
Formerly Used Defense Sites (FUDS) Program
U.S. Army Corps of Engineers (USACE)



**US Army Corps
of Engineers®**

PROPOSED PLAN

Former Hanna City Air Force Station
Hanna City, Illinois
May 1, 2013

DATES TO REMEMBER:

PUBLIC COMMENT PERIOD: May 3, 2013 to June 1, 2013

PUBLIC MEETING: May 20, 2013

USACE will accept written comments on the Proposed Plan via U.S. mail, fax, or electronic mail during the public comment period. Written comments must be postmarked or posted no later than the last day of the public comment period.

PUBLIC MEETING: Monday May 20, 2013; 6:00 to 8:00 pm CST

USACE will hold a public meeting to explain the Proposed Plan and all of the alternatives presented in the Feasibility Study. Oral and written comments will also be accepted during the meeting. The meeting will be held at:

Hanna City Park District Gynmasium
511 N. Main Street
Hanna City, Illinois 61536

For more information, see the Administrative Record File at:

Farmington Area Public District Library
266 East Fort Street
Farmington, Illinois 61531-1276
(309) 245-2175

or

U.S. Army Corps of Engineers
Public Affairs Office
600 Dr. Martin Luther King Jr. Place
Louisville, Kentucky 40202
502-315-6773

Or on the Internet:
<http://bit.ly/HannaCityAFS>

1. INTRODUCTION

This document presents the **Proposed Plan**¹ for the U.S. Army Corps of Engineers (USACE²), Louisville District (CELRL). GEO Consultants, LLC prepared this report for CELRL under Contract Number W912QR-08-D-0014, Delivery Order 0003. The Preferred Alternative and supporting rationale for remediation of contaminated soil at the **Formerly Used Defense Site (FUDS)** Former Hanna City Air Force Station (HCAFS) is presented in this Proposed Plan. This Proposed Plan does not contain recommendations for the remediation of the entire Former HCAFS, but only for a portion of the Former HCAFS, an operational unit of 38.5 acres. In addition, this Proposed Plan provides information to support the use of the Preferred Alternative and includes summaries of other cleanup alternatives evaluated for use at this site along with site background and remedial objectives. The Preferred Alternative proposed by USACE includes excavation of surface soils to protect human health and the environment from potential harmful effects of surface soil at the site. The property is currently used at irregular intervals by the Peoria County Sheriff's Office; based on discussions with personnel from Peoria County this industrial/commercial type use is expected to continue. An additional consideration is that the property transfer of the site from the State to the County does stipulate that the site be used for public purposes which limit the potential future use of the site.

USACE, in consultation with Illinois Environmental Protection Agency (Illinois EPA), will select the final remedy for the site after reviewing and considering all information submitted during the public comment period. The Preferred Alternative presented in this Proposed Plan may be modified based on new information or public comments. Therefore, the public is encouraged to review and comment on all alternatives presented in this Proposed Plan.

USACE is issuing this Proposed Plan as part of its public participation responsibilities under Section 300.430(f)(2) of the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**. This Proposed Plan summarizes information that can be found in greater detail in the **Remedial Investigation (RI)** and **Feasibility Study (FS)** reports and other documents contained in the **Administrative Record File** for this site. USACE and the Illinois EPA encourage the public to review these documents to gain a more comprehensive understanding of the site and FUDS activities previously conducted.

¹ All terms appearing in bold print are defined in the Glossary of Terms in Attachment A on Pages 21 through 22.

² A list of Acronyms and Abbreviations can be found in Attachment B on Page 23.

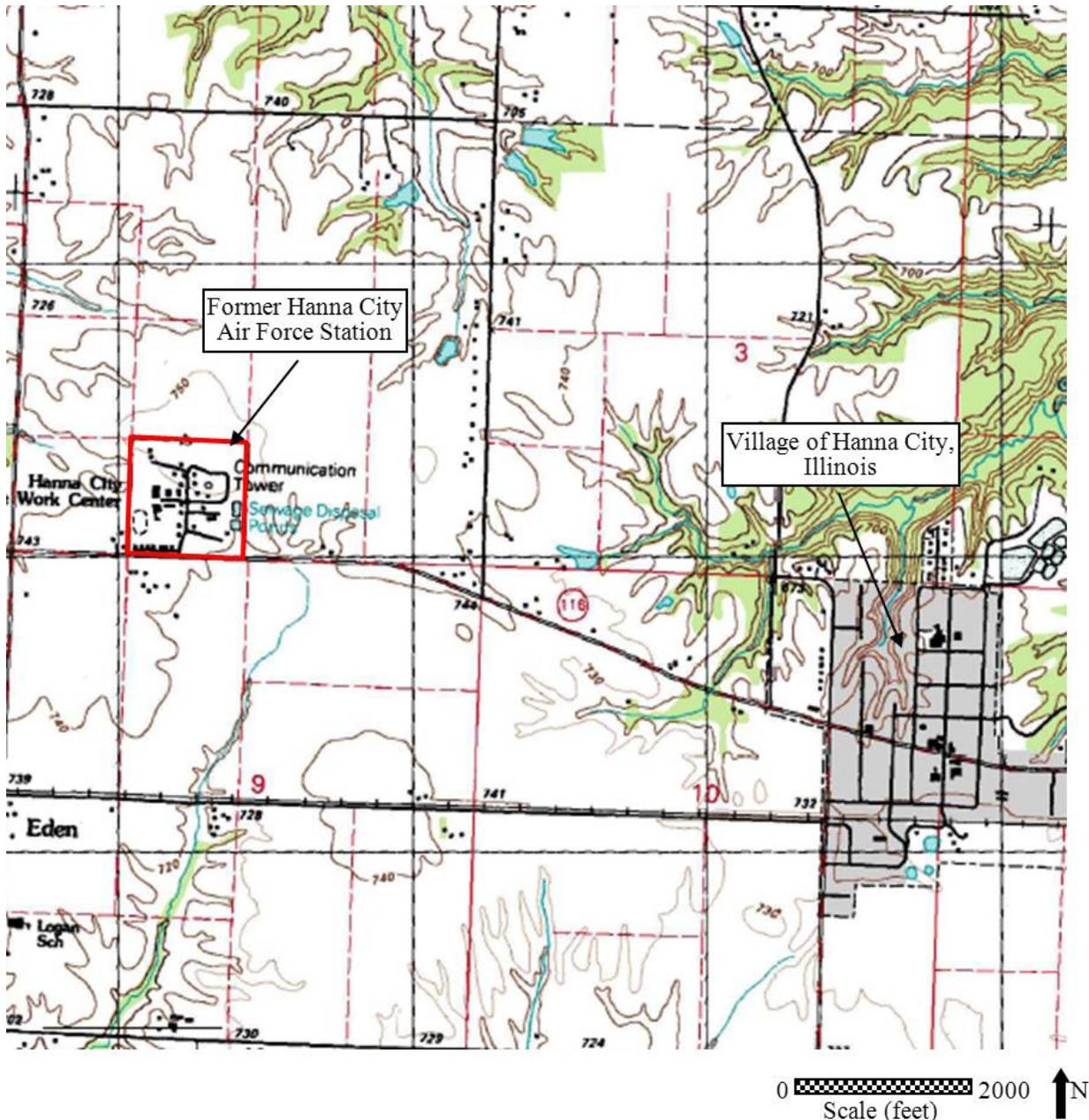


Figure 1. Site location map.

2. SITE BACKGROUND

The site occupies approximately 43 acres of land and is located approximately 10 miles west of the city of Peoria and two miles west of the Village of Hanna City in Peoria County, Illinois (Figure 1) and is shown in Figure 2. Due to **Potentially Responsible Party (PRP)** issues, only 38.5 acres were evaluated for this investigation (highlighted area of Figure 3). The U.S. Government acquired the property for use by the U.S. Air Force as a radar tracking and investigation facility from 1952 to 1968. In 1968, the property was declared excess and transferred to the General Services Administration, then quitclaimed to the State of Illinois and occupied by the Illinois Department of Corrections until October 2002. In 2009, the property was transferred to Peoria County and is currently used by the Peoria County Sheriff's Office for Special Weapons and Tactics training, highway department storage of equipment and road maintenance supplies,

County record and file storage, and miscellaneous short term events. When the property was transferred to the County there was a requirement that the property will be used for public purposes. Should the use change from public use the property will revert to State ownership.

Site investigations performed in 1992 and 1996 revealed the following contaminants of concern: polycyclic aromatic hydrocarbons (PAHs) in surface soil in all areas of concern and in subsurface soil at the Vehicle Wash Rack, arsenic in the subsurface soil at Coal Storage Areas A, B, and C and the Paint Shed; and metals in **groundwater** for the site as a whole.

In 2008 and 2009, the RI/FS was conducted at the site by USACE. Types, quantities, and locations of contaminants along with the development of ways to address the contamination problems were identified in the RI/FS studies. **Baseline Human Health Risk Assessment (BLRA)** and **Screening Level Ecological Risk Assessment (SLERA)** were conducted as part of the RI/FS, which determined that PAH surface soil exceedances of **Tiered Approach to Corrective Action Objectives (TACO)** Tier 1 criteria do exist, and the exposure pathway for PAHs in surface soil are through surface transport via surface water runoff and snow melt. Surface soils containing PAHs are subject to becoming airborne when the soils are disturbed and dust is produced. The recommended **Remedial Action Objective (RAO)** for the Former HCAFS is to reduce human health risk posed by surface soils to acceptable levels for industrial/commercial use.

3. SITE CHARACTERISTICS

The site lies on relatively flat ground with elevations ranging from approximately 740 to 756 feet above mean sea level and is located on top of a gentle north-south trending ridge. The surface water bodies within the Former HCAFS include two wastewater treatment ponds (installed after the Former HCAFS was deactivated) and the water treatment lagoon (which has not been operational since the Hanna City Water Supply was shut down in 1987), neither surface water body are being remediated.

Drinking water is supplied to the surrounding residents from the Illinois of America Water Company. Groundwater in the vicinity of the site is not used as a major water source. On March 1, 2005, the Village of Hanna City passed Ordinance 5-03-01, which prohibits the use of groundwater for potable water supply in the Village. According to the Ordinance, the reason for this prohibition is that certain properties within the Village had been used for commercial and industrial purposes and, as a result, “the groundwater beneath the Village may exceed Class I groundwater quality standards for potable resource groundwater, as set forth in 35 Illinois Administrative Code 620 or Tier I residential remediation objectives.” A 1864-foot deep water supply well and water treatment facility was operated on the Former HCAFS by the Village of Hanna City until 1987, when the water supply well was closed by the Illinois EPA due to elevated levels of naturally occurring radon.

