IMFD-PWE XX April 2016

MEMORANDUM FOR RECORD

SUBJECT: Fort Detrick Restoration Advisory Board (RAB) Meeting Summary,
04 NOVEMBER 2015

1. Summary Contents

Items addressed at the meeting are listed below, with corresponding section numbers indicated in the column on the right.

Please note: PowerPoint presentations were utilized during the RAB meeting. A copy of the presentations are attached to these minutes and are incorporated into these minutes by this reference.

Text contained within brackets [] has been added for clarification purposes.

2. Attendees

Members Present:
Dr. Gary Pauly, Community RAB Member, Co-Chair
Mr. Robert Craig, Army Co-Chair
Mr. Joseph Gortva, Fort Detrick, Environmental Restoration Program Manager
Mr. Rolan Clark, Community RAB Member
Mr. Barry Glotfelty, Frederick County Health Department
Dr. Elisabeth Green, Maryland Department of the Environment
Ms. Jennifer Hahn, Community RAB Member
Mr. Cliff Harbaugh, Community RAB Member
Ms. Karen Harbaugh, Community RAB Member
Mr. George Rudy, Community RAB Member
Mr. Rob Thomson, US Environmental Protection Agency

Others Present:
Mr. Larry Brown, US EPA Public Affairs
Mr. John Buck, US Army Corps of Engineers
Mr. Gary Zolyak, Fort Detrick Office of the Staff Judge Advocate
Ms. Laurie Haines-Eklund, Army Environmental Command
Mr. Keith Hoddinott, US Army Public Health Center
Mr. Roger Wilson, Frederick County Executive's Office
Mr. Jeff Samuels, Congressman John Delaney's Office
Ms. Sylvia Carignan, Frederick News Post
Mr. Harold Dyson, Clustered Spires PS
Ms. Tracy Coleman, City of Frederick
Mr. Roger Wilson, Office of Frederick County Executive Director
Mr. John Cherry, ARCADIS
Ms. Shelly Morris, On-Site Contractor to Fort Detrick Environmental Restoration Program
Ms. Katrina Harris, Bridge Consulting Corp.

Members Absent:
Mr. Eli DePaula, Community RAB Member
Dr. Henry Erbes, Community RAB Member
Mr. Barry Kissin, Community RAB Member

3. Meeting Opening / Remarks

Mr. Gary Pauly, Community Co-Chair, called the meeting to order. He welcomed everyone to the meeting and asked everyone to introduce themselves.

4. RAB Operating Procedures presented by Mr. Joseph Gortva

Mr. Gortva stated the Board's community members had met several times to develop drafts of Operating Procedures. He advised he had emailed a clean version to the Board and hoped to discuss any final changes tonight, send out a revised version if needed, and vote on the document at the next meeting. Community members began offering comments. Ms. Jennifer Hahn

suggested the discussion be postponed in light of the presence of several elected officials or their representatives who were interested in hearing the presentations on technical topics. The other community members agreed, and later in the meeting, also agreed to send Mr. Gortva any comments by email in the next week. He said he would summarize the changes and send them out to the community members. Mr. Gortva said an evening conference call also could be held to discuss the changes if needed.

5. Installation Restoration Program FY16 Planned Activities presented by Mr. Joseph Gortva, Fort Detrick

Mr. Gortva said the focus of his presentation was to provide everyone with an understanding of the environmental restoration work that will be performed in the coming year.

Mr. Gortva reminded everyone that the environmental restoration program is regulated by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). He stated CERCLA has eight primary steps on how to proceed with environmental restoration; he noted the yellow box indicates where Fort Detrick is within the environmental restoration program under CERCLA. Mr. Gortva said there are 43 sites on Fort Detrick included in the environmental restoration program, and 42 sites have been closed out or have a remedy in place or is in a long-term monitoring program. He said one site, Area B groundwater, is in the remedial investigation phase, and the remedial investigation for this site has been ongoing over a number of years.

Mr. Gortva said he would be reviewing a number of projects and providing their current status.

a. **Area A Building 190 Boiler Plant**: Mr. Gortva stated in 1995 the Army removed 10 50,000 gallon underground storage tanks which had leaked #6 fuel oil. He stated two large aboveground storage tank and two smaller underground storage tanks were installed to replace the ones removed. He advised the Army implemented a corrective action plan in 2006. He explained the plan was to recover the fuel oil by skimming and bringing the fuel oil to the surface. Mr. Gortva showed the Board a sample of the fuel oil, noting the thickness of the product and that it does not flow very freely. He advised only about 300 gallons of the fuel oil had been recovered in the 10 years of skimming, and while that may seem like a small amount, the State of Maryland had advised it is the largest amount of fuel oil recovered anywhere in the state from similar types of recovery efforts. Mr. Gortva stated the Army has been doing quarterly groundwater monitoring at the site. Mr. Gortva said in 2014 the Army made a decision to decentralize the plant and end the burning of #6 fuel oil, and the plant stopped burning No. 6 fuel in March 2015. He explained Maryland Department of the Environment regulations require underground storage tanks to be removed within one year of the out of service date. Mr. Gortva said a contract has been awarded to remove the tanks and excavate contaminated soil to the extent possible. Mr. Gortva showed an aerial photograph of the building and tanks and a map with a yellow outline of the soil believed to be contaminated with #6 fuel oil. He noted once the underground tanks are removed, the potential for recovering fuel oil also ends.

Mr. Rudy asked where the excavated soil would be taken to be disposed, and Mr. Gortva responded the soil would be taken to a licensed disposal facility.

Mr. Gortva said the work would begin in December or January. He advised Maryland Department of the Environment Oil Control Program staff will be on-site during the removal action. He said a close-out report would be prepared, and the Board would be updated at the next meeting.

b. Area A 568 TCE Spill Site Vapor Intrusion Testing: Mr. Gortva stated there had been a trichloroethylene (TCE) spill around Building 568. He displayed a map with a blue line showing the historical outline of the groundwater plume. He advised the pumping system installed has controlled the contamination so there are now only two areas where the TCE is just slightly above the drinking water standard of 5 parts per billion. Mr. Gortva said some low levels of perchloroethylene (PCE) just above the drinking water standard has been detected which may be from a different source and will be addressed separately. Mr. Gortva advised vapor intrusion testing was conducted to see if there was any impact on the indoor air quality of 10 adjacent buildings. He stated initial results did not show any hazards or immediate dangers. He advised a second round of sampling of some of the buildings will be conducted to complete the data set and finish the risk assessment. Mr. Gortva said the Army has been working with the Maryland Department of the Environment to select appropriate locations for the second round of testing; once the testing is completed during this upcoming heating season, the human health risk assessment can be completed.

Ms. Hahn asked if the boundary of the plume stopped at Rosemont Avenue because it is Fort Detrick's boundary or is it known that the contamination does not extend to the other side of the road. Mr. Gortva responded that only one well in that area was showing 5 parts per billion; other wells in the area are below that level. Ms. Hahn asked if there were any well locations right across the road that had been sampled, and Mr. Gortva responded there had not been any sampling across the road; however, Carroll Creek is nearby and the closer to Carroll Creek, the more influence there is from Area B. He noted the site is a convergence zone for groundwater from Area A and Area B.

c. Area B Groundwater Investigations: Mr. Gortva gave some historical background noting that prior to the enactment of hazardous waste regulations in the 1970s the industry practice for hazardous waste disposal was to dispose of it with trash or dig a hole and bury the waste. He stated Area B was purchased as a testing area for simulants, but it was also used for waste disposal; there are a number of waste disposal areas at Area B. He noted the waste disposal areas were known to the Army, the remedial investigation of the areas was completed to determine the extent of waste burial, and in 2010, the Army finished installing caps over the disposal areas. Mr. Gortva explained that a cap is like an umbrella where a plastic liner is placed over the waste materials with a slope around the edges with soil then placed on top of the liner; he stated this is a simple explanation but in reality it is a complex engineered capping system. He continued explaining that the cap prevents rainfall from going into the disposal area where it could transport contamination to the groundwater; the water is shed off to the sides where it does not go through the

waste materials. Mr. Gortva displayed a map showing the various disposal areas which had been capped. He noted that there are requirements to periodically inspect the cap and perform maintenance, so there is a contract in place with Watermark ECC to inspect the caps to make sure there are no erosion, animal, or vegetation issues. Mr. Gortva advised there is also a draft groundwater monitoring plan that is being reviewed by the Maryland Department of the Environment and the U.S. Environmental Protection Agency to look at a subset of wells around each of the disposal areas to monitor the groundwater and look for any changes in the groundwater conditions that might indicate a change in the disposal area site. He said as soon as the plan is approved, the quarterly monitoring program will begin.

Mr. Rudy stated that over the years the nuclear industry has proven that capping does not work. He said he would provide Mr. Gortva with articles that discuss this issue. Ms. Elisabeth Green stated it is a state regulation that landfills must be capped. She explained more modern landfills have a liner at the bottom in addition to the one on top.

Ms. Hahn asked for confirmation that a cap does not completely stop a contaminant plume from moving. Mr. Gortva responded that a cap keeps additional contamination from moving into the groundwater. He stated there is already contamination in the subsurface bedrock which acts as a continuing source to the groundwater; the cap only minimizes the amount of infiltration that moves through the contamination and transfers additional contamination into the groundwater.

Mr. Rudy asked if the groundwater monitoring determines there is a problem, what action would Maryland Department of the Environment take. Ms. Green said the Army would be required to address the issue. Mr. Gary Zolyak added that if the Army caused contamination, the Army is responsible for cleaning it up.

Mr. Craig reminded the Board that the Army still has an active landfill in the northwest corner, which has the permanent liner on the bottom as referenced by Ms. Green.

Mr. Gortva continued his presentation by displaying an aerial photograph with Area B outlined in black. He pointed out the sampling locations and the legend which marks the levels of contamination. He showed areas outside of Area B where contamination has not been detected above the drinking water standard; he stated the area near B-11 is where the highest levels of contamination have been detected and where the majority of the contamination is detected. He explained that in general groundwater flow is from Area B towards Carroll Creek and contaminant levels drop off as the groundwater moves east through diffusion and dilution, but the groundwater is being discharged along Carroll Creek. Mr. Gortva said a well along Fort Detrick's fenceline near B-11 showed TCE concentrations at 10,000 parts per billion, which led to an investigation of the Waverley View property. He said the Army obtained rights of entry to Waverley View and installed several wells; the deep wells installed further away from the boundary did not show contamination, but contamination (TCE and PCE) was detected along a small section of the Waverley View property near the property line. Mr. Gortva noted the

highest concentration detected on Waverley View was about 390 parts per billion of TCE.

Mr. Rudy asked if Fort Detrick had access to the Waverley View property. Mr. Gortva responded that access was obtained for sampling in September, and the Army is working on a new access agreement.

Mr. Gortva said one round of deep groundwater sampling was completed in September on the Waverley View property. He stated a draft work plan is being reviewed by the regulators for additional sampling and water level measurements on the Waverley View property; he stated the well locations have not yet been finalized.

Mr. Gortva said at the Frederick County Montevue Lane property where there were detections in the streams, as well as a detection of PCE in the groundwater at PZ20 around 9 parts per billion compared to the drinking water standard of 5 parts per billion. He stated upcoming work includes additional testing at the Montevue property. He reminded the Board in the past an attempt had been made to install direct push wells, and because of the shallow bedrock encountered, the wells could not be installed. He said groundwater monitoring wells will be installed using a drill rig so groundwater samples can be collected to determine if the detection is associated with Fort Detrick or possibly a localized source. Mr. Gortva said all the previously installed piezometers will be sampled, and groundwater levels will be measured to provide information in helping to determine the source. He stated isotopic forensic profiling also would be conducted to attempt to profile the chlorinated solvents and determine if they are from Area B or from another source.

