beginning again on January 7th.</p>
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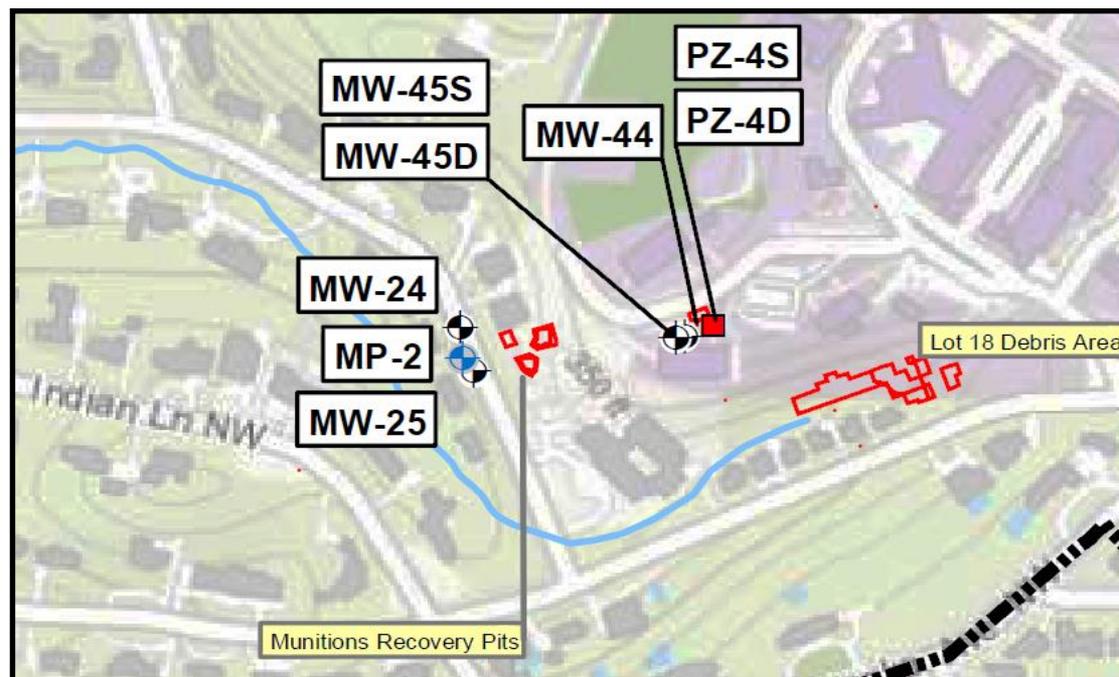
TENTATIVE SCHEDULE: GLENBROOK RD PROJECT AREA

Fall/Winter 2018/19	<p>Resume the soil removal operation along the 4825/4835 Glenbrook Road property line.</p> <p><i>Working hours:</i> Monday - Friday from 6:30 am to 5:00 pm. Heavy equipment operations do not begin until after 7:00 am.</p>
Spring/Summer 2019	<p>Potential completion of remedial activities at 4825 Glenbrook Road.</p> <p>Start of site restoration for Glenbrook Road sites – 4801, 4825, and 4835.</p>



GROUNDWATER STUDY

USACE Updates



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SPRING VALLEY GROUNDWATER

Agenda:

- Remedial Investigation Summary
- Feasibility Study Summary
- Army Corps' Preferred Remedy in the Proposed Plan
- DOEE Dispute Resolution



GROUNDWATER REMEDIAL INVESTIGATION (RI)

The RI was initiated in 2005: sampling included 56 monitoring wells and 27 surface water locations. Last sampling occurred in April 2015.

RI Conclusions:

- **NO unacceptable risk to current receptors:**
 - Groundwater is not used as a drinking water source. AU and local residents are connected to the city water supply.
- **Potential unacceptable risk for future receptors would occur if groundwater is used as a drinking water source within Exposure Unit 2 (EU2) – the area next to Kreeger Hall and adjacent to the Glenbrook Rd disposal areas.**
 - Perchlorate concentrations above drinking water advisory level next to Kreeger Hall.
 - Arsenic concentrations above drinking water standard in one well on Glenbrook Rd (EU2).
- **Conduct a Feasibility Study to determine the best alternative to address the groundwater risk to future residential users at EU2 (vicinity of American University and Glenbrook Road).**



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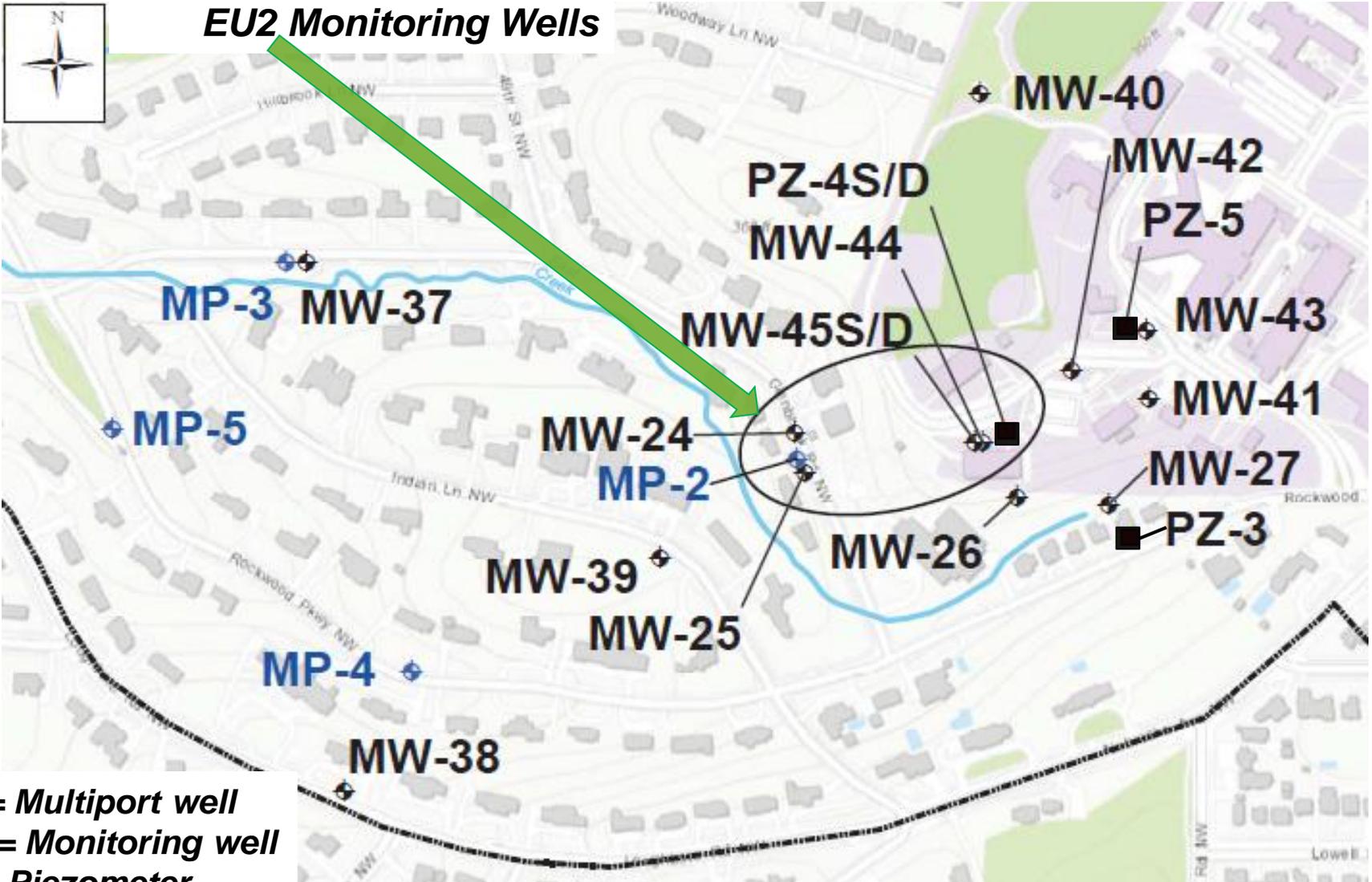
ARSENIC AND PERCHLORATE IN EU2

- Perchlorate and Arsenic detections above drinking water level are isolated. These concentrations are stable/decreasing.
- Arsenic is slightly above 10 parts per billion (ppb) drinking water standard at one location: multi-port (MP)-2 (maximum detection during last sampling event was 12 ppb).
- Perchlorate was only present above the 15 ppb Drinking Water Advisory Level (DWAL) next to Kreeger Hall (maximum detection during last sampling event was 39 ppb).
- Perchlorate is no longer present above DWAL (15 ppb) along Glenbrook Road. The number of wells with DWAL exceedance have decreased from six to two wells.
- There has been significant soil source removal: about 40,000 tons of contaminated soil or debris has been removed in area around Exposure Unit 2.