Aerial photo from Peoria County GIS, 2003.



Figure 2. Historical and current site layout for the Former HCAFS.

(Green circles are areas of potential concern, building numbers shown in black text, referenced areas shown in white text.)

Aerial photo from Peoria County GIS, 2003.

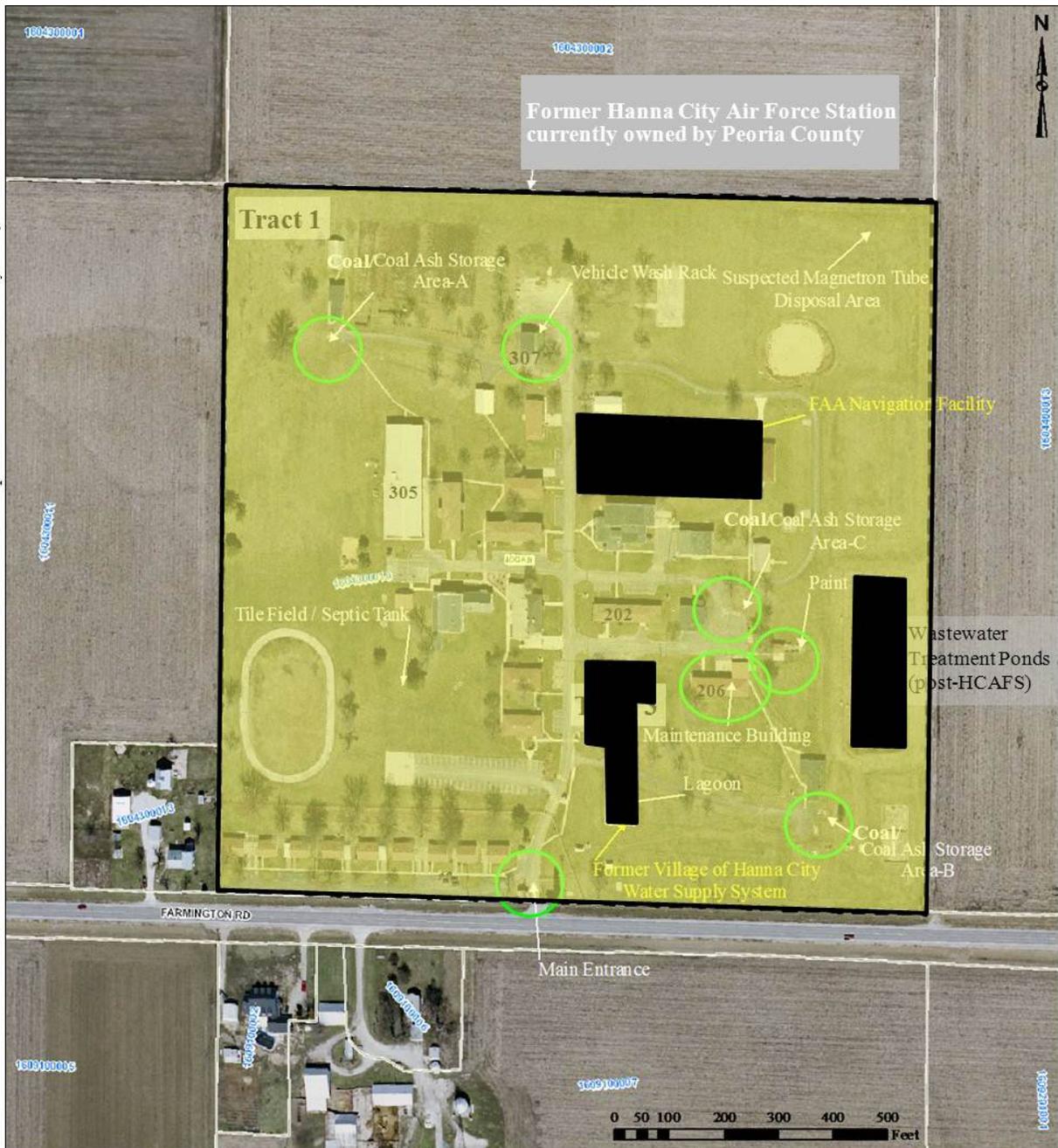


Figure 3. Portion of Former HCAFS that is included in this Proposed Plan.
(Black areas were not included in the Remedial Investigation.)

4. CONTAMINANT SOURCES

Based on the Site Inspection (SI) and Supplemental Site Investigation (SSI), the impacted media at the site were identified as surface soil, subsurface soil, and groundwater. There was no record or evidence of any significant releases or spills while the Former HCAFS was an active radar tracking facility that were identified. This previous data suggest that the contamination at the site is primarily the result of small releases that occurred over time during normal site operations at the Vehicle Wash Rack, Maintenance Building, and Paint Shed, as well as possible runoff or infiltration from the coal storage areas (Figure 2). Investigations at the Main Entrance were also completed. The likely source of contaminants at the Main

Entrance is coal dust from coal being transported onto the site. The investigations found no indication that the Department of Corrections used the coal piles, maintenance building, paint shed and vehicle wash rack. Examination of air photos from 1956 to the present did not indicate that the Main Entrance had been disturbed, except for tree removal, after the Department of Defense (DoD) used the site.

The RI that was conducted confirmed that surface soil quality had been impacted by activities at the facility. In particular, surface soil has concentrations of PAHs, which are group of chemicals that occur in coal, crude oil, and gasoline. The sources of these compounds at the facility include car emissions, coal transportation on the site, and the coal storage areas. The areas of surface soil to be remediated include the areas where it has been shown that the PAHs are the result of DoD actions and not solely from road traffic since road traffic is not specific to DoD use and road traffic is an ongoing activity associated with continued use of the site.

Contamination in subsurface soils was found only in small, isolated occurrences. An exception to this is arsenic which was found in the subsurface soil at many locations. However, the average of the concentrations reported is below the background concentration for metropolitan areas in Illinois. Since there is no known source of arsenic associated with site use and the average arsenic concentrations are below background concentrations, the conclusion of the RI was that the arsenic reported from the subsurface soil samples represents naturally occurring conditions. This conclusion is consistent with the geology of the site.

The RI/FS also concluded that the metals that were found above TACO groundwater criteria did not come from site activities but are naturally occurring because of the geology of the site therefore groundwater is not addressed in the remediation alternatives.

5. SCOPE AND ROLE OF THE ACTION

The selected action will be the remedial action for portions of the Former HCAFS. The objectives for the remedial action at the included portions of the Former HCAFS are to prevent ingestion, inhalation, and direct contact with surface soils containing DoD-released PAHs above remediation objectives and to reduce migration of contaminants in surface soils and mitigate the possibility of contaminants leaving the site through surface water run-off and erosion of the surface soils. A discussion on the comparison of PAHs in the areas of concern with background PAH values due to road runoff, melting of plowed snow, and vehicular emissions are presented in Section 4.6.3.6 of the RI Report (GEO 2010). PAHs attributed to DoD-related activities are being addressed in this Proposed Plan and contaminated attributed to non-DoD sources (roadways) has been excluded.

6. SUMMARY OF SITE RISKS

Human Health Baseline Risk Assessment

In 2010, a BLRA was conducted to evaluate potential human health risks resulting from exposure to soil and groundwater contamination if no remedial action is taken at the Former HCAFS. In evaluating risk from soil contamination, Coal Area A, Coal Area B, the Vehicle Wash Rack and Main Entrance were each considered as separate Exposure Units (EUs). Because of their proximity to each other, Coal Area C, the Maintenance Building, and the Paint Shed were combined into one EU. To evaluate risks from groundwater, the entire site was considered as a single EU.

The BLRA focused on chemicals of potential concern (COPCs) in areas where chemical analyses from the SI and SSI exceeded human health screening criteria. To identify the COPCs that were to be carried through the quantitative BLRA, data were compared against human health screening criteria that consisted of the TACO background concentrations for metals or the lowest of the TACO and USEPA Regional Screening Level criteria for soil, and the lowest of the TACO groundwater criteria, as well as

state and federal drinking water standards for groundwater.

Based on recent land use, the site receptor considered in the BLRA was a commercial/industrial worker. An unrestricted land use scenario was incorporated in the risk assessment by including residential receptors (adult and child). In the **conceptual site model**, it was assumed that there were completed pathways from surface and subsurface soil to all four site receptors and from groundwater to residential receptors. These completed pathways were then included in the BLRA.

The TACO Tier 1 standards were used in evaluating the risk associated with the remedial alternatives. Alternative 2 is based on the TACO Tier 1 Residential Remediation Goals (RGs) and Alternative 3 is based on the TACO Tier 1 industrial/commercial RGs. In order to determine if Alternative 3 requires land use restrictions or controls the residential risk levels for the industrial/commercial preliminary RAOs were calculated using the TACO Residential criteria (which reflect a risk level of 10^{-6}). The calculated residential risk levels for the proposed Alternative 3 RAOs are well below the upper limit of the NCP target risk range (10^{-4}). For naphthalene, the residential risk level for the RG is well below 10^{-6} . Therefore, the Alternative 3 RGs will be protective of receptors under current land use, and will also be protective of residential users should the property be converted to residential use in the future.

The **incremental lifetime cancer risks (ILCRs)** for the correctional facility land use is shown in Table 1 for the five EUs. The correctional facility worker and inmate are used to represent the larger class of industrial/commercial workers as the most recent fulltime land use was as a correctional facility. The ILCRs for unrestricted land use for the five EUs are shown in Table 2.

Table 1. Summary of ILCRs for commercial/industrial worker site receptors exposed to surface soil.

Exposure Unit	Correctional Facility	Correctional Facility
	Inmate	Worker
Coal Area A	1.6×10^{-5}	1.8×10^{-5}
Coal Area B	1.8×10^{-5}	2.1×10^{-5}
Coal Area C (including Paint Shed and Maintenance Building)	5.9×10^{-5}	3.1×10^{-5}
Vehicle Wash Rack	2.7×10^{-5}	3.1×10^{-5}
Main Entrance	2.2×10^{-5}	2.5×10^{-5}

Note: Acceptable cancer risk is between one in ten thousand (10^{-4}) and one in one million (10^{-6}). COPCs include: benzo(a)pyrene for all EUs.

