

SPRING VALLEY FORMERLY USED DEFENSE SITE

Partners Meeting Presentation
August 2020



US Army Corps
of Engineers®



AGENDA REVIEW



Parsons Update

- 4825 Glenbrook Road
- 4835 Glenbrook Road (Restoration Update)

Weston Updates

- Site-Wide Remedial Action
- Public Safety Building

USACE Updates

- Groundwater Study
- New TAPP Advisor
- 4835 Glenbrook Road (Sub-slab Monitoring Update)

Future Partners Agenda Development

SPRING VALLEY GLENBROOK ROAD SITES

PARTNER'S UPDATE
August 2020



"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."



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4825 Glenbrook Road - Recent Activities

- June and July was spent excavating and recompacting temporarily placed backfill in areas of previous remedial excavation to bring the site up to current grade in accordance with the final backfill specification



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4825 Glenbrook Road - Recent Activities (Cont.)

- August was spent bringing stockpiled soil from the Federal Property to the site to add lifts above the post excavation elevation
- Also dismantled and removed emergency siren from American University property



4825 Glenbrook Road - Summary of Clean Backfill for Restoration

Restoration					
	Expected Volume Needed (bcy*)	Approx. Volume Placed (bcy)	Approx. Volume on Hand (bcy)	# of Truck Loads this week	Total # of Truck Loads to Date
	4,348	1,072	800	61	134
% Complete:	--	24.7%	--	--	--

*bcy – bulk cubic yards

North wall of Grid -10,-90 Excavated Down to Bedrock



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Near-Term Schedule

- Early September obtain EPA and DC Department of Energy & Environment approval of backfill source
- Early September reinstall 4835 waterline lateral
- Early September reinstall 4835 sanitary sewer lateral
- Throughout September continue bringing entire site up to grade



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Mid-Term Schedule

- Bring site to grade for AU water and sewer installation
- Re-install AU water line
- Re-install AU sanitary sewer line
- Final soil and water waste shipments
- Move 4835 AC units to original location
- Restore fence along 4801 and 4825 Glenbrook Road properties
- Restore site to final grade in 6-inch lifts with compaction in accordance with the Work Plan



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Tentative Long-Term Schedule

Summer-Fall 2020

Final restoration of 4801 and 4825 Glenbrook



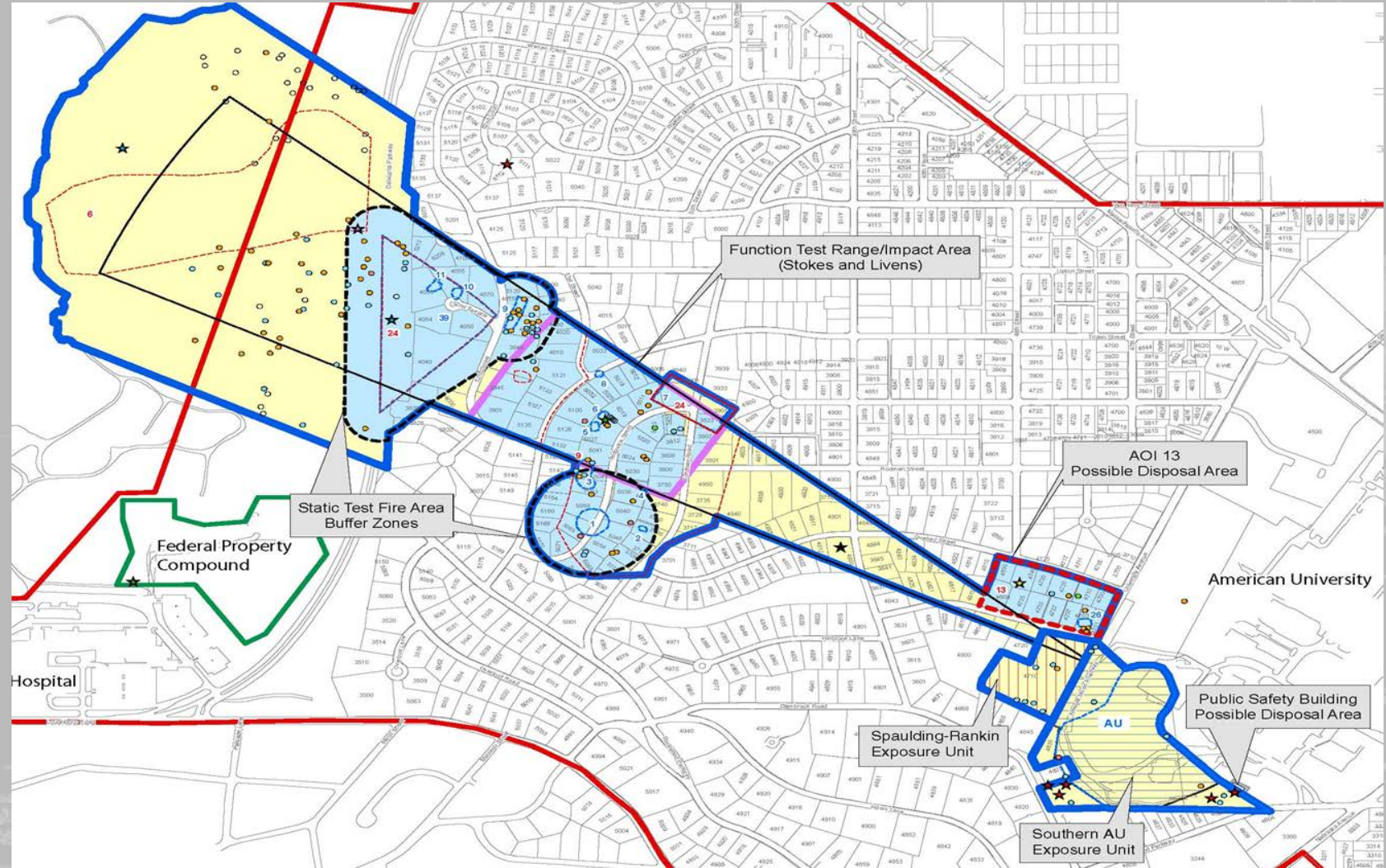
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SVFUDS SITE-WIDE REMEDIATION STATUS AUGUST 2020

Weston Solutions, Inc.



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SPRING VALLEY STATUS UPDATE – COVID-19



- **Public Safety Building Site** – Field operations at the PSB Site restarted on July 10, 2020 after remobilization. U.S. Army Combat Capabilities Development Command (CCDC) was once again able to support the daily air monitoring services starting at the end of June, so PSB remobilization started after the July 4 Holiday.
- **92 Residential Properties** – Field operations at the 92 Residential Properties have continued and they have not been impacted, so far, by the COVID-19 pandemic. CCDC has been able to provide single-day operations required to support the AGC anomaly dig teams.



RESIDENTIAL PROPERTIES – FIELDWORK*



- **Property Availability –** 9 new properties approved their landscape plans and became available for geophysical surveys.
- **Vegetation removal/Blind Seeding –** Vegetation removal completed and blind seeding completed at 7 properties.