Ms. Hahn asked about the TCE detections along Carroll Creek which exceed the drinking water standard. Mr. Gortva said the detections may be in seeps not bodies of water, and as soon as the water mixes with the stream, the concentrations are well below any recreational action standard. He continued explaining that since it is not drinking water, the recreational standard applies which is 18 parts per billion. Mr. Gortva said the sampling results from Carroll Creek had been discussed with Frederick County, Maryland Department of the Environment, and EPA, and it was determined there is not a threat to people who are using the stream; however, as part of the remedial investigation a full human health risk assessment will be performed once all the data is collected to ensure members of the public are being protected. Mr. Gortva said there will also be follow-on work at Carroll Creek including a stream, spring and seep survey using an infrared camera to identify any previously unidentified seeps and springs. He stated up to 60 surface water samples will be collected.

Mr. Rudy asked about humans eating fish from Carroll Creek. Mr. Gortva responded that the levels of contamination do not exceed the criteria for fish ingestion. Mr. Craig added that in addition to the human health risk assessment, there will also be an ecological risk assessment.

Mr. Gortva reminded the Board that many piezometers had been installed around the southern portion of Area B approximately two years ago. He said this type of monitoring well was like putting a straw through the ground to hopefully reach groundwater; if. bedrock is encountered, it might not be possible to install the piezometer. He advised where bedrock was encountered, monitoring wells will be installed to collect groundwater samples; the piezometers will also be sampled.

Mr. Gortva discussed the connection of five residential properties to public water. He noted in 2005 there were a few detections of PCE and TCE in several residential wells along Kemp Lane below the drinking water standard. He said it was believed that during periods of significant drought the residential wells pulled small amounts of contamination towards the homes. He said the Army has been providing bottled water to the five residences and monitoring the residential wells since 2006. He emphasized there has never been an exceedance of the drinking water standards. He advised about two years ago the City installed a water line along Kemp Lane, and the Army proposed connecting the residences to the water line and discontinuing the bottled water. Mr. Gortva said an Engineering Evaluation/Cost Analysis was prepared and released for public comment; an Action Memorandum was then prepared noting the decision to connect the homes to the public water supply. He said the Army has been working with the City on a few issues, including an official decision during a Council meeting which is in process and a zoning issue. Mr. Craig said there is also a question about the rates, and the Army is hoping these residents can be charged the same rates as residents in the City. Mr. Craig said the Army will be sending a letter to the Mayor soon regarding the outstanding issues.

Ms. Hahn said the residents would not be using the bottled water for showering, and Mr. Rudy said they would also not be using bottled water for activities such as dishwashing. Ms. Shelly Morris responded that the wells have been sampled quarterly for many years and there have only been three detections over those years; those detections did not exceed drinking water standards.

Mr. Gortva added that the sampling had detected a common gasoline additive which is not coming from Fort Detrick so connecting the residents to the public water system would also eliminate that compound from their water.

Mr. Craig asked Mr. Gortva what is planned to complete the remedial investigation for the Area B groundwater. Mr. Craig said he had discussed additional sampling that is planned along Carroll Creek, the additional drilling of groundwater wells, and the additional testing on the Montevue property; these activities are to address questions raised by the Army and the regulators. He said an activity he had not discussed is to resolve issues related to the dye trace study. Mr. Craig asked EPA and Maryland Department of the Environment if the outlined work will answer all their questions. Ms. Green said all the work performed through the Arcadis contract has been to address issues that Maryland Department of the Environment had, but final concurrence on the remedial investigation being complete hinges on the results of the additional work discussed by Mr. Gortva. Mr. Thomson said he would like to have a meeting with EPA's

hydrogeologist, Kathy Davies, and the Army and its contractors to discuss any additional data needs and the dye trace studies.

Mr. Gortva said Fort Detrick has received EPA's comments on the dye trace study and is working on responses which should be completed soon. He said a meeting is being scheduled for perhaps early December. Mr. Rudy asked about EPA's concerns with the dye trace studies. Mr. Thomson said EPA does not think the dye trace study demonstrated the flow of deep groundwater. Mr. Gortva said the results of the meeting will be discussed at the next Board meeting.

d. Archival Search Reports/Follow-Up Site Inspections: Mr. Gortva referenced the archival search report performed to research the outdoor testing of herbicides done at Fort Detrick. He stated that up to that point it was believed the testing had only been performed indoors. He reminded the Board the archive search was done by the U.S. Army Corps of Engineers, St. Louis District, to identify historical activities performed at Fort Detrick which may have resulted in environmental releases which are not already known. He stated there were then two reports developed by the Corps of Engineers, one focusing on herbicide testing and one focusing on potential environmental releases from historical operational activities.

Mr. Gortva stated the herbicide 2,4,5-T was a common herbicide used across the country, but it was also a component of Agent Orange. He advised that during the manufacturing process for 2, 4, 5-T, if the reaction is run at too high a temperature, it produces a byproduct—dioxin. He said the environmental program will be looking at whether there are any residual impacts from the testing of the herbicide.

Mr. Gortva said a contract has been awarded to Arcadis to perform a Site Inspection to sample the locations identified in the archival search reports. He said work plans have been developed for Area A and Area B. He explained that since Area B in on the National Priorities List, the Army works with both Maryland Department of the Environment and the U.S. Environmental Protection Agency; at Area A, the Army works only with Maryland Department of the Environment. He noted this is one reason why the two areas are being investigated separately, as well as the fact that different types of activities took place at the two areas. He said the Area A work plan has been approved by the Maryland Department of the Environment, and the sampling is scheduled to begin in January pending utility clearances.

Mr. Gortva advised the sites on Area A and B have been divided into eight groups. He said Group 1 are the former herbicides sites. Mr. Gortva displayed aerial photographs of Area A and Area B with boxes showing the locations of the former herbicide testing sites. He noted Area A included the National Cancer Institute property, which is not owned by the Army, so access permission is needed. Mr. Gortva said there are also off-post properties which are locations that were formerly part of the post; Mr. Gortva said the properties were returned to the City and homes have been built. He noted the off-post properties are near Rosemont Avenue which turns into Yellow Springs. Mr. Rolan Clark asked what type of samples would be collected. Mr. Gortva responded that soil samples

would be collected first as herbicides tend to stay with the soil. He said the amount of herbicides used at Fort Detrick was small so it is unlikely there would still be any left in the soil. Mr. Gortva stated a gamma radiation survey would also be conducted in one area as at one time sewage sludge from Fort Detrick's waste water treatment plant was used as a fertilizer in that area. He explained that hospitals or labs may have used and disposed of radioactive tracers. Mr. Gortva said the Army does not believe there is a residual impact, but the testing is being done as part of due diligence to verify there is no impact. Mr. Gortva added that the Area B work plan would be looking at the two locations on Area B where herbicides were tested.

Mr. Craig added that the upcoming work is not the first round of herbicide testing. He stated a few areas were sampled on Area B soon after the information became available through the archival search report. He said the investigation found that 2,4,5-T and 2,4-D break down very quickly and cannot be detected now. He said measurable levels of dioxin were detected, which is a by-product of the manufacturing process. Mr. Gortva said background testing was done to see what levels existed in other areas of the County, and samples were collected from park areas that were previously farms. Mr. Gortva said Fort Detrick Area B samples had lower concentrations of herbicides than the background locations. He stated the same herbicides were used by farmers until the herbicides were banned in the 1970s and 1980s. Mr. Craig noted a farmer would have used more 2,4,5-T in a year than Fort Detrick used over its history.

Mr. Gortva said Group 2 are low-level radiation areas. He noted investigation of the type of isotopes used found they had extremely short half-lives, such as a few days, so the likelihood of environmental impact is low. He said a few of the isotopes had longer half-lives, and these sites will be examined.

Mr. Gortva said Group 3 are former incinerator sites. He said the sites would be investigated primarily for petroleum products (fuel oil was used for firing the incinerators) and poly aromatic hydrocarbons (PAHs) which are byproducts of combustion. Mr. Rudy asked if the City of Frederick's incinerator would be investigated since Fort Detrick shipped some of its waste there. Mr. Gortva responded the amount of waste sent to the City was negligible compared to the amount they burned, and it would be difficult to point to waste from Fort Detrick having an impact compared to anything else they burned.

Ms. Hahn asked about the impact on the air quality if the incinerators did not have scrubbers when they were in operation. Mr. Gortva responded that the environmental investigation can only determine any current impacts based on historical activities. Ms. Hahn asked EPA and Maryland Department of the Environment staff if it is true to say that we do not know what was being breathed when the incinerators were in use, and Mr. Rob Thomson agreed. Mr. Zolyak added that the effectiveness of an incinerator is determined by time and temperature. He said knowing the details of how long material was inside the incinerator chamber would determine how effective the incineration process was at destroying the materials. Mr. Gortva added that the type of materials being released is also dependent on the time of materials going in; he stated animal

carcasses are cleaner than most municipal waste such as paint cans and chemical containers which could release metals and other compounds.

Mr. Gortva discussed Group 4, TCE Sites. Mr. Gortva referred to his earlier discussion of Building 568 where TCE was used as a refrigerant. He advised the archival search report found three other buildings where TCE was used in a similar manner. He noted there are groundwater monitoring wells in some of the areas, but soil sampling and groundwater sampling is planned to see if there are any other impacts.

Mr. Gortva advised that petroleum, oil, and lubricant sites are Group 5. He noted there are many locations across the country were petroleum products were stored in underground storage tanks, including home heating oil tanks. He said the Army will be verifying the tanks were properly abandoned, whether there is any petroleum contamination remaining, and if there are any environmental impacts. He advised both soil and groundwater will be sampled at numerous locations on Area A.

Mr. Gortva next discussed Group 6, dispersion test areas. He stated the archival search report identified three areas that were used as outdoor test grids for simulants and crop agents. He said the surface soil would be tested for metals and other residuals from the test activities. Mr. Gortva said no agents were used outdoors for testing because of the risk of exposure, so simulants were used or a fluorescent particle was used; therefore, samples will be analyzed for the possible presence of metals.

Mr. Gortva said Group 7 are two former vehicle maintenance areas nor known until the archival search report found information about the historical operations in those areas. He said soil and groundwater samples will be collected.

Mr. Gortva advised Group 8 is a miscellaneous group of general disposal, storage, or other use areas. Mr. Gortva stated the Army did not test much Agent Orange on Fort Detrick, but there was a location where 100 drums of Agent Orange were supposedly stored; therefore, soil and groundwater samples will be collected.

Mr. Gortva said a waste disposal site and a few other locations will be investigated in Area B for any residual contamination.

Mr. Rudy said the archival search report mentioned a compound being sprayed over the City of Frederick; he asked the name of the compound. Mr. Gortva responded the test was not conducted over the City of Frederick, but there was a test along Route 270 which involved zinc cadmium sulfide particles.

Mr. Gortva advised the Area B Site Inspection work plan will be finalized soon. He noted EPA and Maryland Department of the Environment had provided comments, and the Army is working on responses. He said he anticipated data collection for Areas A and B to be performed this summer, and a draft Site Inspection report to be issued in late summer. He explained the Site Inspection report would not address whether any contamination detected is at a level of concern; it would address whether additional

sampling and investigation is needed. [A site inspection is performed to determine if a release has occurred to the environment. A follow-on remedial investigation, if warranted, determines the full nature and extent of the release and performs a risk analysis as required.] Ms. Hahn asked for confirmation that the sites being looked at on Area A and B through the Site Investigation are at the very beginning stages of the CERCLA process, and no risk assessment or cleanup actions have occurred yet. Mr. Gortva confirmed the Site Investigation is the second step in the eight-step CERCLA process.

Ms. Hahn asked who would be performing the Site Inspection work and working with the Army on making the decision about further work, and Mr. Gortva said the contract had been awarded to Arcadis. Ms. Morris added that the contractor does not make the decision but only makes recommendations which are reviewed by the Army and the regulators—EPA and Maryland Department of the Environment. Mr. Gortva said data is collected and presented to the regulators for concurrence on whether there is sufficient data to make a decision or if more investigation is needed.