Table 2. Summary of ILCRs for unrestricted land use site receptors exposed to surface soil.

Exposure Unit	Resident Adult	Resident Child
Coal Area A	2.8×10^{-4}	2.4×10^{-4}
Coal Area B	3.1×10^{-4}	2.6×10^{-4}
Coal Area C (including Paint Shed and Maintenance Building)	3.5×10^{-4}	2.9×10^{-4}
Vehicle Wash Rack	1.1×10^{-3}	9.0×10^{-4}
Main Entrance	5.0×10^{-4}	4.3×10^{-4}

Note: Acceptable cancer risk is between one in ten thousand (10^{-4}) and one in one million (10^{-6}). COPCs include: benzo(a)pyrene and dibenzo(a,h)anthracene for all EUS except Coal Area C. Coal Area C COPCs include: benzo(a)pyrene, dibenzo(a,h)anthracene, benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene.

The ILCRs were below the acceptable risk range of 10^{-4} to 10^{-6} for all EUs for a commercial/industrial scenario. ILCRs were above 10^{-4} for a Residential Adult and Child under an unrestricted land use scenario.

The **Hazard Indices (HIs)** from surface soil cannot be calculated because there are no non-carcinogenic toxicity values available for PAHs. The HIs from arsenic in subsurface soil are below 1 for all site receptors. An HI value of less than 1 indicates that adverse non-cancer health effects are considered extremely unlikely while an HI of greater than 1 indicates that adverse health effects may occur.

ILCRs from unfiltered groundwater for the residential receptors exceed 10^{-4} , primarily from arsenic. The arsenic is probably associated with suspended solids, since there are no carcinogenic COPCs in the filtered groundwater samples.

The HIs from unfiltered groundwater for the residential receptors are greater than one, with hazard quotients (HQs) exceeding one. The HIs from filtered groundwater are less than one, with dissolved manganese being the only contributor to this hazard. However, manganese has been determined to be naturally occurring as a result of the site geology.

Ecological Risk Assessment

A SLERA was performed to evaluate ecological risks from current and potential future exposure to contamination at the Former HCAFS if no remedial action is taken, and to determine if a baseline **Ecological Risk Assessment (ERA)** is required to protect important ecological resources within and in the vicinity of the Former HCAFS. A field ecological reconnaissance was conducted in 2008 to document habitats, observe wildlife within and around the Former HCAFS, and identify designated wetlands and critical or sensitive habitat for threatened or endangered species. No sensitive areas or important ecological resources were found within 0.5 miles of the site. No record of state-listed threatened or endangered species, Illinois Natural Inventory sites, dedicated Illinois Natural Preserves, or registered land and water reserves were found in the vicinity of the site. The SLERA did not recommend conducting a baseline ERA; the scope and results for the SLERA were considered sufficient to make decisions regarding future remedial actions at the Former HCAFS.

The RI concluded that there are no ecological risks from low molecular weight PAHs. Hazard calculations for three types of mammals (herbivore, ground insectivore, and carnivore) show hazards from exposure to high-molecular weight PAHs to be greater than one for the mammalian ground insectivore (shrew) and less than one for mammalian herbivores (vole) and carnivores (weasel).

The SLERA concluded that even though zinc and lead were present at levels above ecological screening criteria, further action to address ecological risk was not warranted based on the following:

- There are no records of federal or state-listed threatened or endangered species within 0.5 miles of the Former HCAFS and the receptor groups found at the Former HCAFS consist of common, widely distributed species.
- The HQs are conservative or comparable to background ecological risks. The HQs were calculated using maximum detected concentrations rather than average concentrations.
- The median values for lead and zinc in surface soil were below the respective TACO background values for metro areas and, in addition, the maximum detected concentrations used were outliers.

The risks from lead and zinc are elevated in localized areas, but on average are comparable or below the TACO regional background values.

Summary

As the lead agency on the site, it is the current judgment of the USACE that the Preferred Alternative identified in this Proposed Plan, or one of the other active measures considered in the Proposed Plan, is necessary to protect public health or welfare from actual or threatened releases of hazardous substances into the environment.

7. REMEDIAL ACTION OBJECTIVES

The **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)** and the NCP define RAOs that are applicable to all Superfund sites. They relate to the statutory requirements for the development of remedial actions. Site specific RAOs relate to potential exposure routes and specific contaminated media, such as soil, and are used to identify target areas of remediation and contaminant concentrations. They require an understanding of the contaminants in their respective media and are based on the evaluation of risk to human health and the environment, protection of groundwater, information gathered during the RI and applicable guidance documents. In consideration of the data collected and the findings of the risks assessments conducted, RAOs are recommended for surface soil only. Because there are no unacceptable risks posed by contaminants from site activities there are no recommended RAOs for groundwater or subsurface soil. Metals in surface soils are within the range of background concentrations and metals in groundwater are also naturally occurring. The RAOs for surface soil are as follows:

- Prevent ingestion, inhalation, and direct contact with surface soils containing PAHs above the remediation objectives; and
- Reduce migration of contaminants in surface soils and mitigate the possibility of contaminants leaving the site through surface water run-off and erosion of the surface soils.

Table 3. Summary of Exposure Routes, Receptors, and Remediation Goals.

Contaminant of Concern	Exposure Route	Receptor	Remediation Goal
Benzo(a)pyrene*	Inhalation, Ingestion, Dermal Contact	Resident; unlimited use and unrestricted exposure	Alternative 2 Set 1 – 90 µg/kg
Benzo(a)pyrene*	Inhalation, Ingestion, Dermal Contact	Industrial/Commercial worker	Alternative 3 Set 2 – 800 µg/kg

*Benzo(a)pyrene is a marker compound, remediation of benzo(a)pyrene will remove other COPCs.

CERCLA Section 121 requires that on-site remedial actions attain compliance with federal standards determined to be legal **applicable or relevant and appropriate requirements (ARARs)**. A requirement under CERCLA may be either “applicable” or “relevant and appropriate” to a site-specific remedial action, but not both. The USACE, as the lead agency on this site, has determined that no ARARs exist. Off-site activities specific to the remedial work at the Former HCAFS will comply with Federal and Illinois laws governing off-site transportation, handling, and disposal of excavated soil.

8. SUMMARY OF REMEDIAL ALTERNATIVES

Based on the established site conditions, contaminant characteristics, and the volume of contaminated soil requiring remediation, three potential remedial actions were evaluated. They were: no action and removal and disposal of surface soil that exceeds two different sets of RGs, Set 1 and Set 2).

Following discussions with the Illinois EPA, two sets of RGs were considered in the FS, as described below:

- RG Set 1 is designed to leave the site protective for unlimited use and unrestricted exposure and therefore based on TACO residential criteria.. This set of RGs reflects a target risk of 10^{-6} , which is more protective than required by the NCP. The areas of surface soil to be removed based on Set 1 RGs are shown in the left-hand column of Figures 4 through 13.

- RG Set 2 assumes the area will continue to be used as industrial in the future and is therefore based on the minimum of the TACO industrial/commercial and construction worker criteria for ingestion and inhalation. However, to evaluate the proposed remediation objectives under unrestricted land use, the residential risk levels for the preliminary remediation objectives were calculated using the TACO residential criteria. With the exception of naphthalene, the calculated residential risk levels for the proposed Set 2 remediation goals are greater than 10^{-6} , but below 10^{-5} , and are well below the upper limit of the NCP target risk range (10^{-4}). For naphthalene, the residential risk level for the remediation goal is well below 10^{-6} . Therefore, the Set 2 RGs will be protective of receptors under current land use, and will also be protective of residential users should the property be converted to residential use in the future. Since these remediation objectives are also protective of possible residential users, land use restrictions would not be required. Surface soil to be removed based on Set 2 RGs are shown in the right-hand column of Figures 4 through 13.

8.1 ALTERNATIVE 1 – NO ACTION

The no action response is identified, as required by the NCP, for the purpose of establishing a baseline against which other alternatives are compared. There would be no preventative or remedial action implemented, as a result of the no action response and the current contamination at the site would remain in place and exposed at the surface.

8.2 ALTERNATIVE 2 – REMOVAL OF SURFACE SOIL EXCEEDING THE SET 1 RG

The removal would be accomplished by excavation of the surface soil (0 – 1 foot below ground surface) that has been determined to have PAH concentrations above the Set 1 RG. Implementation of this alternative would result in soil being removed from all five EUs. The exact volume of soil removed will be based on the data collected to date and the data collected during sampling and analysis as part of remedial design, which will be conducted to determine that the soil at the boundary of the removal area(s) does not exceed the Set 1 RGs. An estimated removal volume for Alternative 2 is 2577 cubic yards. Should the results of the boundary sampling show that this objective has not yet been achieved, soil removal will be extended until the objective has been achieved. The sampling plan for confirmatory sampling and details of removal and disposal implementation will be developed as part of the design documents.

In the areas from which the soil is removed, backfill soil will be used to bring the surface up to grade and the area would be seeded to blend in with the surroundings and mulched. The removed soil will be disposed of or treated at an approved off-site facility. Off-site disposal or treatment leaves no maintenance requirements at the site. A five-year review will not be required (see Section 6).

8.3 ALTERNATIVE 3 – REMOVAL OF SURFACE SOIL EXCEEDING THE SET 2 RG

The removal would be accomplished by excavation of the surface soil (0 – 1 foot below ground surface) that has been determined to have PAH concentrations above the Set 2 RGs. Similar to Alternative 2, sampling will be conducted to determine that the soil at the boundary of the removal area(s) does not exceed the Set 2 RGs. An estimated removal volume for Alternative 3 is 305 cubic yards. Should the results of the sampling show that this objective has not yet been achieved; soil removal will be extended until the objective has been achieved. A number of the removal locations are close to or bounded by roads; removal will not extend under roads or in such proximity to roads that the integrity of roads is undermined. The sampling plan for confirmatory sampling and details of removal and disposal implementation will be developed as part of the design documents.

