

## **APPENDIX D – ENVIRONMENTAL OVERVIEW**

**ENVIRONMENTAL OVERVIEW  
KY 90 SCOPING STUDY  
KYTC ITEM #3-8819.00**

Barren County: From Sanders Street in Cave  
City (MP 0.160) to US 68 (Veterans Outer Loop)  
in Glasgow (MP 8.574)



Prepared for:  
Kentucky Transportation Cabinet  
Central Office  
Highway District 3

Prepared by:  
Stantec Consulting Services Inc.

March 28, 2016



## Executive Summary

This Environmental Overview has been prepared for the KY 90 Scoping Study in Barren County, Kentucky (KYTC Item #3-8819.00). The purpose of the Scoping Study is to identify and evaluate improvements to the KY 90 corridor between Cave City and US 68 (the Veterans Outer Loop) in Glasgow. The purpose of this Environmental Overview is to identify environmental resources of significance, potential jurisdictional features, and other environmental areas of concern that should be considered during project development. Natural and human environment resources within the study area were identified from secondary sources, as well as a pedestrian survey conducted on January 14, 2016. Based on this information, the key environmental features within the study area include:

Surface Streams: Beaver Creek and its associated 100-year floodplain crosses the study area near the south end of the study area. Additional 100-year floodplain areas associated with larger sinkholes/depressions are also present in the center and south portions of the study area.

Wetlands: Twelve (12) NWI wetlands are mapped in the study area, with extensive wetland complexes mapped adjacent to the study area south of Pace Quarry Road.

Threatened and Endangered Species: Seven (7) federal-listed endangered and one threatened species have the potential to occur in the study area, with three federal-endangered species recorded within 5-miles of the study area. Potential summer roost and foraging habitat for the federal endangered Indiana bat (*Myotis sodalis*) and Gray myotis (*Myotis grisescens*) and the federal threatened northern long-eared bat (*Myotis septentrionalis*) occur in the narrow riparian corridor along Beaver Creek. Beaver Creek may provide suitable habitat for Kentucky Creekshell (*Villosa ortmanni*, federal-species of management concern), rabbitsfoot (*Quadrula cylindrica cylindrica*, federal-threatened) and snuffbox (*Epioblasma triquetra*, federal-endangered) mussels, three small to medium creek species. Suitable habitat for the Kentucky cave shrimp (*Palaemonias ganteri*; AKA Mammoth Cave Shrimp, federal-endangered) is known to be present within 1-mile, as several cave entrances are located in the study area vicinity.

Groundwater: The central portion of the study area contains extensive sub-surface drainage associated with the Turnhole Spring karst basin, with underground flow to the northwest. This basin is listed as a Kentucky Division of Water (KDOW) Outstanding State Resource Water (OSRW) and Cold Water Habitat (CAH) designated use, and is known to harbor the federal-endangered Kentucky cave shrimp outside of the study area.

Karst: 116 sinkholes are mapped underlying the study area, accounting for approximately 14% of the area, being most prominent in the north half. Eight cave entrances are known within 1-mile of the study area, 4 of which are within 1,500-feet.

Farmland: Over 90% of the soils in the study area and vicinity are identified as Prime Farmland and Farmland of Statewide Importance. Outside of existing right-of-way, extensive portions of the study area are currently utilized as farmland.

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Hazardous Materials Concerns: 26 potential hazardous materials sites are in or immediately adjacent to the study area, including 5 UST sites, 1 RCRA site, 5 automotive sales/service sites, and several additional sites of potential concern (including 1 SHWS record, 5 SPILLS sites and 1 electrical substation). Sites of potential concern are concentrated in Cave City and the KY 90/US 68 intersection at the south end of the study area.

Environmental Justice (EJ): Based on a review of available census data, the study area and vicinity has a minority resident percentage greater than the county but less than state levels. The percentage of low income population in the study area is less than both county and state levels.