ARSENIC AND PERCHLORATE IN EU2

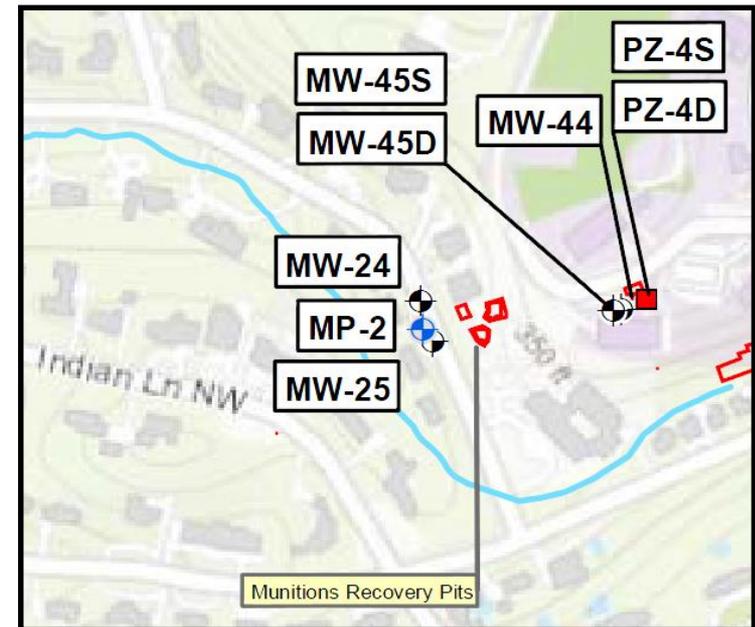
Areas encompassing the EU2 Monitoring Wells



MP = Multiport well
MW = Monitoring well
PZ = Piezometer

GROUNDWATER FEASIBILITY STUDY (FS)

- **Remedial Action Objective: Prevent ingestion of groundwater above drinking water levels in Exposure Unit 2.**
- **Six Alternatives were evaluated:**
 - No Action
 - Land Use Control/Long Term Monitoring (LUC/LTM)
 - In Situ Permeable Reactive Barrier and Bioremediation
 - Pump and Treat – Ion Exchange
 - Pump and Treat – Reverse Osmosis
 - Monitored Natural Attenuation
- **DOEE and EPA did not concur with the inclusion of the LUCs and LTM alternative, since it does not include an objective to achieve drinking water standards in groundwater.**



GROUNDWATER PROPOSED PLAN (PP)

- **Based on the Feasibility Study, the Army Corps selected Land Use Controls (LUC) and Long Term Monitoring (LTM) as the preferred remedy. Remedy includes:**
 - Periodic notices to property owners that groundwater is not suitable for use as drinking water (approximately 40 property owners). Monitoring of groundwater to determine when LUCs can be removed.
 - **Additional benefits/rationale for preferred remedy:**
 - Protective of human health and the environment under current and foreseeable land use conditions.
 - Reduced impacts to the community due to absence of construction activities.
 - Does not involve injecting chemicals into the subsurface.
 - Physical construction of treatment systems would be very challenging in this residential/campus neighborhood.
 - LUCs/LTM are appropriate for the limited nature of groundwater contamination, with all residents connected to city water supply, and with the extensive soil source removal that has already occurred ($\approx 40,000$ tons).



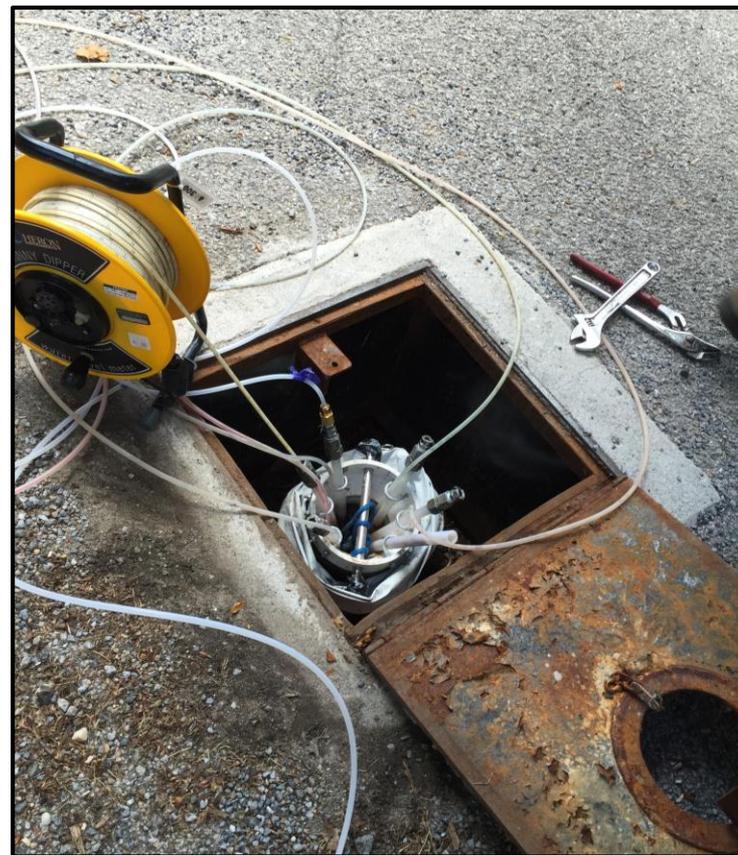
DISPUTE RESOLUTION

- **After receipt of the Draft Final Proposed Plan, DOEE submitted a request for Dispute Resolution under the DoD/District Memorandum of Agreement (DDMOA).**
- **Nationwide DoD/EPA Policy Disagreement:**
 - EPA and DOEE position: groundwater must be restored to drinking water standards if groundwater could be used as drinking water source.
 - DoD position: CERCLA is risk based, cleanup decisions should be based on protection of human health and the environment. Prevention of exposure is an acceptable remedy.
- **DDMOA includes provisions for a three-tier dispute resolution process**
 - Tier 1 – Baltimore District Commander, Deputy Director DOEE.
 - Tier 2 – Headquarters-USACE Environmental Division Chief, Director DOEE.
 - Tier 3 – Deputy Assistant Secretary of the Army for Environment, Safety, and Occupational Health (DASA ESOH), DC Mayor.
- **Tier 1 meeting held on November 5:**
 - USACE/DOEE reiterated their positions on this issue.
 - DOEE offered alternative to collect more data, or proceed to Tier 2.
 - USACE anticipates responding to DOEE this Fall.



TENTATIVE GROUNDWATER SCHEDULE

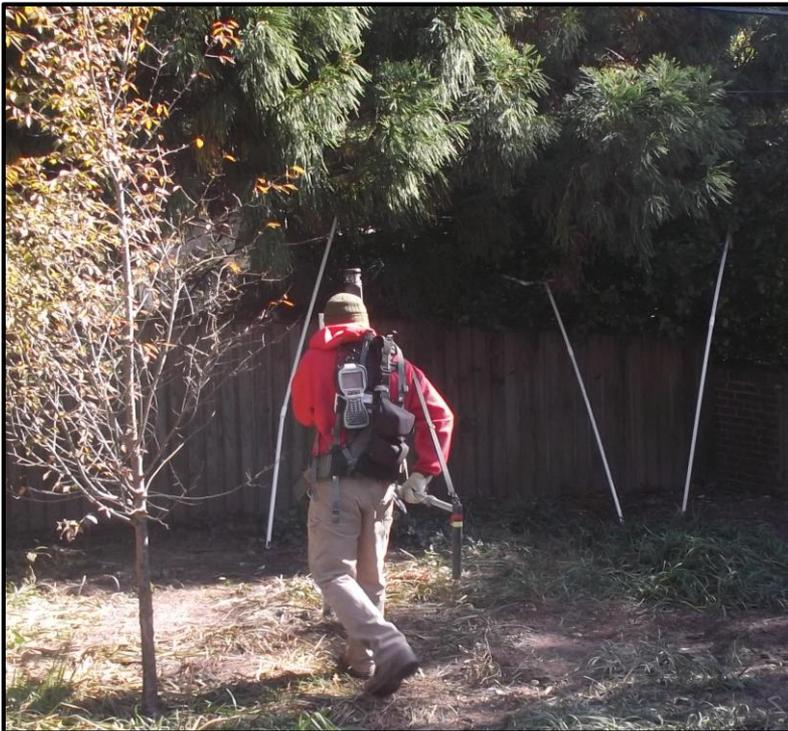
- **Winter 2018/19:**
Address Dispute
Resolution Request
- **Winter 2019:** Finalize
Feasibility Study.
- **Spring 2019:** Proposed
Plan, public comment
period, public meeting.
- **Fall 2019:** Final
Decision Document.



MP-5 on Rockwood Parkway

SPRING VALLEY FUDS RESTORATION ADVISORY BOARD

Community Items



SPRING VALLEY FUDS RESTORATION ADVISORY BOARD

Open Discussion:

Reminders:

- The next RAB meeting will be
Tuesday, **January 8th, 2019**

Upcoming Agenda Items:

- Suggestions?