In the areas from which the soil is removed, clean soil will be used to bring the surface up to grade and the area will be seeded and mulched. The removed soil would be disposed of or treated at an approved off-site facility. Off-site disposal or treatment leaves no maintenance requirements at the site. A five-year review will not be required (see Section 6).

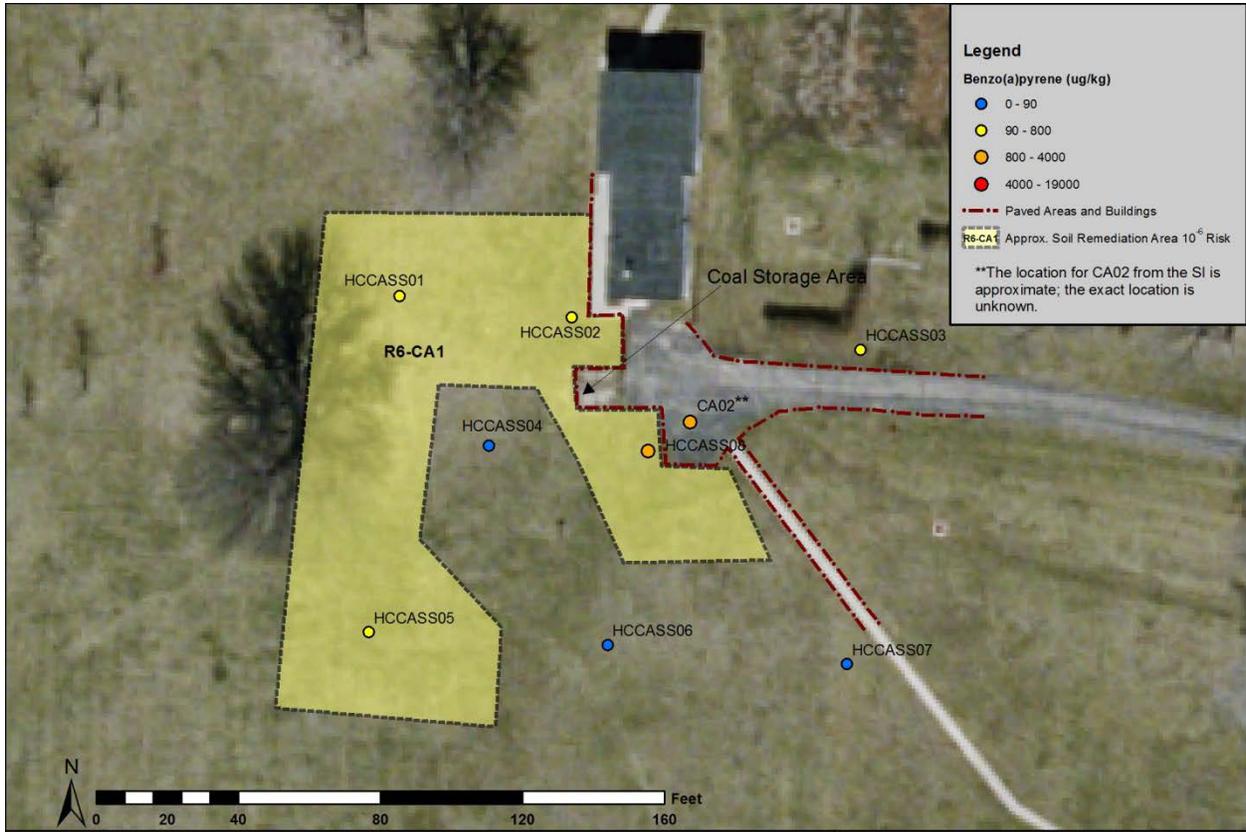


Figure 4. Coal Area A soil remediation area using Set 1 RGs.

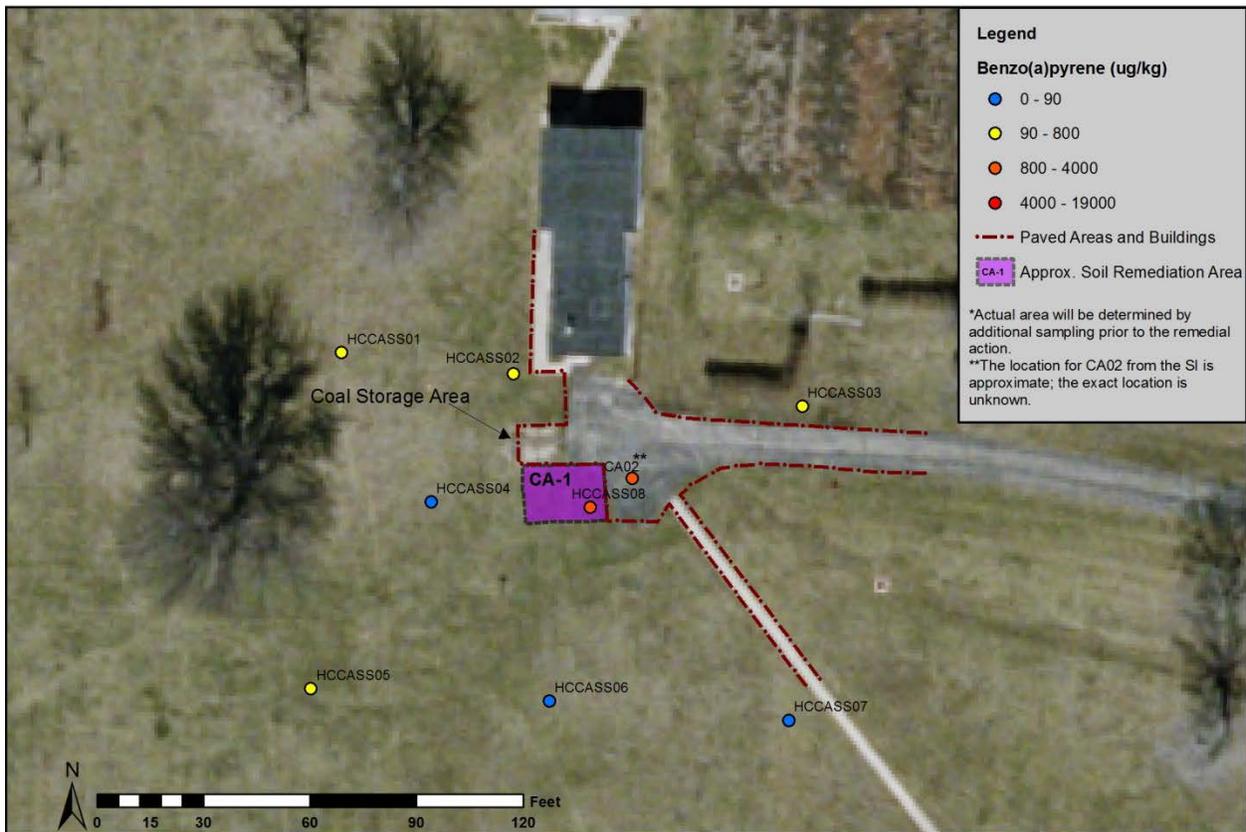
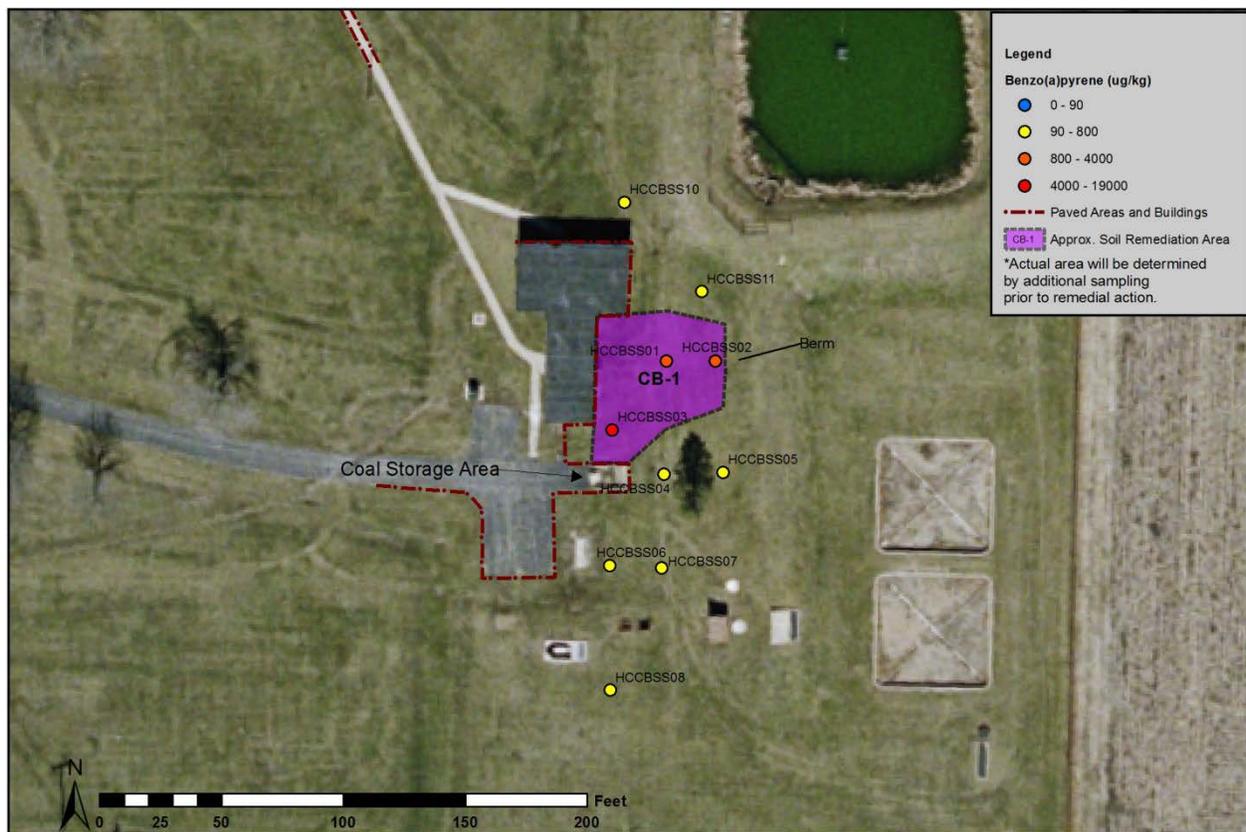
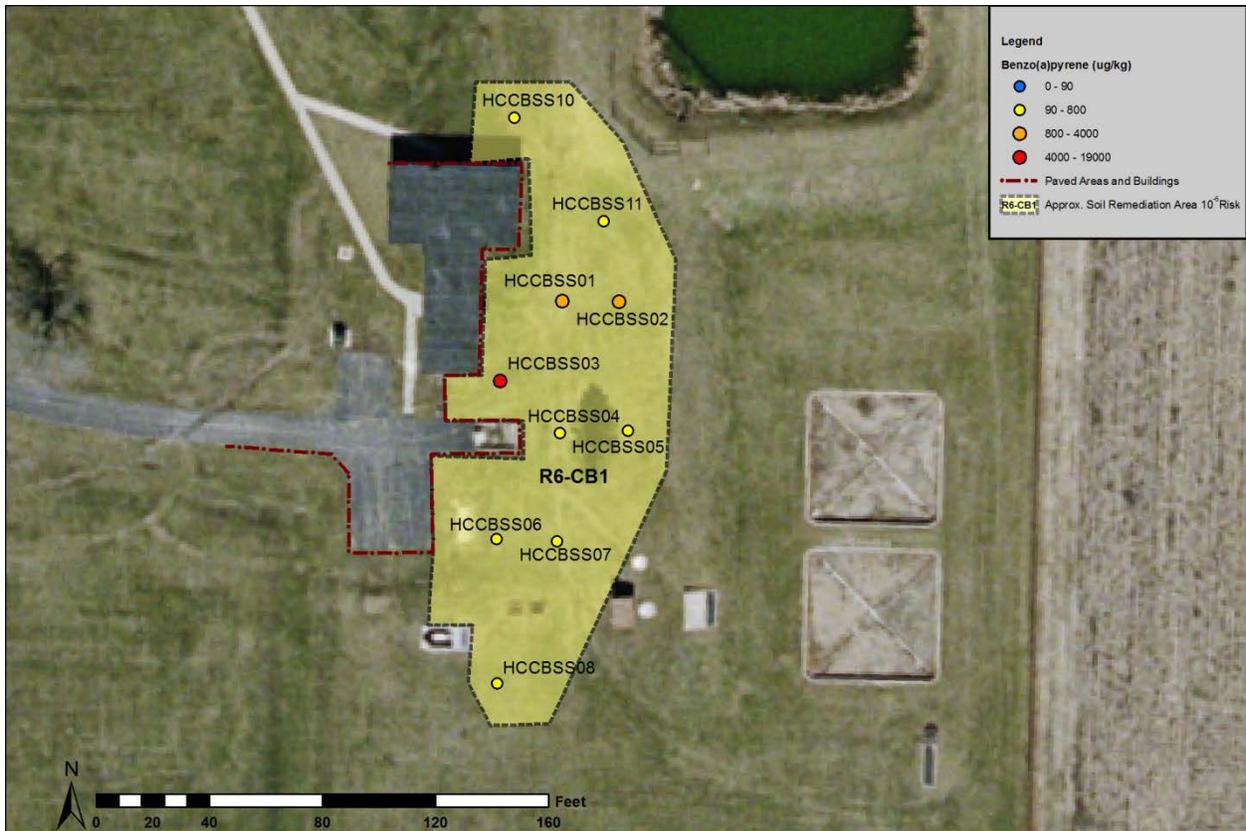