Cultural and Historic Resources: No NRHP-listed cultural-historic resources were identified in the study area or vicinity. Four previously surveyed cultural-historic resources, NRHP status undetermined, are located in the study area, with an additional seven previously surveyed cultural-historic resources in the vicinity. Additional resources are likely present in the study area and vicinity based on historical and land use context of the study area, and additional investigations may be required. No NRHP-listed archaeological sites are located within the study area. Previous surveys have identified six recorded archaeological sites within and/or adjacent to the study area. Very little of the study area has been surveyed for archeological resources, but based on a review of historical maps it is likely that work proposed outside of existing right-of-way will require archaeological surveys and may encounter additional resources.

Community Resources: Community resources and sensitive noise receptors in the study area include several single and multi-family residential housing developments and 2 churches. One cemetery, a small family plot dating to the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, is present in the study area.

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## Environmental Overview

Stantec Consulting Services, Inc. has prepared this Environmental Overview as part of the KY 90 Scoping Study (KYTC Item #3-8819.00) being conducted for the Kentucky Transportation Cabinet (KYTC). This overview identifies known natural and human features which occur within the study area that should be considered during project development. The KY 90 alignment under review begins at the intersection with Sanders Street in Cave City and proceeds to the south to the intersection with US 68 (the Veterans Outer Loop) in Glasgow, Kentucky (see **Figure 1**), a total length of 8.4-miles. The study area extends as a 500-foot wide corridor centered on the existing KY 90 alignment from begin point to end point, for a total area of 516 acres (0.8 square mile), running between Cave City and Glasgow in Barren County (see **Figure 2**).

**Table 1** below provides a summary of the features that were identified within the study area. Natural environment features within the study area are identified on **Figures 3.1, 3.2 and 3.3**, and human environment features are identified on **Figures 4.1 and 4.2**. The information listed in Table 1 and shown on the attached mapping was obtained from secondary sources and a pedestrian survey conducted on January 14, 2016. A photo inventory of the study area also is attached (**Attachment 8**), which highlights environmental features throughout the study area and shows representative views of land uses in the study area. This information provides an overview of resources of significance within the study area as well as other environmental issues of potential concern. More detailed environmental studies may be required as the project is further developed in accordance with the National Environmental Policy Act (NEPA).

Table 1: Environmental Resources/Features in the KY 90 Study Area Barren County, KY		
Environmental Category	Resource/Feature	Source/Information
USGS Streams	<p>Beaver Creek and one intermittent stream (unnamed tributary to Turnhole Spring) are the only USGS streams located within the study area.</p> <p>Beaver Creek is not classified as Special Use Waters within the study area as defined by the KDOW. It is designated as fully supporting WAH (warmwater aquatic habitat) and DWS (drinking water supply).</p> <p>Watersheds in the study area include Duff Branch-Green River (HUC-12: 051100010804), Park City-Barren River (HUC-12: 051100020702) and Little Beaver Creek-Beaver Creek-Barren River (HUC-12: 051100020306), from north to south, respectively.</p> <p>The study area lies within two Source Water Assessment and Protection Program (SWAPP) areas; the north portion associated with the Green River Valley Water District (Duff Branch watershed), and the south portion associated with the Glasgow Water Company (Little Beaver Creek-Beaver Creek watershed).</p>	<p>Source: USGS 24K NHD dataset (2004a), USGS 12-Digit HUC (2004b), ESRI USGS map service layer, KDOW 305b and 303(d) tables (2012a), KDOW (2016a and 2016b), KDOW SWAPP (2013)</p>