**US Army Corps
of Engineers.**

SPRING VALLEY FUDS RESTORATION ADVISORY BOARD AGENDA (continued...)

- **Public Comments**
- **Wrap-Up**



**Have a wonderful
holiday season!
See you next year!**



**U.S. Army Corps of Engineers
Spring Valley Restoration Advisory Board
St. David's Episcopal Church
Minutes of the November 2018 Meeting**

RESTORATION ADVISORY BOARD MEMBERS PRESENT AT THIS MEETING	
Dan Noble	Military Co-Chair/USACE, Spring Valley MMRP Manager
Greg Beumel	Community Co-Chair
Jennifer Baine	Community Member
Brenda Barber	USACE, Spring Valley Project Manager
Paul Bermingham	Community Member
Mary Bresnahan	Community Member
Mary Douglas	Community Member
Paul Dueffert	Community Member
Alma Gates	At Large Representative - Horace Mann Elementary School
Steve Hirsh	Agency Representative - Environmental Protection Agency (EPA) Region III
Andrew Huff	American University
William Krebs	Community Member
Lawrence Miller	Community Member
Lee Monsein	Community Member
Tom Smith	Community Member
George Vassiliou	Community Member
John Wheeler	Community Member
RESTORATION ADVISORY BOARD MEMBERS NOT PRESENT AT THIS MEETING	
Malcolm Pritzker	Community Member
Dave Tomlinson	Agency Representative - Department of Energy & Environment
ATTENDING PROJECT PERSONNEL	
Todd Beckwith	USACE
Kathy Davis	EPA
Alex Zahl	USACE, Spring Valley Technical Manager
Rebecca Yahiel	Spring Valley Community Outreach Program

Whitney Gross	Spring Valley Community Outreach Program
Chris Gardner	USACE – Corporate Communications Office
Holly Hostetler	ERT, Inc.
Carlos Lazo	USACE, Government Affairs Liaison
HANDOUTS FROM THE MEETING	
I. Final Agenda for the November 13, 2018 RAB Meeting	
II. Army Corps of Engineers Presentation	
III. October 2018 Monthly Project Summary	

AGENDA

Starting Time: The Nov. 2018 Restoration Advisory Board (RAB) meeting began at 7:07 PM.

I. Administrative Items

A. Co-Chair Updates

Dan Noble, U. S. Army Corps of Engineers (USACE), Spring Valley Project Manager, welcomed everyone and opened the meeting.

1. Introductions

D. Noble welcomed Officer Tony McElwee of the District of Columbia Metropolitan Police Department (MPD) 2nd District to the RAB meeting. Officer T. McElwee offered to answer any questions or address any concerns of the RAB. Lieutenant Darren Haskis is the new Lieutenant for the MPD 2nd District. Officer McElwee modeled the new MPD uniform as of November 13, which included a body camera, radio, flashlight, bullet-proof vest, and handcuffs.

Officer McElwee encouraged residents to take advantage of the MPD 2nd District’s Ride-Along program. More information about the program can be found at MPDC.gov. Officer McElwee thanked the RAB and wished everyone a safe Thanksgiving and Christmas.

2. General Announcements

D. Noble reviewed website updates which included the September and October Site-Wide Monthly Project Updates, weekly 4825 Glenbrook Road updates and photos, September RAB meeting minutes, August Partner meeting minutes, updated RAB member roster, and the finalized Site-Wide Land Use Control Implementation Plan (LUCIP).

B. Task Group Updates

1. RAB Technical Assistance for Public Participation (TAPP) Consultant

D. Noble discussed the open RAB TAPP Consultant position with Ed Hughes, USACE Hazardous and Toxic Waste (HTW) Project Manager. USACE Baltimore will advertise the opportunity through FedBizOpps.gov, screen responding candidates, and present the list of qualified candidates to the RAB for review, likely by the next RAB meeting.

Comment from G. Beumel, Community Co-Chair - Yes, by next meeting if we have the group of names, we can then decide how we want to do it. When they hired Peter deFur, they had a small committee that reviewed the applicants. I do not know whether they selected P. deFur for us and

said, or whether they let us look at a couple resumes, and we agreed to make the offer to P. deFur. D. Noble confirmed that E. Hughes recalled that 3 or 4 resumes were presented to the RAB, the RAB selected P. deFur, and then the paperwork was completed to Sole Source P. deFur.

Comment from G. Beumel, Community Co-Chair - At the end of this meeting during New Business we can talk about who might want to look at the resumes first.

II. USACE Program Updates

A. Annual Project Funding

1. Fiscal Year (FY) 18, Actual Funding (\$25.228 M)

FY18 ended September 30. At the start of FY18, the projected budget was ~\$12 M. The largest portion of the funding was allocated to the Military Munitions Response Program. A large part of the unplanned expense was associated with the Board of Investigation. The Return-to-Work date at 4825 Glenbrook Road was unclear, so a budget for that work was not projected until summer of 2018.

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2. FY19 Projected Funding (\$11.854 M)

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 - Groundwater RI/FS/PP/DD (\$0.106 M)
- Technical Assistance for Public Participation (TAPP) (\$0.080 M). Unused funds from the remainder of FY18 after P. deFur retired will be used for efforts to hire a new TAPP consultant and fund the first year of the TAPP consultant's work:
 - RAB Technical Consultant
 - RAB Cost

Question from Tom Smith, Community Member - Is this part of the funding that has already been approved by Congress? This is not part of what they have to do right now?

D. Noble explained that the approved Formerly Used Defense Site (FUDS) work plan for FY19 has been passed and the funds are allocated to the Spring Valley effort. Congress allocated additional funds for FUDS projects as part of the Plus-Up Program, based on surplus funds in the

national FUDS budget. Additional funds may be requested for FUDS projects through the Plus-Up Program.

Question from T. Smith, Community Member - If they wind up having a partial shutdown of the government in December, this project would not be effected?

D. Noble confirmed that spending would not be affected. Paying for the labor might be affected. During shutdowns in the past, USACE Baltimore found ways to keep the project going; either being granted an exception or being designated by the USACE Baltimore Commander as a critical project that must continue.

Question from William Krebs, Community Member - A couple years ago you built in to the budget, with respect to Glenbrook Road, the anticipated costs that will be carried over for the next year. Do you recall that?

D. Noble explained that sometimes a big expenditure is shown because the project was pre-funded. The project was pre-funded at the end of FY18, and much of the \$20 M will be spent in FY19 by the contractor.

Question from W. Krebs, Community Member - And you did that again in FY16 or FY17?

D. Noble confirmed there have been years when large expenditures have been shown at the end of the year, because it would be impossible to spend that much money before the end of the year. That money is then added to the next year.

Question from W. Krebs, Community Member - So, the doubled numbers you are showing for 2018 really include the carryover into 2019?

D. Noble confirmed this.

Question from T. Smith, Community Member - If the Environmental Protection Agency (EPA) is forced to shut down temporarily, will it have any kind of impact on the day-to-day operations at the site?

Steve Hirsh, EPA Region III explained that if EPA is shut down temporarily, the shutdown would affect EPA but not the Spring Valley project.

B. Site-Wide Remedial Action (RA)

1. Site-Wide Land Use Control Implementation Plan (LUCIP)

The Site-Wide Land Use Control Implementation Plan (LUCIP) has been finalized. The LUCIP recognizes that there is no way to guarantee that all munitions left behind in WWI will be found. USACE Baltimore will engage with the community and conduct a continuing education program indefinitely until the program is deemed no longer necessary.

Part of the continuing education effort is the Department of Defense (DoD) 3 Rs (Recognize, Retreat, Report) explosive safety program. Mailings will be sent to the community once a year with information about the boundaries of the FUDS, the potential possibility that a munition could be encountered, and instructions on what to do if a munition is found. Now that The LUCIP has been finalized, the next step is to put together the information packets that will be mailed to the community. The packets will be reviewed by EPA and DOEE. The LUCIP calls for the mailing to be sent in the spring when most residents are preparing to conduct outdoor activities.

Question from M. Douglas, Community Member - Will the RAB have any involvement in taking

a look at it before it is finalized?

D. Noble confirmed that once EPA and DOEE have completed their review, the RAB will have the opportunity to review of the LUCIP.

Question from G. Beumel, Community Co-Chair - Should it be mailing addresses, because there are more apartments coming in all the time. If you send it to the property owners, it may or may not get to them.

D. Noble explained that USACE Baltimore has a way to determine the residential units within the community so that the occupants of the units will get the notice. For the institutions that are within the FUDS, such as Sibley Memorial Hospital, Washington Aqueduct, AU, and Wesley Seminary, USACE Baltimore will engage with the institutions and the institutions will distribute the information to their visitors and students.

Question from M. Bresnahan, Community Member - Why is it never mentioned that a portion of American University (AU) Park is actually part of the FUDS?