Ms. Hahn mentioned there was a statement on the Fort Detrick Public Affairs web site from the Agency for Toxic Substances and Disease Registry that states there is no risk. Mr. Pauly added that he had a different interpretation and interpreted the conclusion of the ATSDR report was there is no ongoing threat meaning the public is not being exposed now. Mr. Gortva advised that the ATSDR report was referring to current risk, and their report does not mean Fort Detrick's environmental restoration program does not continue with its investigations.

Mr. Zolyak stated that part of what Ms. Hahn was referring to was related to the investigation into whether there is a cancer cluster around Area B or in Frederick County. Mr. Gortva said he would look at the web site and make any necessary changes. He noted a new environmental restoration program web site is under development. Ms. Hahn said more information needs to be communicated to the community; Mr. Gortva responded that fact sheets are being developed which contain more updated information. Ms. Hahn said it is not fair to the community to not have accurate information.

6. RAB Member Open Discussion and General Community Comments

Mr. Cliff Harbaugh asked about any impact of the solar panel field on the environmental investigations. Mr. Gortva said there is no impact on the groundwater or investigations. Ms. Karen Harbaugh asked about the grass, and Mr. Gortva said a special type of grass had been planted which is used at airfields and has limited growth.

Mr. Clark asked if the two-year budget put in place will allow for EPA to continue to attend meetings and restoration program activities to be funded. Mr. Thomson said individual agency budgets are not yet in place so EPA is facing a December deadline. Mr. Gortva said Fort Detrick has been fortunate in that funding has been received as requested, and there have not been any changes in the Army Environmental Command supporting Fort Detrick's program. He added the work he had discussed in his presentation has already been funded.

Mr. Clark stated Maryland Department of the Environment and EPA have to follow the law and it is up to the community to contact legislatures if change is desired.

Mr. Gortva invited community comments; none were offered.

7. Future Meeting Dates

Mr. Gortva said proposed future meeting dates are April 13, August 10, and November 9. He stated additional meetings can be added as needed.

The meeting adjourned at approximately 8:36 p.m.

Reviewed by:

Approved/Disapproved

Enclosures:
Installation Restoration Program FY16 Planned Activities Presentation
Meeting Sign-In Sheet

DISTRIBUTION:
Each RAB Member (w/o enclosure)
Each Meeting Attendee (w/o enclosure)

FORT DETRICK RESTORATION ADVISORY BOARD
LIST OF TOPICS FOR FUTURE MEETINGS

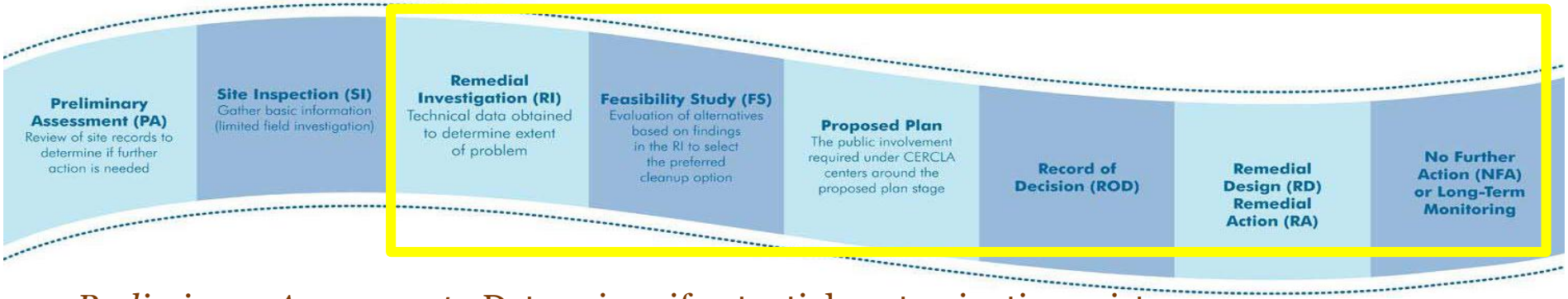
Proposed at November 2014 RAB Meeting

- City road proposed to go through Area B
- Surface water detections
- Archive search report presentation (completed at February 2015 meeting)

Fort Detrick
Installation Restoration Program
FY16 Planned Activities

Mr. Joseph Gortva
Restoration Program
USAG Environmental Management Division

Comprehensive Environmental Response, Compensation & Liability Act (CERCLA)



1. *Preliminary Assessment* - Determines if potential contamination exists
2. *Site Inspection* – Site sampling and additional investigations
3. ***Remedial Investigation (RI)*** –Characterization of the full nature and extent and contamination is investigated. A risk assessment is performed to characterize current and potential threats to human health and the environment and helps establish acceptable exposure levels.
4. *Feasibility Study (FS)* - Options for cleanup are investigated and identified.
5. *Proposed Plan (PP)* - The PP is prepared for public comment. It summarizes the remedial alternatives presented in the FS and identifies the preferred alternative.
6. *Record of Decision (Decision Document)* The selected cleanup option is outlined in a public document called the Decision Document.
7. *Remedial Design* – Design of the selected remedy.
8. *Remedial Action* – Implementation of the selected Remedy.

Fort Detrick IRP

FY 16/17 Projects

- Area A Building 190 Boiler Plant – (2) Underground Storage Tanks (USTs) Removal with remediation of soil contaminated from #6 oil spill (Request site closure) (1-2 Qtr FY16)
- Area A Building 568 TCE Spill Site Vapor Intrusion Testing - Round 2 (FY16)
- Area B Groundwater Investigations – Remedial Investigation underway

  FY16 Activities:
  - Ongoing Landfill Cap inspections and monitoring
  - Ongoing groundwater monitoring
  - Off-post groundwater testing
    - Waverly View
    - Frederick County Montevue Lane Property
    - Carroll Creek spring discharge areas
  - Interim Action to connect 5 county residents to City of Frederick public water
- Archival Search Reports – Begin Site Inspection Investigations
  - SI locations have been grouped into 8 categories

Building 190 #6 Oil Plume

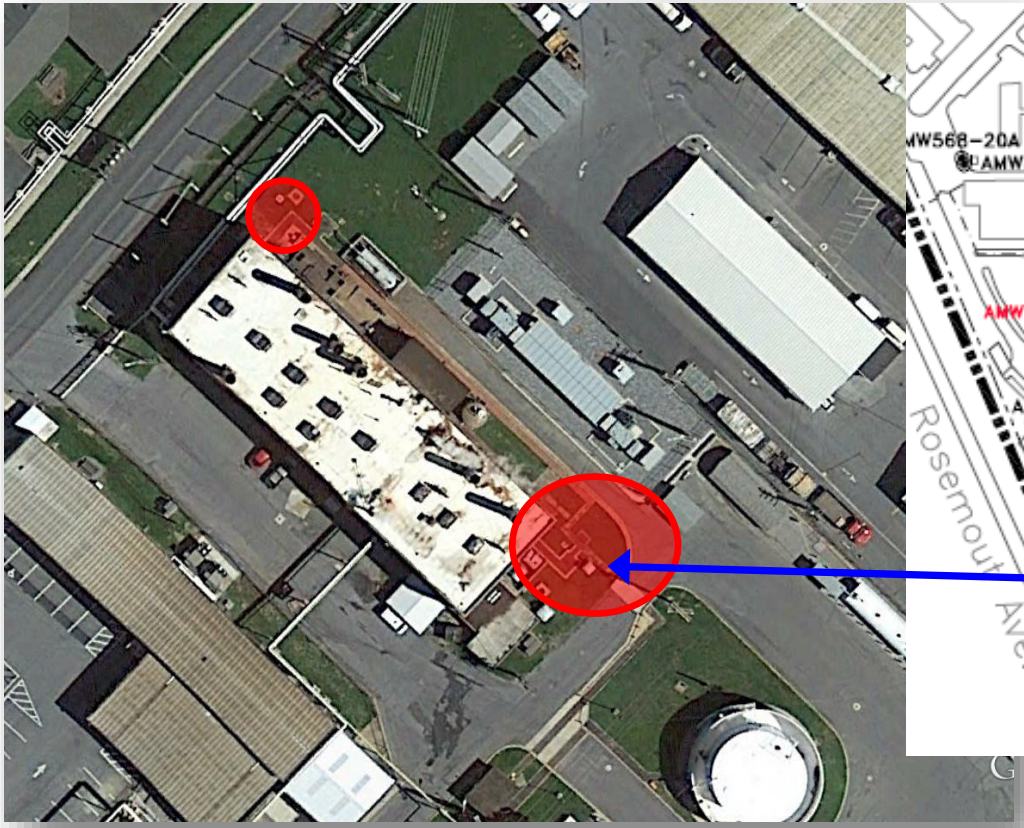
- 1995 - Ten 50,000 gal leaking USTs were removed (caused a # 6 oil plume)
- Corrective Action Plan – finalized in 2006
  - Product recovery by skimming
    - (Less than 300 Gals in 10+ years)
  - Quarterly monitoring of groundwater

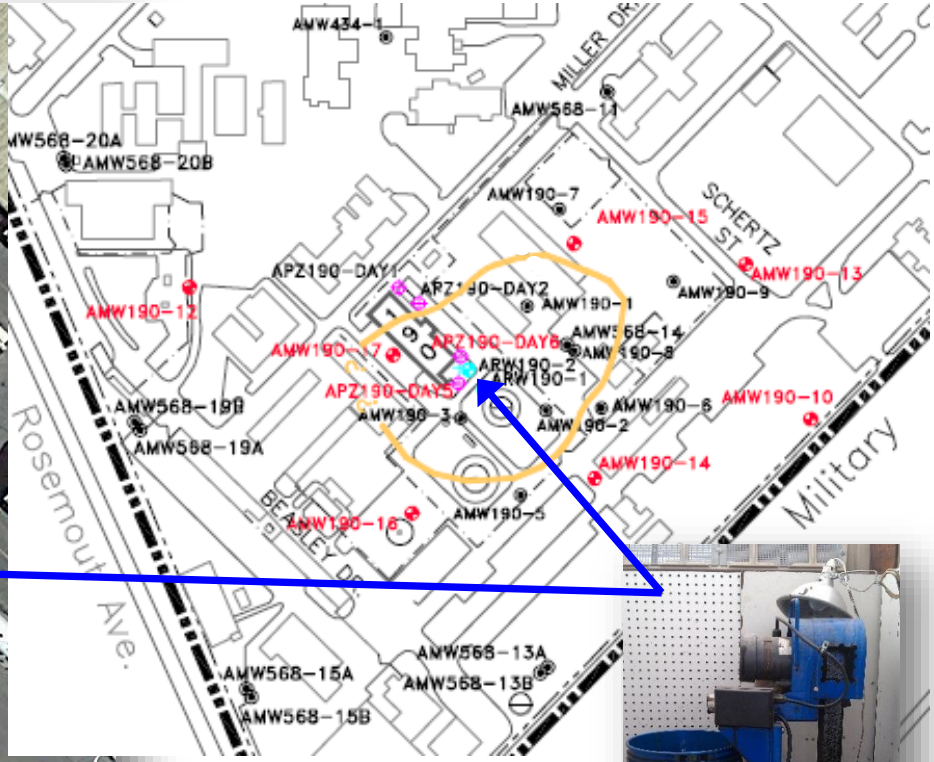
Building 190 History

- Boiler plant historically burned Natural Gas or #6 Fuel Oil to produce steam.
- 1995 - Large Above Ground Storage Tanks and two USTs were installed to replace old UST farm
- 2014 Decision made to decentralize plant and end burning #6 fuel Oil
- March 19th 2015 – Last of #6 oil burned at plant
  - MDE UST regulations require USTs to be removed within 1 year of out of service date
- FY 2015 Contract awarded to remove tank and excavate contaminated soils to the extent possible
  - Limitations Building 190 footer, gas line, transformer bank, other utilities.