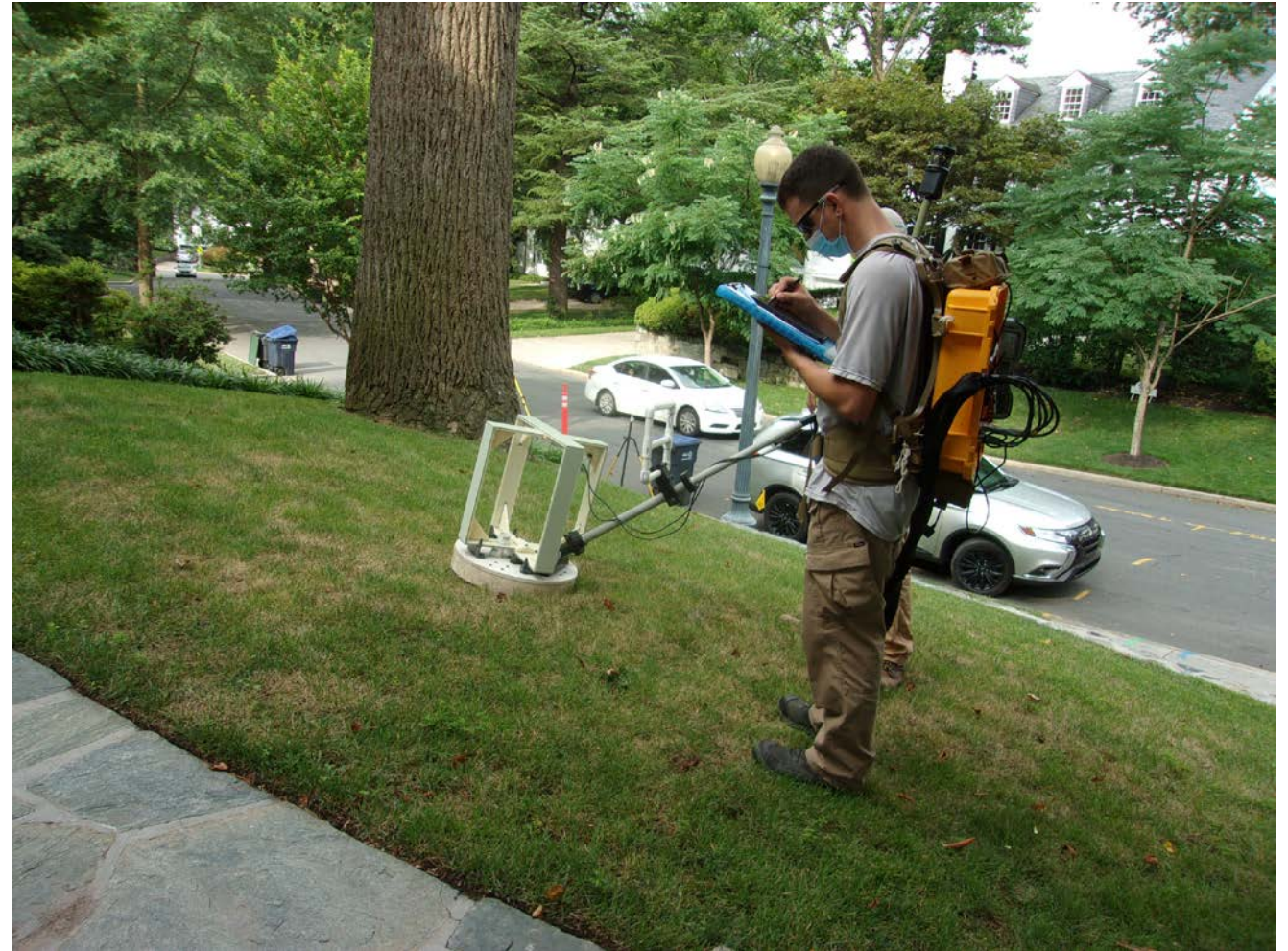
*info provided includes progress since last Partners presentation on June 19, 2020



RESIDENTIAL PROPERTIES – FIELDWORK* (CONTINUED)



- **Geophysical surveys –**
Dynamic surveys completed at 9 properties. Cued surveys completed at 7 property.
- **Intrusive Investigations –**
Began on August 24th, 2020. This group includes 10 new properties and 6 grids. Expect to complete late September.



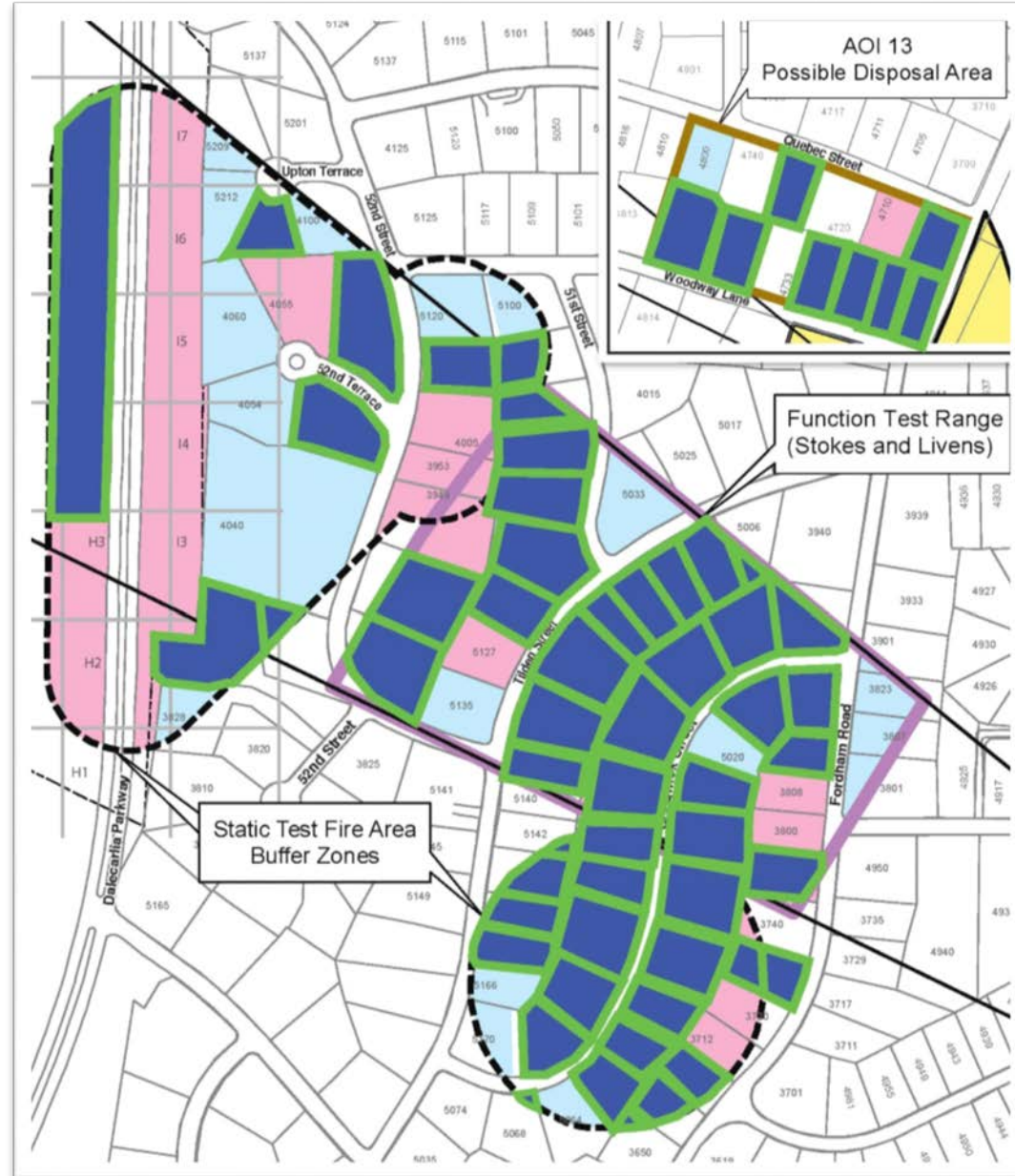
*info provided includes progress since last Partners presentation on June 19, 2020