D. Noble asked if M. Bresnahan meant that USACE Baltimore does not call out the name of AU Park. He noted that the AU Park area is shown in the Spring Valley FUDS boundary map.

Question from M. Bresnahan, Community Member - I am in real estate and disclosures have to go out as well as the letters have to be produced if they wish to sell their property. They do not believe that it is necessary because it is never mentioned, it is only Spring Valley that is mentioned. I think that can be very serious in terms of, as you know, there have been some lawsuits. I think that there should be some way that this could be mentioned so it is clear. There are real estate agents that will not show anything in Spring Valley but will show properties in AU Park. When I mention to them there is a portion that is within the map of the Spring Valley FUDS, they say, 'well, they do not call it AU Park, therefore that is what we are going to do.' So, that concerns me and that is why I am asking the question.

D. Noble confirmed that traditionally over the years the area was called Spring Valley.

G. Beumel confirmed that he and several other RAB members live in the AU Park area. He noted that he understood why there may be lawsuits since knowledge of the FUDS must be disclosed.

Question from Lawrence Miller, Community Member - Are there munitions issues on the AU Park side or just arsenic issues?

D. Noble confirmed that arsenic cleanup had been conducted in the AU Park area but could not recall if there had been munition items found in AU Park.

Question from M. Bresnahan, Community Member - I thought that I recall that way back when that there were some munitions.

D. Noble confirmed there might have been 1 or 2 munitions found.

G. Beumel noted that munitions were found at AU Campus on the Spring Valley side of the street.

Question from John Wheeler, Community Member - M. Bresnahan, who defines what Spring Valley is?

Question from M. Bresnahan, Community Member - Washington DC Zoning. This side of Massachusetts Avenue is Spring Valley and right across the street is AU Park on that side of Massachusetts Avenue.

Comment from Alma Gates, At Large Representative - Horace Mann Elementary School - I think the Office of Planning.

Comment from M. Bresnahan, Community Member - On all maps it is clearly labeled out, especially in real estate because you go by the name of that subdivision. That is AU Park on this side of Massachusetts Avenue and Spring Valley.

Question from M. K. Covert Steel, Community Member - The Spring Valley FUDS has been the moniker. Are there any other monikers that have been used that more broadly encompass and would be more accurate?

S. Hirsh explained that EPA calls the area the Washington DC Munitions Site.

D. Noble explained that USACE Baltimore periodically points out that the Spring Valley FUDS is made up of two former WWI facilities; the American University Experiment Station (AUES) and Camp Leach. Camp Leach was approximately located on the portion that was on the AU Park side of Massachusetts Avenue. The functions of the two facilities were different. Munitions and chemical warfare materiel (CWM) would have been used in association with the AUES on the Spring Valley side of the site. Camp Leach was used as a training facility that would have used munitions but not CWM. Over the years items may have moved and soil shifted around, so there is a possibility that items may be found in AU Park.

Comment from T. Smith, Community Member - In the past, people in Spring Valley questioned the legitimacy of the RAB because there were AU Park residents on the RAB, not really knowing the real history of the problem.

D. Noble explained that the residents of the AU Park section of the FUDS will be part of the mailing list and will get the annual notice. The property owners and residents in that area should be well aware that their property is part of the Spring Valley FUDS.

Question from T. Smith, Community Member - I suppose you cannot call it now Spring Valley/AU Park FUDS Boundary?

D. Noble confirmed that the name cannot be changed unless USACE Baltimore formally engages with the FUDS program to possibly change the name. The name has not changed in 26 years.

Comment from M. Bresnahan, Community Member - You could have in parenthesis, 'AU Park.'

Comment from M. K. Covert Steel, Community Member - I think it is worth exploring, and I think there should be alignment among all government entities as to what we call it. I think it is very confusing when people are researching, that this is what they see about Spring Valley. If they are looking for information and it is called something on the EPA site and then it is called something else at the DC Department of Water, I think there should be alignment if possible.

Question from S. Hirsh, EPA Region III - We have what we call aliases, and we associate all the names. For instance, if you look at Spring Valley EPA on Google you will find it, because we associate different names with the same site.

D. Noble explained that aliases are listed for searching purposes in the USACE Formerly Used Defense Sites Management Information System (FUDSMIS). Part of the FUDSMIS is a public access section. He noted that formerly in the USACE database, a large portion of the FUDS was in VA. There is a civil war range fan that is part of the Spring Valley FUDS that stretches

across the river into VA. The determination was made that there was no issue with the civil war range fan and no further action was necessary.

Comment from M. Bresnahan, Community Member - I guess I did know that. Because when you were looking in Dalecarlia, this is where you found those items.

D. Noble confirmed that civil war cannonballs were found, but civil war cannonballs can be found anywhere around Washington D.C. The range fan from Battery Vermont, located approximately on the site of Sibley Memorial Hospital, extended over the Chain Bridge into VA to protect the VA approach to the Chain Bridge.

The acreage of the FUDS covers almost 2,000 acres because of the civil war range fan. The acreage generally discussed at the RAB is the active 650-acre portion of the project site on the Washington DC side of the river.

Question from M. Douglas, Community Member - If there is a sale, does this information from the LUCIP have to be disclosed?

Comment from M. Bresnahan, Community Member - You do not have to disclose. I have to be very specific now. They have updated the disclosures that go with the Washington DC listings a couple years ago.

Question from M. Douglas, Community Member - Who is 'they'?

Comment from M. Bresnahan, Community Member - GCAR, Greater Capitol Association of Realtors. But D.C. was in charge of it, it was DCAR, The District of Columbia Association of Realtors. What they did was, they changed some very specific words and they put in there, 'to our knowledge.' So, what it did was, it basically gave mercy to everybody, so people can say, 'I do not know.' Therefore, they will ask, 'is there chemical something or other, to your knowledge.'

2. Brief of the 5-Year Review Process

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process requires 5-year reviews to evaluate the implementation and performance of a remedy to determine whether the remedy remains protective of human health and the environment. Typically, reviews take place 5 years following the start of a CERCLA response action and are repeated every succeeding 5 years as long as future uses remain restricted. This definition and language of the 5-year reviews may be found on the EPA website at <https://www.epa.gov/superfund/superfund-five-year-reviews>. USACE Baltimore will conduct the review every 5 years. Part of the 5-year review will include the LUCIP to determine if the LUCIP is still appropriate. Decisions to step down the LUCIP or add additional land use controls can be proposed during the 5-year reviews for the site.

Question from W. Krebs, Community Member - So, this is from the start of a response action?

D. Noble confirmed this.

Question from W. Krebs, Community Member - So, would not the start of the response action have been years ago?

D. Noble explained that the start of the 5-year time period begins with the start of the Remedial Action (RA) phase, not the Remedial Investigation (RI), Feasibility Study (FS), or Proposed Plan (PP) phases. The day the RA begins is the day the 5-year review clock begins.

Question from W. Krebs, Community Member - With the house that we tore down, when did that 5-year period begin? When the decision was made to tear it down as opposed to anything else, or when work started on it?

D. Noble explained that the 5-year period would have begun the day work started to tear 4825 Glenbrook Rd down. However, that remedy will not require a 5-year review because the remedy will remove all risk and hazard at the property.

Comment from W. Krebs, Community Member - The 5-year review is going to be for the rest of the neighborhood that says, 'we are not sure we got everything, we did the best we could, let us know if you see anything.'

D. Noble confirmed this and explained that the Site-Wide Remediation will not include the removal of all soils from the properties, which is the type of excavation being conducted at 4825 Glenbrook Road.

Question from J. Wheeler, Community Member - Most of the \$300-plus million that has been spent was not remedial, it was what Superfund called removals?

D. Noble confirmed that a large portion of the funds were spent on Removal Actions. A large amount was also spent on the Remedial Investigation (RI). Since the remedy was put in place at Glenbrook Road, funds in the million-dollar figures have been spent on the remedy at Glenbrook Road.

Comment from J. Wheeler, Community Member - Things started back in the 1990s and for a long time it was removals that were being done.

S. Hirsh and D. Noble confirmed that all the arsenic was removed.

D. Noble confirmed that all the sampling at each property was part of the RI. Some investigations were very expensive because of the materials involved, such as the safety protocols necessary for the investigation of a disposal pit.

3. 91 Residential Properties and 13 Federal/City Lots

Alex Zahl, USACE, Spring Valley Technical Manager briefly reviewed the Site-Wide Remedial Design (RD)/Remedial Action (RA).

- Right-of-Entries received from 33 residential properties.
- 33 civil surveys and 29 arborist surveys have been completed.
- Geophysical clearing walkthroughs completed at 26 properties.
- Preparing 26 Vegetation Removal Plans for property owner approval.
- Vegetation removed from 4 properties and 7 Fed/City lots.
- Clearing completed and initial geophysical surveys ongoing with the man-portable vector (MPV) and G-858 Magnetometer at 4 private properties and 4 Fed/City lots off Dalecarlia Parkway.