Area A Building 190

Two USTs Removal





Next Steps

- UST removal with remediation of soil contaminated from #6 oil spill (Request site closure) (1-2 Qtr FY16)
  - MDE Oil Control Program inspector onsite during removal action.
  - Close out report
  - Future RAB presentation
- Request closure of UST tanks (FY16)
- Request closure of #6 fuel oil spill site. (FY16/17)

Fort Detrick IRP

FY 16/17 Projects

- Area A Building 190 – (2) USTs Removal with remediation of soil contaminated from #6 oil spill (Request site closure) (FY16)
- Area A Building 568 TCE Spill Site Vapor Intrusion (VI) Testing - Round 2 (FY16)
- Area B Groundwater Investigations – Remedial Investigation underway

  FY16 Activities:
  - Ongoing Landfill Cap inspections and monitoring
  - Ongoing groundwater monitoring
  - Off-post groundwater testing
    - Waverly View
    - Frederick County Montevue Lane Property
    - Carroll Creek spring discharge areas
  - Interim Action to connect 5 county residents to City of Frederick public water
- Archival Search Reports – Begin Site Inspection Investigations
  - SI locations have been grouped into 8 categories

Area A VI Test Locations

- Trichloroethylene was historically used as a refrigerant medium in Building 568.
- Spills or leaks resulted in groundwater contamination.
- 1985 - Groundwater withdraws at Building 568 has created capture zone and has been remediating the site.
- June 2001 -Decision Document was signed to monitor groundwater capture
- Site approaching MCLs of 5 parts per billion (ppb).
- Five-Year review of site recommended VI testing of buildings near groundwater locations above 5 ppb TCE.

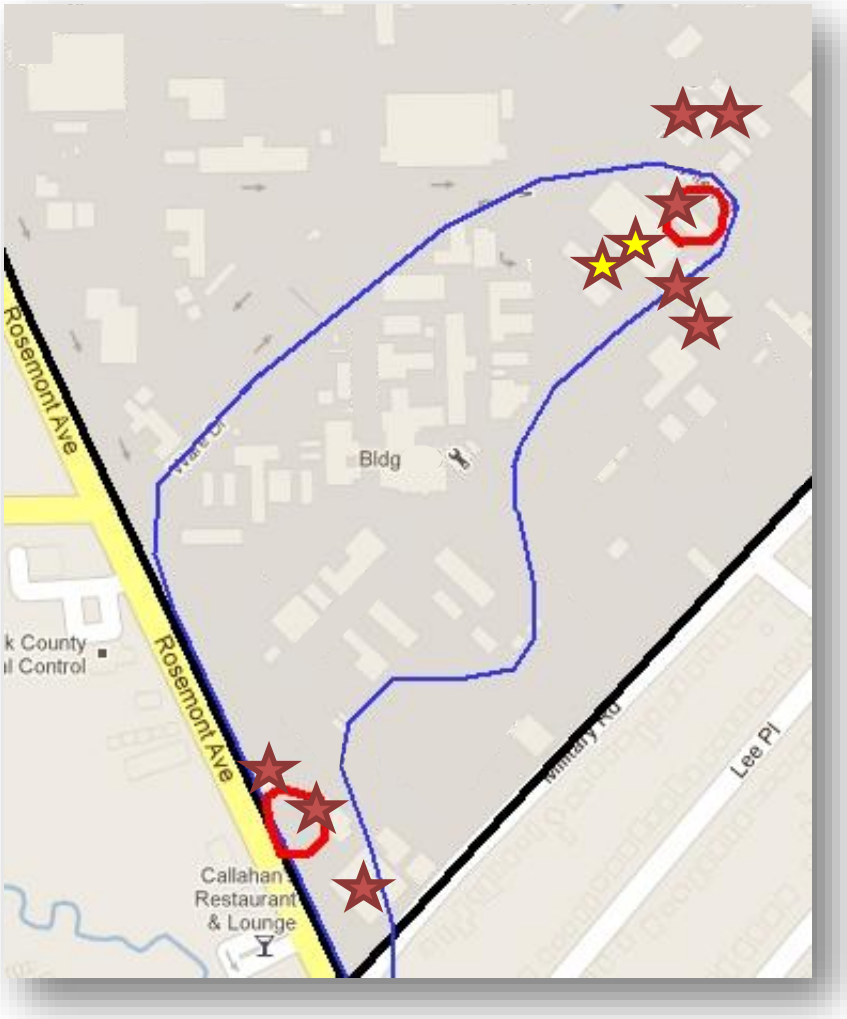
Area A VI Test Locations

- 8 Army buildings
- 2 NCI buildings

- Completed one round of testing at 10 locations

UPDATE: Second round vapor intrusion testing rescheduled for FY16 heating season for select locations to obtain sufficient data for risk assessment.

- MDE approved workplan



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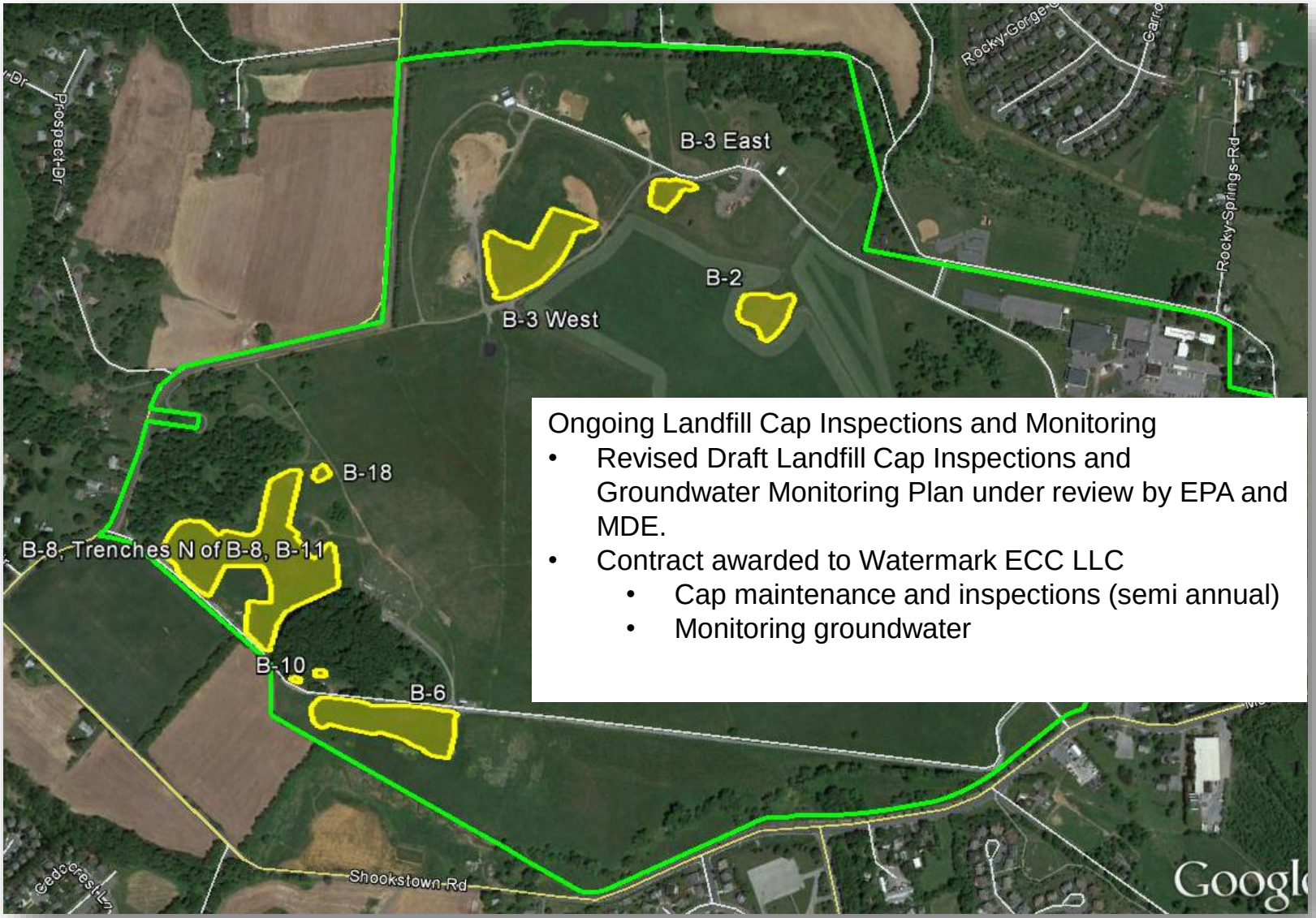
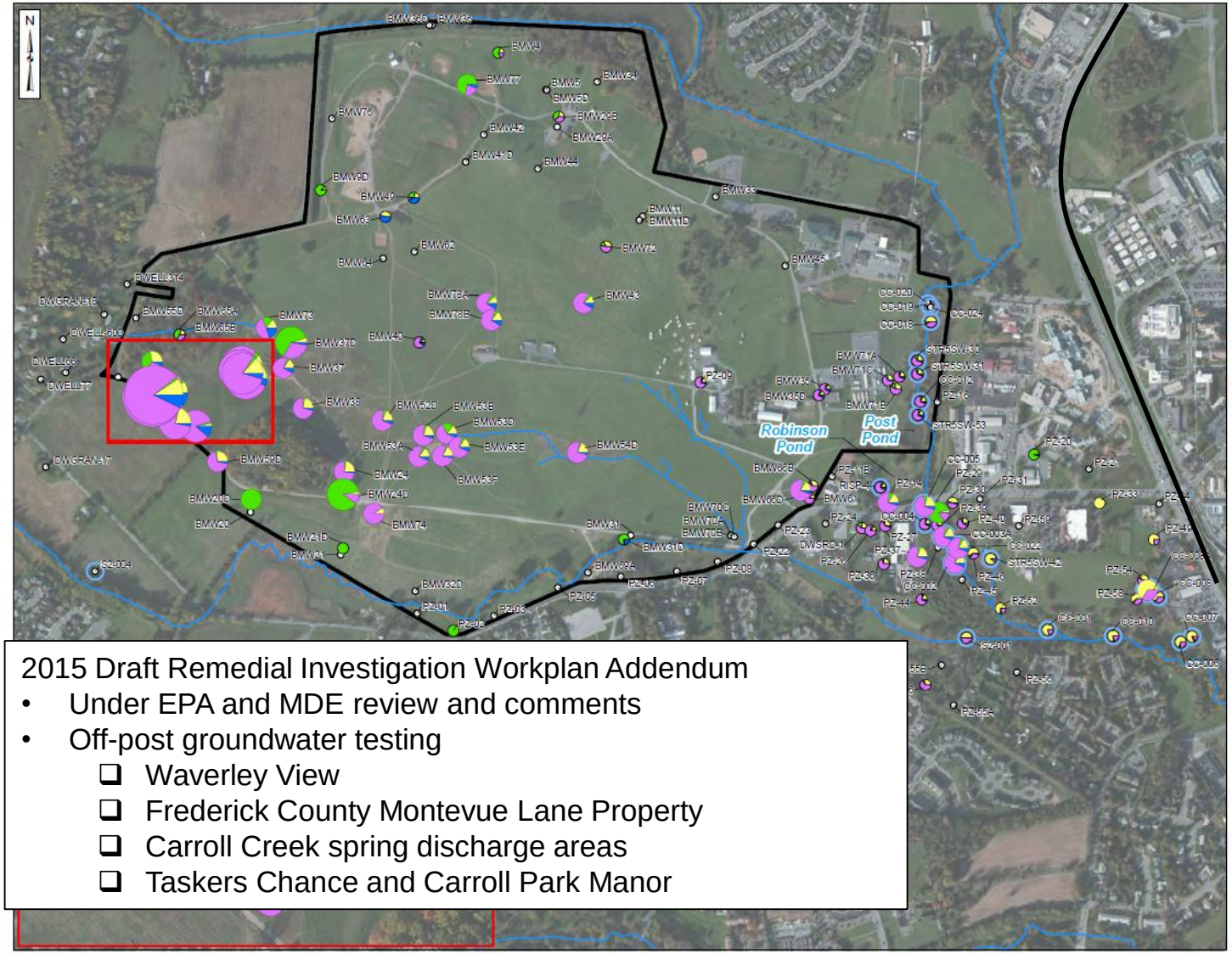
Area B Restoration Sites