RESIDENTIAL PROPERTIES - INTRUSIVE STATUS



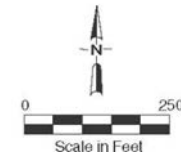
- 60 residential properties completed to date (65%)
- 1960 total DGM targets investigated to date
- Total MD found = 106 (5.41% of total digs)
- Total MEC found (including Civil War cannonball) = 2 (0.10% of total digs)
- Total WW1-era MEC found = 1 (0.05% of total digs)



Intrusive Investigations:

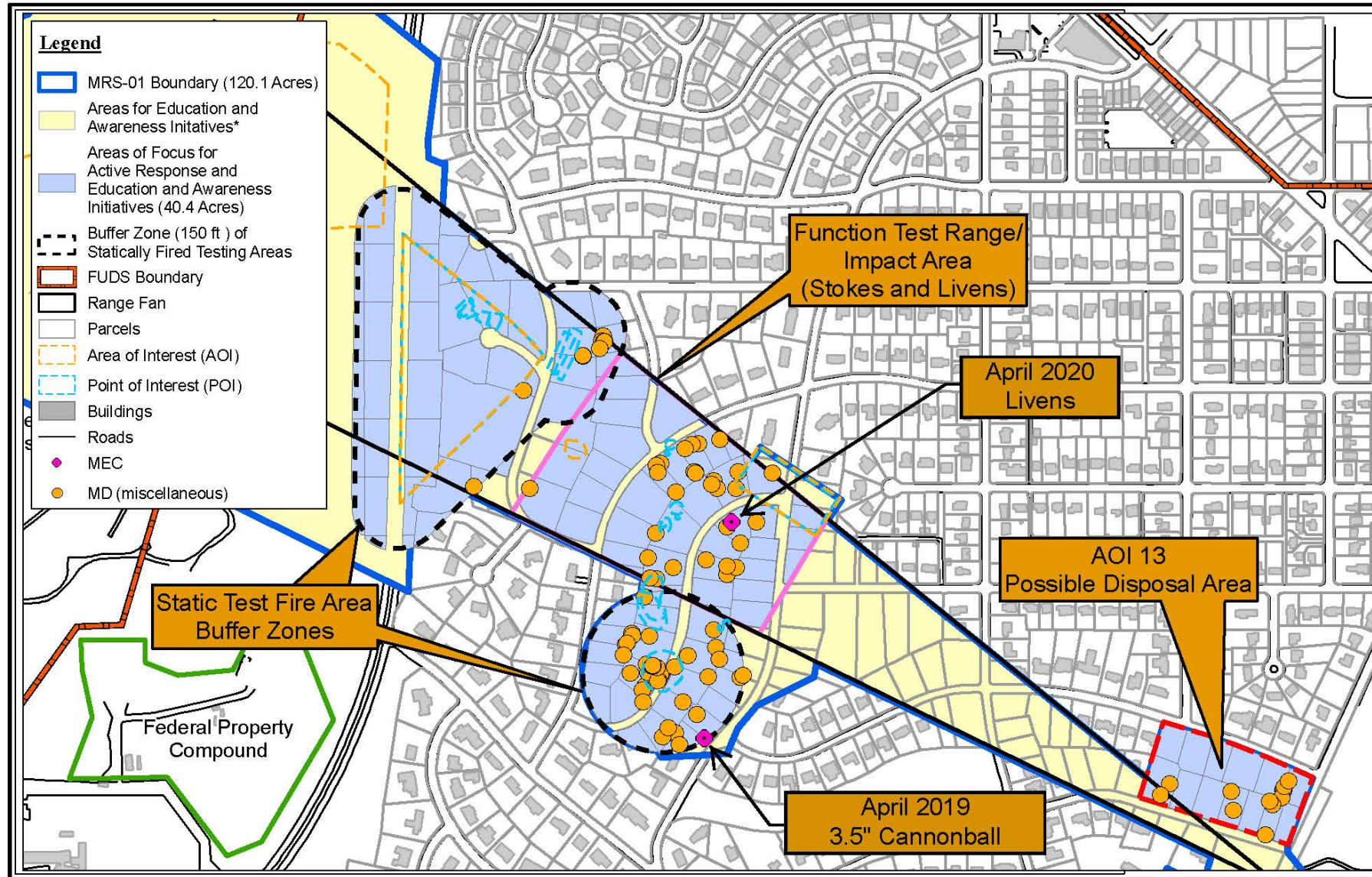
Property/Lot Completed

Remediation Planned previous DGM completed
Remediation Planned as listed in PWS





RESIDENTIAL PROPERTIES – RA MEC/MD FINDS





RESIDENTIAL PROPERTIES – DELIVERABLES*



- **Property Specific Data Summary (PSDS) Reports** – Five (5) Draft Final PSDS were delivered to USACE/EPA/DOEE. Six (6) additional Draft Final PSDS will to be delivered to USACE/EPA/DOEE prior to conducting intrusive investigations at the respective properties/grids in August/September.
- **RA Property Summary (RAPS) Memos** – Twenty-four (24) Draft Final RAPS were submitted to USACE/EPA/DOEE for review and twenty-three (23) Final RAPS were delivered to the respective property owners.
- **Root Cause Analyses (RCAs)/Field Variance Forms (FVFs)** – No new FVFs. One (1) RCA was approved by USACE. Details provided on following slides.

*info provided includes progress since last Partners presentation on June 19, 2020



RESIDENTIAL PROPERTIES – APPROVED RCAs



■ SV-RCA-016

- **Issue** – A QC/verification seed at a residential property failed to meet the 25 cm horizontal offset measurement quality objective (MQO). The seed was selected as a likely target of interest (TOI) dig, had a very good library match to a seed item, and showed a very good predicted depth. However, the horizontal offset between the pick (dig location) and the ground truth (actual location) was 28.8 cm, failing the 25 cm MQO by 3.8 cm.
- **Cause** – MPV_3, which was used to collect the data that included the failed MQO, had recently been sent to the manufacturer for maintenance and repairs. The day the MQO failure occurred at the property (7/17/20) was the first day the unit had been used to collect data since it returned from the manufacturer. Tests conducted at the IVS and the residential property indicated the instrument was functioning properly (met all MQOs) based on the in-field application results observed by the field geophysicists. Initial review of the data by the MPV data processor confirmed all IVS and QC function tests passed the MQOs, but the data processor noted the data showed a non-typical positional offset to the west.



RESIDENTIAL PROPERTIES – APPROVED RCAs*



- **SV-RCA-016**

- **Cause (continued)** – Based on the feedback from the data processor, the field geophysicists adjusted the alignment of the IMU on MPV_3 and conducted a gyroscope bias tare on the following work day. Additional tests with MPV_3 and a detailed review of the data collected with MPV_3 on the day the MQO failure occurred and days following indicated the realignment of the IMU and gyroscope bias tare resolved the positional offset issue. It was determined that positioning errors in the cued data at the residential property were due to a misaligned IMU was the root cause of the horizontal MQO failure.



RESIDENTIAL PROPERTIES – APPROVED RCAs*



■ SV-RCA-016 (continued)

- **Corrective Action** – The corrective action included recollecting the cued data collected with MPV_3 on 7/17/20. Additionally, any MPV sensor being brought back into production after being shipped offsite for any reason will be required to undergo the following procedures to confirm positional accuracy:
 1. check and adjust (as necessary) the IMU alignment including ini measurements,
 2. conduct gyroscope bias tare,
 3. conduct MIP hard and soft iron calibrations,
 4. collect 2 sets of dynamic and cued IVS and QC function tests, and
 5. have the MPV data processor confirm positional accuracy of the unit.