The geophysical equipment is checked in the morning and afternoon at the Federal Property using an Instrument Verification Strip (IVS). Blind seeds are buried on every property to confirm the equipment is working properly. A team buries several industry standard objects (ISOs) that look like military items on the property. A second team must find the blind seeds without knowing the locations of the blind seeds. Additionally, the Army Corps buries a second set of blind seeds with undisclosed locations as a double-blind test.

The survey equipment uses a laser sight device because normal global positioning system (GPS) equipment will not work properly under the tree cover. The surveyors place 4 to 6 benchmarks on a property to be used with the laser sight to track all the equipment as it moves across the property. The MPV has a laser sight that provides precision locations to within about two centimeters.

The dynamic survey locates an object in the ground. If the object has the correct characteristics, the object will be added to the cued survey for further analysis. Guide ropes are used to ensure that the entire property is surveyed.

The G-858 Magnetometer can detect larger items that are deeper in the ground. The MPV and the G-858 Magnetometer were selected for use together during the Pilot Test in 2016.

After the dynamic survey is completed, the cued survey targets items that have been listed for further analysis. The equipment can produce a 3-dimensional view of the item in the ground. Based on a magnetic impulse, the electromagnetic signal can determine shape, wall thickness, and depth of the item. If the item is tubular and appears to be a munition, the Advance Classification library can identify the type and size of the munition.

Question from Allen Hengst, Audience Member - The Area of Interest 13 up in the right-hand corner. Have you received any Rights-of Entry from any of those 13 properties?

Rebecca Yahiel, Spring Valley Community Outreach Program and A. Zahl confirmed this.

Question from A. Hengst, Audience Member - Is one of them the property that refused Right-of-Entry before?

R. Yahiel explained that the property owner has not approached the Outreach Team and the Outreach Team has not approached the homeowner yet.

Question from A. Hengst, Audience Member - Not yet?

R. Yahiel confirmed this and explained that of the 91 homeowners contacted, the Outreach Team has worked with a little less than 35 homeowners.

Question from A. Hengst, Audience Member - So, it sounds like you are working with the people that reached out to you?

R. Yahiel confirmed that other homeowners have expressed interest in being prioritized.

Question from A. Hengst, Audience Member - Do you have a plan for Area of Interest 13? Is that going to happen near the beginning of the 3 years, the middle, or the end of the 3 years?

A. Zahl explained that the first groups of homeowners are based on the homeowners that have expressed interest in having their properties completed as fast as possible. Several homeowners have come forward since the initial 18 homeowner group to request to be put on the top of the list.

Question from A. Hengst, Audience Member - I just want to make the same observation that I made at the last two meetings, that of all the properties, only Area of Interest 13 is a possible disposal area. It is marked as a possible disposal area and it has been a possible disposal area since the beginning of this project. There is a property there that refused Right-of-Entry.

A. Zahl explained that USACE Baltimore will make every effort to obtain Right-of-Entry for that property.

Question from A. Hengst, Audience Member - Will it happen towards the end of the 3 years, the middle, or soon? I do not want to keep asking this every week.

A. Zahl explained that USACE Baltimore is currently working with the homeowners that requested prioritization. USACE Baltimore will make every effort to obtain all 91 Right-of-Entries.

Question from T. Smith, Community Member - So, you have gotten 33 Right-of-Entries?

A. Zahl confirmed this and explained that work has started on several properties. Civil surveyors have visited the properties to identify property boundaries, arborist surveys have been performed to identify plants, and geophysicists have identified which plants will need to be removed. The teams are working with individual homeowners to ensure that the removal list is approved by the homeowners. Clearing has been completed on the entire west side of the 13 Fed/City lots. Geophysical surveys have been completed on four of the properties and three are in process.

To minimize disruption to the properties, in some cases low hanging branches can be propped up with plastic poles out of the way of the geo-classification equipment. The plastic poles do not interfere with the magnetic signal.

Question from Jennifer Baine, Community Member - Did the majority of these sites require some vegetation removal?

A. Zahl confirmed this.

Question from J. Baine, Community Member - Do all of them?

A. Zahl confirmed that all the properties will likely require some vegetation removal.

Question from J. Baine, Community Member - What does that look like, though? You mean, like, clear all the vegetation or? I am curious.

A. Zahl explained that trees 6" in diameter or larger will not be removed. The geophysical equipment can maneuver around the large trees. Each property will have ~2/3 of the vegetation removed. Plants such as boxwood, laurels, groundcover, and perennials will be replaced if removed/damaged.

Question from M. K. Covert Steel, Community Member - At our last meeting, you said that we have had geophysical clearing at 12. So, we are up to 26 now. Is this the rate of progress we should expect, or are you expecting this project to accelerate as we get further along? I want to get a sense of how long this is going to take for both the Site-Wide RA and the geophysical clearing.

A. Zahl explained that determining a completion timeline is challenging because private individuals are involved. USACE Baltimore expects to have most of the work completed within the next 2 years.

Question from M. K. Covert Steel, Community Member - Ok. So, in your perception, this project is proceeding at the pace you would like.

A. Zahl confirmed this.

4. Hotspot Removal of Contaminated Soil

Hotspot removal of cobalt contaminated soil at one residential property (Spaulding and Captain Rankin Area (SCRA)).

- Completed excavations and backfill at 4 of 6 locations. The last 2 locations are expected to be completed by November 15.
- Conducted a preliminary restoration site walk with the SCRA homeowner, documented site

conditions and damages.

- Safety training completed with crew due to continued rain and harsh excavation conditions.
- Restoration in spring.

Temporary roads of plywood were installed on the large SCRA property to disperse the weight of heavy hauling trucks on the rain-saturated grounds. Tree trunks were wrapped to prevent damage from the trucks. Teams used hydro-excavation techniques to liquefy soil with added water around tree roots to preserve large trees.

Question from W. Krebs, Community Member - That is all on one property?

D. Noble confirmed that the SCRA is all one property.

Question from W. Krebs, Community Member - That is privately owned?

D. Noble confirmed the property is a private residence on Woodway Lane.

5. Site-Wide RA Tentative Schedule

- Fall - Continue to finalize plant removal plans for first groups of homeowners; start geophysical surveys at first group of properties; continue soil removal and begin restoration at SCRA.
- Late Fall - Finalize and distribute the Munitions Education and Awareness packet (first of future annual spring mailings).
- Winter - Continue finalizing plant removal plans with subsequent groups in preparation for geophysical surveys; begin to obtain Right-of-Entries from the next group of homeowners. Begin soil removal preparations for the southern AU campus exposure unit.

6. Former Public Safety Building (PSB)

Brenda Barber, USACE, Spring Valley Project Manager provided a brief update on the former PSB.

USACE Baltimore worked with AU to formulate an alternate heating plan for the Jack Child Hall building that was being served by a gas line that was near the foundation of the former PSB. A new heating system was installed in the Jack Child Hall building to facilitate abandoning the gas line in place, making the excavation effort much safer. The new heat pumps are fully operational, and the building has heat. AU assisted USACE Baltimore to coordinate with Washington Gas for a gas shut-off date in late November. The team will likely mobilize after the December holidays.

The overall Spring Valley project received Plus-Up funds, and part of those funds will be allocated to fund the extra support on the PSB project.

Question from T. Smith, Community Member - Do you all pay for the heat pumps or does AU have to pay for it?

B. Barber confirmed that USACE Baltimore will pay for the heat pumps because USACE Baltimore requested AU abandon the gas line. This was the compromise reached between AU and USACE Baltimore.

7. PSB Schedule

- Fall - Complete shut-off/rerouting of gas utility line.
- Winter - Remove concrete foundation slab. Excavate contaminated soils underneath removed foundation slab. Conduct perimeter air monitoring during excavations.

- Winter/Spring - Collect confirmation samples. Backfill with clean soil. Restoration and demobilization.

Question from George Vassiliou, Community Member - So, you took some samples from that site and you did geomagnetic as well?

B. Barber explained that sub-slab samples were collected to assess the sub-surface soils.

Question from G. Vassiliou, Community Member - Ok. What were the results of that?

B. Barber explained that there were no detections for chemical agent or chemical agent breakdown products (ABPs).

C. Glenbrook Road

B. Barber provided a brief update on 4825 Glenbrook Road and 4835 Glenbrook Road.

1. Recent Activities - 4825 Glenbrook Road

Work resumed at the site the week of October 22. During the weeks prior to return-to-work, the teams mobilized to the site to prepare for low probability work. A larger miniature chemical agent monitoring system (MINICAMS) trailer was installed for enhanced air monitoring. A personnel decontamination station (PDS) and dress-out tent were installed now that the work will be conducted in Level B Personal Protective Equipment (PPE).

All equipment was inspected and tested to ensure the equipment is up to maintenance requirements. All employees completed refresher training and scenarios for working in Level B PPE. Since the teams are excavating mechanically and loading soil directly to drums, a funnel was constructed to prevent spill-over and containerize the soil during drum loading.

