

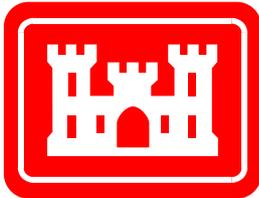


Fort George G. Meade



Restoration Advisory Board Meeting November 20, 2014

Preliminary Assessment/ Site Inspection (PA/SI) Update North Areas of Interest (AOIs)





Follow Up On Question From Last RAB



Past radiological and bio-maintenance
facility activities at
Buildings 8549/8550/8551



Buildings

8549/8550/8551



Legend

2013 URS PA/SI Sample Location

- Soil
- Soil/GW
- ⊛ GW

2002 O'Brien Road Sample

- Geoprobe

2001 Site Investigation Location

- Soil
- ⊛ GW

1999 Sampling Visit Location

- Soil
- Soil/GW

- Fence



Buildings 8549 and 8550



- Building 8549
 - constructed in the mid-1950s
 - served as a Motor Pool until the mid-1990's
 - biomedical maintenance area from 1994 to the late 1990's
 - common cleaners, nitrous oxide, and oxygen were used to repair and calibrate biomedical equipment
- Building 8550
 - constructed in the mid-1950s
 - used as a Motor Pool until December of 1993
 - 85th General Hospital Maintenance - offices and a tool room
 - parts cleaner that uses biodegradable soap and is serviced by a contractor





Ft Meade PA/SI Synopsis



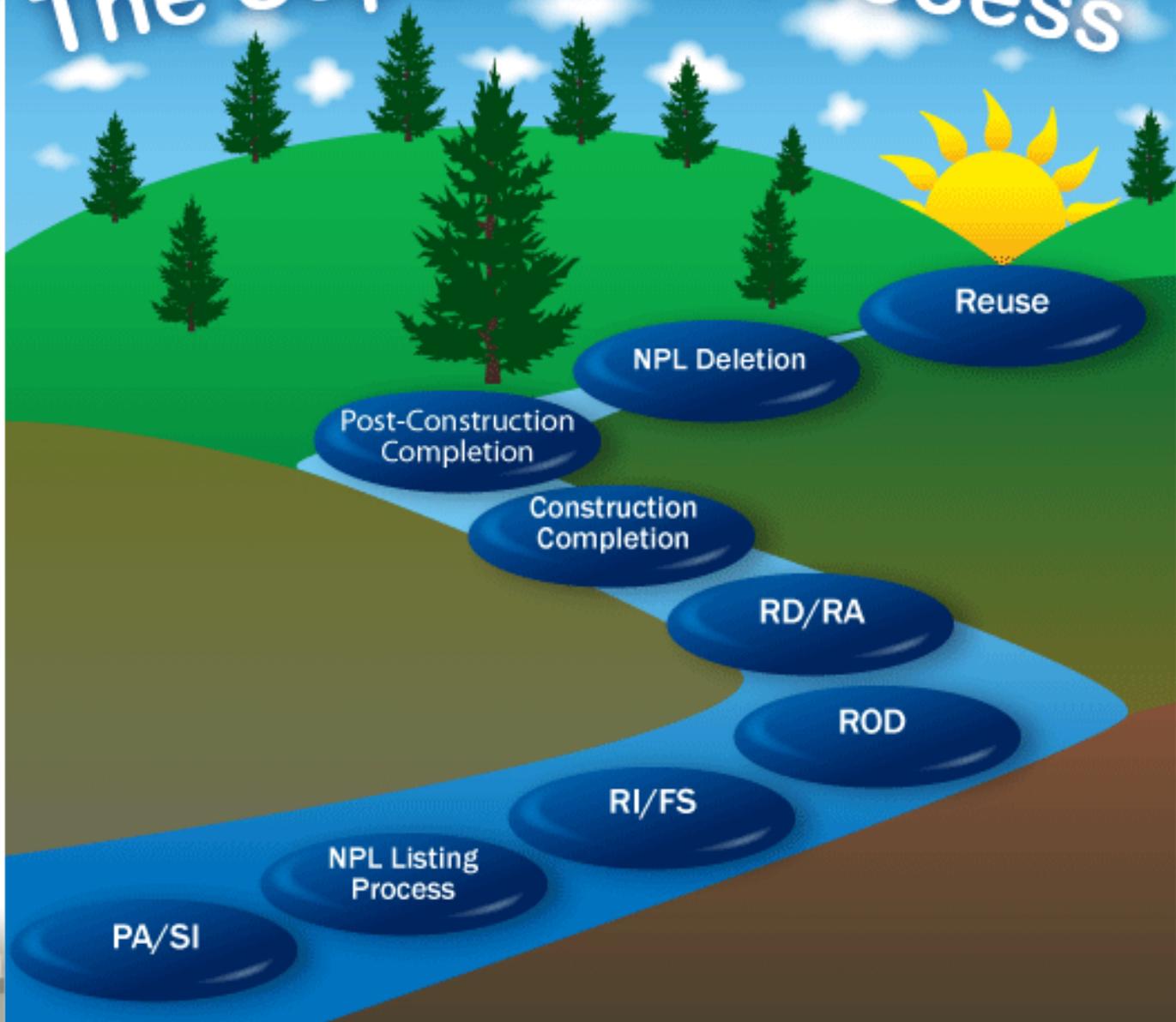
- Last RAB update of the PA/SI was September 2014.
- A Preliminary Assessment/Site Inspection (PA/SI) is an installation wide environmental study.
- The PA was conducted to assess the status of AOIs for closure, or, where appropriate, recommend the collection of additional data (the SI) to determine if the AOI can be closed or if it needs to be carried further in the CERCLA process.



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The Superfund Process





PA/SI

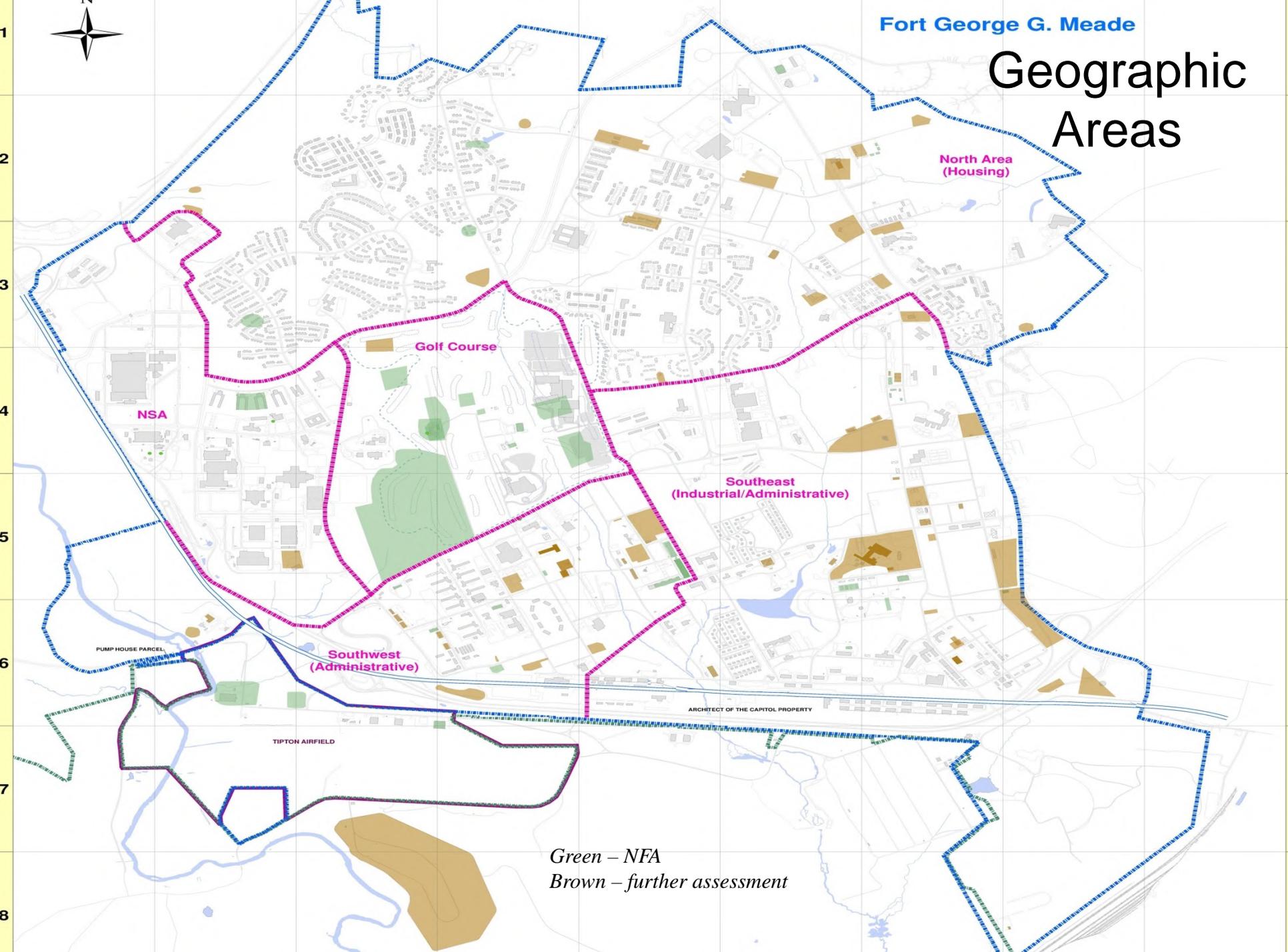
Areas of Interest (AOIs)