Figure 5. Coal Area A soil remediation area using Set 2 RGs.



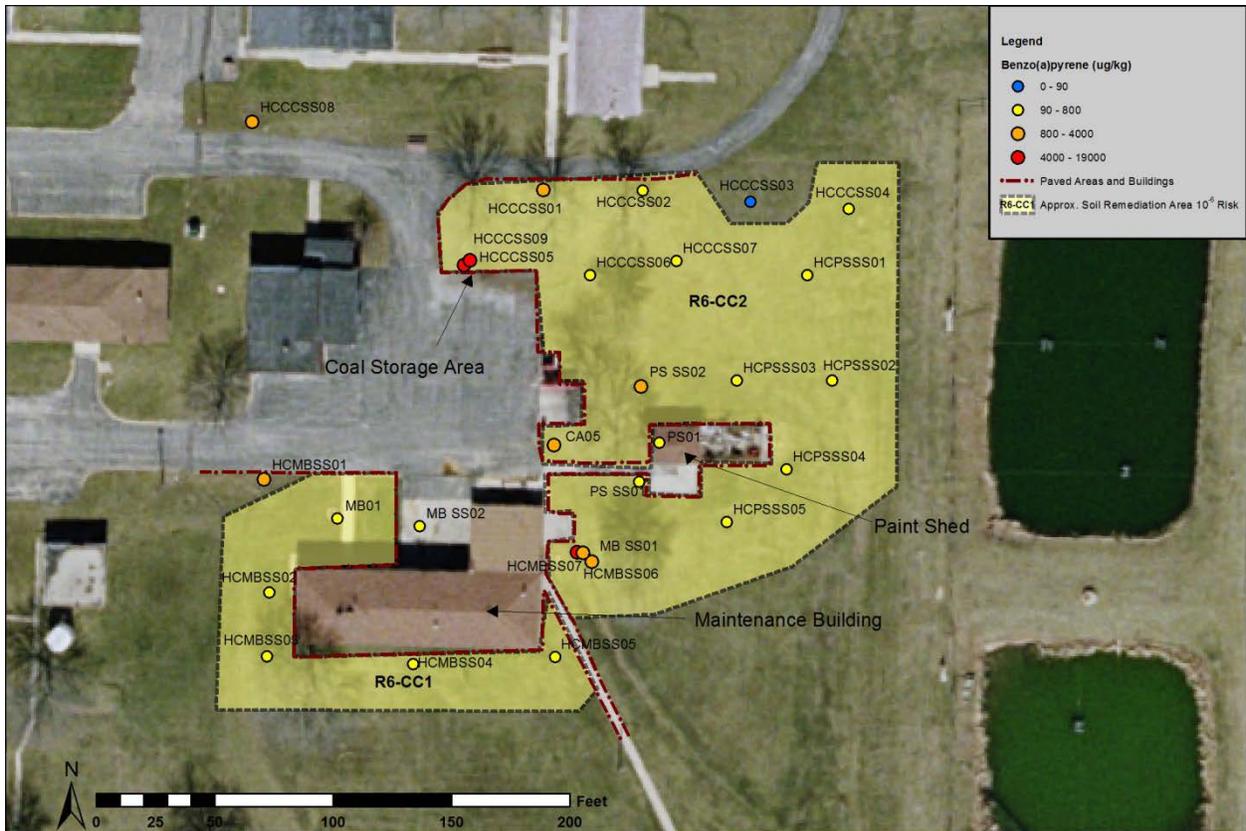


Figure 8. Coal Area C/Maintenance Building/Paint Shed soil remediation area using Set 1 RGs.

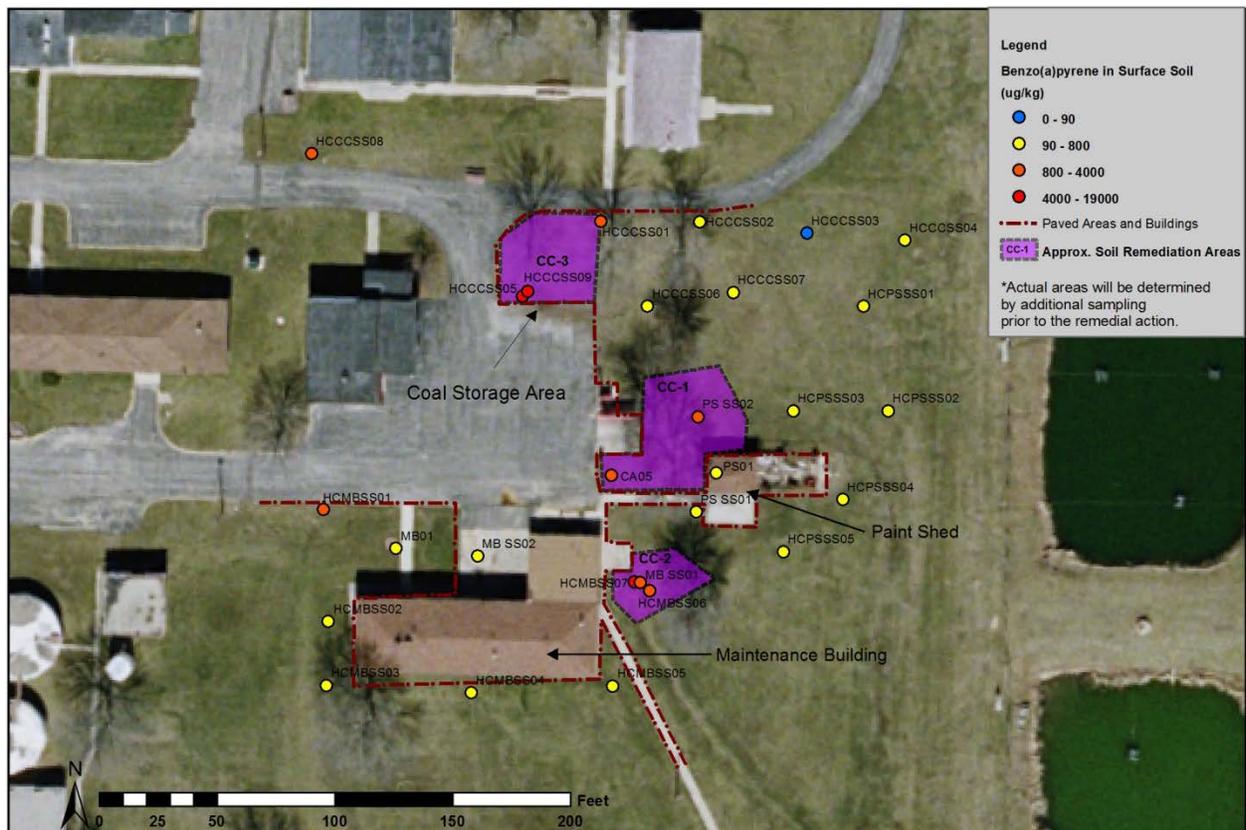


Figure 9. Coal Area C/Maintenance Building/Paint Shed soil remediation area using Set 2 RGs.