*info provided includes progress since last Partners presentation on June 19, 2020



RESIDENTIAL PROPERTIES – SCHEDULE



- **Geophysics** – Geophysical surveys in Grids H&I - rows 5, 6, & 7 (H5-East, I5, H6-East, I6, H7-East, and I7) is expected to be completed mid-to-late September. Geophysical surveys will begin at 6 residential properties once these grids are completed.
- **Intrusive Investigations** – August/September 2020 intrusive investigations will complete 11 properties and 6 grids. The next dig team mobilization is anticipated to begin in early November.



PUBLIC SAFETY BUILDING UPDATE



- PSB Site was shut down from 28 March to 6 July 2020.
- Weekly inspections of site security and E&S controls were done during shut down.
- Remobilized crew & equipment the weeks of 6 and 13 July.
- Intrusive work began Monday, 20 July.





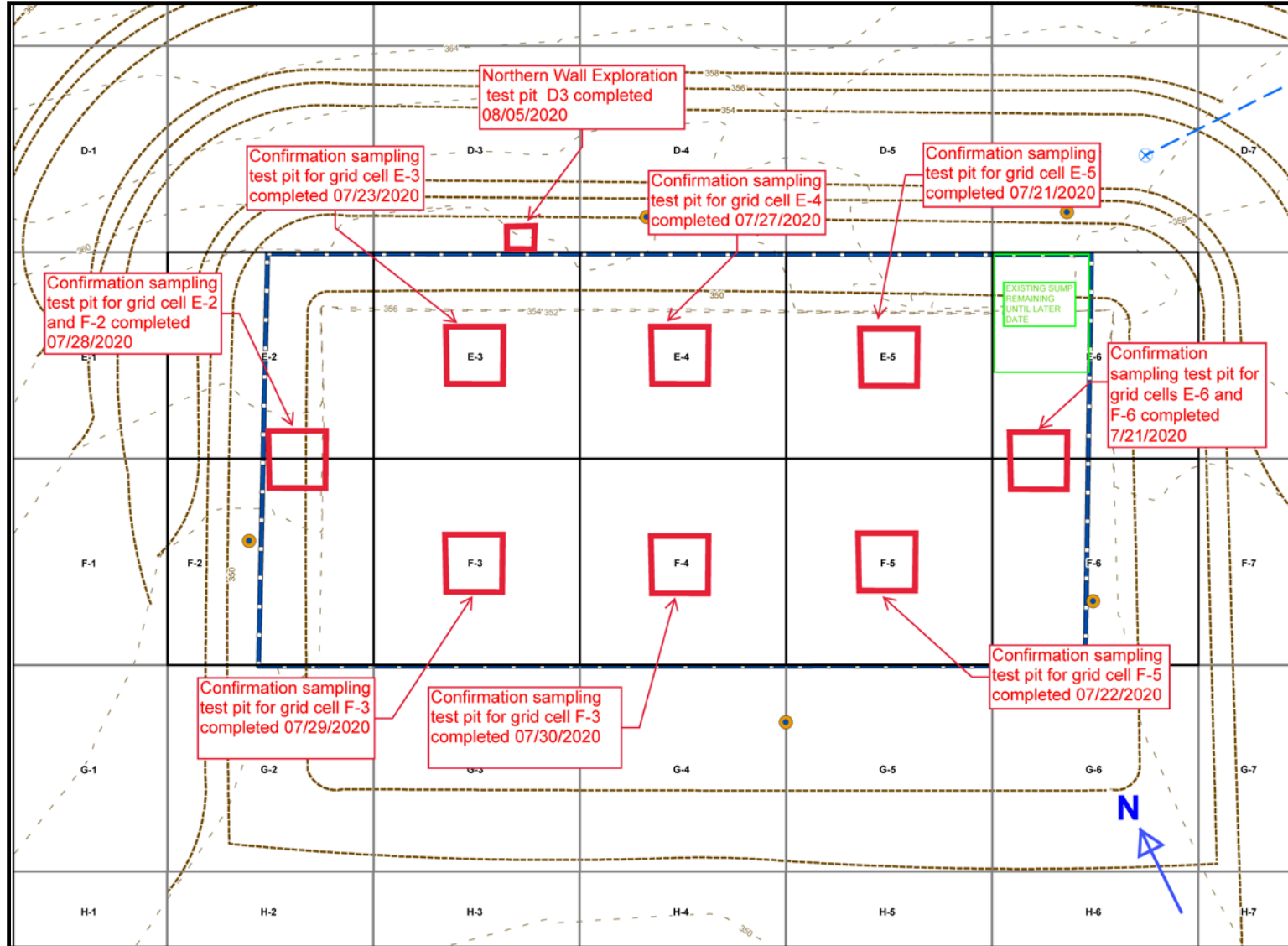
PUBLIC SAFETY BUILDING STATUS



- The Draft Final SOP for Determining Final Excavation Boundaries and Post-Excavation Confirmation Sampling at the PSB was approved by EPA and DOEE and the document was finalized.
- Conducted Test Pitting to 8 feet below slab at the center each of the 8 PSB grids to help determine final excavation depths. Sorted test pit soil for AUES debris and collected soil confirmation lab samples one-foot below where the last AUES debris was identified.
- Conducted Test Pitting horizontally into the north sidewall of PSB excavation (grid D-3) to determine the extent of the dark soil layer with AUES debris identified at approximately 2 to 3.5 feet below the slab. Advanced 8 feet north of former PSB slab – AUES debris was still evident, but Team had to stop due to slope stability concerns.



GRID & SIDEWALL TEST PIT LOCATIONS





PUBLIC SAFETY BUILDING STATUS



- Additional investigation required to determine how far back into the PSB slope the AUES debris extends. So far it goes 8 feet north of the PSB slab. Additional test pits or coring will be required to determine the extent.
- Based on the results of the AUES debris investigation north of the PSB, USACE will determine the scope of work to excavate those materials.
- Excavation floor Confirmation Soil Sample results for Grids E2/F2, F3, E4, F4, E5, and E6/F6 all meet the cleanup criteria for CWA, metals, SVOCs, Cyanide, Explosives (Grid F3 only) and VOCs (none detected).
- Transported 24 non-hazardous soil and concrete roll-offs during July and early August to King & Queen Landfill in Virginia for disposal.



PUBLIC SAFETY BUILDING STATUS



- Controlling water table and rain water successfully in excavation with sumps and transporting water off-site for non-hazardous disposal. Each frac tank of water is sampled & analyzed prior to disposal.
- Re-started PSB grid soil excavations at 3-4 feet below the slab at grids E6/F6, E5 and F5 – continuing to grids E4 and F4.