- AOIs were geographically grouped
 - *Golf Course*
 - **North**
 - *Southeast*
 - *Southwest*
 - South of Route 32



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Geographic Areas



Green – NFA
Brown – further assessment



North AOIs

- 25 North AOIs.
- No further action (NFA) approval for 8 North AOIs during PA stage.
- Field work for the remaining 17 North AOIs completed.
- Lab data received and validated and Risk-Based Screening performed on the results.
- Draft Report for North AOIs submitted to EPA and MDE. Comments received.



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17 SI North AOIs



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- Building 940
- Building 1007
- Building 2120c
- Building 2128
- Building 3000
- Incinerator Building - 1943
- Motor Pool-13/ Wash Rack-9
- Motor Pool-14
- Motor Pool-17
- Motor Pool-18/ Wash Rack-12
- Motor Pool-19/ Wash Rack-13
- Incinerator - Reece Road
- Possible Dump Site A – 1957
- Possible Dump Site B – 1957
- Site 1957 E
- Possible Dump Sites – 1970
- Small Pit – 1952

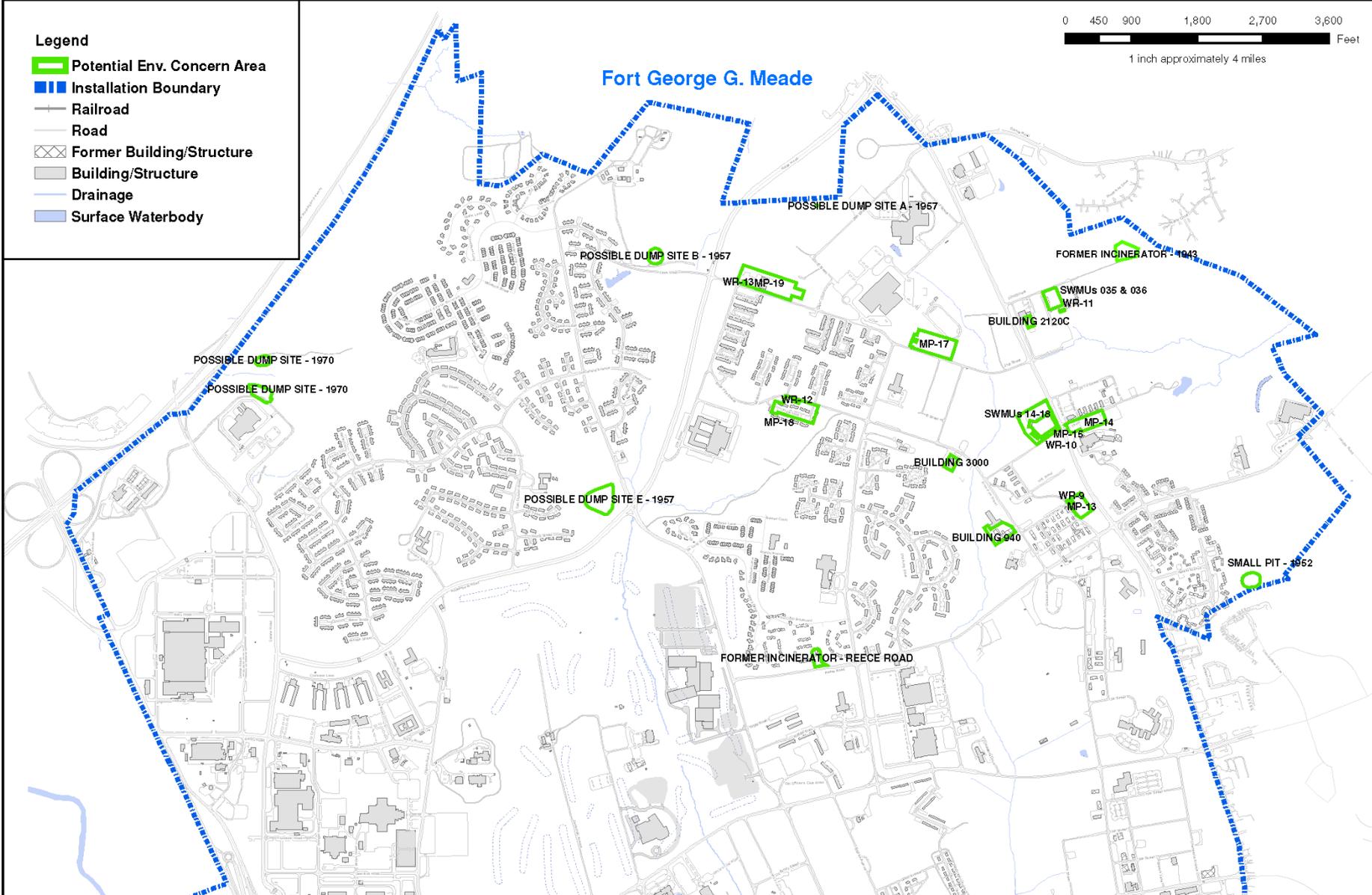


Legend

- Potential Env. Concern Area
- Installation Boundary
- Railroad
- Road
- Former Building/Structure
- Building/Structure
- Drainage
- Surface Waterbody



Fort George G. Meade



CLIENT USACE, Baltimore District

NOTES Outlines of sites are arbitrary.

REVISION NO	0	GIS BY	AER	9/5/2013
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SCALE	1:21,600	CHK BY	JK	9/5/2013
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TITLE

North Sites
Areas of Interest



12420 Milestone Center Drive
Germantown, MD 20876

Figure 1-2



8 AOIs Recommended for NFA Based on SI



- *Building 940*
- Building 3000
- Motor Pool-14
- *Motor Pool-17*
- *Incinerator - Reece Road*
- Possible Dump Site A – 1957
- Possible Dump Sites – 1970
- Small Pit – 1952

Italicized AOIs do not have concurrence from all reviewers.





Based on SI, 9 AOIs May Require Further Action



- *Building 1007/MP-15/
WR-10*
- *Building 2120c*
- *Building 2128*
- *Incinerator Building -
1943*
- *Motor Pool-13/ Wash
Rack-9*
- *Motor Pool-18/ Wash
Rack-12*
- *Motor Pool-19/ Wash
Rack-13*
- *Possible Dump Site B –
1957*
- *Site 1957 E*

Italicized AOIs do not have concurrence from all reviewers.