All backfill that was placed on the site for mitigation purposes during the investigation period has been removed. Work has resumed along the shared property line to remove soils contaminated with chemical agent.

2. Areas to be Excavated at 4825 Glenbrook Road

- Area 1 - Primary area of excavation. Most of the remaining soils to be removed are located along the shared property line. A small section of retaining wall and ~300 cubic yards of soils to be removed.
- Area 2 - Front corner of 4835 Glenbrook Road. A small amount of glassware debris was found in this area.
- Area 3 - Excavated previously and confirmation samples failed. In compliance with the work plans, another two feet of soil will be excavated. Confirmation samples will be collected again. If the samples pass, the area will be completed.
- Area 4 - Small area in the front yard and location of one of the arsenic grids where an odor was encountered in July.
- Area 5 - Slightly outside of the work zone; exposed soil face with stairs down into the site. During heavy rainfall events the team noticed small amounts of glassware in the side wall of the slope. Excavation will be performed to ensure the area is clear.

3. Air Monitoring

The air monitoring protocols have been enhanced at the site. In addition to the perimeter air monitors, MINICAMS and Depot Area Air Monitoring System (DAAMS) air monitors will be

located at the excavation point, at the upwind direction, and the drum filling location. The additional monitoring will provide early detection to the team in the event of an issue of concern.

4. Holiday Schedule

The crews will work up to the November 21, take a short break for the Thanksgiving holiday, and will resume work on November 26. The crews will take a longer break from December 21 until January 3. Excavation operations will begin on January 7. Between January 3 and January 7 there will be no parking restrictions on Glenbrook Road. Due to permit restrictions, there will be parking restrictions on Glenbrook Road during Thanksgiving.

Question from T. Smith, Community Member - You are all done at 4835 Glenbrook Road?

B. Barber explained that a round of soil gas sampling was performed at 4835 Glenbrook Road. Low levels of chemical agent were detected, specifically ABPs. USACE Baltimore has been working with EPA, Public Health Command, and USACE toxicologists to formulate possible alternatives to understand why the detections are occurring and the plan forward. Currently, USACE Baltimore does not plan to conduct additional sampling until the removal of contaminated soils on 4825 Glenbrook Road is complete.

5. Schedule

- Fall/Winter 2018/2019 - Soil removal operations have resumed along the 4825/4835 Glenbrook Road property line. The hours of operation are Monday through Friday from 6:30 AM to 5:00 PM. Heavy equipment operations do not begin until after 7:00 AM.
- Spring/Summer 2019 - Potential completion of remedial activities at 4825 Glenbrook Road. Start of site restoration for 4801/4825/4835 Glenbrook Road sites.

Question from Audience Member 1 - Is the contaminated soil being disposed of in a safe way?

B. Barber explained that all soils removed from the property that are contaminated with chemical agent or ABPs are drummed and taken to an incinerator in Port Arthur, TX. The only items taken to local landfills are non-hazardous waste and construction debris that have been properly tested and do not exhibit any signs of hazardous materials.

Question from T. Smith, Community Member - Remind me why there is restoration of 4801?

B. Barber explained that USACE Baltimore has a 10-ft Right-of-Entry on 4801 Glenbrook Road to remove a fence and relocate the water line that ran through 4825 Glenbrook Road onto 4801.

D. Groundwater Feasibility Study

Todd Beckwith, USACE Baltimore provided a brief summary and status update on the Groundwater Feasibility Study (FS).

USACE Baltimore submitted the Draft Final Groundwater Proposed Plan (PP) to EPA and DOEE in September. DOEE submitted a request for Dispute Resolution on the Groundwater PP.

1. Groundwater Remedial Investigation Summary

The Groundwater Remedial Investigation (RI) project began in 2005. The purpose of the Groundwater RI was to determine if any impacts to the groundwater exist related to past Army operations at the site, and the nature and extent of any groundwater contamination. USACE installed 56 monitoring wells across Spring Valley and sampled the wells multiple times. Samples were also collected from 27 different surface water locations. The last sampling was conducted in

April 2015 and the data collected was determined sufficient to write the Groundwater RI Report.

a. Groundwater RI Conclusions:

- There is no unacceptable risk to current receptors since the groundwater is not used as a drinking water source. AU and local residents are connected to the city water supply.
- Potential unacceptable risk for future receptors would occur if groundwater is used as a drinking water source in the future within Exposure Unit 2 (EU2) - the area next to Kreeger Hall and adjacent to the Glenbrook Road disposal areas.
- The main contaminants of concern are perchlorate and arsenic (As).
- Conduct a Groundwater Feasibility Study (FS) to evaluate different alternatives to address the potential risk for future use of groundwater as drinking water.

b. Arsenic (As) and Perchlorate in EU2

- Perchlorate and As detections above drinking water level are isolated. These concentrations are stable/decreasing since the beginning of sampling.

Question from M. K. Covert Steel, Community Member - What does that mean? I am not familiar with that term, 'stable/decreasing.' Is it stable or decreasing and where and how?

T. Beckwith explained that if well sampling results over a period of time were consistently near a concentration of 40 parts per billion (ppb) for perchlorate, those well results would be considered stable. If the well was sampled 5 years ago at 100 ppb and in later samplings the level was at 20 ppb, those levels would generally be considered to be decreasing.

Comment from M. K. Covert Steel, Community Member - Got it. I am just not seeing any sort of chart in here that can help us as community members understand that. I think this is primarily where the community is concerned, and I am hearing a lot about this issue in particular, so I think it would be really helpful if we could see that that kind of data outlined.

T. Beckwith explained that the well sampling data was presented at previous RAB meetings and was not included in the summary brief for tonight's presentation. A review of the well data could be presented in the future.

Comment from M. K. Covert Steel, Community Member - Thank you.

Question from T. Smith, Community Member - Maybe you could just send out where that is on the website, a link, maybe, to where it is on the website?

T. Beckwith confirmed this.

- The level for As is slightly above the 10-ppb drinking water standard at one well location: multi-port (MP)-2 (maximum detection during last sampling event was 12 ppb).
- Perchlorate was only present above the 15-ppb Drinking Water Advisory Level (DWAL) next to Kreeger Hall (maximum detection during last sampling event was 39 ppb).
- Perchlorate is no longer present above DWAL (15 ppb) along Glenbrook Road. The number of wells with DWAL exceedance have decreased from 6 to 2 wells. In 2006-2007 there were 6 wells that had exceedances of perchlorate above 15 ppb; at last sampling there were only 2 wells that were above the DWAL, both wells next to Kreeger Hall.
- There has been significant soil source removal: ~40,000 tons of contaminated soil or debris have been removed from the area around EU2.

Question from G. Vassiliou, Community Member - So, the limits you use as a reference are for

drinking water?

T. Beckwith confirmed this.

Question from G. Vassiliou, Community Member - Ok. So, this is not really groundwater vs drinking water. We are talking miles and miles of travel?

T. Beckwith confirmed that there is no current risk, no one is using the groundwater as a drinking water source.

The area indicated by the oval on slide 39 of the presentation shows wells that, historically, have had either detections of As or perchlorate above drinking water standards at one point in time. All the wells outside of the oval either have low level detections for As and perchlorate or non-detect for those compounds. The one well of concern for As is MP-2, along Glenbrook Road. In the past, MW-24 also had As detections above the drinking water standard, but that is no longer the case. The two wells of concern for perchlorate are MW-44 and PZ-4S/D that still have perchlorate remaining above the drinking water standard. The wells along Glenbrook Road had perchlorate levels above the drinking water standard during the beginning of the sampling effort, with a maximum detection of 124 ppb at MW-24. At last sampling, all perchlorate levels along Glenbrook Road are below drinking water standards.

2. Groundwater FS Summary

Based on the conclusions from the Groundwater RI, USACE performed the Groundwater FS.

Remedial Action Objective: Prevent ingestion of groundwater above drinking water levels in EU2.

Alternatives Evaluated:

- No Action - baseline condition always considered.
- Land Use Control/Long Term Monitoring (LUC/LTM) - implementation of educational controls to provide notices to property owners that the groundwater is not suitable as a drinking water source. Monitoring of the groundwater until concentrations are below drinking water standards.
- In-Situ Permeable Reactive Barrier and Bioremediation - treat the contamination in place. A permeable reactive barrier would be used for As; injecting small iron particles into the sub-surface that would act to demobilize the As. Bioremediation would be used for perchlorate; adding a carbon source to the sub-surface to promote bacterial and biological growth that would break down the perchlorate into chlorine and water.
- Pump and Treat, Ion Exchange - installing extraction wells, pumping the groundwater out of the ground, and piping the groundwater to a treatment system to remove the contaminant. The water would then be discharged into the sewer.
- Pump and Treat, Reverse Osmosis - installing extraction wells, pumping the groundwater out of the ground, and piping the groundwater to a treatment system to remove the contaminant. The clean water would then be discharged into the sewer.
- Monitored Natural Attenuation (MNA) - observation of natural processes acting to reduce contaminant concentrations to below drinking water standards.