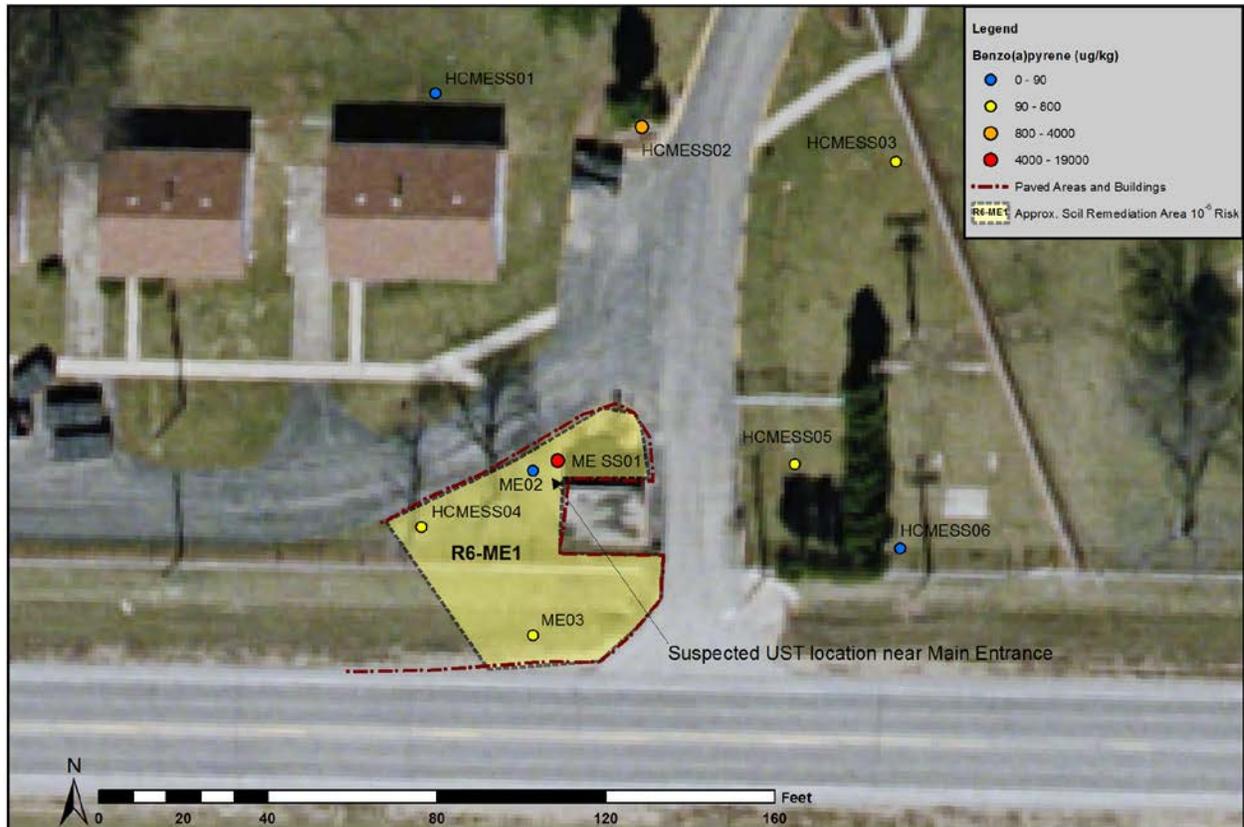


Figure 10. Main Entrance soil remediation area using Set 1 RGs.

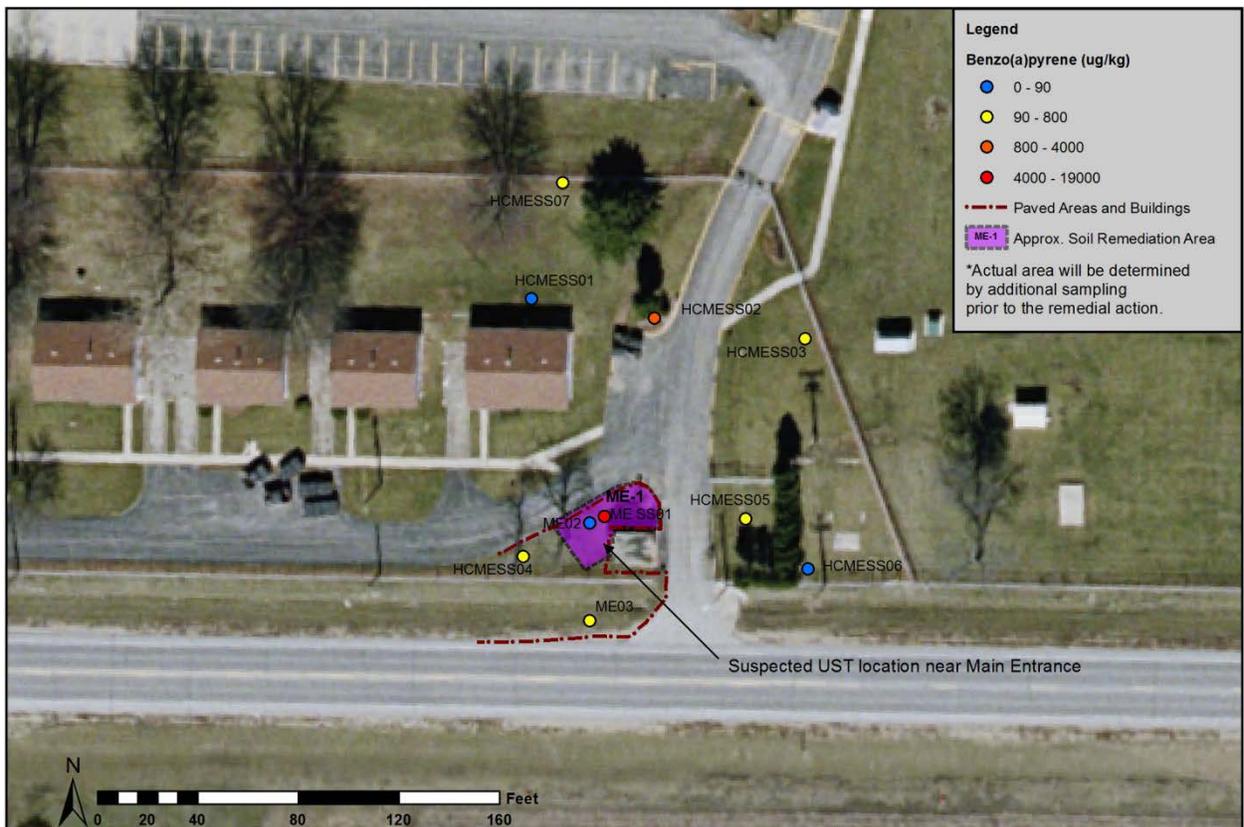


Figure 11. Main Entrance soil remediation area using Set 2 RGs.

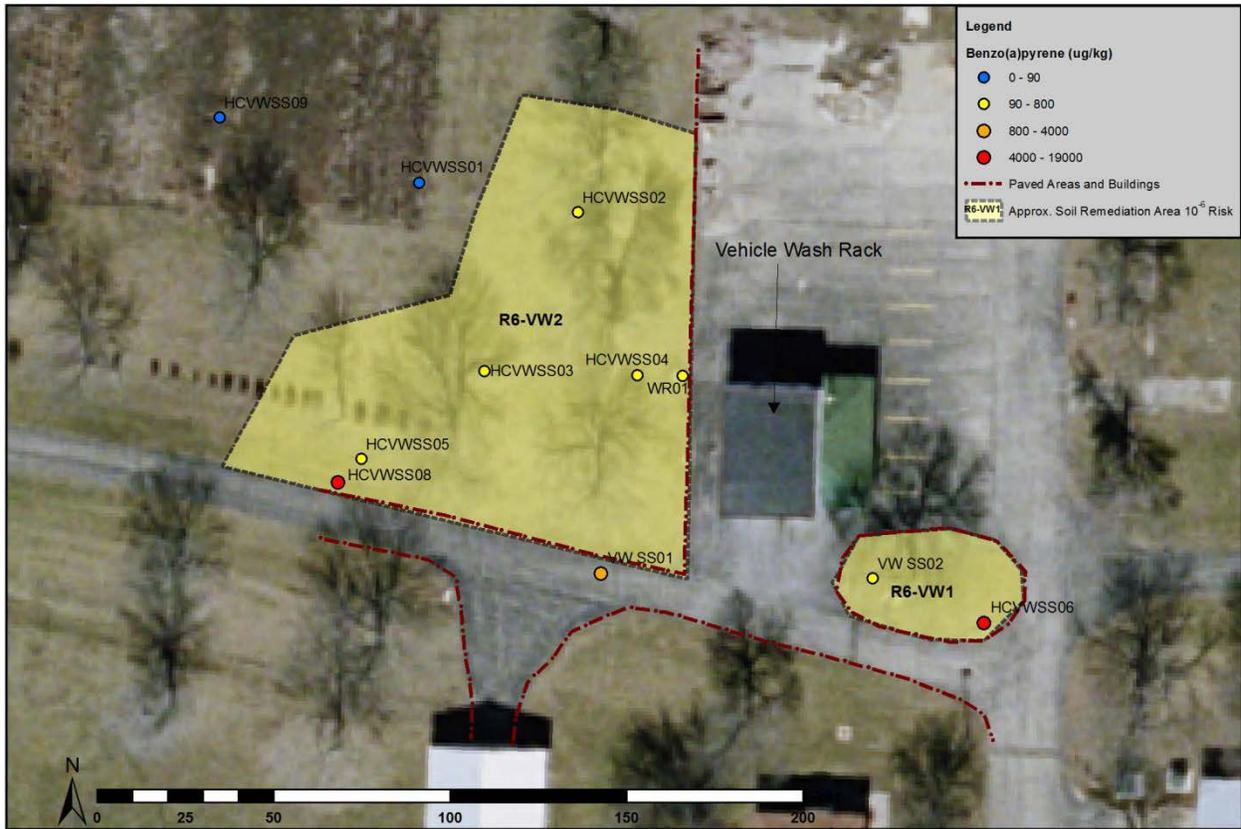


Figure 12. Vehicle Wash Rack soil remediation area using Set 1 RGs.