Review of Risk



- Maximum detected concentrations (MDCs) of individual chemical compounds are compared to the most current EPA (2014) residential (if soil) or tap water (if groundwater) regional screening levels (RSLs).
- Chemicals become COPCs if the MDC is greater than RSLs.
- Risk calculated for each COPC than added to obtain cumulative risk.
- Cumulative risk for the AOI compared to site-specific thresholds:
 - Cancer risk: 5×10^{-5}
 - Non-cancer hazard index: 0.5



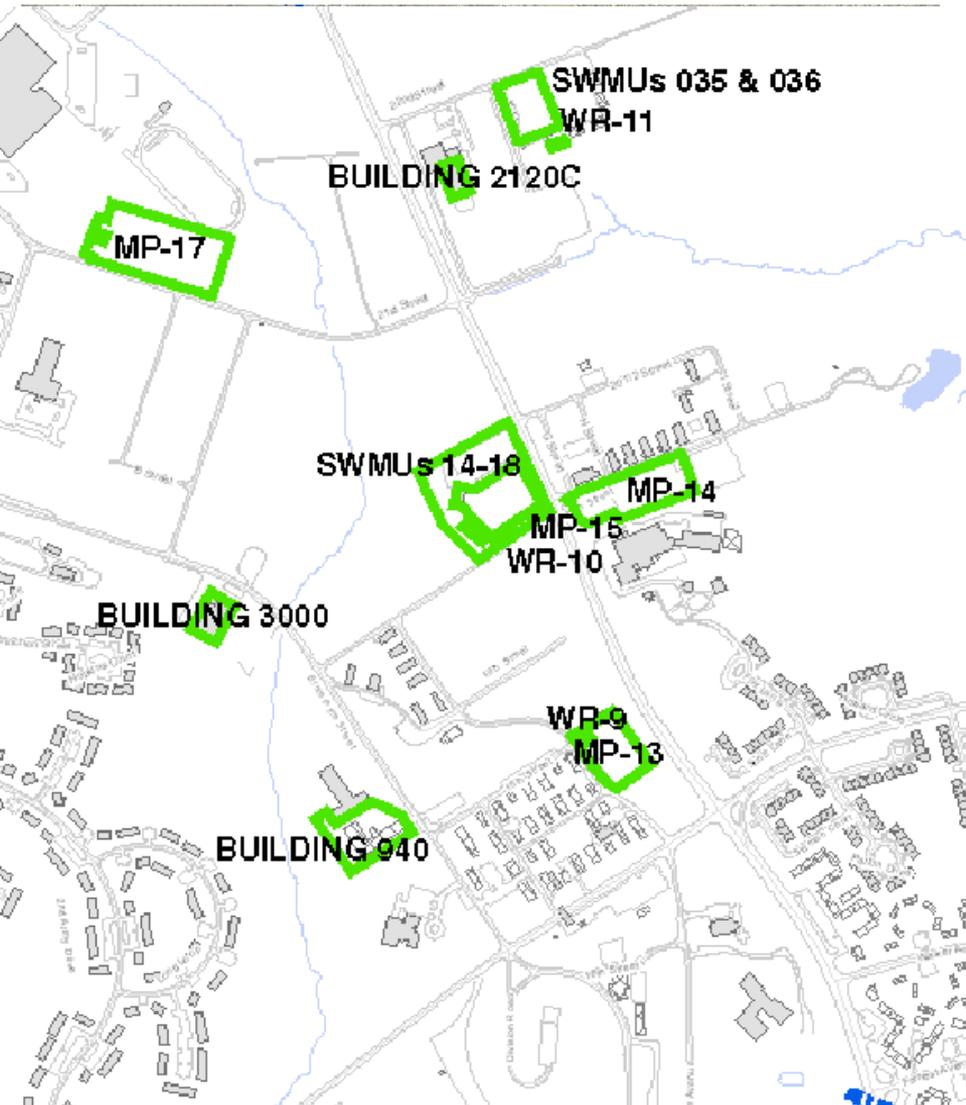
Key for the Remaining Slides



- Figure showing location of AOI.
- Figure of AOI with all historic and PA/SI sampling.
- Why it is an AOI.
- Calculated cancer and non-cancer risk for media (usually groundwater) that requires further investigation.
- Chemical compounds that contribute the most to the elevated risk levels.
- Maximum detection of those chemical compounds and the EPA Maximum Contaminant Level (MCL) of that chemical compound.



Building 1007/MP-15/ WR-10





Building 1007/MP-15/ WR-10



- Former maintenance facility/motor repair shop and associated former WR and OWS.
- Groundwater with total metals analysis:
 - cancer risk: 1.9×10^{-4} (chromium and arsenic)
 - non-cancer hazard: 7.7 (cobalt, thallium, and arsenic)

Compound	MDC	MCL
Arsenic	1.9	10
Chromium	4.9	100
Cobalt	44	NA
Thallium	0.46	2

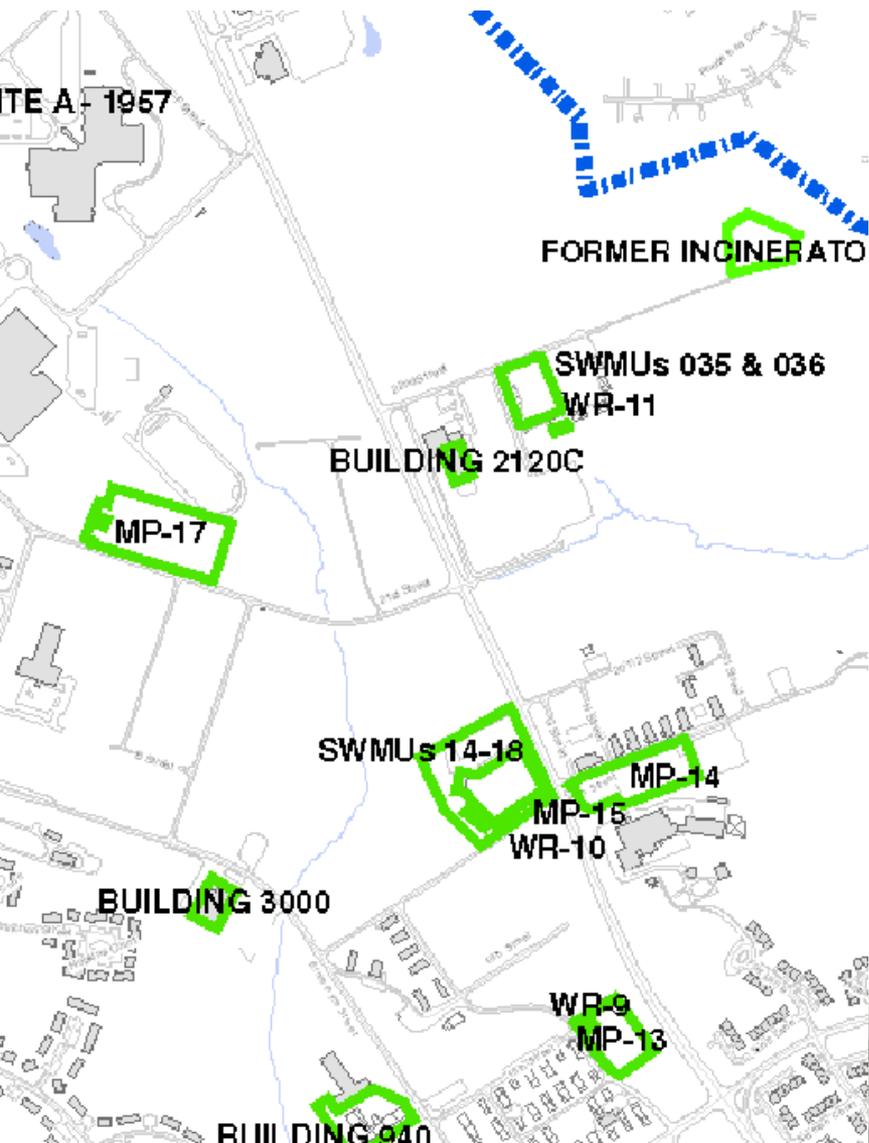
MDC: Maximum Detected Concentration

MCL: Maximum Contaminant Level





Building 2120c



Legend

- 2013 URS PA/SI Sample Location
- GW
- 2000 Initial Delineation Location
- Soil
- Soil/GW
- 1999 Sampling Visit Location
- Soil
- Soil/GW



Building 2120c



- Vehicle Storage and Maintenance and associated WR/truck wash pit and OWS
- Groundwater with total metals analysis:
 - cancer risk: 8.8×10^{-5} (chromium and arsenic)
 - non-cancer hazard: 6.2 (cobalt, manganese, and 1,2,4-trimethylbenzene)

Compound	MDC	MCL
Arsenic	1.3	10
Chromium	1.7	100
Cobalt	35	NA
Manganese	350	NA
1,2,4-trimethylbenzene	6.13	NA