DOEE and EPA did not concur with the inclusion of the LUCs and LTM Alternative, since it does not include an objective to achieve drinking water standards in groundwater.

Question from T. Smith, Community Member - Are there any wells in this area that are being used for something other than drinking water?

T. Beckwith confirmed that the Korean Ambassador's property uses a well for irrigation.

Question from M. Douglas, Community Member - What is the difference between the second alternative LUC/LTM and Monitored Natural Attenuation?

T. Beckwith explained that the two Alternatives are very similar. For MNA, the objective is to achieve the drinking water standard in the aquifer with natural processes. If the objective is not met, then a contingency remedy must be identified to implement if the MNA is not occurring. The LUC/LTM is preventing exposure, could continue in perpetuity, and does not have an objective to treat the groundwater.

Question from M. K. Covert Steel, Community Member - What was EPA and DOEE's preferred method? If they did not agree with our Land Use Control plan, then what was their preferred option?

S. Hirsh and Kathy Davis, EPA geologist explained that EPA would have been ok with anything other than No Action or Land Use Controls. From EPA's perspective, EPA looks at groundwater as a resource to be protected and restored. The beneficial use is considered, how the groundwater could be used. If the groundwater has physical attributes of being a potential drinking water source, EPA would prefer to see the groundwater cleaned up, so the groundwater could be used as a potential drinking water source in the future. To that end, EPA studies current exposure to see if anyone is currently using the groundwater and future potential use. Drinking water standards are used as a metric to obtain a clean-up level, so EPA would prefer Alternatives that would reach the drinking water standards.

Question from T. Smith, Community Member - Is that general policy or is that specific regulations?

K. Davis explained that the statute states that it is EPA's expectation to restore groundwater to its beneficial use, or practicable in a timeframe that is reasonable to the circumstances at the site.

S. Hirsh reiterated that the issue is not about the RAB's current health or the health of the people that have been living in the neighborhood for many years. The issue is the chemicals in the groundwater if ingested in the future.

Question from M. K. Covert Steel, Community Member - Right. My question is, though, if you did not concur with this Alternative, what was your preferred option?

S. Hirsh explained that if MNA could be demonstrated to be occurring, that Alternative would be acceptable. If there is MNA occurring now (and probably is, there are a lot of different ways compounds attenuate), the selection of an Alternative does not matter, the attenuation is still occurring. The concentrations will continue to decrease. USACE also removed a large amount of contaminated soil, therefore the concentrations are expected to decrease, particularly at Glenbrook Road. For some stakeholders the In-Situ Alternatives were unacceptable because of the large machinery involved. Any Alternative that included a goal of groundwater restoration would have been acceptable to EPA.

Question from W. Krebs, Community Member - What is the status of the dispute?

T. Beckwith explained that the status of the dispute will be covered later in the presentation.

S. Hirsh explained that the reason the dispute is with DOEE is because EPA does not have a dispute resolution procedure with USACE at the site. DOEE does have a previously-agreed-upon Dispute

Resolution process with USACE.

3. Groundwater Proposed Plan (PP)

Based on the Groundwater FS, The Army Corps selected LUC/LTM as the preferred Alternative. The preferred Alternative is identified in the current Groundwater Proposed Plan (PP). The LUC/LTM includes:

- Periodic notices to property owners that groundwater is not suitable for use as drinking water (~40 property owners). Monitoring of groundwater to determine when groundwater concentrations are below drinking water standards and LUCs can be removed.

Additional benefits/rationale for preferred Alternative:

- Protective of human health and the environment under current and foreseeable land use conditions.
- Reduced impacts to the community due to absence of construction activities (no new wells or treatment systems installed).
- Does not involve injecting chemicals into the sub-surface. This method can sometimes have unanticipated secondary effects, such as mobilizing naturally-occurring compounds in the sub-surface.
- Physical construction of treatment systems would be very challenging in this residential/campus neighborhood. AU has gone on record that AU is opposed to the installation of treatment systems on AU property. Private homeowners are also unlikely to allow the installation of treatment systems on their properties.
- LUCs/LTM are appropriate for the limited nature of groundwater contamination, with all residents connected to city water supply, and with the extensive soil source removal that has already occurred (~ 40,000 tons).

Question from T. Smith, Community Member - Can you explain why AU would not want the [Ed. installation of treatment systems]? Is it because it is too big, or what? It takes up too much space, or what is the issue?

T. Beckwith explained that AU stated that AU did not have the space and had other plans for AU property.

Question from T. Smith, Community Member - Does that kind of treatment system require a lot of space?

T. Beckwith explained that the space required would depend on the type of technology selected. For the Pump and Treat remedy of the groundwater a small trailer would be installed to house the treatment system.

Comment from T. Smith, Community Member - Does not sound like a lot of space.

Question from M. Bresnahan, Community Member - But is not some of this coming from the AU property?

Comment from T. Smith, Community Member - It is all coming from the AU property.

Question from M. Bresnahan, Community Member - Yes, that is what I thought. If it is coming from their property, they should be willing to help out.

T. Beckwith reiterated that AU stated that AU did not want the treatment systems on AU property.

Question from M. Bresnahan, Community Member - So they do not want to take any responsibility at all? That is what it sounds like.

A. Huff explained that the answer is no, AU is not saying that AU will not take responsibility.

Comment from M. Bresnahan, Community Member - Well then, I do not understand this answer then, that they are not willing to do this.

S. Hirsh pointed out that USACE did not propose the treatment system Alternative.

Comment from A. Hengst, Audience Member - But he is using that as a reason for not picking it. He is saying, 'one of the reasons we did not pick it is because AU is opposed to it.'

T. Beckwith explained that AU's position is one of the factors that was considered. If USACE were to consider one of the other Alternatives such as In-Situ or Pump and Treat, there would be infrastructure associated with each Alternative. USACE is pointing out there are difficulties in finding locations to install infrastructure for those Alternatives.

Question from G. Vassiliou, Community Member - So, how are you going to remedy?

T. Beckwith explained that no one was advocating selecting a Pump and Treat Alternative, but if that Alternative were selected, the implementation of that Alternative would be difficult.

Question from M. Douglas, Community Member - Is there any provision for adjusting this remedy if EPA lowers the perc standards?

T. Beckwith explained that contingency would be a factor USACE would have to consider. He asked S. Hirsh to share the status of establishing the maximum contaminant level (MCL) for perchlorate.

S. Hirsh explained that EPA is under a court order to establish an MCL for perchlorate. He had no information on what the perchlorate MCL might be; the level might be below or above 15 ppb. MCLs are different than the interim numbers that EPA develops, in that the MCL must consider economics, such as how the MCL might affect the cost of water and the ability of people to have clean, fresh water in their homes. When the MCL is determined, the level might be higher or lower. The Groundwater project is subject to a 5-year Review. At the next 5-year Review, the MCL would be re-evaluated to determine if the level is still protective. If the MCL went down but the groundwater is still not being used as a drinking water source, then the conclusion would be that nothing has changed in terms of risk. If a 5-year Review is performed and people are beginning to use the groundwater as a drinking water source, that would be a big change.

Comment from A. Hengst, Audience Member - The problem is that under the court order which S. Hirsh just mentioned, EPA is supposed to come out with the new standard by December 2019. That is when you are still going to be in the area, that is when you are still going to be working with groundwater, so you do not escape from the lowered standard by outlasting the EPA. They are going to come out with a standard in 1-years' time, under court order. It is probably going to go down, it is not going to go up.

T. Beckwith reiterated that the number might be higher or lower.

Comment from A. Hengst, Audience Member - I do not think anybody thinks it is going to be higher.

S. Hirsh reiterated that he did not have any information on the number, the MCL could go either way.

Question from A. Hengst, Audience Member - It is going to be lower. In Massachusetts it is 2 ppb and in California it is 1 ppb. You are talking about 15 ppb.

S. Hirsh gave an example of the MCLs for arsenic and vinyl chloride. The MCLs for those contaminants are generally at a level that Superfund would consider unacceptable risk levels. MCL development involves the occurrence of the contaminants in groundwater, cost to treat, and other factors.

Question from J. Baine, Community Member - In the [Ed. Groundwater] PP what is the frequency of monitoring?

T. Beckwith explained that the frequency of monitoring is not specified in the Groundwater PP and would be determined after the Groundwater Decision Document (DD) is finalized.

Question from J. Baine, Community Member - In this pump and dump scenario, does that just clean the water that it has pumped up or does that somehow, at some point, mean that the water will be clear without that? Is there a source that is feeding this, but the pump and dump is not addressing, it is just cleaning what is coming out or would that in some way, you think, eventually be achieved?