PUBLIC SAFETY BUILDING - PHOTOS



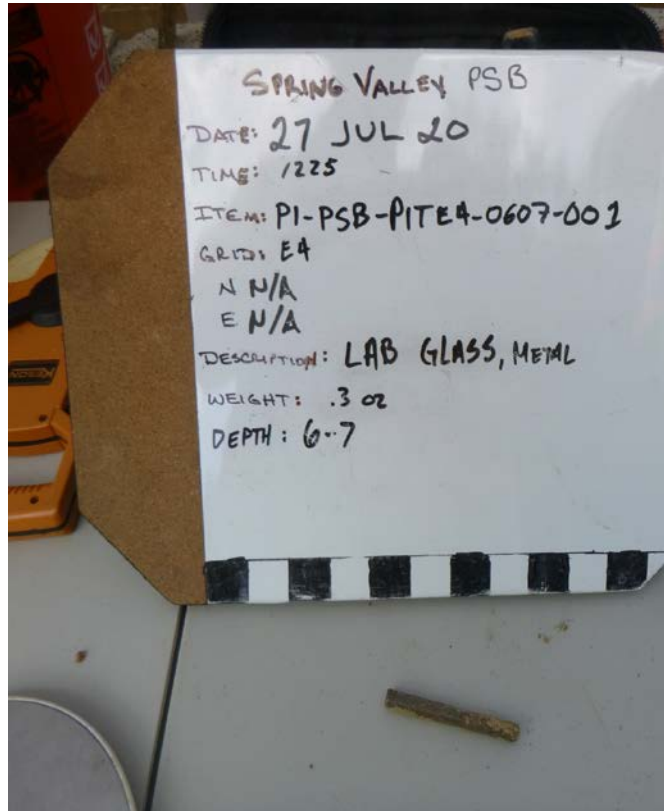
PSB Operations – Excavator dumping soil on the sorting table for the UXO Techs to screen for MEC/AUES items.



North Wall Grid D3 – Test pit into the North Sidewall – chasing the dark AUES debris layer @ 6 feet from slab.



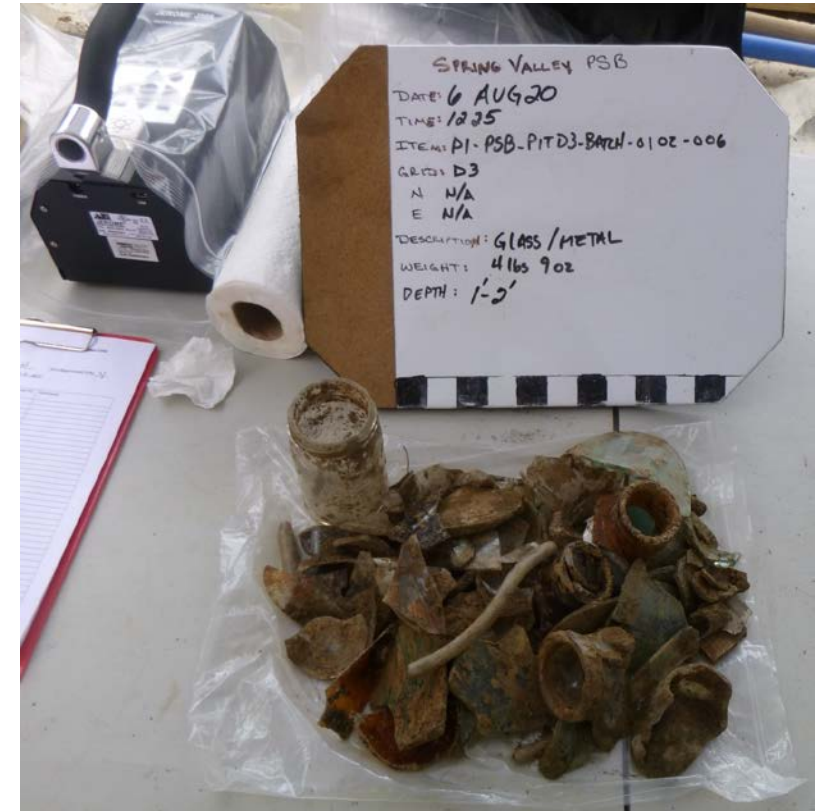
PUBLIC SAFETY BLDG – AUES DEBRIS PHOTOS



Grid E4 – One piece AUES glass tubing at 6-7 feet below slab.



North Wall Grid D3 – Test pit into the North Sidewall – AUES debris screened out by UXO Team on Sorting Table.





PUBLIC SAFETY BUILDING – ONGOING TASKS



- E&S control inspections after major rain events.
- Excess water in the excavation will be pumped off into the Frac tank, as needed to keep the excavation from filling up with water.
- Remove/break up sanitary sump at the NE corner of the PSB in grid E6.
- Continue soil excavations in each grid below 3 feet down to target depths based on the test pit AUES sorting results – proposed end depths:
 - Grid E6/F6 - 4 ft below slab
 - Grid E5 - 5 ft below slab
 - Grid F5 - 5 ft below slab
 - Grid E4 - 8 ft below slab
 - Grid F4 - 8 ft below slab
 - Grid E3 - 6 ft below slab
 - Grid F3 - 8 ft below slab
 - Grid E2/F2 - 6 ft below slab



TEST PIT INVESTIGATION RESULTS



Grid Cell Test Pit	Depth (ft) – Potential Items Found					Confirmation Floor Soil Sample Results	Proposed Excavation Depth (ft)	Soil Description	Depth of Water Table (ft) below slab
	3 – 4	4 – 5	5 – 6	6 – 7	7 – 8				
E-6/F-6	No AUES or MD Found No VOCs or Mercury vapor detected					All SV Analytes Below Criteria	4	Sandy CLAY, some silt and gravel, brown with gray inclusions	7.5
E-5	PI – Glass (3 pieces)	No AUES/MD Found, No VOCs or Mercury vapor detected				All SV Analytes Below Criteria	5	Clayey SILT, some sand, little gravel, brown with gray inclusions	6.0
F-5	PI – Glass (6 pieces)	No AUES/MD Found, No VOCs or Mercury vapor detected				Pending	5	Clayey SILT, some sand, little gravel, brown with gray inclusions	6.0
E-4	PI – Glass & Metal (10 pieces)	PI – Glass (2 pieces)	PI–Glass & Metal (6 pieces)	PI – Glass (1 piece)	No AUES/MD No VOCs or mercury vapor	All SV Analytes Below Criteria	8	Sandy SILT, little clay and gravel, brown/gray	7.0
F-4	PI – Glass & Metal (20+ pieces)	PI – Glass & Metal (20+ pieces)	PI – Glass (2 pieces)	PI – Glass (1 piece)	No AUES/MD No VOCs or mercury vapor	All SV Analytes Below Criteria	8	Sandy SILT, little clay and gravel, brown with gray inclusions	7.0
E-3	Test Pit initiated at 4 feet	PI – porcelain (1 Piece)	No AUES/MD Found No VOCs or Mercury vapor detected			Pending	6	Sandy SILT, little clay and gravel, brown/gray	7.0
F-3	Test Pit initiated at 4 feet	PI – Glass (3 pieces)	PI – Glass (1 piece)	PI – Glass (1 piece)	No AUES/MD No VOCs or mercury vapor	All SV Analytes Below Criteria	8	Sandy SILT, some gravel, little clay, brown with gray inclusions	7.0
E-2/F-2	No AUES/MD No VOCs or mercury vapor	PI – Glass (1 piece)	No AUES/MD Found No VOCs or Mercury vapor detected			All SV Analytes Below Criteria	6	Sandy SILT, little clay and gravel, brown/gray	7.0