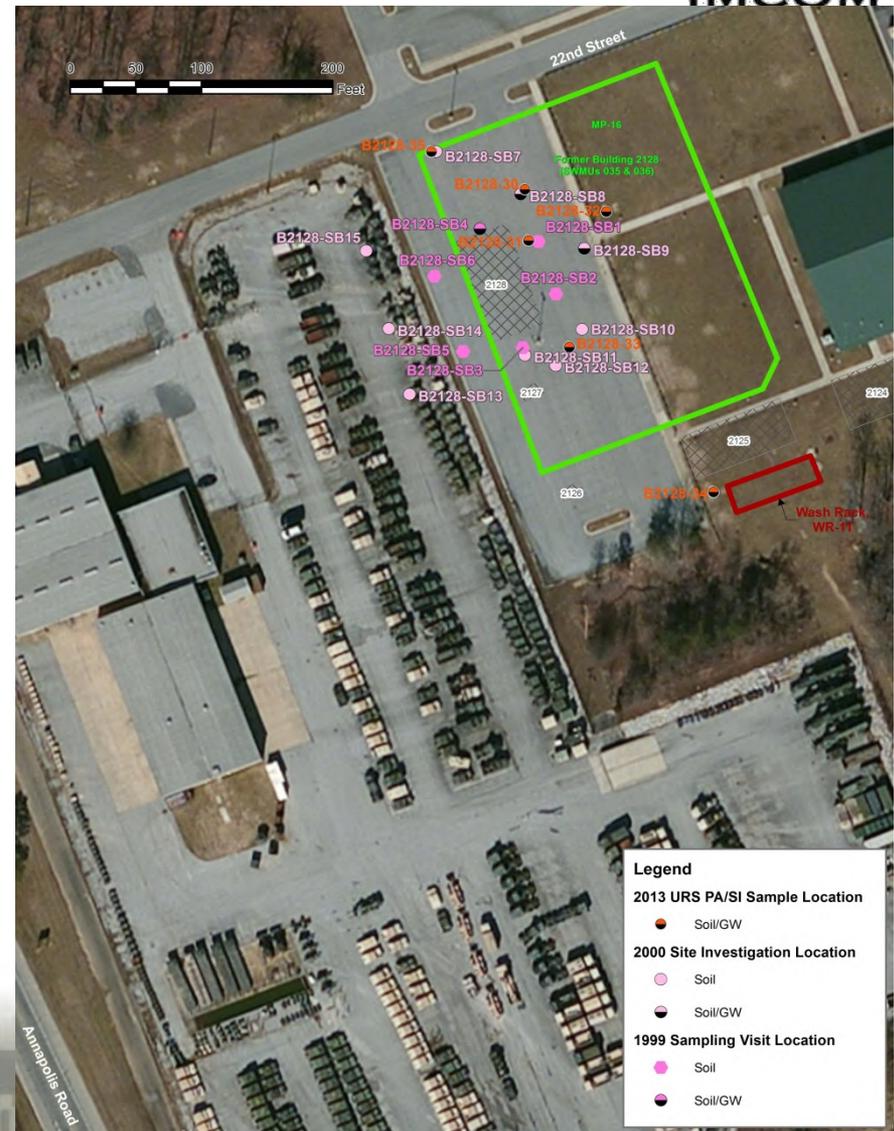
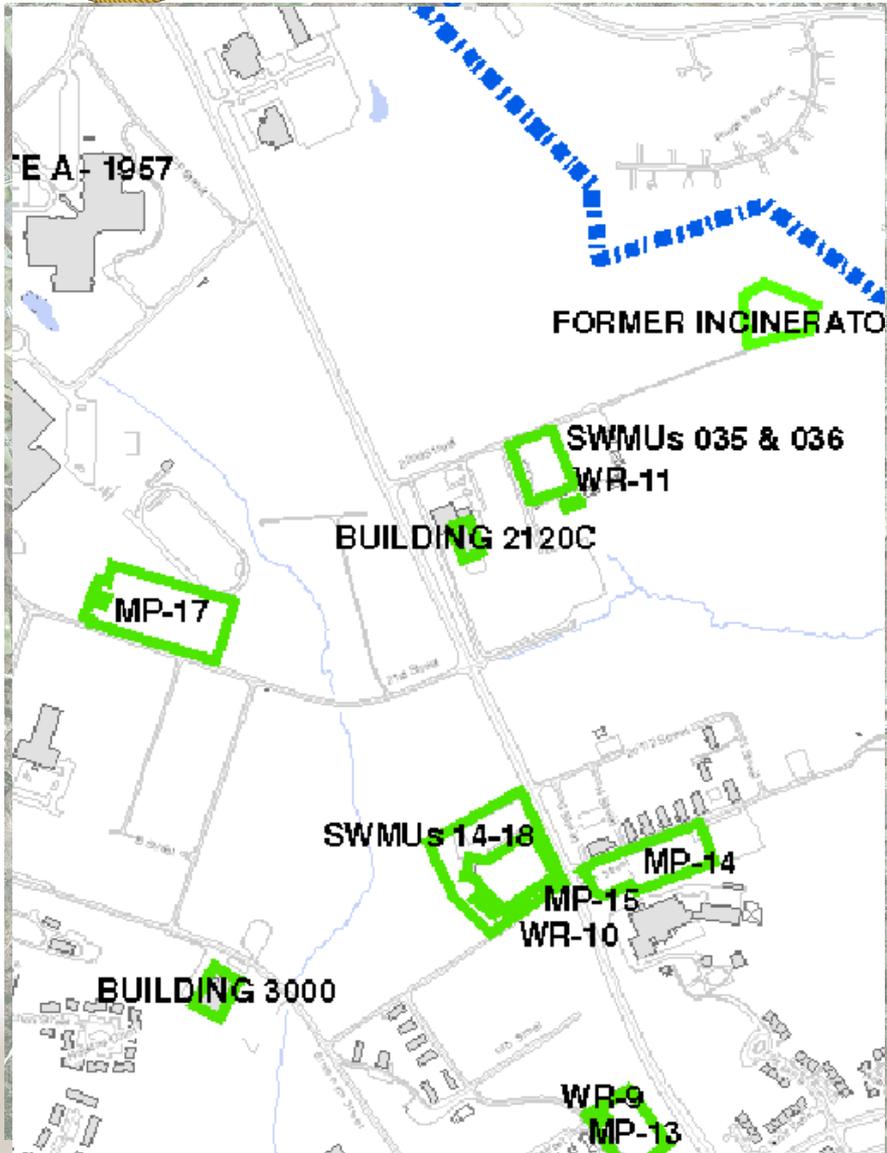




Building 2128



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Legend

- 2013 URS PA/SI Sample Location
 - Soil/GW
- 2000 Site Investigation Location
 - Soil
 - Soil/GW
- 1999 Sampling Visit Location
 - Soil
 - Soil/GW



Building 2128



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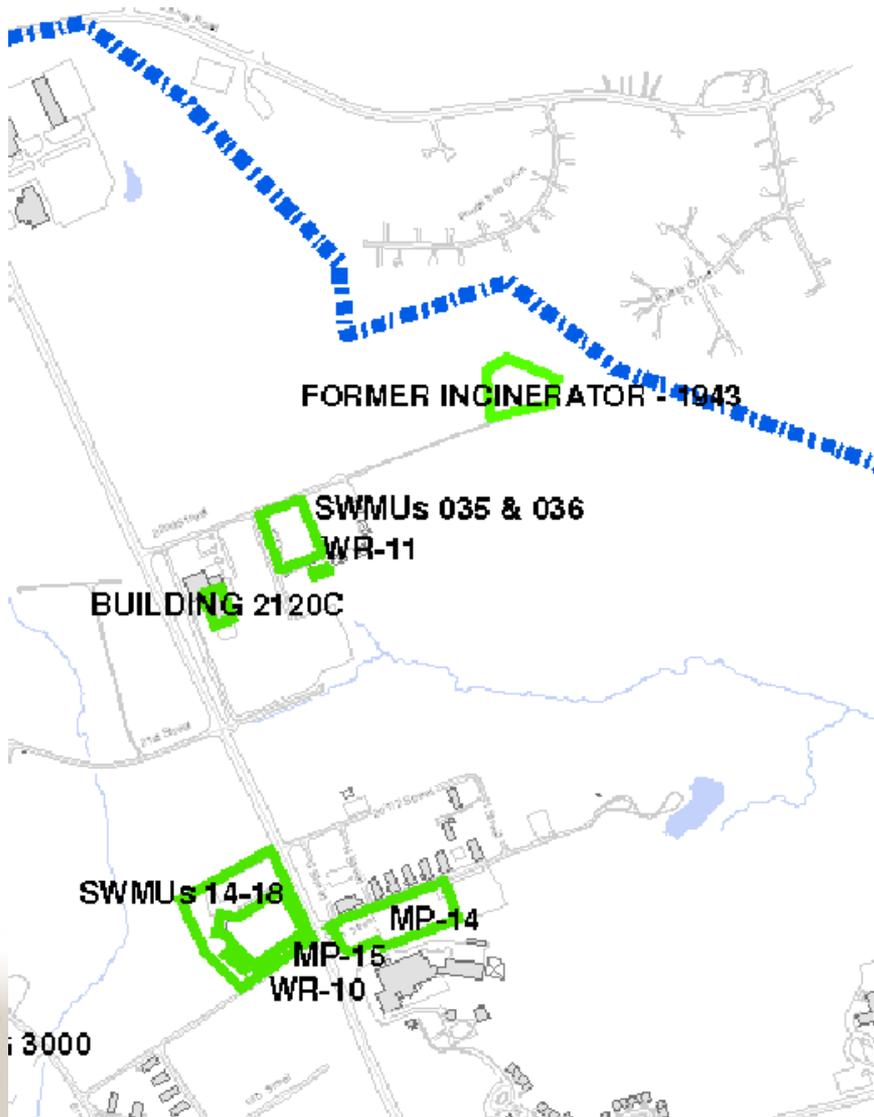
- Former vehicle maintenance.
- Groundwater with total metals analysis:
 - cancer risk: 1.1×10^{-3} (dibenz(a,h)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(a)anthracene, and indeno(1,2,3-cd)pyrene)
 - non-cancer hazard: 9.3 (cobalt, manganese, and thallium)