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Table 1: Environmental Resources/Features in the KY 90 Study Area Barren County, KY		
Environmental Category	Resource/Feature	Source/Information
Other Streams	No additional surface streams are mapped or evident in the study area due to the karst plain features of the area, including sinkholes, sinking creeks and caverns.	Source: USGS topographic maps, KDOW (2016b), Carey and Stickney (2002), field survey
Wetlands	<p>Twelve (12) NWI wetlands are mapped in the study area including 2 emergent, 1 forested and 9 ponds. Extensive wetland complexes are mapped adjacent to the study area south of Pace Quarry Road. Additional wetland areas were observed in select low-lying areas of the study area.</p> <p>Hydric soils occur across approximately 5% of the study area, concentrated south of Pace Quarry Road and around the US 68 intersection. This soil type indicates the potential for additional non-NWI mapped wetlands to be present in the study area.</p>	Source: KEPPC 24K NWI map dataset (2002), USDA SSURGO KY646 (2014), field survey
Ponds	Nine (9) ponds are mapped (NWI) within the study area. Several appear to be intermittent, occurring in sinkhole depressions and do not appear to hold water permanently.	Source: KEPPC 24K NWI map dataset (2002), ESRI Aerial map service layer, aerial photo review (USGS, 2014), KGS (2003)
USFWS Species List	<p>Indiana bat (endangered), gray bat (endangered), and northern long-eared bat (threatened) are known to occur in Barren County. Three endangered mussels (fanshell, sheepsnose, and snuffbox) and one threatened mussel (rabbitsfoot) may or could potentially occur in the study area. Kentucky cave shrimp (endangered) is known to occur in Barren County and could potentially occur in the study area.</p> <p>The entire study area lies within a Known Summer 1 + Swarming 1 habitat designated area for Indiana bat. The north portion of the study area (north of Pace Quarry Road) lies within a Known Summer 1 + Swarming 2 habitat designated area for Northern long-eared bat. These designated habitat types refer to mitigation measures required for impacts to potential habitat. The nearest sensitive area for either species is located approximately 3.5 miles west of the north project terminus. Potential summer roost and foraging habitat for Indiana bat and northern long-eared bat (woodlots and riparian woodlands) is present mostly in scattered woodlots south of Cave City. More extensive woodlots are present in the vicinity of Harry King Road and near Beaver Creek at the south end of the study area.</p> <p>Of the four federally-listed mussel species included in the IPaC report for the study area, only snuffbox and rabbitsfoot have the potential to occur as Beaver Creek may provide suitable habitat for these species that prefer small to medium sized creeks.</p> <p>Habitat for gray bat and Kentucky cave shrimp may be present as several cave entrances are known in the study area vicinity.</p>	Source: USFWS IPaC Trust Resource Report (2016), USFWS Kentucky Ecological Services Field Office, Indiana bat and northern long-eared bat habitat areas map (2015), KYTC Environmental Overview web map (2016), KYTC Programmatic Biological Assessment (2012), ESRI Aerial map service layer, NatureServe (2016), KSS (2016)

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Table 1: Environmental Resources/Features in the KY 90 Study Area Barren County, KY		
Environmental Category	Resource/Feature	Source/Information
KDFWR Species List	<p>KDFWR lists 50 additional State Threatened, Endangered, and Special Concern Species (beyond the 9 species listed by USFWS, above) as occurring (either recently or historically) in Barren County. These include:</p> <ul style="list-style-type: none"> <li>9 state endangered species (1 fish, 1 amphibian, 6 birds, 1 reptile)</li> <li>20 state threatened species (10 birds, 1 mussel, 6 invertebrates, 1 gastropod, 1 reptile, 1 mammal)</li> <li>19 state special concern species (5 fish, 6 birds, 1 reptile, 3 crustaceans, 1 gastropod, 1 mussel, 2 mammals)</li> <li>2 historical records of state listed Upland Sandpiper and American Bittern</li> </ul>	Source: KDFWR - Species List for Barren County (2016)
KSNPC Species Database	<p>KSNPC provided 10 records for 8 federal or state endangered, threatened, or special concern listed species within 1-mile of the study area. These include:</p> <ul style="list-style-type: none"> <li>3 plants (1 each state-endangered, -threatened and -species of concern);</li> <li>1 mussel (federal-species of management concern);</li> <li>1 aquatic snail (state-species of concern);</li> <li>1 fish (federal-species of management concern); and</li> <li>2 crustaceans (1 federal-endangered, 1 federal-species of management concern).</li> </ul> <p>Occurrence records for the snail, fish and crustaceans all related to cave-dwelling species. Additional federal listed species known within 5-miles include Indiana bat and Gray Myotis (gray bat), both listed as federal-endangered.</p> <p>The KSNPC data response specifically highlights the project lies within the Green River Biosphere Reserve, associated with the Green River and the Mammoth Cave Systems, with emphasis upon prevention of erosion and sedimentation. Several cave-obligate organisms are known within 5-miles of the project. Due to the occurrence of numerous records of six bat species in the study area vicinity (capture and hibernacula), KSNPC mentions any project should include a thorough bat survey to avoid impacts to bats. American chestnut (state-threatened) is also specifically identified as known to occur within 0.5-mile of the study area.</p>	Source: KSNPC Natural Heritage Database response (February 11, 2016)