Ongoing Landfill Cap Inspections and Monitoring

- Revised Draft Landfill Cap Inspections and Groundwater Monitoring Plan under review by EPA and MDE.
- Contract awarded to Watermark ECC LLC
  - Cap maintenance and inspections (semi annual)
  - Monitoring groundwater

Area B Groundwater Contamination

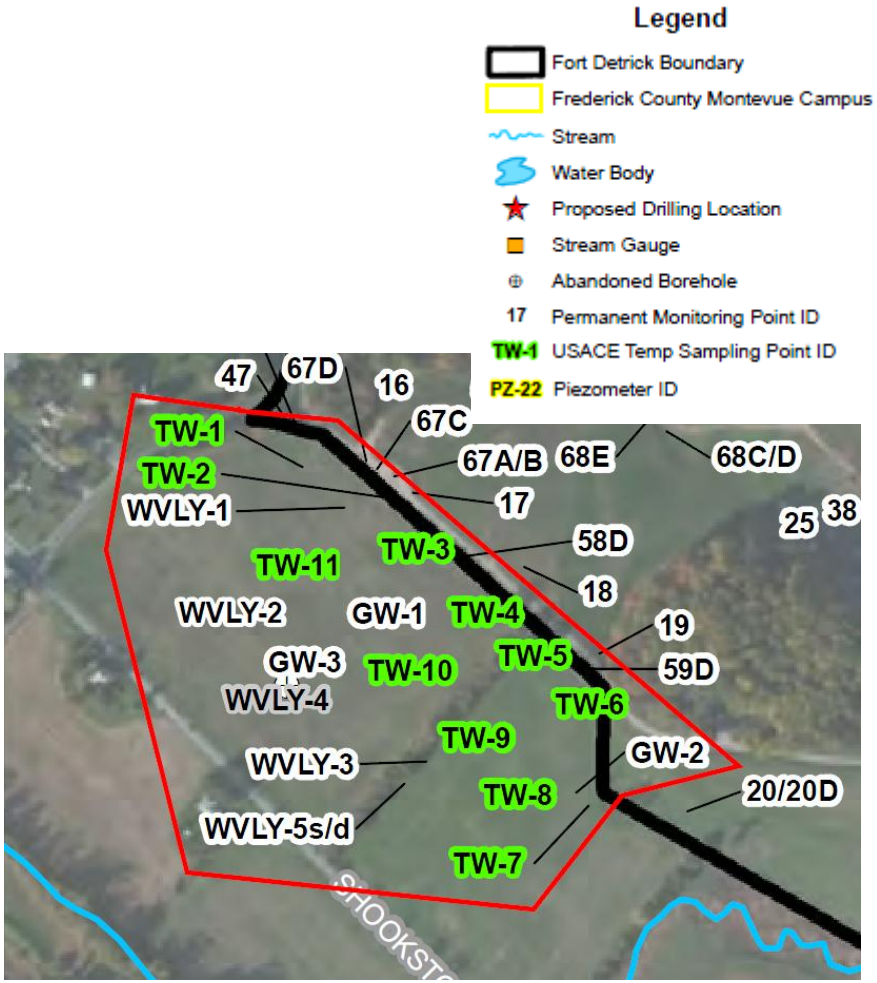


2015 Draft Remedial Investigation Workplan Addendum

- Under EPA and MDE review and comments
- Off-post groundwater testing
  - ❑ Waverley View
  - ❑ Frederick County Montevue Lane Property
  - ❑ Carroll Creek spring discharge areas
  - ❑ Taskers Chance and Carroll Park Manor

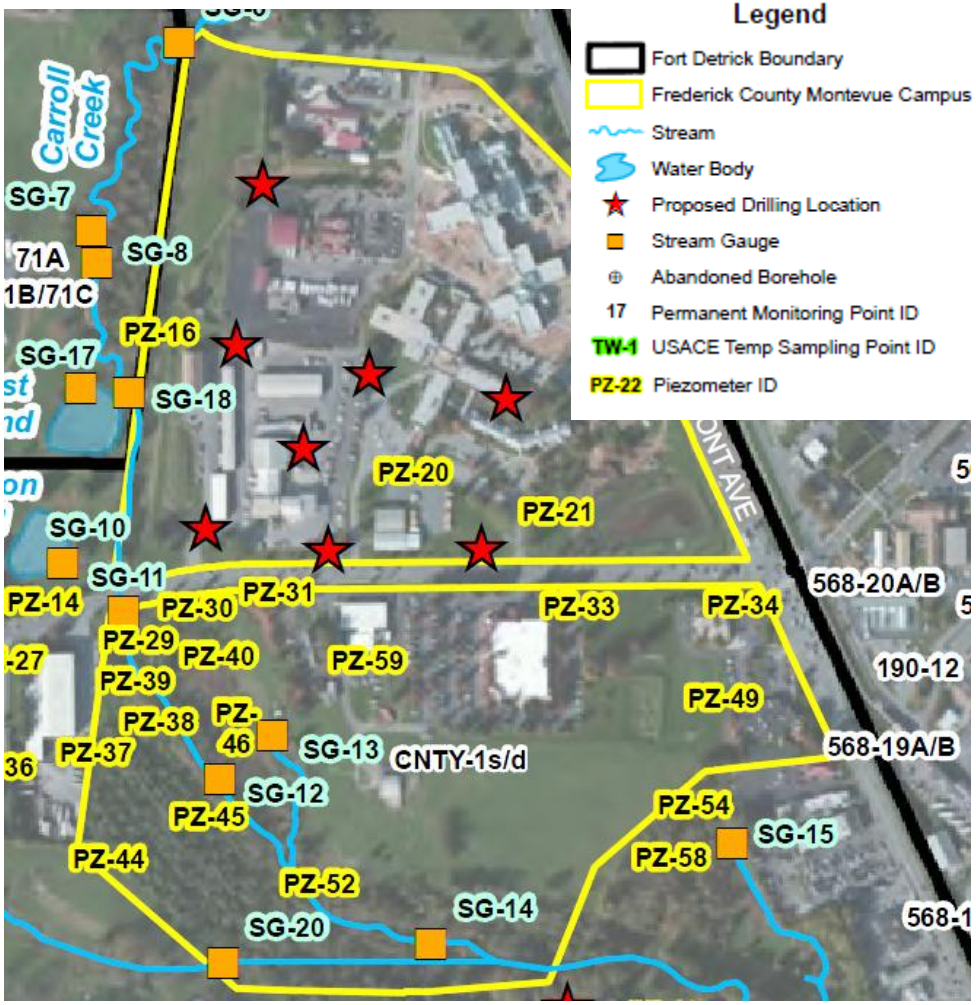
Waverley View

- Working on long term access agreement
- Completed one round of deep well testing in September 2015
- Draft Workplan: FY16 – Additional groundwater sampling and synoptic groundwater levels.
  - *Locations not finalized*



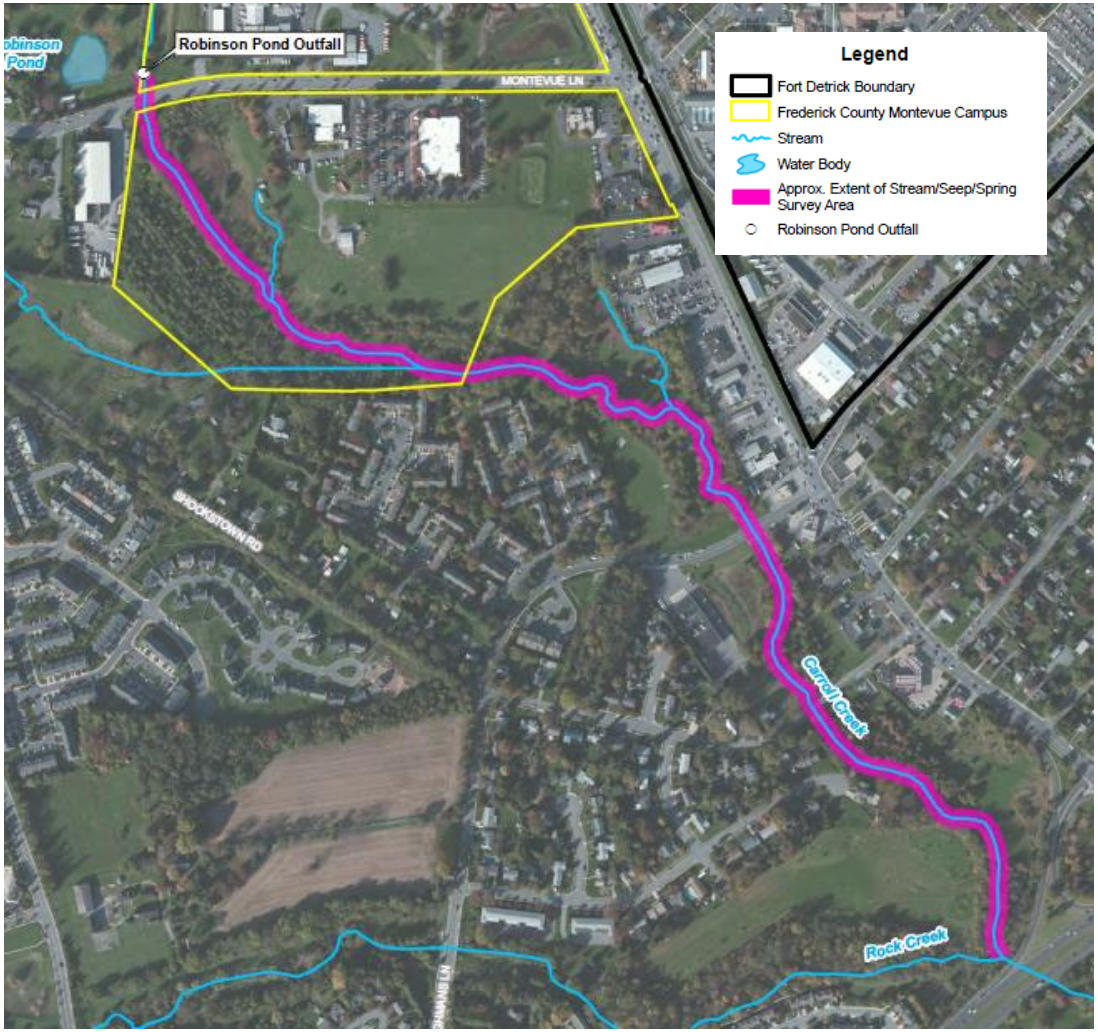
Frederick County Montevue Lane Property

- Access agreement in place
- FY 16 Draft Workplan:
  - Review of chemical usages in county buildings
  - Soil gas study around buildings
  - Install 8 additional shallow wells (standard drilling)
  - Two rounds of groundwater sampling at new wells. (VOCs)
  - Sample existing piezometers (VOCs) and take synoptic groundwater levels
  - Isotopic forensic profiling of chlorinated solvents in groundwater