Compound	MDC	MCL
Cobalt	54	NA
Manganese	240	NA
Thallium	0.069	2
Dibenz(a,h)anthracene	1.5	NA
Benzo(a)pyrene	1.3	0.2
Benzo(b)fluoranthene	1.6	NA
Benzo(a)anthracene	1.5	NA
Indeno(1,2,3-cd)	1.5	NA
Pyrene		





Incinerator Building - 1943





Incinerator Building - 1943



- Former Incinerator Building.
- Groundwater with total metals analysis:
 - Cancer risk: 6.5×10^{-5} (chromium)
 - Non-cancer hazard: 4.5 (cobalt and manganese)
 - The upgradient well detected the highest concentrations of cobalt and manganese.

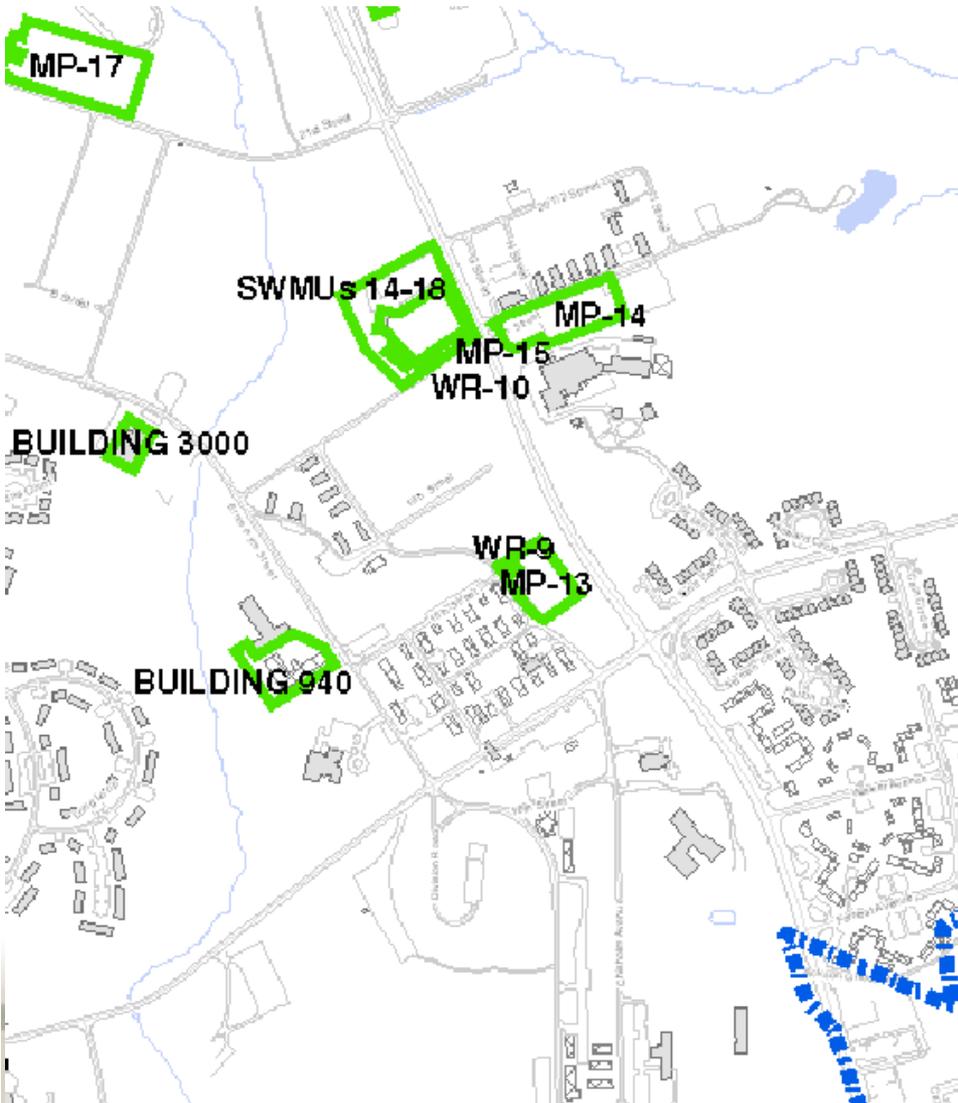
Compound	MDC	MCL
Chromium	1.8	100
Cobalt	26	NA
Manganese	920	NA



Motor Pool-13/ Wash Rack-9



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Motor Pool-13/ Wash Rack-9



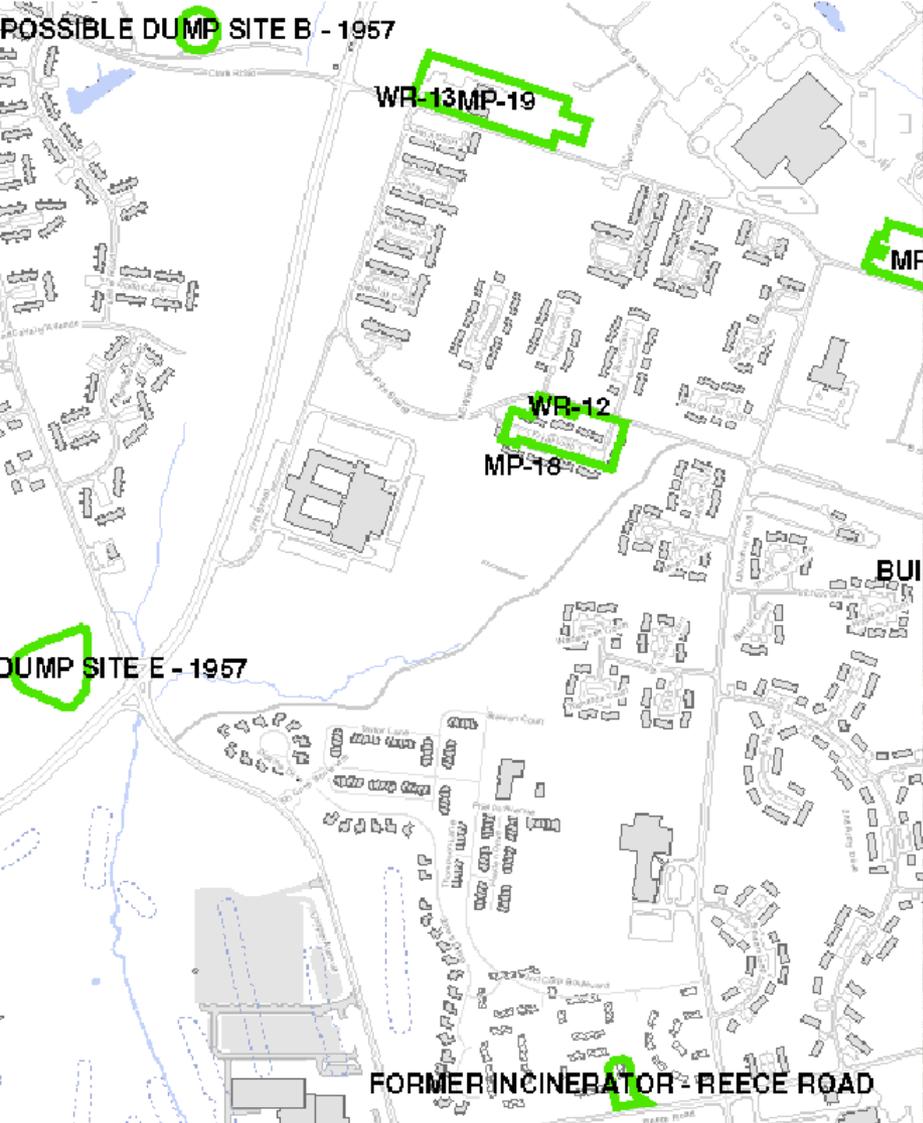
- Former motor pool and wash rack.
- Groundwater with total metals analysis:
 - Cancer risk: 4.3×10^{-4} (dibenz(a,h)anthracene and benzo(a)pyrene)
 - Non-cancer hazard: 2.4 (cobalt)