PUBLIC SAFETY BUILDING - PROGRESS



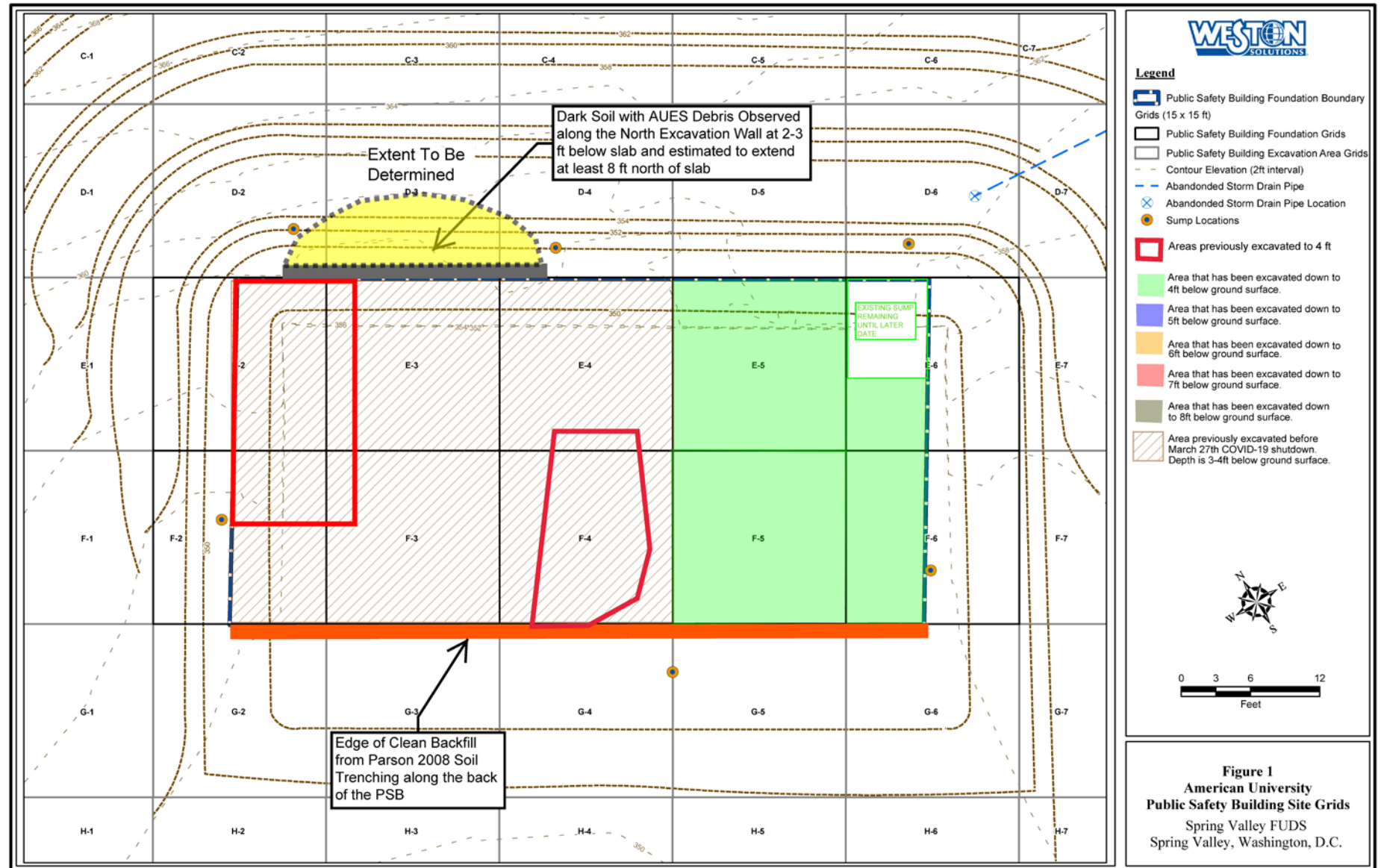
- Excavation extends down 3-4 feet below the former PSB concrete slab. All the concrete slab, cinder block wall and footers have been removed except around the former sanitary sump in the NE corner.
- The bulk of the dark brown soil with abundant AUES glass debris and munition debris has been excavated and removed from below the slab, however, the AUES debris field encountered at 1-4 feet below the slab extends north beyond the slab into the soil slope – an as yet undetermined distance. No agent or ABPs were detected in the excavated soil headspace or low-level analyses.



PUBLIC SAFETY BUILDING - EXCAVATION



- PSB excavation extent as of August 21st.
- Excavation depths range from 3-4 feet.
- Excavated dark AUES debris field mostly from 1-3 feet but with one area 1-4 feet.





AUES DEBRIS ENCOUNTERED



AUES Debris: The AUES Debris layer contained dark brown soil, abundant unsealed lab glassware bottles, pipettes & tubes, plus munitions debris from 75-mm projectiles and 4" Stokes mortar rounds. All items have been negative for CWA headspace analysis and soil samples were non-detect for low-level chemical agent and agent breakdown product analyses.



PSB SCHEDULE



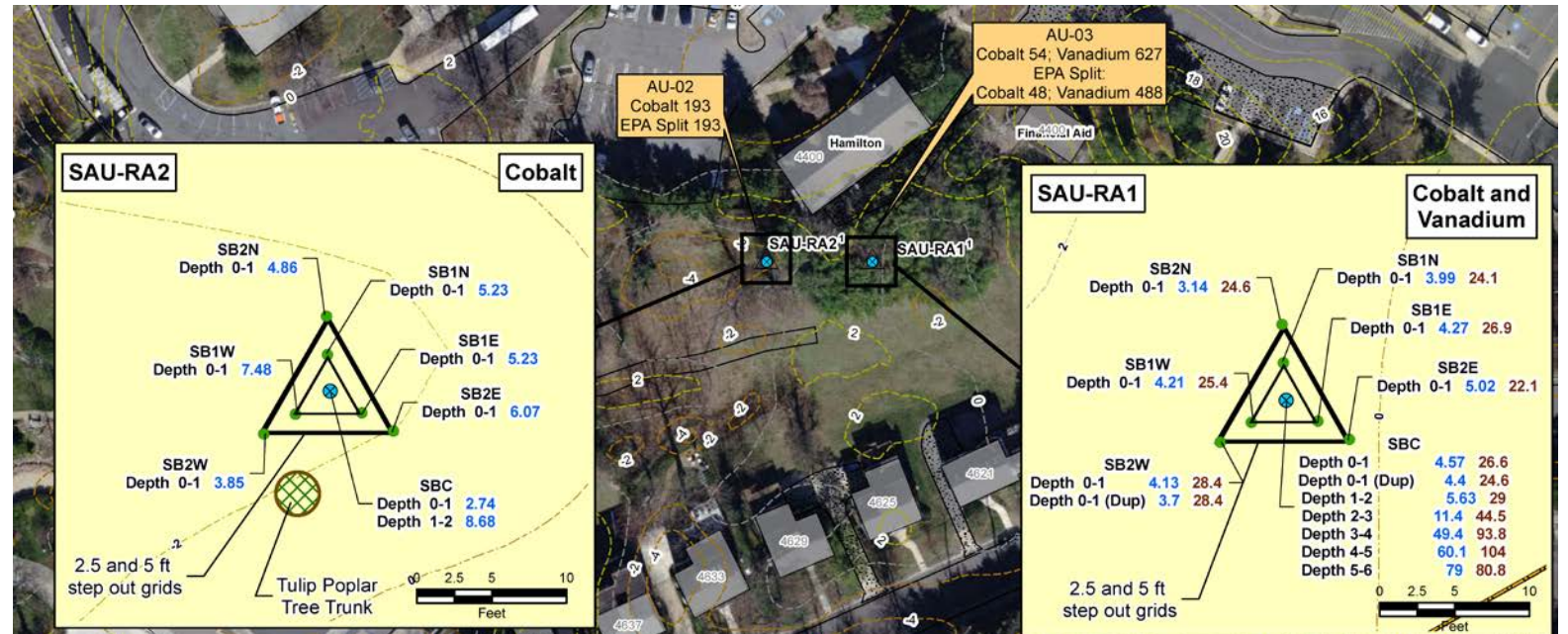
- Continue E&S controls inspections after rain events.
- Continue sub-slab grid soil excavation with UXO Tech support & soil screening in 1-foot lifts. Move east to west, grid by grid. Complete Grids E6/F6, E5 and F5 to depth.
- Move to Grid E2/F2, excavate to terracotta pipe depth, reroute pipe after excavating & backfilling new pipe location.
- Continue sub-slab grid soil excavation at grids E4 and F4, then E3 and F3.
- Current schedule has PSB excavation work taking approximately 6 weeks through 10/1/2020.
- The excavation schedule may need to be extended depending on the results of the north slope investigation of the AUES debris extent.
- Restoration work would follow in October – rebuilding the PSB slope, removing the access road, and starting landscape work.