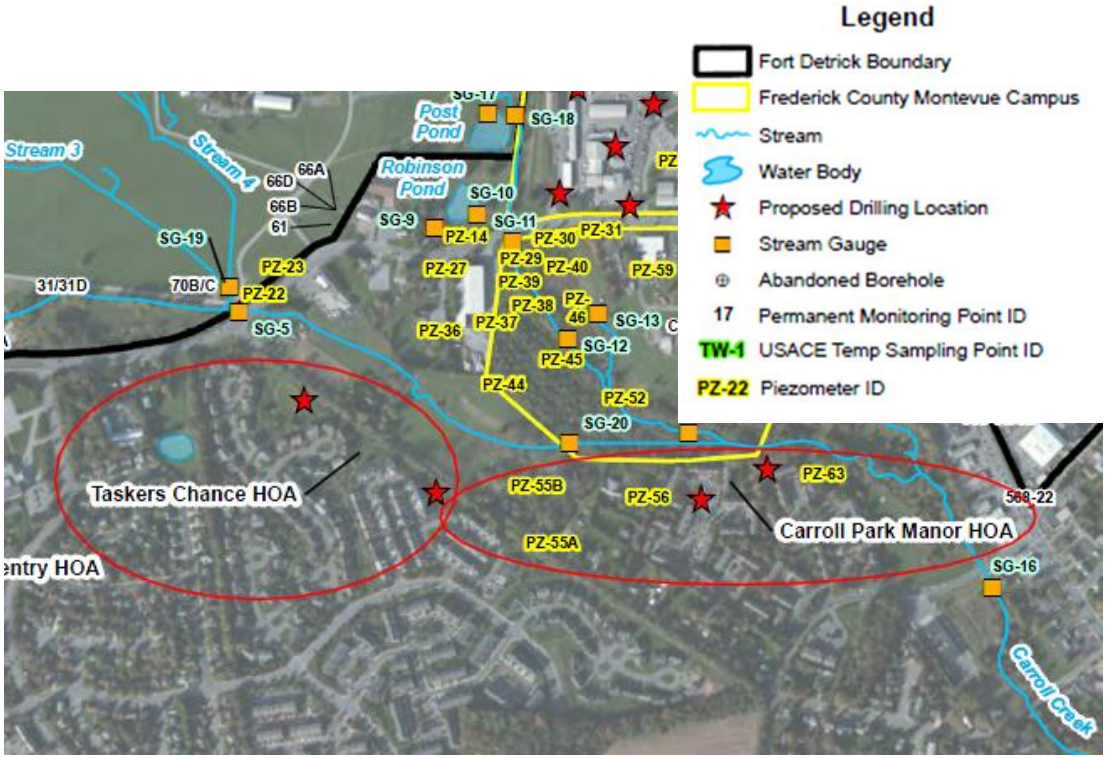
Carroll Creek Spring Discharge Areas

- Access agreements in place
- FY 16 Draft Workplan:
  - Follow-on stream, spring, and seep survey
  - Infrared camera to identify springs/seeps
  - Up to 60 surface water spring and seep samples (VOCs)
  - Carrol Creek transport analysis



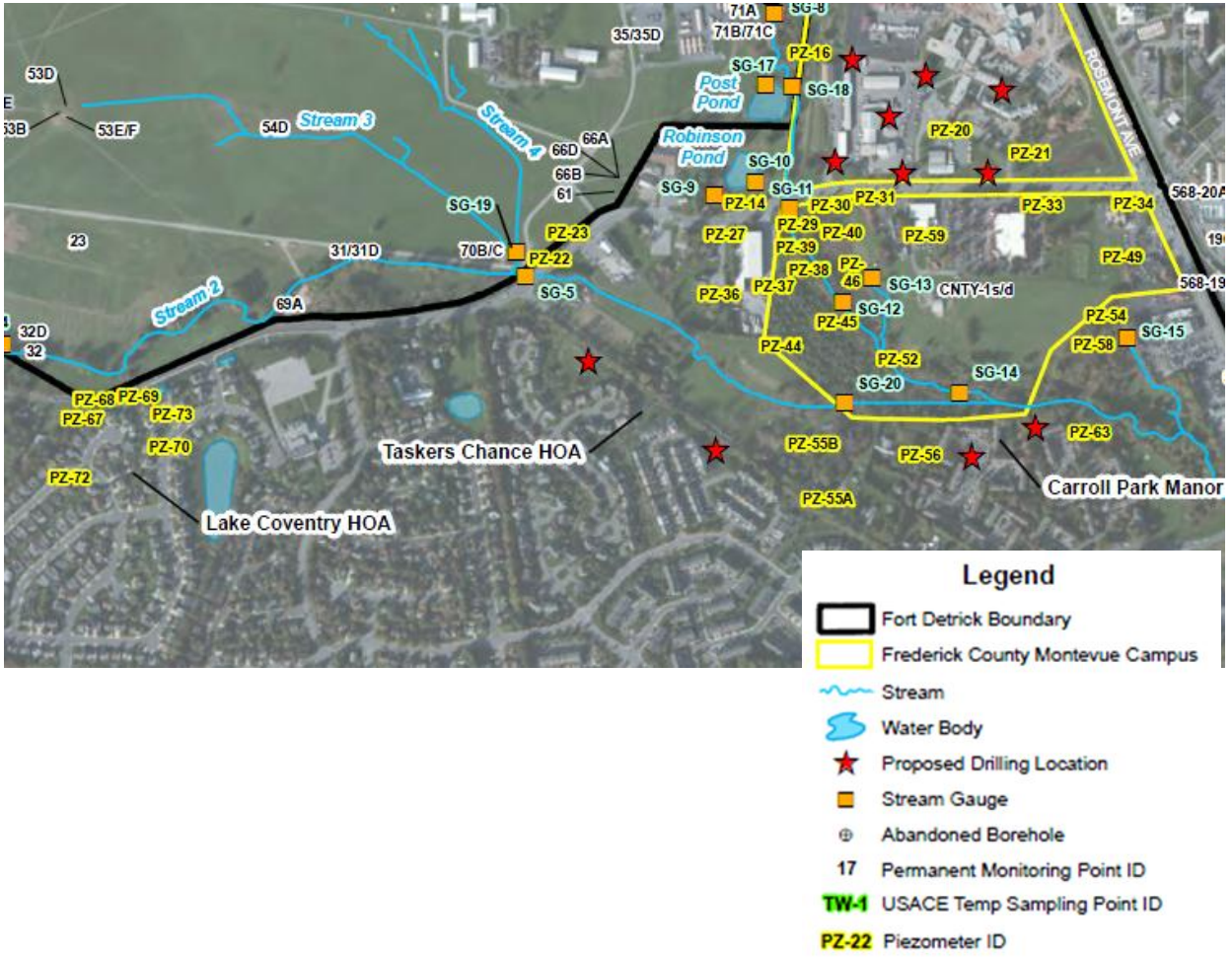
Taskers Chance and Carroll Park Manor

- Access agreements in place
- FY 16 Draft Workplan:
  - Additional shallow well installation (standard drilling)
  - Sample existing piezometers (VOCs) and take synoptic groundwater levels
  - Two rounds of groundwater sampling at new wells. (VOCs)



Sample Off-post Piezometers

- Access agreements in place
- FY 16 Draft Workplan:
  - Sample existing off-post piezometers (VOCs) and take synoptic groundwater levels



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Interim Removal Action

Connection of 5 Properties to Public Water

- Late 2005 – Detected Perchloroethylene and Trichloroethylene in 3 residential wells below MCLs (5 ppb)
- 2006 - Provided bottled water to 5 residents
- City of Frederick installed new water line along Kemp Lane
- Interim Removal Action approved to connect 5 County residents to City water line
- Construction (1-2 Qtr FY16)
- City of Frederick - Request for service letter from Fort Detrick to Mayor and Aldermen. - In progress
- Frederick County – Rezone locations for municipal water service. – In progess

Fort Detrick IRP

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Archival Search Reports

- U.S. Army Corps of Engineers St. Louis District
  - Identified historical activities at Fort Detrick which may have resulted in environmental releases

1. Findings for Field Testing of 2,4,5-T and Other Herbicides 4 April 2012
   http://www.detrick.army.mil/responsible/ArchivalReport2012.pdf
2. Operational History for Potential Environmental Releases 16 June 2014
   http://www.detrick.army.mil/responsible/repository/asr16June2014.pdf

- Contract awarded to Arcadis to perform a Site Inspections (SI) for areas of concern

Comprehensive Environmental Response, Compensation & Liability Act (CERCLA)

1. *Preliminary Assessment* - Determines if potential contamination exists
2. ***Site Inspection*** – Site sampling and additional investigations
3. *Remedial Investigation (RI)* –Characterization of the full nature and extent and contamination is investigated. A risk assessment is performed to characterize current and potential threats to human health and the environment and helps establish acceptable exposure levels.
4. *Feasibility Study (FS)* - Options for cleanup are investigated and identified.
5. *Proposed Plan (PP)* - The PP is prepared for public comment. It summarizes the remedial alternatives presented in the FS and identifies the preferred alternative.
6. *Record of Decision (Decision Document)* The selected cleanup option is outlined in a public document called the Decision Document.
7. *Remedial Design* – Design of the selected remedy.
8. *Remedial Action* – Implementation of the selected Remedy.

Workplan Status

- Area A SI Workplan
  - Workplan approved by MDE
  - Work to begin January 2016 pending utility clearances.

- Area B SI Workplan
  - Draft Workplan
    - EPA and MDE comments

Locations Grouped into 8 Categories

On Both Areas A and B

- Group 1: Former herbicide sites
- Group 2: Low-level Radiation Areas
- Group 3: Incinerator Sites
- Group 4: TCE Sites
- Group 5: Petroleum, Oil, and Lubricant (POL) Sites
- Group 6: Dispersion Test Areas
- Group 7: Vehicle Maintenance Areas
- Group 8: General disposal, storage, or other use areas

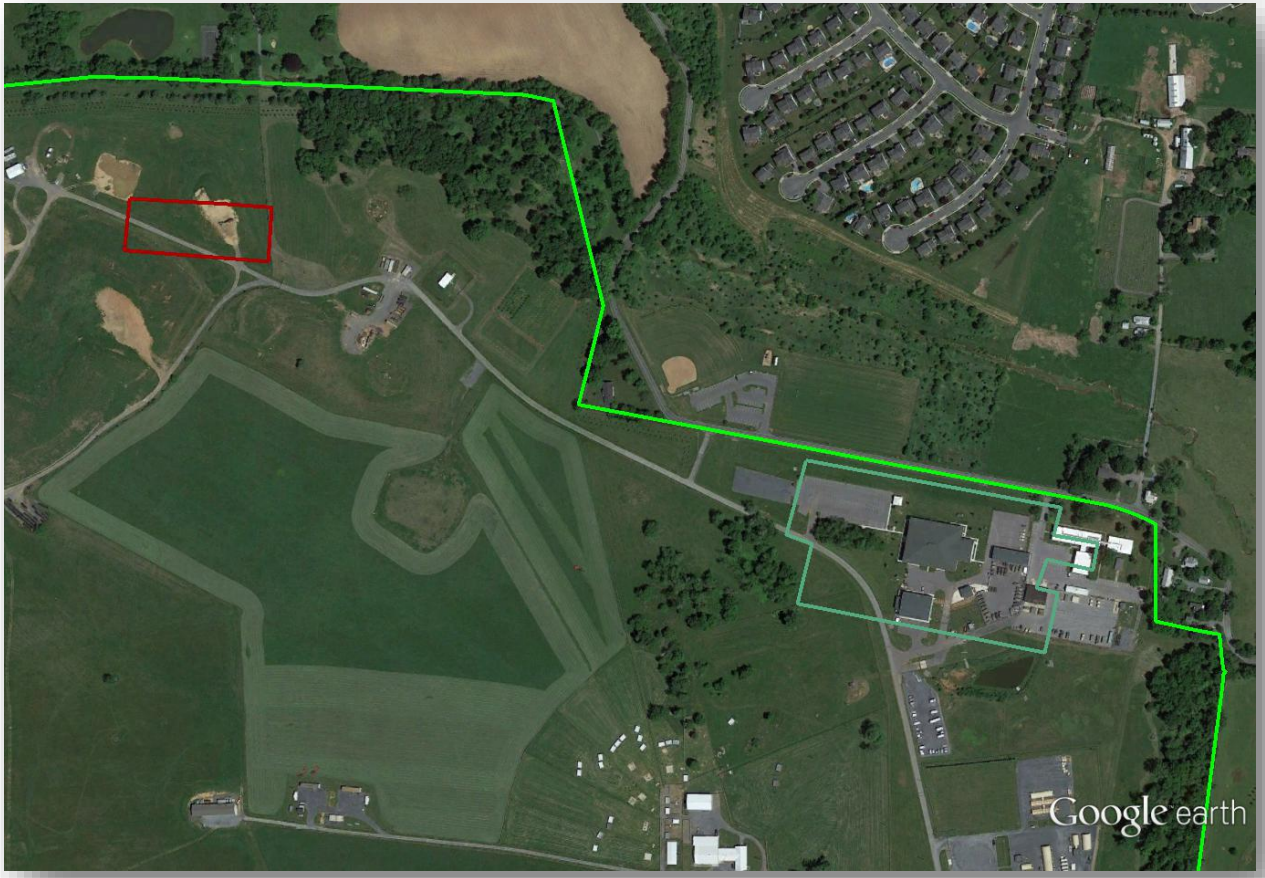
- ***Significant amount of utility clearances needed for sampling***