Compound	MDC	MCL
Cobalt	14	NA
Dibenz(a,h)anthracene	0.57	NA
Benzo(a)pyrene	0.51	0.2





Motor Pool-18/ Wash Rack-12





Motor Pool-18/ Wash Rack-12



- Former motor pool and wash rack.
- Groundwater with total metals analysis:
 - Cancer risk: 1.4×10^{-4} (benzo(a)pyrene and dibenz(a,h)anthracene)
 - Non-cancer hazard: 1.8 (cobalt and manganese)

Compound	MDC	MCL
Cobalt	9.9	NA
Manganese	400	NA
Dibenz(a,h)anthracene	0.13	NA
Benzo(a)pyrene	0.15	0.2

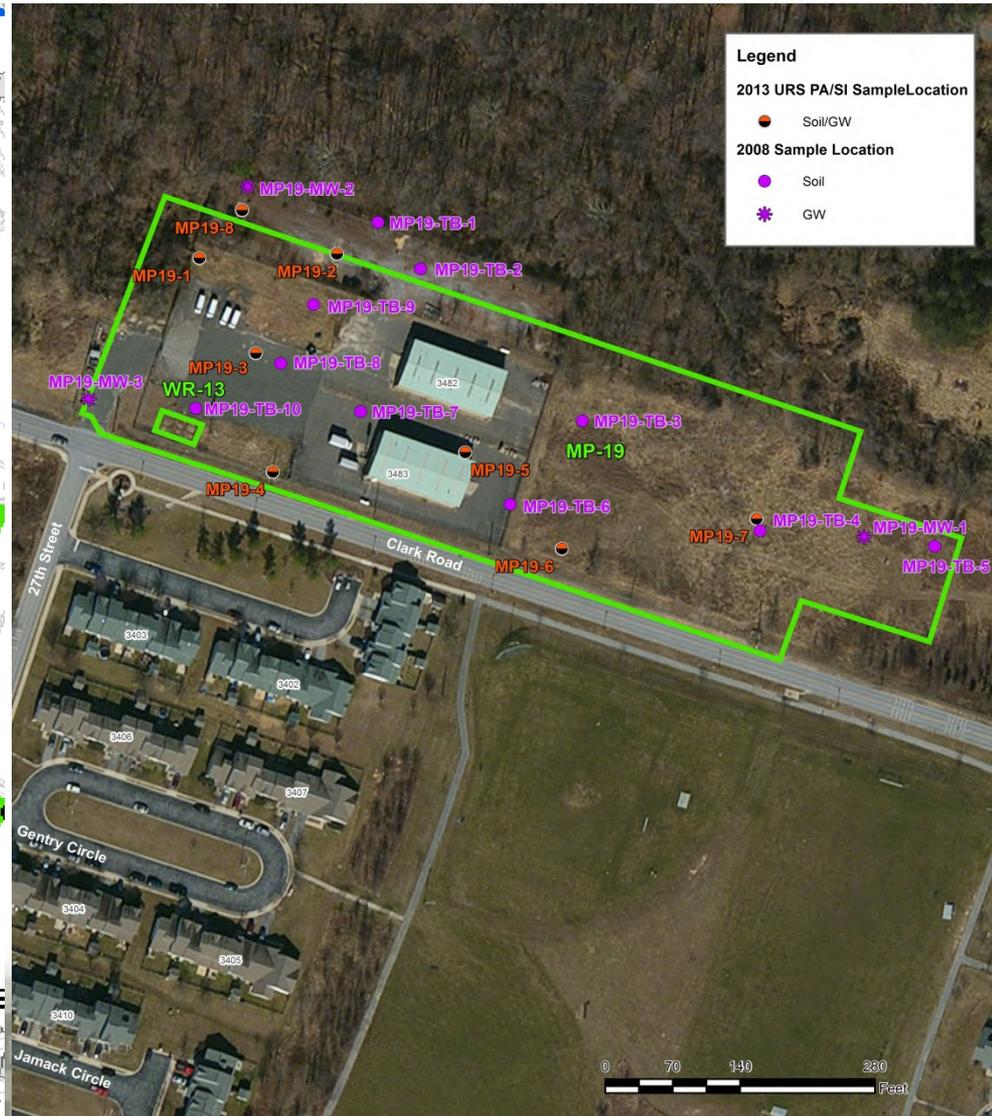
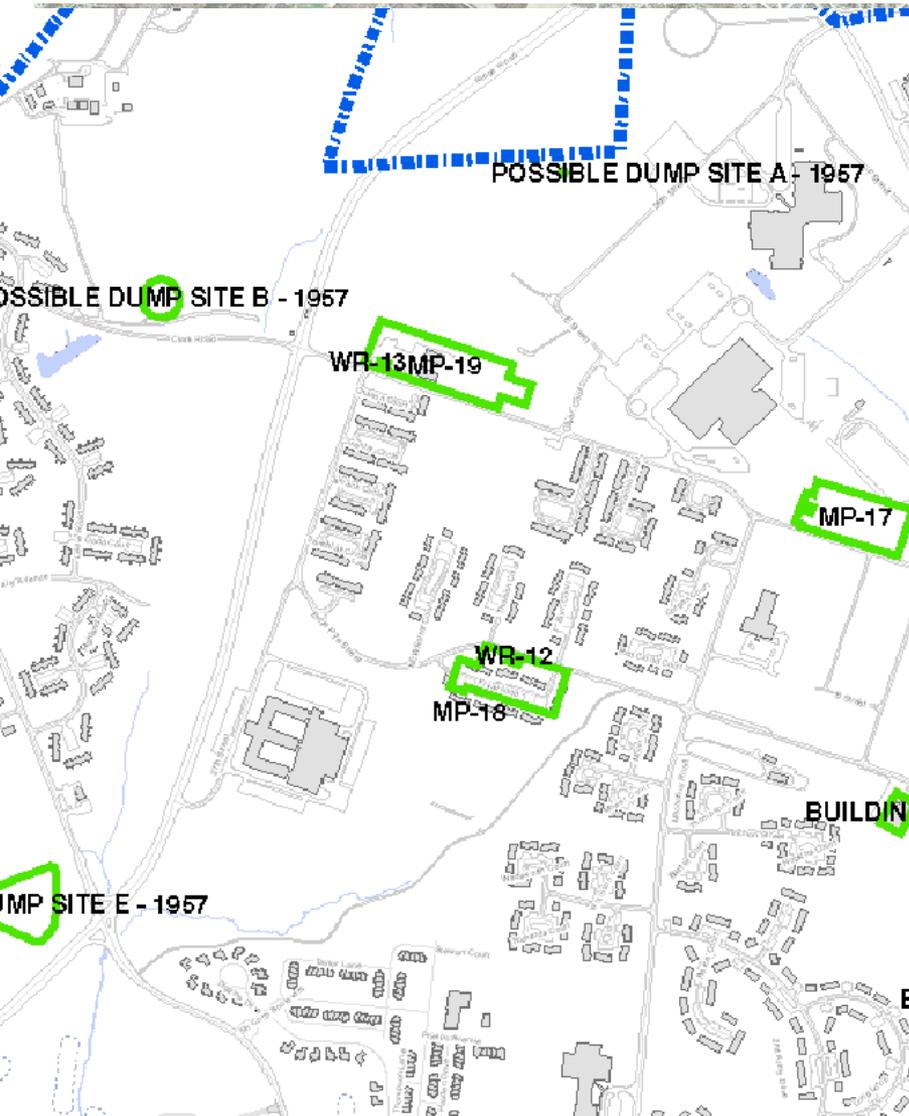