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Table 1: Environmental Resources/Features in the KY 90 Study Area Barren County, KY		
Environmental Category	Resource/Feature	Source/Information
Groundwater	<p>No water wells or springs are mapped within the study area, and no wellhead protection areas occur in the study area.</p> <p>The central portion of the study area contains extensive sub-surface drainage associated with the Turnhole Spring karst basin, containing subsurface flow to the northwest. This basin is listed as a KDOW Outstanding State Resource Water (OSRW) and Cold Water Habitat (CAH) designated use, and is known to harbor the federal-endangered Kentucky cave shrimp outside of the study area.</p>	Source: KGS Water Wells and Springs GIS map, data repository and dataset layer (2015a), KDOW Exceptional Use Waterbodies (2008), KDOW Wellhead Protection Areas data download (2012b)
Karst	<p>The project area is underlain by bedrock with moderate to high potential for karst. 116 sinkholes are mapped underlying the study area, accounting for approximately 14% of the area. Sinkholes are most prominent in the northern half of the study area, north of Lee Fendell Road.</p> <p>Eight cave entrances are known within 1-mile of the study area, 4 of which are within 1,500-feet. Due to the sensitive nature of this resource, location information is not included in this report.</p> <p>KYTC has a karst policy for use of specific drainage design (grass swales and detention basins) in roadway improvement projects.</p>	Source: Karst Occurrence in Kentucky map (Paylor and Currens 2002), KGS (2003), KSS Data Request response (January 27, 2016), KYTC-DEA (2016)
Floodplain	FEMA 100-Year floodplain occurs along Beaver Creek and within two sinkhole areas in the central part of the study area, one occurring around the Lee Fendell Road intersection and the other south of Pace Quarry Road.	Source: FEMA National Flood Hazard Layers for Barren County, Kentucky (2013)
Floodway	No FEMA designated floodway occurs in the study area or vicinity.	Source: FEMA National Flood Hazard Layers for Barren County, Kentucky (2013)
Farmlands	Over 90% of the soils in the study area and vicinity are identified as Prime Farmland (43%), Farmland of Statewide Importance (37%), and Prime farmland if drained or protected from flooding (11%). Extensive portions of the study area are currently utilized as farmland including row crop and pasture. Multiple active farms were observed in and around the study area.	Source: USDA SSURGO KY646 (2014), field survey