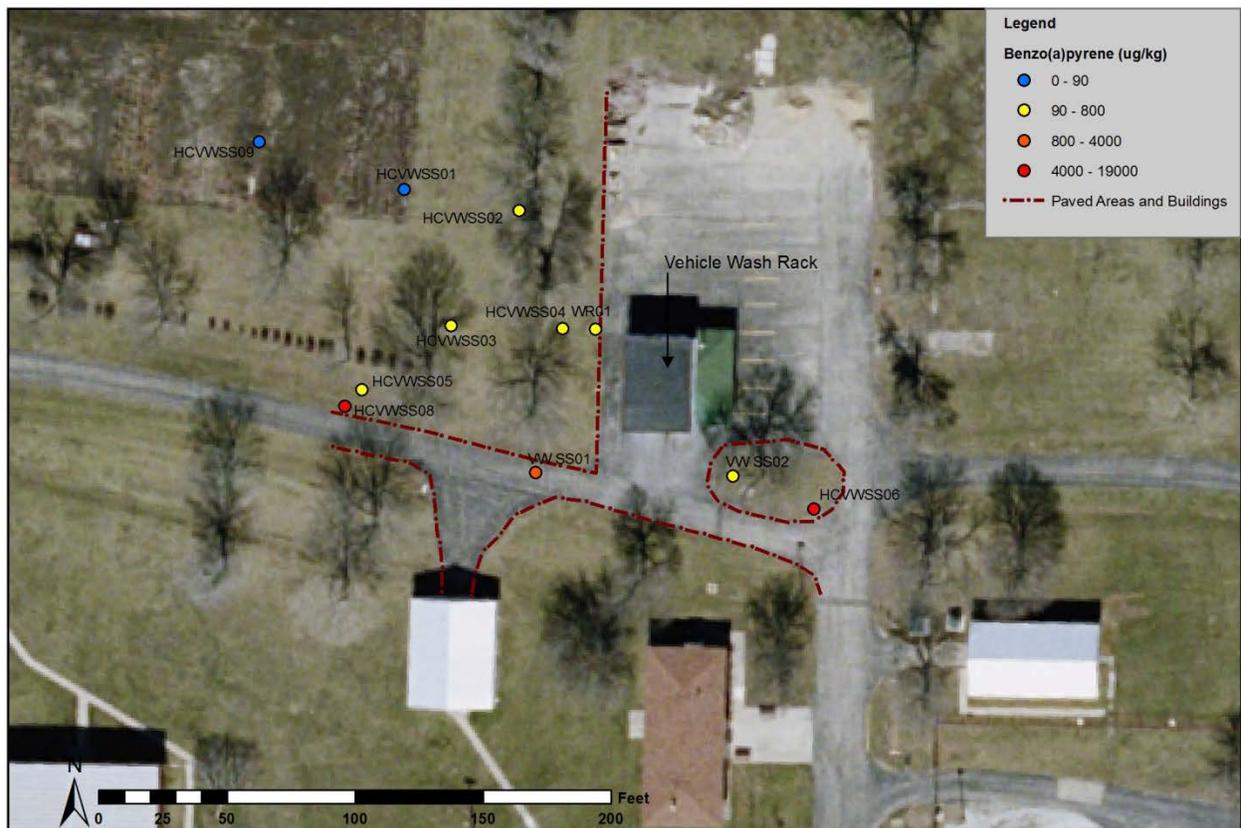


Figure 13. Vehicle Wash Rack soil remediation area (none) using Set 2 RGs.

9. EVALUATION OF ALTERNATIVES

9.1 CONSIDERATION OF GREEN AND SUSTAINABLE REMEDIATION PRACTICES

The 2012 Defense Environmental Restoration Program Manual directs, “when feasible” and where “practicable based on economic and social benefits and costs” the use of Green and Sustainable Remediation Practices (GSR) strategies for remedial actions that:

- Use natural resources and energy efficiently;
- Reduce negative impacts on the environment;
- Minimize or eliminate pollution at its source; and
- Reduce waste to the greatest extent possible.

The GSR Best Management Practice (BMP) was reviewed and Alternative 3 was determined to be the feasible alternative that is most effective in that it results in the smallest volume of soil to be removed, transported and disposed. Technologies that would result in no removal of soil were found to not be feasible or effective for this site.

The contract for the remediation will include language for potential inclusion and documentation of GSR per these BMPs and any additional GSR that the USACE and/or the contractor may identify for implementation of the remedy.

9.2 NCP EVALUATION

In accordance with the NCP, the selected alternatives were evaluated against the following nine criteria:

1. Overall protection of human health and the environment;
2. Compliance with ARARs;
3. Long-term effectiveness and permanence;
4. Reduction of toxicity, mobility, or volume through treatment;
5. Short-term effectiveness;
6. Ease of implementation;
7. Estimated cost;
8. State regulatory acceptance; and
9. Community acceptance.

In order to establish priority among the screening criteria, they are separated into three groups. The first two criteria listed are threshold criteria, and must be satisfied by the remedial action alternative being considered. The next five criteria are secondary criteria used as balancing criteria among those alternatives which satisfy the threshold criteria.

State and community acceptance is evaluated during the public comment period of the Proposed Plan, and a Responsiveness Summary is incorporated into the **Decision Document (DD)**.

1. Overall Protection of Human Health and the Environment – Each alternative was assessed to determine whether it can adequately protect human health and the environment, in both the short- and long-term, from unacceptable risks posed by contaminants present at the site by eliminating, reducing, or controlling exposures to levels established during development of the remedial goals. Overall protection of human health and the environment draws on the assessments of other evaluation criteria, especially long-term effectiveness and permanence, short-term effectiveness, and compliance with ARARs.

Alternative 1 does not meet the threshold criteria of protecting human health and the environment. Alternatives 2 and 3 meet the criteria. Both alternatives 2 and 3 reduce the risk to site users to acceptable levels and allow unrestricted use of the site. However, site activities specific to the remedial work at HCAFS will comply with Federal and Illinois laws governing off-site transportation, handling, and disposal of excavated soil.

2. Compliance with ARARs –Because it has been determined that there are no ARARs all alternatives are equal for this point of comparison.
3. Long-Term Effectiveness and Permanence – Each alternative was assessed for the long-term effectiveness and permanence it presents in maintaining protection of human health and the environment after the response objectives have been met.

Alternative 1 would leave the contaminated surface soil in place with neither treatment nor containment. Since the surface soil presents a risk to short-term and long-term site users, this alternative is considered the least preferable of the three. Both Alternatives 2 and 3 will remove the soil above the remediation objective from the site. The soil will be transported to an approved site for disposal or treatment and will be effectively and permanently removed from the Former HCAFS.

4. Reduction of Mobility, Volume, Toxicity Through Treatment – Each alternative was assessed against this criterion to evaluate the performance of the specific treatment technologies the alternative may employ.

Since Alternative 1 does not include any action, it has no effect on the mobility, toxicity, or volume of the contaminated soil. Both Alternatives 2 and 3 will reduce the mobility, toxicity, and volume if the final disposition of the soil is through treatment at an off-site facility. Regardless of the final disposition of the soil, the mobility, toxicity, and volume of contaminants at Former HCAFS will be reduced.

5. Short-Term Effectiveness – The short-term effectiveness of each alternative was assessed considering the short-term risks that might be posed to the community during implementation of the alternative; potential environmental impacts of the remedial action and the effectiveness and reliability of measures taken to mitigate impacts during implementation; and length of time needed until protection is achieved.

Alternative 1 would not increase the risk to the surrounding community or site workers, but the risk to site users would remain. Alternatives 2 and 3 would result in a temporary increase in nuisance noise, dust, and exposure to remediation workers during soil excavation. Alternatives 2 and 3 would require site workers to have precautionary protection against dermal contact and inhalation of contaminated dust during soil excavation and handling. Both Alternatives 2 and 3 will require approximately six months to complete final design and required plans. The implementation of both Alternatives 2 and 3 can be expected to be completed in an additional six months. Based on these assumptions, the period of performance for Alternative 2 and Alternative 3 is one year.

6. Implementability – The ease or difficulty of implementing each alternative was assessed by considering the following types of factors (as appropriate). 1) Technical feasibility, including technical difficulties and unknowns associated with the construction and operation of a technology, the reliability of a technology, ease of undertaking additional remedial actions, and the ability to monitor the effectiveness of the remedy. 2) Administrative feasibility, including activities needed to coordinate with other offices and agencies and the ability and time required to obtain any necessary approvals and permits from other agencies. 3) Availability of services and materials, including the availability of necessary equipment and specialists and the availability of services and materials.

Alternative 1 could be implemented immediately. Alternatives 2 and 3 use established methods that

have been successfully demonstrated in applications for heavy molecular weight PAHs. Conditions external to the site (e.g., equipment availability, materials, and services) present no problem at this time for Alternatives 2 or 3.

7. Cost – The type of costs that were assessed included: capital costs, including both direct and indirect costs; annual operation and maintenance (O&M); and net present worth of capital and O&M costs. The present worth of each alternative provides the basis for the cost comparison. Assumptions that were used to develop the cost estimates for Alternatives 2 and 3 include: that the soil will be considered non-hazardous for disposal, a work plan will be developed based on the collection of additional surface soil samples to determine the extent of PAH contamination, site restoration, and a construction completion report. The assumption that the soil to be disposed will be non-hazardous is based on discussion with potential vendors however the final determination will be made at the time of excavation. Additional assumptions regarding the cost estimates can be found in the FS (GEO 2012).

Alternative 1 – There is no cost associated with this alternative.

Alternative 2 – The total present worth for this alternative is approximately \$502,398 to achieve the remediation objective. Costs assume that the ultimate disposition of approximately 2577 cubic yards of soil will be disposal at an approved location. Regardless of the ultimate disposition and remedial objective that is selected, the initial activity will be to design sampling for and collect additional surface soil samples to better define the volume of soil that will be removed. At completion of excavation and removal of the soil, the site will be restored. Site restoration includes backfilling the excavated areas with new soil; grading, seeding, and mulching the excavated areas; and removing or repairing the haul road.