Motor Pool-19/ Wash Rack-13



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Motor Pool-19/ Wash Rack-13



- Former motor pool and wash rack.
- Groundwater with total metals analysis:
 - Cancer risk: 1.0×10^{-4}
 - Non-cancer hazard: 0.7
- Groundwater with dissolved metals analysis:
 - Cancer risk: 3.3×10^{-5}
 - Non-cancer hazard: 0.4

- Cancer risk – Chromium
- Non-cancer hazard – Cobalt, thallium, and iron

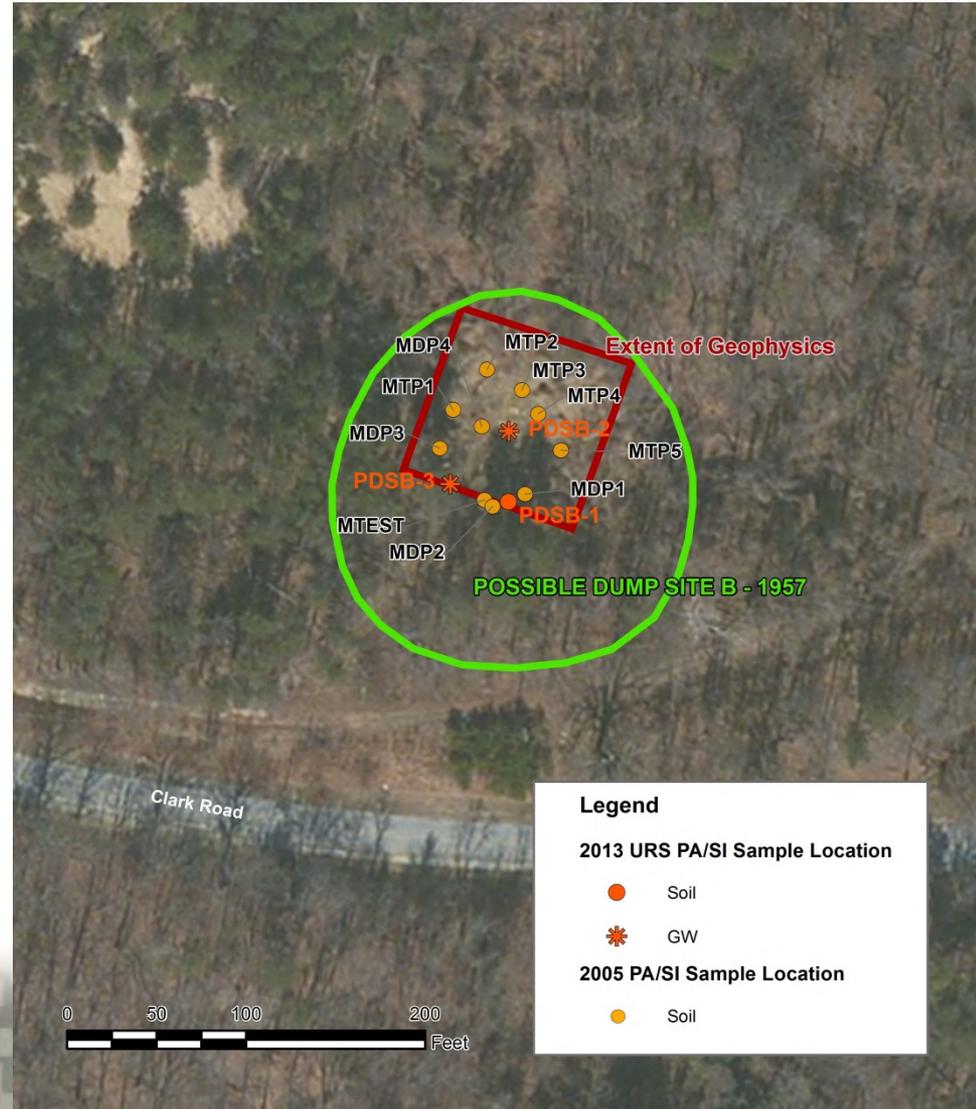
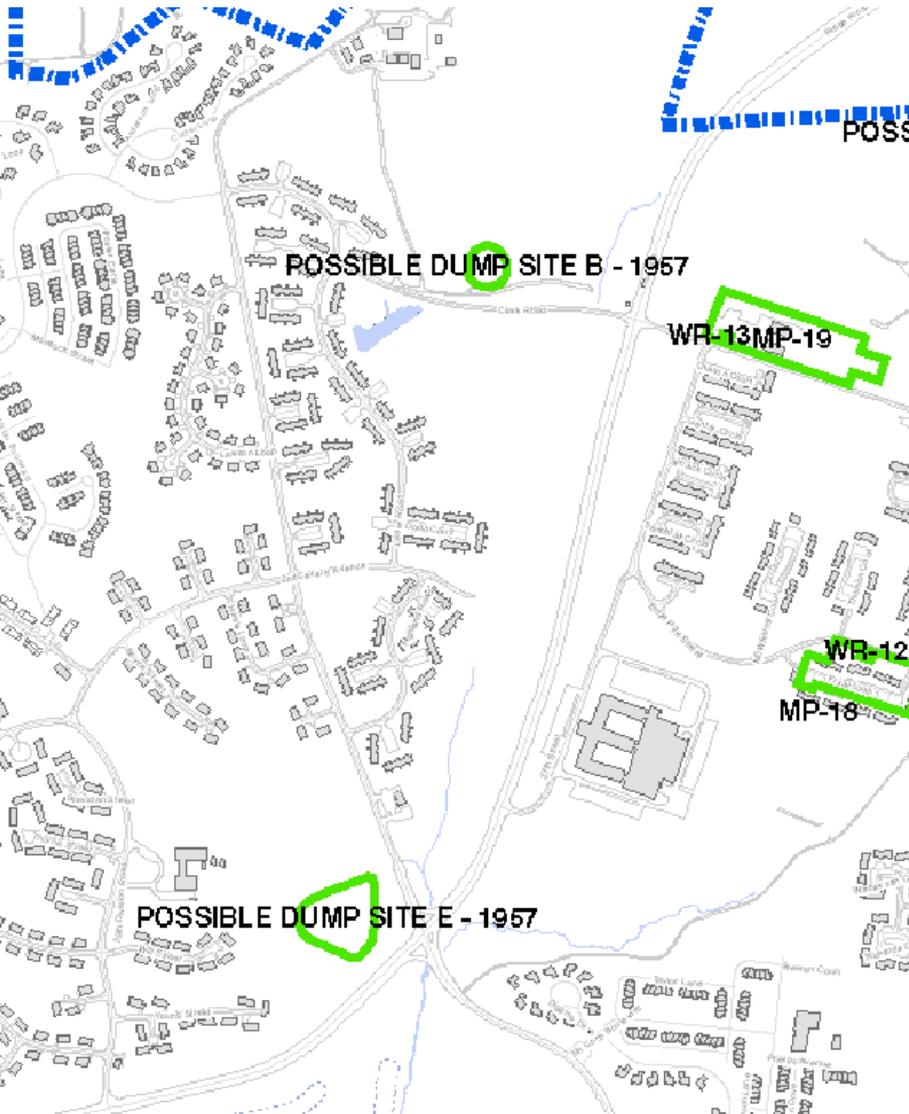
Compound	MDC	MCL
(total metals)		
Chromium	2	100
Cobalt	2.7	NA
Iron	2000	NA
Thallium	0.074	2



Possible Dump Site B – 1957



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Legend

2013 URS PA/SI Sample Location

- Soil
- * GW

2005 PA/SI Sample Location

- Soil



Possible Dump Site B – 1957



- Former “solid waste/dump”
- Subsurface Soil:
 - Cancer risk: 1.3×10^{-4} (chromium)
 - Non-cancer hazard: 0.7
- Groundwater with total metals analysis:
 - Cancer risk: 1.5×10^{-4}
 - Non-cancer hazard: 2.2
- Groundwater with dissolved metals analysis:
 - Cancer risk: 7.1×10^{-5}
 - Non-cancer hazard: 2.1

- Cancer risk – chromium
- Non-cancer hazard – cobalt and thallium

Compound MDC MCL (total metals)