Group 1: Former Herbicide Sites

- Records indicate a low likelihood for detecting residual herbicides but testing will be conducted in these areas for confirmation.
- Area A Test Locations
  - **Include NCI property**
  - **Included off-post properties**
  - Sampling soils for standard herbicides, components of Agent Orange and other derivatives
  - Additional: Gamma Radiation Survey and limited gamma sampling in one on-post area (Ditto Ave Garden Plots) based on possible historical use of waste-water sludge as fertilizer

Group 1: Former Herbicide Sites

- Area B Test Locations



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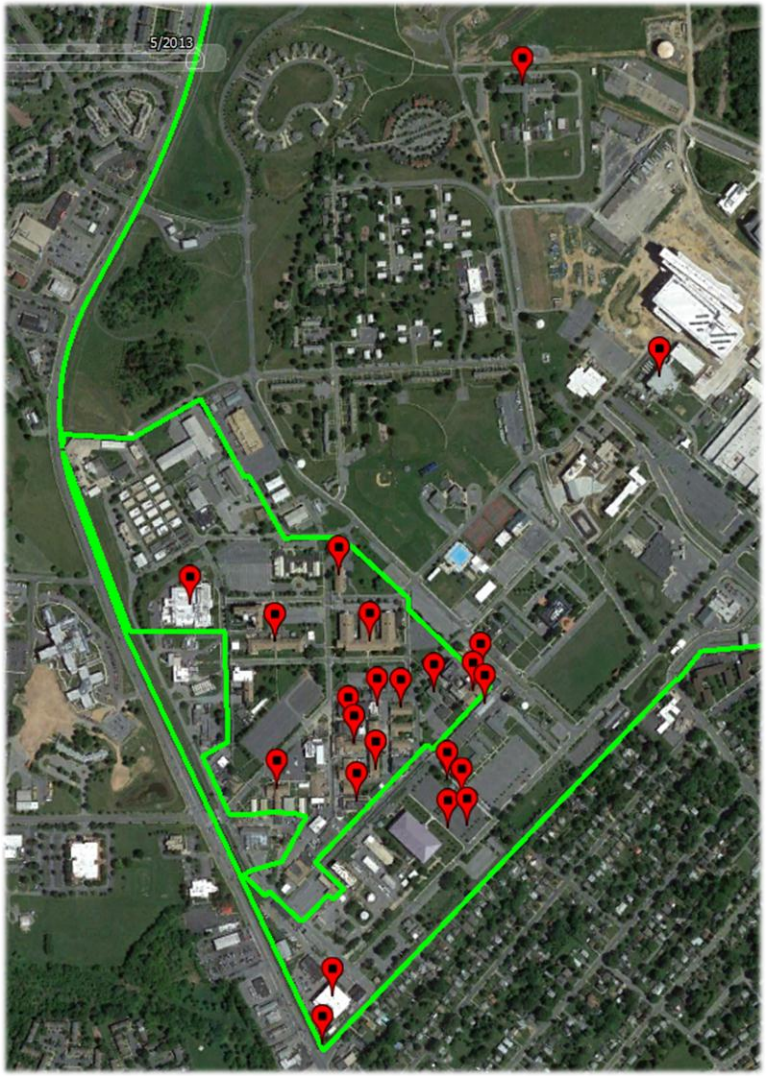
Low-level Radiation Areas

- Eighteen current or former Area A buildings were identified for historical use of sealed-source or by-product radioactive materials
- The likelihood of environmental impact is considered low
- Desktop review of isotopes used and work practices indicated no further testing necessary



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Group 3: Incinerator Sites

- Eleven former incinerator locations in Area A dating back to World War II previously used for disposal of burnable wastes and decontamination of air from test facilities.
- Environmental impacts from air deposition is possible in the vicinity of these locations. The historical use and storage of fuel oil for firing the incinerators also warrants evaluation.
- Testing for metals, poly aromatic hydrocarbons (PAHs), dioxins/furans, radionuclide (C14) and petroleum products in soils and groundwater

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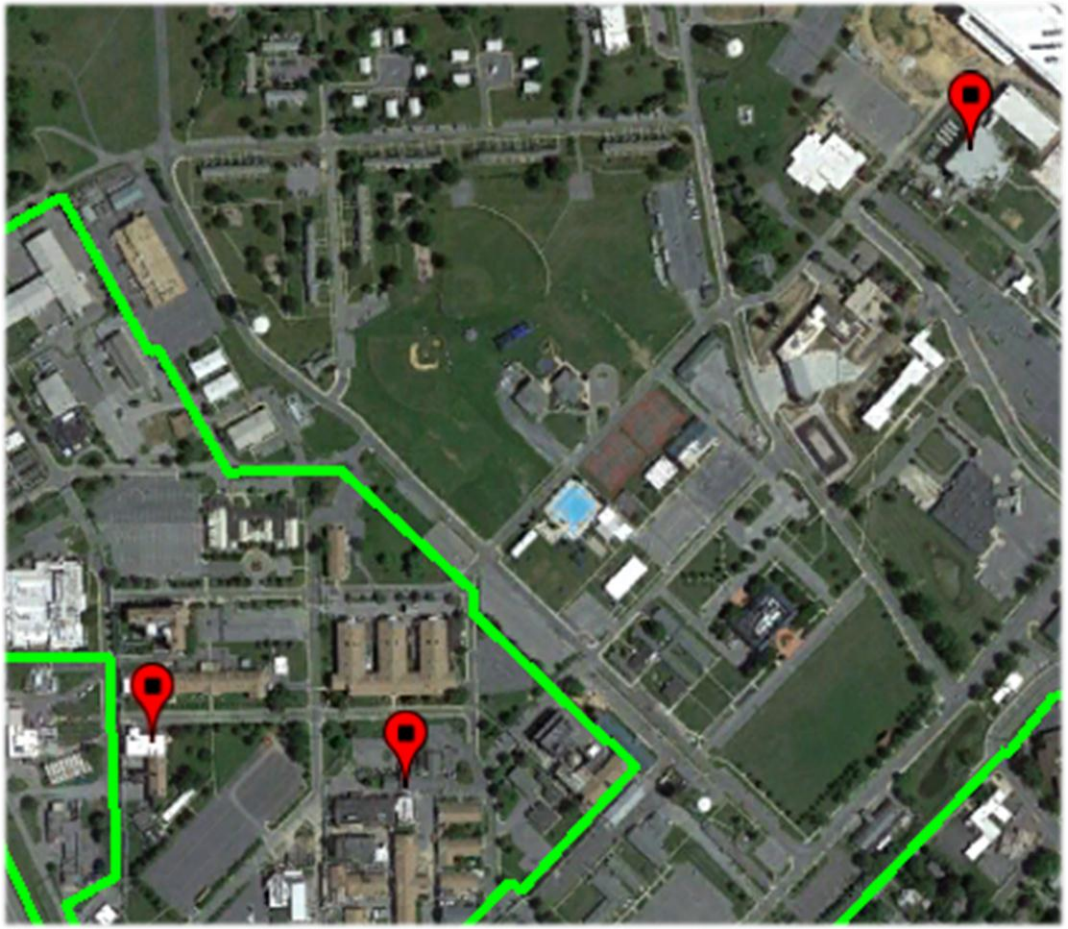
Group 4: TCE Sites

- TCE used in three Area A buildings for refrigeration and/or freeze-drying purposes.
- Environmental impacts are possible and warrant groundwater sampling near these buildings for TCE/volatile organic compounds (VOCs).



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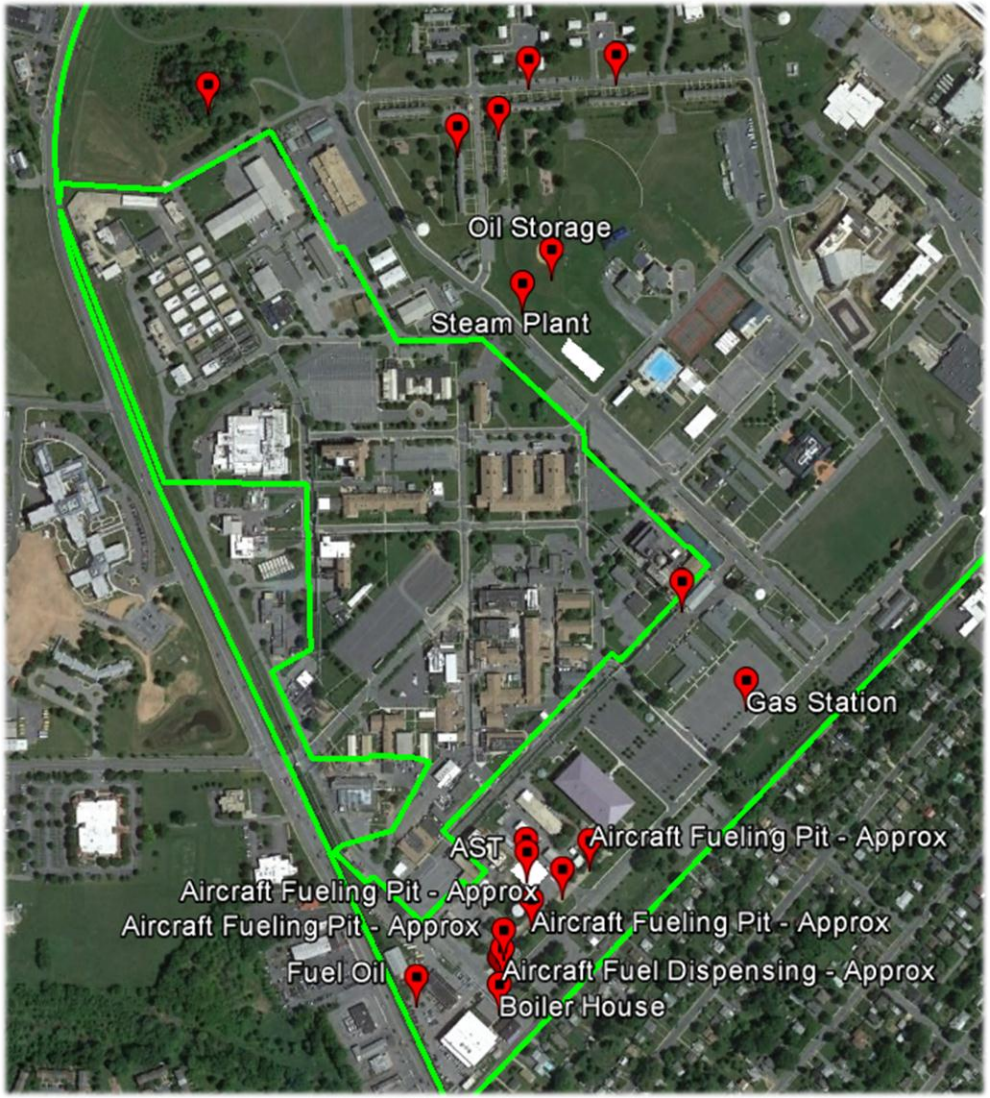
Group 5: Petroleum, Oil, and Lubricant (POL) Sites

- Records identified 15 locations with historic POL storage, use, or dispensing. These locations include former underground fuel lines, pumping/dispensing areas, and possible underground storage tanks
- Environmental impacts are possible due to the historical use of gasoline, diesel, and fuel oil in these areas
- Ground penetrating radar to locate any remaining USTs
- Test soils and groundwater for fuel related compounds