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Table 1: Environmental Resources/Features in the KY 90 Study Area Barren County, KY		
Environmental Category	Resource/Feature	Source/Information
Hazardous Materials	<p>Database records review summary: 21 sites of potential concern (with a total of 32 records) occur within the study area, including 1 state hazardous waste (SHWS) record, 3 AIRS air emission records (manufacturing sites), 6 SPILLS records (at 5 locations), 1 RCRA record, 6 UST sites (3 active), and 1 EDR historical auto station record. An additional 20 records are mapped within 0.25 mile of the study area including 5 RCRA records.</p> <p>Field survey indicated 5 additional potential hazardous materials concern sites including 4 automotive sales and service businesses and one electrical substation.</p> <p>Summary: Database records and field survey indicate 26 potential hazardous materials sites are in or immediately adjacent to the study area, including 5 UST sites, 1 RCRA site, 5 automotive sales/service sites, and several additional sites of potential concern (including 1 SHWS record, 5 SPILLS sites and 1 electrical substation). Sites of potential concern are concentrated in Cave City and the KY 90/US 68 intersection at the south end of the study area.</p>	Source: Environmental Data Resources (EDR 2016), USEPA Envirofacts (2016), KDWM (2016), aerial photo review (USGS 2014), ESRI USGS map service layer, field survey
Oil and Gas Wells	Two oil/gas wells are mapped within the study area, both indicated as being dry and abandoned. An additional 18 wells are located within 0.25-mile of the study area, 7 producing oil or gas and all located in the south half of the study area.	Source: KGS (2015b)
Section 4(f)	No Section 4(f) resources were identified in the study area through secondary source information or during field survey. No public use recreational facilities are present in the study area.	Source: ESRI USA Parks dataset (2015), KGN LocalParks dataset (2007), field survey
Section 6(f)	Based on current Land and Water Conservation Fund (LWCF) records, there are no Section 6(f) resources in the study area.	Source: NPS LWCF list (2015), ESRI USA Parks dataset (2015), ESRI Aerial map service layer, field survey
Air Quality	The study area is not located in a Non-attainment Area for 8-hour ozone (2008 standard) or a Maintenance area for PM 2.5 (1997 standard) for the transportation-related criteria pollutants for which the EPA has established National Ambient Air Quality Standards (NAAQS). Two USEPA air emissions facilities are located within the study area, one each in Cave City and Glasgow.	Source: KYTC (2013), USEPA Green Book (2015), USEPA Envirofacts (2016)

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Table 1: Environmental Resources/Features in the KY 90 Study Area Barren County, KY		
Environmental Category	Resource/Feature	Source/Information
Noise	<p>Noise sensitive land use areas are few and scattered through the study area (Activity Category “B” and “C” land uses – consisting of several single and multi-family residences and 2 houses of worship).</p> <p>The study area is primarily rural and dominated by agricultural land uses, with commercial land uses concentrated at the north and south endpoints.</p>	Source: KYTC Noise Policy (2011), field survey
Environmental Justice	<p>The project area includes portions of Census Tracts 9501, 9502, 9503, and 9505 in Barren County. Based on the most recent U.S. Census American Community Survey (ACS) data available (2008-2014), the percentage of minority population in the project area is 10.4%, which is slightly higher than the percentage of minority population in Barren County (9.2%) but less than the percentage of minority population in the Commonwealth of Kentucky (14.6%). In addition, the percentage of low income population in the project area is 18.4%, which is lower than the percentages of low income population for both Barren County (19.5%) and Kentucky (19.1%). As both minority and low income populations occur in the project area, environmental justice is a potential issue in the study area.</p>	Source: US Census Bureau, ACS 5-year data 2010-2014, KYTC Environmental Justice Analysis (2014)
Cultural - Archaeology	<p>Based on a review of National Register of Historic Places (NRHP) and Office of State Archaeology (OSA) records, no archaeological sites listed on the NRHP are located in the study area. However, four previous archaeological surveys conducted in or adjacent to the study area have recorded six archaeological sites within 500-feet of the study area. Of the six sites, two were not evaluated for NRHP listing, and four were considered to be ineligible for NRHP.</p> <p>Historical map review indicated a number of structures located in or directly adjacent to the study area may be associated with unrecorded historic archaeological sites. The integrity of such sites may have been compromised by past roadway construction activities.</p> <p>Less than 2% of the study area has been previously surveyed for archaeological resources. With the known presence of several archaeological sites in close proximity, it is likely that work proposed outside of existing right-of-way will require archaeological surveys and may encounter additional resources.</p>	Source: <i>An Archaeological Overview for the Proposed KY 90 Improvements Project in Barren County, Kentucky (Item No. 3-8819.00)</i> , prepared by CRA (2016a)