Question from G. Vassiliou, Community Member - The thing that strikes me is that it says the number of wells with exceedance have decreased from six to two, so there is ongoing remediation, right? So, are we going to see zero next time, or what do you expect, analyzing whatever you look at?

T. Beckwith explained that he cannot predict the status of the natural attenuation. There is a possibility that if sampled again, the As level would be below 10 ppb. There were two wells that had higher levels of perchlorate, one well that was close to 15 ppb and one well that was consistently at ~40 ppb. Concentrations may have gone down since the sampling or may have stayed the same. The overall amount of groundwater contamination has clearly decreased, based on data and the removal of a significant amount of soil source from the area. Based on the contaminants of concern, he did not believe there is a source of contamination in the sub-surface that is continuing to feed the groundwater and create a problem.

Question from J. Baine, Community Member - If the last sampling was 2015, have they thought about sampling again before going forward with a plan? What if this is now down to 1ppb or 0ppb?

T. Beckwith explained that another round of sampling has been suggested. The Groundwater project was focused on writing the Groundwater RI report in order to get to the Groundwater DD. The process to get to the Groundwater DD dragged out longer than expected and it has been three years since the data was collected. Another round of data collection may be a result of the dispute resolution process.

Question from T. Smith, Community Member - If you did decide to go that route with collecting additional data, how long until you would actually have a new conclusion or recommendation? Would it be another 2 or 3 years, or if you collect more data, are we looking at having the same discussion 3 years from now given the way the process works?

T. Beckwith explained that he did not know how long the analysis and recommendation would

take, it would depend on the scope of the additional data collection.

Question from T. Smith, Community Member - And that is what DOEE is suggesting, additional testing?

T. Beckwith confirmed that DOEE has suggested additional data collection.

Question from W. Krebs, Community Member - I understand that the removal of soil may remove some of the sources of the As. Do we have any reason to believe that the removal of soil has any effect on perchlorate?

T. Beckwith explained that the data shows that there were three wells along Glenbrook Road that had concentrations up to 120 ppb. All those wells are now clean, all three wells are below 15 ppb. Something caused the perchlorate groundwater contamination in that area to go away. USACE removed a significant amount of material from across the street, it is possible that perchlorate was a component of what was disposed in that area.

Question from W. Krebs, Community Member - Do you test removed soil for contaminate?

T. Beckwith explained that perchlorate was not identified as a compound of concern until 2005-2006. Testing was not conducted for perchlorate before that date.

Question from M. Bresnahan, Community Member - Have you found the source of the perchlorate?

T. Beckwith explained that the source of the perchlorate has not been found. USACE performed an extensive soil boring investigation at AU looking for a potential soil source and found none. PZ-4S/D, located in front of Kreeger Hall, is the shallowest well in the area and had the highest ppb of perchlorate found to date at 146 ppb in 2007. PZ-4S is now clean at 4ppb at last sampling. There seems to be no soil source in the vicinity of PZ-4S. If there were a continuing soil source there, perchlorate would still be seen in PZ-4S.

Question from T. Smith, Community Member - I would like to go back a bit, though, and ask about this piece that you had said earlier about an option where you have the physical construction of treatment systems. Is the Army recommendation based on the idea that you would not have a place to put this physically?

T. Beckwith replied no.

Comment from T. Smith, Community Member - Ok. Because I do not think it is fair to say that, because it kind of blames AU for this. I do not think that it is fair to present it that way. Now, if you do think that is a major factor in the recommendation that is being made, then that is another issue, and I think we would be entitled to an explanation from AU as to why they would be unwilling to do it. But that is not an issue and they should not be blamed like that.

T. Beckwith agreed that was a good point.

Comment from T. Smith, Community Member - I do not think any of us should leave here with the misunderstanding. That is all, I just want to be very clear about that.

4. Dispute Resolution

After receipt of the Draft Final Groundwater PP, DOEE submitted a formal request for Dispute Resolution under the Department of Defense (DoD)/District Memorandum of Agreement (DDMOA).

a. Nationwide DoD/EPA Policy Disagreement

- EPA and DOEE position: groundwater must be restored to drinking water standards if groundwater could be used as a drinking water source.
- DoD position: CERCLA is risk-based, cleanup decisions should be based on protection of human health and the environment. Prevention of exposure is an acceptable remedy.

b. DDMOA includes provisions for a three-tier dispute resolution process

- Tier 1 - Baltimore District Commander, Deputy Director DOEE.
- Tier 2 - Headquarters-USACE Environmental Division Chief, Director DOEE.
- Tier 3 - Deputy Assistant Secretary of the Army for Environment, Safety, and Occupational Health (DASA ESOH), DC Mayor.

c. Tier 1 meeting held on November 5

- USACE/DOEE reiterated their positions on this issue.
- DOEE offered alternative to collect more data for current conditions or proceed to Tier 2.
- USACE anticipates responding to DOEE this fall.

Question from A. Hengst, Audience Member - How long did that Tier 1 meeting take?

T. Beckwith explained that the Tier 1 meeting lasted ~90 minutes.

Question from J. Wheeler, Community Member - What happens if there is no resolution in Tier 3?

T. Beckwith explained that no resolution in Tier 3 is a possibility. DOEE is prepared to take legal action and may file a lawsuit.

Question from M. Douglas, Community Member - You say 40 property owners are going to be subject to these notifications about not drinking the groundwater. Do they overlap with the 91, who are these property owners? They are in different locations?

T. Beckwith and D. Noble explained that the 40 property owners near well locations in the vicinity of Rockwood Parkway, Indian Lane, and Glenbrook Road. The 40 property owners will receive two notices per year, one concerning munitions awareness and one concerning the groundwater.

Question from T. Smith, Community Member - Realizing that EPA is not part of this agreement with DOEE, does EPA have any role at all in this dispute resolution process?

S. Hirsh explained that EPA is not part of the dispute resolution process.

Question from T. Smith, Community Member - So you are not in these meetings?

S. Hirsh confirmed this.

5. Tentative Schedule

- Winter 2018/2019 - Address Dispute Resolution Request
- Winter 2019 - Finalize Groundwater FS
- Spring 2019 - Groundwater PP, public comment period, public meeting.
- Fall 2019 - Groundwater Final Decision Document

III. Community Items**1. RAB TAPP Consultant**

Potential RAB TAPP Consultant contractors will submit their credentials. The credentials could be sent to all members of the RAB for review and discussion. G. Beumel proposed setting up a small sub-committee similar to the sub-committee for RAB membership. The sub-committee method was used for hiring the last RAB TAPP Consultant. While any RAB member will be able to review any of the contractors' credentials, the sub-committee would submit a short-list to the RAB for review and recommendations. G. Beumel requested any other ideas from the RAB for selecting a new RAB TAPP Consultant.

Question from T. Smith, Community Member - Can you share the timeline?

G. Beumel explained that the timeline depends on the advertising process by USACE. After the position is posted, contractors will have 30 days to submit applications. Depending on the number of applications received, the process is expected to take an additional 30 to 60 days for the sub-committee to review and present their recommendations at the next RAB meeting.

Question from L. Miller, Community Member - That all sounds good except 30 to 60 days to review. I would think it might take, maybe, a day or two to review?

G. Beumel agreed and explained that he was considering the schedule of the RAB meetings every 2 months. The committee could review each application as it is submitted. Recommendations could be sent to the RAB members by email and a formal vote conducted at the next meeting. G. Beumel prefers to get a TAPP contractor on board as soon as possible for a professional to give an informed opinion on the current RAB issues.

D. Noble noted that since the inception of the TAPP program, there has been a pay ceiling of \$25,000. per year for the TAPP Consultant that has not changed in over 25 years.

Question from L. Miller, Community Member - Is that what we paid last year?

D. Noble confirmed this.

USACE Baltimore will begin the process of advertising for the TAPP Consultant.

G. Beumel requested that RAB members interested in serving on the TAPP Consultant Search sub-committee to please email G. Beumel and D. Noble.

Comment from L. Miller, Community Member - I think you need some volunteers with environmental backgrounds.

G. Beumel explained that the sub-committee should have a mix of backgrounds.

2. RAB Attendance

Question from T. Smith, Community Member - Do we know why a representative from DOEE was not here tonight?

D. Noble explained that he had not heard from DOEE.

Comment from T. Smith, Community Member - I think it would have been very helpful to have had someone here when we were talking about groundwater.

Comment from A. Hengst, Audience Member - He missed the last meeting as well. It is two meetings.

D. Noble confirmed he would get in touch with DOEE and express the RAB's concern.

IV. Open Discussion and Future RAB Agenda Development

A. Upcoming Meeting Topics

- Groundwater FS Study/Policy Issues between USACE, EPA, and DOEE
- Site-Wide RD/RA
- 4825 Glenbrook Road/4835 Glenbrook Road

B. Next RAB Meeting:

Tuesday, January 8, 2019

C. Open Discussion

V. Public Comments

VI. Adjourn

The meeting was adjourned at 8:58 PM.