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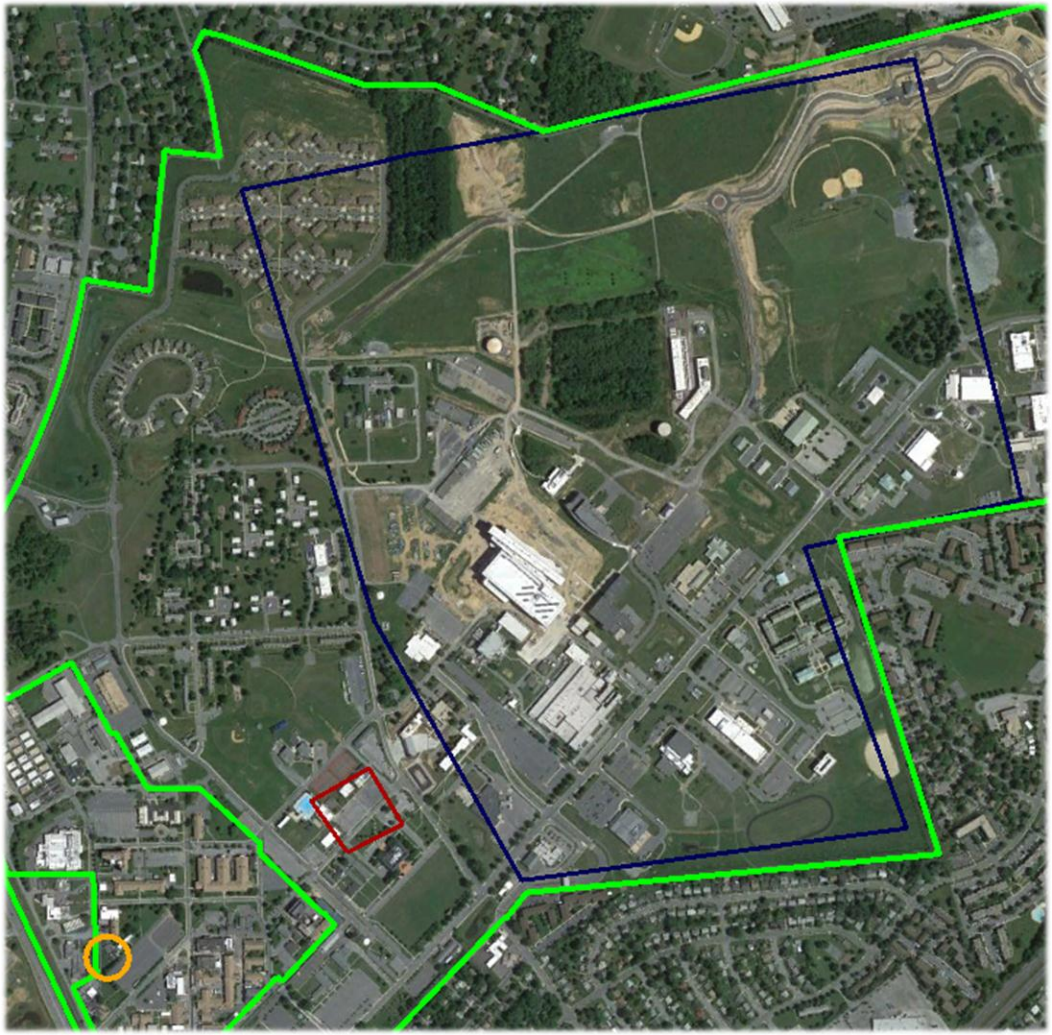
Group 6: Dispersion Test Areas

- Records identified 3 areas in Area A that were previously used as outdoor test grids for simulants and crop agents.
- The likelihood for environmental impacts is considered low but further evaluation will be completed.
- Testing surface soils for metals and other potential residuals



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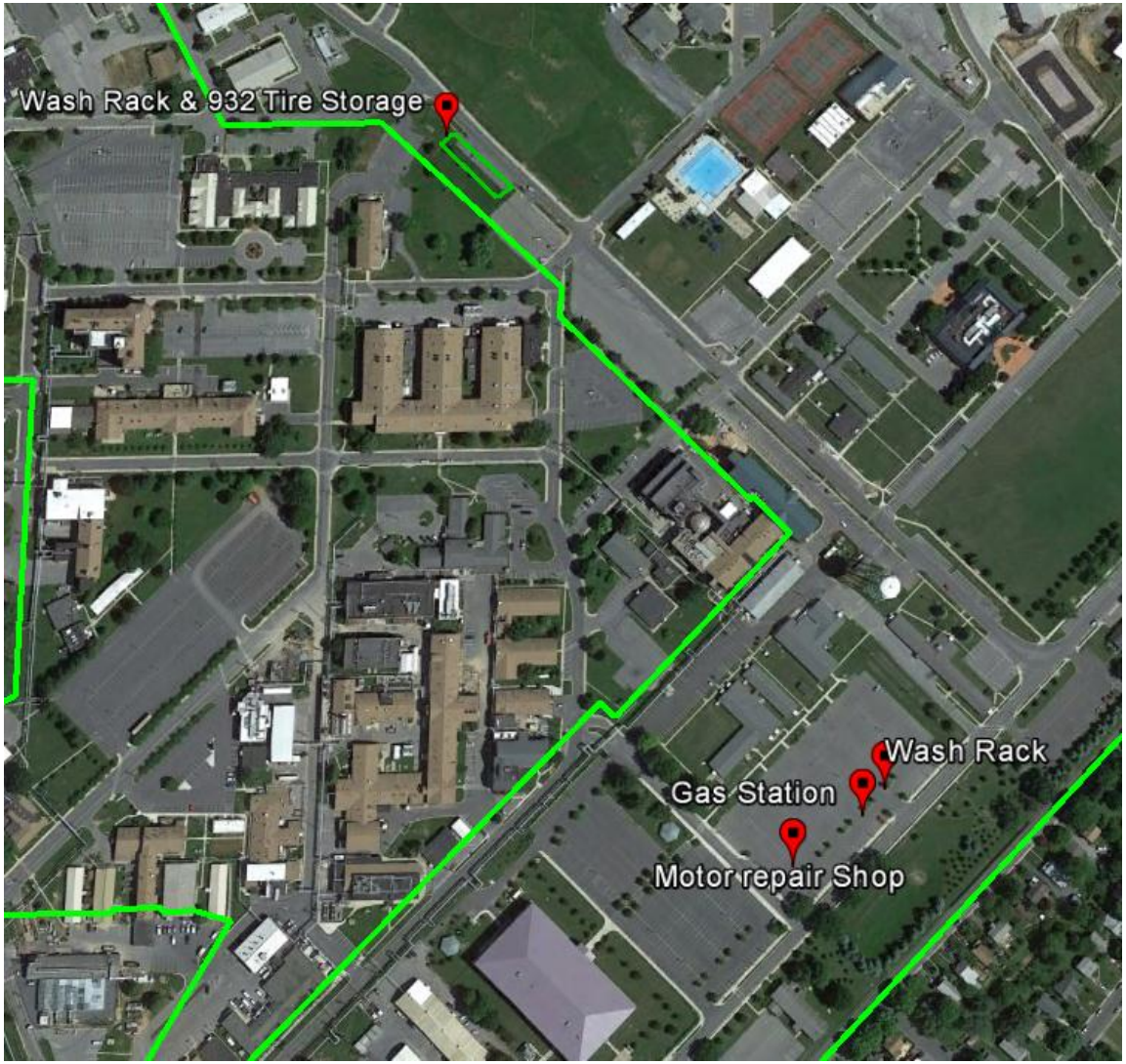
Group 7: Vehicle Maintenance Areas

- Two former vehicle maintenance areas, including motor repair shops, wash racks, and a gasoline station.
- Site evaluation needed to assess whether these historical activities could have impacted soil or groundwater and to determine if USTs may still be present.
- Testing for metals, fuel products, and VOCs in soil samples, and VOCs in groundwater



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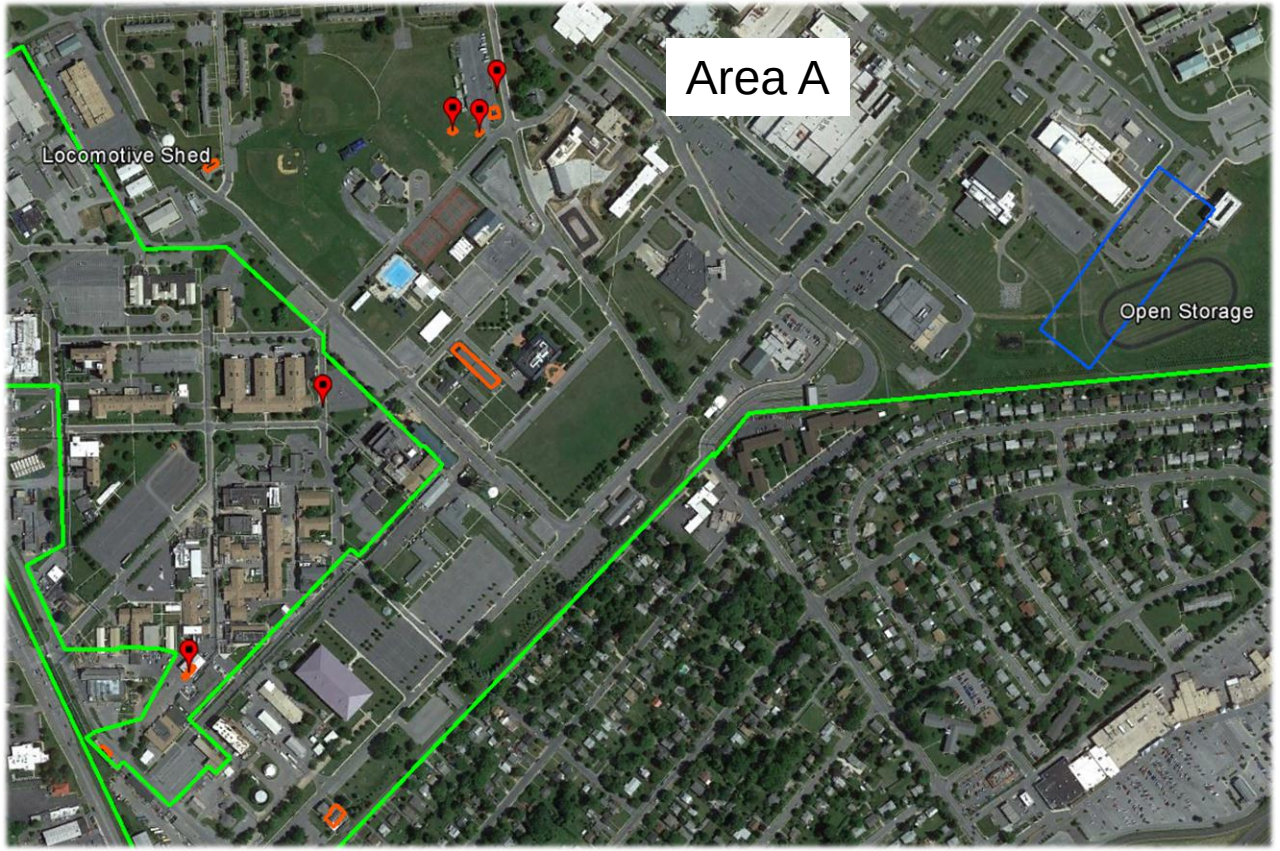
Group 8: General Disposal, Storage, or Other Use Areas

- This group includes a mix of Area A and Area B locations, including small storage/test sheds, a locomotive shed, a photo lab, paint shops, and former storage or disposal areas.
- Site inspection sampling will be tailored based on the types of historical activities and uses in these areas.



Group 8: General Disposal, Storage, or Other Use Areas

What next?

- Finalization of Area B SI work plan.
- Complete data collection in Summer 2016
- Draft SI report in Late Summer 2016

Questions?