Chromium	4.9	100
Cobalt	13	NA
Thallium	0.14	2

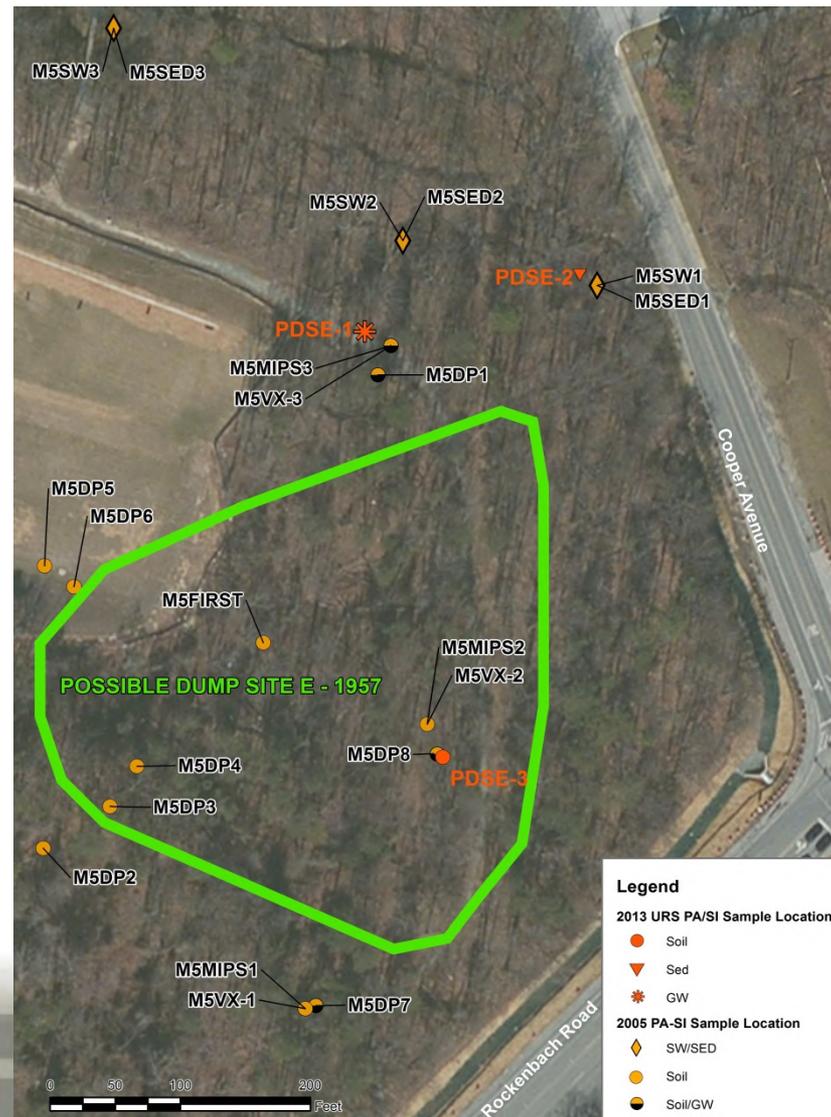
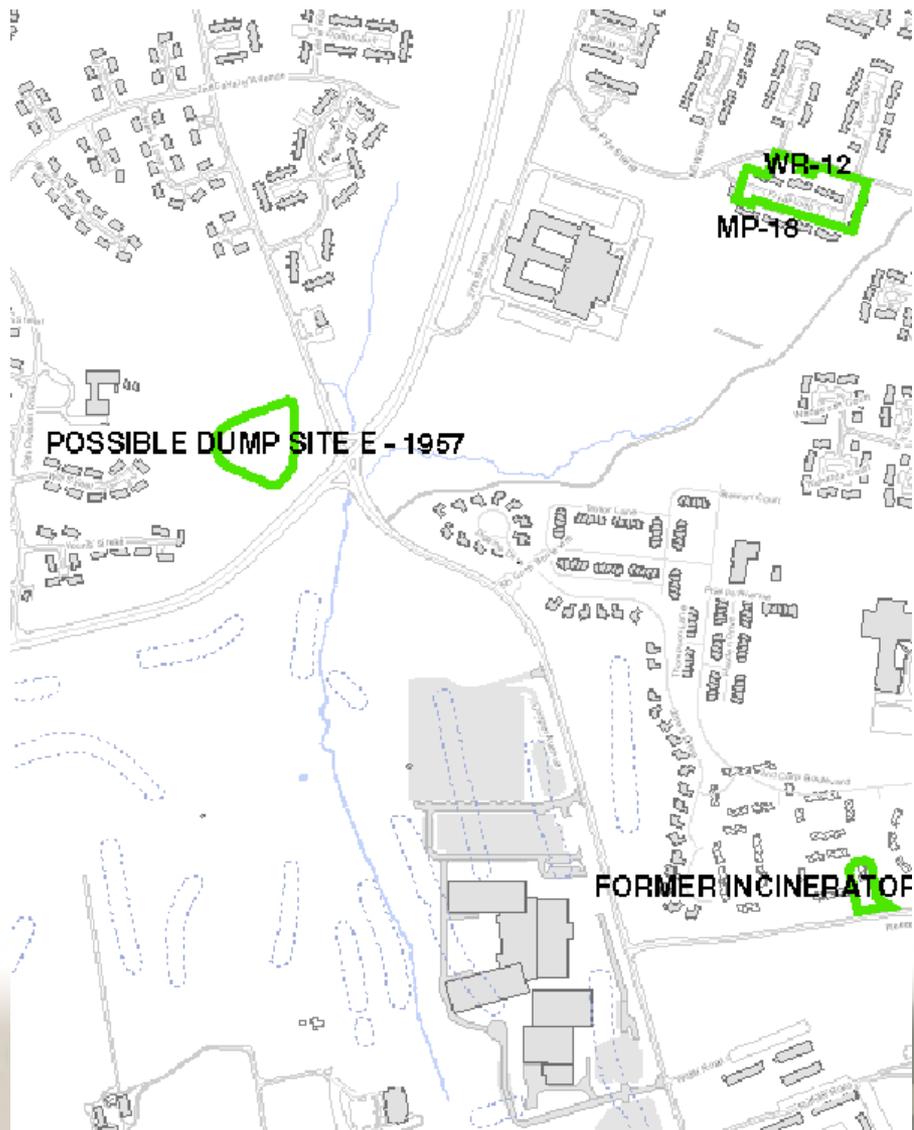




Site 1957 E



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- Legend**
- 2013 URS PA/SI Sample Location**
- Soil
 - ▼ Sed
 - * GW
- 2005 PA-SI Sample Location**
- ◆ SW/SED
 - Soil
 - Soil/GW



Site 1957 E



- Possible dump site.
- Groundwater with total metals analysis:
 - Cancer risk: 1.9×10^{-4} (chromium)
 - Non-cancer hazard: 60.3 (TPH-DRO, cobalt, and manganese)

Compound	MDC	MCL
Chromium	5	100
Cobalt	12	NA
Manganese	130	NA
TPH-DRO	320	NA





Next Step in the Process

- Submit response to comments on the Draft Report.
 - For each AOI, one of the following actions will be taken:
 - No Further Action (NFA) Determination
 - Remedial Investigation/Feasibility Study (RI/FS)



Overall PA/SI Status



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- North – comments received on Draft report, Army addressing comments
- Southeast – comments received on Draft report, Army addressing comments
- Southwest – comments received on Draft report, Army addressing comments
- South of Route 32 – comments received on Draft report, Army addressing comments
- Golf Course – complete





Next RAB Meeting Update for PA/SI Areas of Interest Located South of Route 32





Questions?



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Acronyms and Abbreviations



- AOs – Areas of Interest
- BTEX – Benzene, Toluene, Ethylbenzene, Xylene
- CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
- COPC – Chemicals of Potential Concern
- DRO – Diesel Range Organics
- EPA – U.S. Environmental Protection Agency
- GRO – Gasoline Range Organics
- GW – Groundwater
- MDCs – Maximum Detected Concentrations
- MDE – Maryland Department of the Environment
- NFA – No Further Action
- PA – Preliminary Assessment





Acronyms and Abbreviations (continued)



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- PAH – Polycyclic Aromatic Hydrocarbon
- ProUCL – EPA’s statistical calculation tool (UCL - upper confidence limit)
- RA – Risk Assessment
- RAB – Restoration Advisory Board
- RI – Remedial Investigation
- FS – Feasibility Study
- RSLs – Regional Screening Levels
- SI – Site Inspection
- SSI – Supplemental Site Inspection
- TPH – Total Petroleum Hydrocarbon
- ug/L – micrograms per liter





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