SOUTHERN AU EXPOSURE UNIT UPDATE



- **RA1 (AU-03)** – Soil removal is proposed using an excavator at the center point down to 10 feet bgs and extending out 2.5 feet (5 ft by 5 ft excavation area) – no Cobalt exceedance was detected at the step-out locations.
- **RA2 (AU-02)** – Soil removal by hand digging/air knife (due to Poplar tree) to 1 foot bgs is proposed around the center point and extending out 2.5 feet (5 ft by 5 ft excavation area).
- Excavation Permit under review by DCRA.
- Excavation work behind the Hamilton Building on AU campus is currently scheduled to take 4-5 days starting in early September.

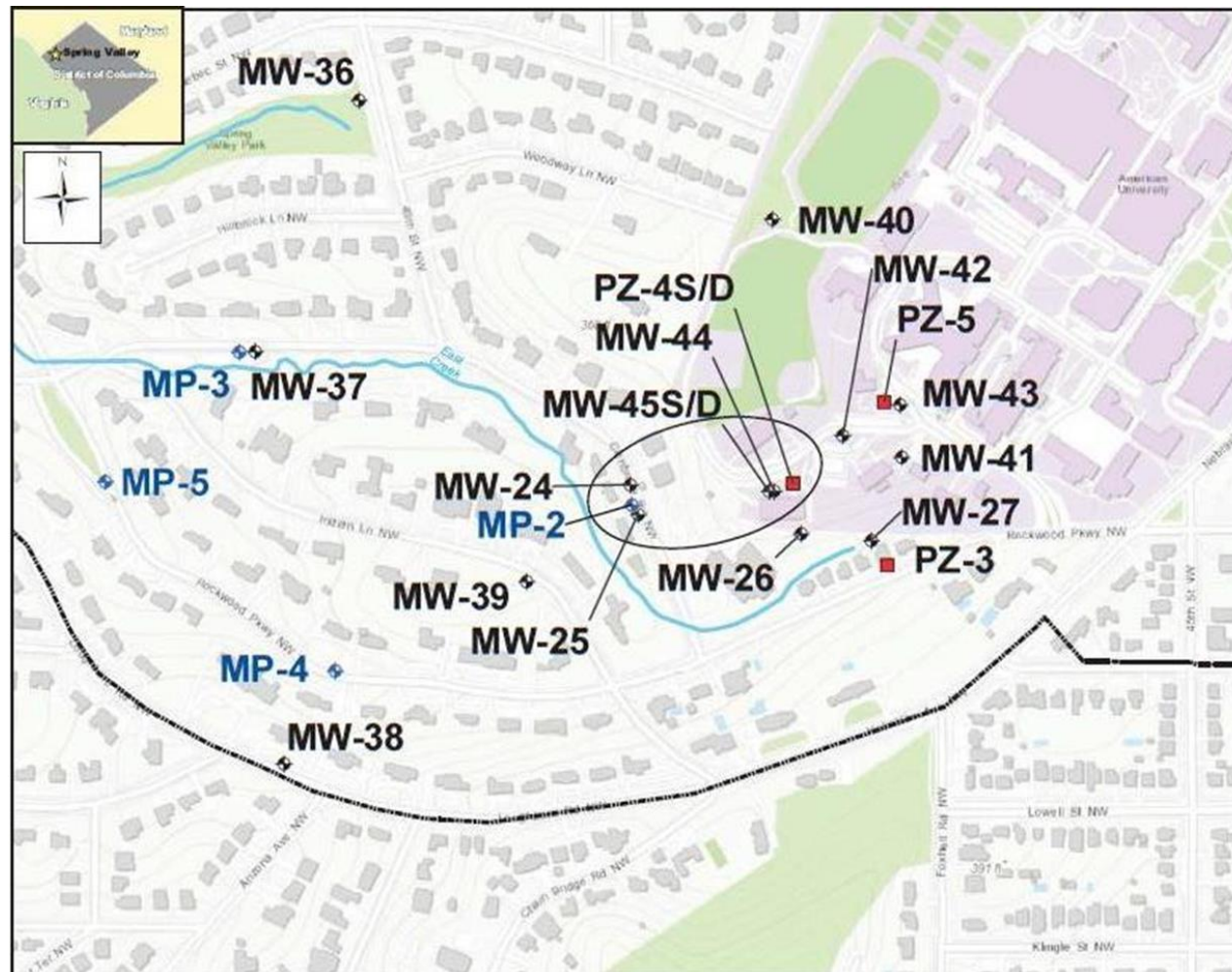




SPRING VALLEY FUDS

Groundwater

USACE Updates





GROUNDWATER STUDY



- The groundwater sampling event took place on June 23-26 and was conducted by the Army Corps and the U.S. Geological Survey (USGS).

Next Steps:

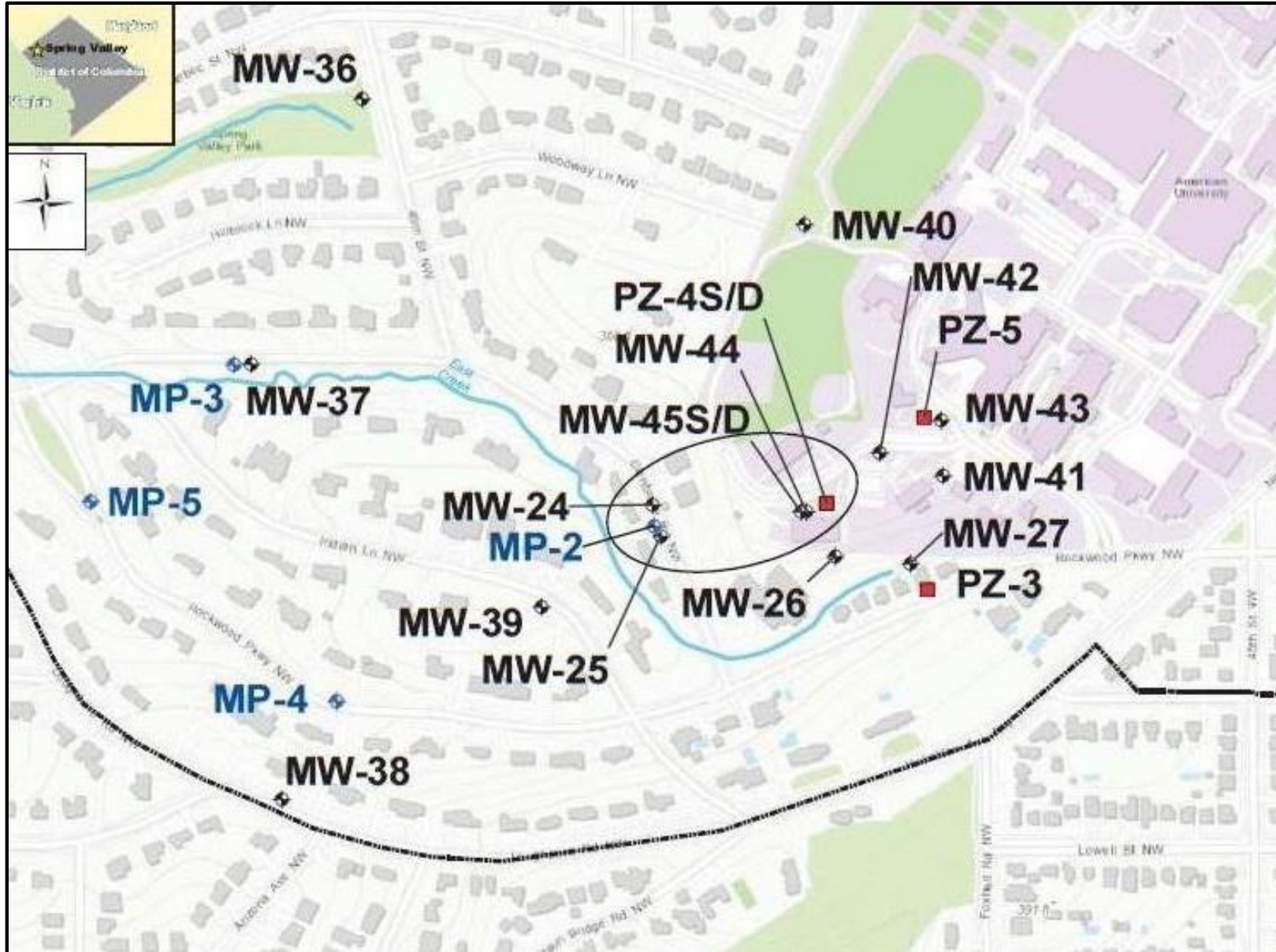
- The current sampling results are very similar to the results from last September. The Army Corps and Partners are currently discussing the path forward for the final groundwater approach.
- EPA declined to establish a Maximum Contaminate Level (MCL) for Perchlorate. The Army Corps and the Partners are discussing the appropriate comparison criteria Perchlorate.



Groundwater sampling well



GROUNDWATER STUDY: EXPOSURE UNIT 2



Key

 Area encompassing the EU2 Monitoring Wells

 Spring Valley FUDS Boundary

 Piezometer

 Monitoring Well

 Multiport Well

S/D = Monitoring well or piezometer with screened intervals in the same borehole.

GROUNDWATER SAMPLING RESULTS: PERCHLORATE KEEGER HALL

	WELL SCREEN (depth below ground surface)	July 06	June 07	Nov 09	May 11	July 11	Aug 11	Nov 11	Feb 12	Apr 12	Sep 12	May 13	July 13	Dec 13	Mar 14	Jun 14	Sep 14	Apr 15	Sep 19	Jun 20
PZ-4S	27 - 47 ft	71.8	146	50	30	18	19	25	28	NT	NT	5.57* *	ND**	6.75	10.9	8.58	4.16	4.49	2	NT
PZ-4D	52 -62 ft	34.7	41	41	39	9.8	39	45	39	36	NT	NT**	5.59* *	39.8	44.5	16.7	13.8	16.1	32.5	26.2
MW-44	80 - 95 ft	NP	NP	NP	NP	NP	NP	NP	NP	34	35	40.5	NT	40.2	42.3	49.8	40.1	39.2	15.7	16.0
MW-45S	119 - 124 ft	NP	NP	NP	NP	NP	NP	NP	NP	NP	6	31.1* *	NT	1.28	5.86	5.74	2.55	2.42	1.4	NT
MW-45D	147 - 152 ft	NP	NP	NP	NP	NP	NP	NP	NP	NP	3.6	54.3* *	NT	5.3	ND	ND	0.221	ND	0.50	NT

All concentrations reported in micrograms per liter (ug/L)

Yellow highlight indicates detected value exceeds the perchlorate IDWHA level of 15 UG/L

NT - Not Tested

ND - Non Detect (analyte was not detected in the sample)

NP - Not Present (well not installed as of that date)

**Samples from wells in front of Kreeger Hall are suspected to have been switched during the May 2013 and July 2013 sampling events. PZ-4S/4D results may actually represent MW45S/45D results (and vice versa). PZ-4D was scheduled sampled in May 2013, but no sample was collected.

SPRING VALLEY GROUNDWATER SAMPLING RESULTS: MP2 Arsenic

Sampling Port (depth bgs in feet)	Mar-12	May-12	Jul-12	May-13	Dec-13	Jun-14	Apr-15	Sep-19	Jun-20
SV-MP-02-1 (35'-44')	7.6	7.4	8.4	7.6	6.6	6.9	5.6	6.7	6.7
SV-MP-02-2 (49'-54')	15	15	16	12.6	11	12.4	10.0	7.6	7.6
SV-MP-02-3(56'-71')	15	18	18	11	15.2	13.7	9.5	7.7	8.6
SV-MP-02-4 (73'-77')	12	15	12	9.2	9.9	7.6	6.4	6.6	4.9
SV-MP-02-5 (96'-102')	13	15	15	9.1	10.3	9.8	11.3	7.6	7.3
SV-MP-02-6 (105'-114')	15	17	16	11	10.2	10.8	11.6	7.5	7.8
SV-MP-02-7 (123'-129')	14	27	16	12	12	11.8	10.0	7.6	7.1
SV-MP-02-8 (145'-160')	14	16	15	12.6	10.3	11.9	9.7	7.2	7.6

All concentrations reported in micrograms per liter (ug/L)

Yellow highlight indicates detected value exceeds the Arsenic MCL of 10ug/L



SPRING VALLEY FUDS

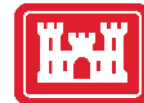
TAPP Advisor - Restoration Advisory Board

USACE updates





TECHNICAL ASSISTANCE FOR PUBLIC PARTICIPATION (TAPP) ADVISOR UPDATE



- Following the RAB's decision, to secure Devamita Chattopadhyay, Ph.D. a local Environmental/Chemical Engineer, for the Spring Valley RAB TAPP position. The 8A contract to the original contractor had expired. USACE worked to redirect the offer to Dr. Chattopadhyay through another firm.
- The two year contract for the TAPP advisor has been approved by USACE Headquarters. A contract will be awarded in September.



SPRING VALLEY FUDS

4835 Glenbrook Road Project Area

USACE Updates





4835 GLENBROOK ROAD – Soil Gas Sampling



- The Partners discussed and concurred to conduct a third round of non-quantitative passive soil gas monitoring at borehole locations in the basement of 4835 Glenbrook Rd.
- The team is currently awaiting the delivery of the samplers, and anticipate placing the dosimeters in the ground by the end of September 2020.



SPRING VALLEY PARTNERS



Reminders:

- Due to continued concerns surrounding the COVID-19 pandemic, the next Partners meeting for **October** will likely be an electronic update in lieu of an in-person meeting once again.
- Our team is continually monitoring the situation and is open to discussing plans for future in-person or conference call meetings.
- We are anticipating that the *September RAB* meeting will be a conference call hosted through WebEx on Tuesday, **September 15th at 7pm**. An invite and instructions on how to join the meeting will be send via email.



Upcoming Agenda Items:

- Suggestions/Requests?