Alternative 3 – To meet the remediation objective, the total present worth for this alternative is approximately \$134,980. Costs assume that the ultimate disposition of approximately 305 cubic yards of soil will be disposal at an approved location. Regardless of the ultimate disposition and remedial objective that is selected, the initial activity will be to design sampling for and collect additional surface soil samples to better define the volume of soil that will be removed. At completion of excavation and removal of the soil, the site will be restored. Site restoration includes backfilling the excavated areas with new soil; grading, seeding, and mulching the excavated areas; and removing or repairing the haul road.

8. State Acceptance – Although the assessment of the concerns of the state of Illinois (Illinois EPA) will not be completed until public comments on the Proposed Plan are received and resolved. Based on the State of Illinois' (i.e., Illinois EPA) review of the FS and the response to the comments received, it is expected that Illinois EPA will accept either Alternative 2 or Alternative 3. Both Alternatives 2 and 3 are in accordance with the respective RGs that have been reviewed by the Illinois EPA.
9. Community Acceptance – This assessment includes determining which components of the alternatives interested persons in the community support, have reservations about, or categorically reject. This assessment will not be completed until comments on the Proposed Plan are received.

10. PREFERRED ALTERNATIVE

The Preferred Alternative for remediation at included portions of the Former HCAFS is Alternative 3 (Removal of Surface Soil Exceeding the Set 2 RGs). This alternative was selected because it will achieve the remedial objectives of preventing exposure to the contaminated soil and the risk to site users is reduced to levels that are within the acceptable range, as defined by the NCP.

USACE and Illinois EPA believe the Preferred Alternative would be protective of human health and the

environment, would achieve the remedial objectives, would meet both short-and long- term effectiveness, would provide permanence, is implementable and cost effective. The Preferred Alternative can change in response to public comment or new information.

The proposed Set 2 RGs are protective of potential future residents according to 40CFR300.430(e)(2)(A)(2-5) and, based on the risk assessment discussed in Section 8, the Set 2RGs are also protective of residential users.

11. COMMUNITY PARTICIPATION

A public comment period, which extends from May 3, 2013 to June 1, 2013, has been established. The purpose of this comment period is to offer the public and other stakeholders the opportunity to review and comment on the Proposed Plan and other alternatives. A final decision will not be made until all comments received during the public comment period have been evaluated. Comments received will be included in the Administrative Record File and summarized in the Responsiveness-Summary section of the DD, the document which formalizes the selection of the remedy. The dates for the public comment period; the date, location, and time of the public meeting; and the locations of the Administrative Record Files are provided on the front page of this Proposed Plan.

To send written comments or to obtain further information, please contact the following representatives:

Dr. David Brancato, Technical Manager
U.S. Army Corps of Engineers, Louisville District
600 Dr. Martin Luther King Jr. Place
Attn: CELRL-ED-E Room 351
Louisville, Kentucky 40202

Mr. Christopher Hill
Bureau of Land
Illinois Environmental Protection Agency
1021 North Grand Avenue East
PO Box 19276
Springfield, Illinois 62794-9273

CERCLA requires that USACE consider the views and comments of the public before making a decision on the remedial action. Based on public comments or new information, USACE may decide to modify the preferred alternative or select another remedial alternative. Therefore, it is important to comment on the Proposed Plan and all alternatives proposed. USACE will respond to comments received in the Responsiveness Summary, a document that will be part of the DD, and will be placed in the Information Repository at the Farmington Area Public District Library. The Responsiveness Summary will be available to the public for review when the decision on the selected remedy is made and set forth in the DD.magilln

The public includes residents and organizations on the site and in nearby communities, state agencies, and other interested parties and groups. Holding a public meeting is one way for interested parties to share their views and comments about the Proposed Plan. All interested individuals are encouraged to attend the public meeting where they will have the opportunity to present spoken and written comments on the Proposed Plan. USACE and Illinois EPA representatives will be present. A court reporter will be present to record the meeting. The meeting will be held on May 20, 2013 starting at 6:00 p.m. CST.

An interested party may also submit comments in writing, either by letter or using the attached blank pre-addressed comment form included at the end of this Proposed Plan. Written comments should be sent to USACE, in care of Dr. David Brancato at the address listed. Comments must be postmarked no later than June 1, 2013.

ATTACHMENT A GLOSSARY OF TERMS

Administrative Record File – A file maintained by the lead agency containing all the information used to make its decision on the selection of a response action under CERCLA. A copy of this file is to be available for public review at or near the site.

Applicable or relevant and appropriate requirement (ARAR) – The Federal and State environmental laws that, along with risk to human health and the environment, determine how much contamination must be remediated. These requirements may vary among sites and alternatives.

Baseline Human Health Risk Assessment (BLRA) – The NCP calls for a site-specific baseline risk assessment to be conducted as part of the RI. The BLRA characterizes the current and potential threats to human health and the environment that may be posed by contaminants at the site. The primary purpose of the BLRA is to provide risk managers with an understanding of the actual and potential risks posed by the site and any uncertainties associated with the assessment.

Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) as amended – Also known as the “Superfund Program”. A Federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). This law provides for the investigation and remediation of hazardous substances released into the environment.

Conceptual site model – The set of descriptions concerning 1) how the different chemicals at the site in question might affect ecological components (primarily the plants and animals, but also the interactions among plants and animals); 2) ecosystems or ecosystem components potentially at risk; 3) the relationships between measurement and assessment endpoints, and 4) how plants and animals might become exposed to harmful chemicals.

Decision Document (DD) – The term adopted by the DoD for the documentation of remedial action decisions at non-National Priorities List FUDS Properties.

Ecological Risk Assessment (ERA) – An ERA evaluates the potential adverse effects that human activities have on the living organisms that make up ecosystems. The risk assessment process provides a way to develop, organize and present scientific information so that it is relevant to environmental decisions. When conducted for a particular place such as a watershed, the ERA process can be used to identify vulnerable and valued resources, prioritize data collection activity, and link human activities to their potential effects. ERA results provide a basis for comparing different management options, enabling decision-makers and the public to make better informed decisions about the management of ecological resources.

Feasibility Study (FS) – A comprehensive evaluation of potential alternatives for remediating contamination. The FS identifies general response actions, screens potentially applicable technologies and process options, assembles alternatives, and evaluates alternatives in detail.

Formerly Used Defense Site (FUDS) – Defined as a facility or site (property) that was under the jurisdiction of the Secretary of Defense and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances. By DoD Environmental Restoration Program policy, the FUDS program is limited to those real properties that were transferred from DoD control prior to 17 October 1986. FUDS properties can be located within the 50 States, District of Columbia, Territories, Commonwealths, and possessions of the United States.

Groundwater – Underground water that fill pores in soils or openings in rocks to the point of saturation. Groundwater is often used as a source of drinking water via municipal or domestic wells.

Hazard Index (HI) – A numerical presentation of the health hazard, unrelated to cancer, posed by contaminants through one or more exposure pathways. An HI value of 1 is similar in concept to a ‘threshold level’ for non-cancer toxicity. An HI value less than one indicates the lack of any non-cancer hazard, while a value greater than 1 indicates the potential for a health hazard.

Incremental lifetime cancer risk (ILCR) – Incremental probability of an individual developing cancer as a result of potential carcinogen exposure averaged over a lifetime.

National Oil and Hazardous Substance Pollution Contingency Plan [also known as the National Contingency Plan] (NCP) – Revised in 1990, the NCP provides the regulatory framework for responses under CERCLA.

Potentially Responsible Party (PRP) – Any individual or company (such as owners, operators, transporters, or generators of hazardous waste) that is potentially responsible for, or contributing to, the contamination problems at a CERCLA site. Whenever possible, EPA requires PRPs, through administrative or legal actions, to clean up hazardous waste sites they have contaminated.

Proposed Plan – In the first step of the remedy selection process, the lead agency identifies the alternative that best meets the requirements in CERCLA 300.430(f)(1) and presents that alternative to the public in a Proposed Plan. The purpose of the Proposed Plan is to supplement the RI/FS and provide the public with a reasonable opportunity to comment on the preferred alternative for remedial action at a site.

Remedial Action Objective (RAO) – Site-specific goals for protecting human health and the environment. RAOs are developed by evaluating ARARs that are protective of human health and the environment and the results of the RI, including human and ecological risk assessments.

Remedial Investigation (RI) – The study which determines how much and what kind of contamination exists at a site. A RI generally involves collecting and analyzing samples of groundwater, surface water, soil, sediment, and air.

Screening Level Ecological Risk Assessment (SLERA) – A simplified risk assessment that can be conducted with limited data; where site-specific information is lacking, assumed values should consistently be biased in the direction of overestimating risk. The need for conservatism is to provide a defensible conclusion that negligible ecological risk exists or that certain contaminants and exposure pathways can be eliminated from consideration.

Tiered Approach to Corrective Action Objectives (TACO) – The Illinois EPA’s method for developing remediation objectives for contaminated soil and groundwater. These remediation objectives protect human health and take site conditions and land use into account. Remediation objectives generated by TACO are risk-based and site-specific.

ATTACHMENT B
LIST OF ACRONYMS AND ABBREVIATIONS

ARARs	applicable or relevant and appropriate requirements
BLRA	Baseline Human Health Risk Assessment
BMP	Best Management Practice
CELRL	U.S. Army Corps of Engineers, Louisville District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COPC	chemical of potential concern
DD	Decision Document
DoD	Department of Defense
ERA	Ecological Risk Assessment
EU	Exposure Unit
FS	Feasibility Study
FUDS	Formerly Used Defense Site
GSR	Green and Sustainable Remediation Practices
HCAFS	Hanna City Air Force Station
HI	Hazard Index
HQ	Hazard Quotient
IAC	Illinois Administrative Code
ILCR	incremental lifetime cancer risk
Illinois EPA	Illinois Environmental Protection Agency
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
O&M	operation and maintenance
PAH	polycyclic aromatic hydrocarbon
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RI	Remedial Investigation
RG	Remediation Goal
SI	Site Inspection
SLERA	Screening Level Ecological Risk Assessment
SSI	Supplemental Site Investigation
TACO	Tiered Approach to Corrective Action Objectives
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

ATTACHMENT C
REFERENCES

GEO (GEO Consultants, LLC) 2010. GEO/09-195. Remedial Investigation, Former Hanna City Air Force Station, Hanna City, Peoria County, Illinois. March.

GEO (GEO Consultants, LLC). 2012. GEO/09-222. Feasibility Study. Former Hanna City Air Force Station. Hanna City, Peoria County, Illinois. September.