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Table 1: Environmental Resources/Features in the KY 90 Study Area Barren County, KY		
Environmental Category	Resource/Feature	Source/Information
Cultural - Historic	<p>Based on a review of Kentucky Heritage Council (KHC) records the following resources were identified in the study area vicinity:</p> <ul style="list-style-type: none"> <li>4 sites within the study area, NRHP status undetermined</li> <li>7 sites adjacent to the study area, NRHP status undetermined</li> <li>No NRHP listed resources</li> </ul> <p>Due to the presence of previously surveyed historic resources in and adjacent to the study area and the significant number of rural agricultural properties in the study area vicinity, additional cultural historic properties with large potential boundaries are likely to be present. Existing historic properties should be avoided and additional cultural historic investigations are recommended for any proposed project activities.</p>	Source: <i>A Cultural Historic Records Review for the KY 90 Scoping Study, Barren County, Kentucky</i> , prepared by CRA (2016b)
Houses of Worship	Two houses of worship (church, mosque, synagogue, etc.) were identified within the study area: Cave City Tabernacle and Caveland Baptist Church, both located in Cave City.	Source: ESRI USA topo map service layer, Google Maps, KDOW Watershed Viewer (2016b), field survey
Schools	There are no primary or secondary schools located within the study area.	Source: ESRI USA topo map service layer, ESRI Aerial map service layer, Google Maps, KDOW Watershed Viewer (2016b), field survey
Cemeteries	One cemetery is located within the study area. It is a small family cemetery (Gardner/Harlow) located in an agricultural field in the center of the study area. Grave markers listed years from 1885 to 1934.	Source: ESRI USA topo map service layer, ESRI Aerial map service layer, Google Maps, KDOW Watershed Viewer (2016b), field survey
Public Services	<p>Public service and utility facilities located within the study area include:</p> <ul style="list-style-type: none"> <li>CSX Railroad Underpass just south of the north endpoint</li> <li>Electric substation, intersection of KY 90 and Estes Road, Cave City</li> <li>2 pipeline crossings marked at Dripping Springs Road (a total of 5 are indicated on USGS mapping), south portion of study area</li> <li>Glasgow Municipal Airport in Glasgow</li> </ul>	Source: ESRI USA topo map service layer, ESRI Aerial map service layer, Google Maps, KDOW Watershed Viewer (2016b), field survey
Residences and Businesses	<p>Residential land use in the study area includes two apartment complexes in Cave City, scattered rural residential homes along KY 90, a few suburban residential developments on side roads in the center of the study area, and one mobile home park at Prewitts Knob Road.</p> <p>Commercial businesses are concentrated in Cave City, with two industrial facilities present in Glasgow. Individual business structures are scattered along the KY 90 corridor.</p>	Source: ESRI Aerial map service layer, field survey

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## ENVIRONMENTAL OVERVIEW

### KY 90 SCOPING STUDY

#### KYTC ITEM #3-8819.00

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## ENVIRONMENTAL OVERVIEW

### KY 90 SCOPING STUDY

#### KYTC ITEM #3-8819.00

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## **FIGURES**

1. Study Area Map
2. Project Location Map
- 3.1 Environmental Footprint: Natural Environment – North Section
- 3.2 Environmental Footprint: Natural Environment – South Section
- 3.3 Environmental Footprint: Natural Environment – Farmland  
Classification of Soils
- 4.1 Environmental Footprint: Human Environment – North Section
- 4.2 Environmental Footprint: Human Environment – South Section



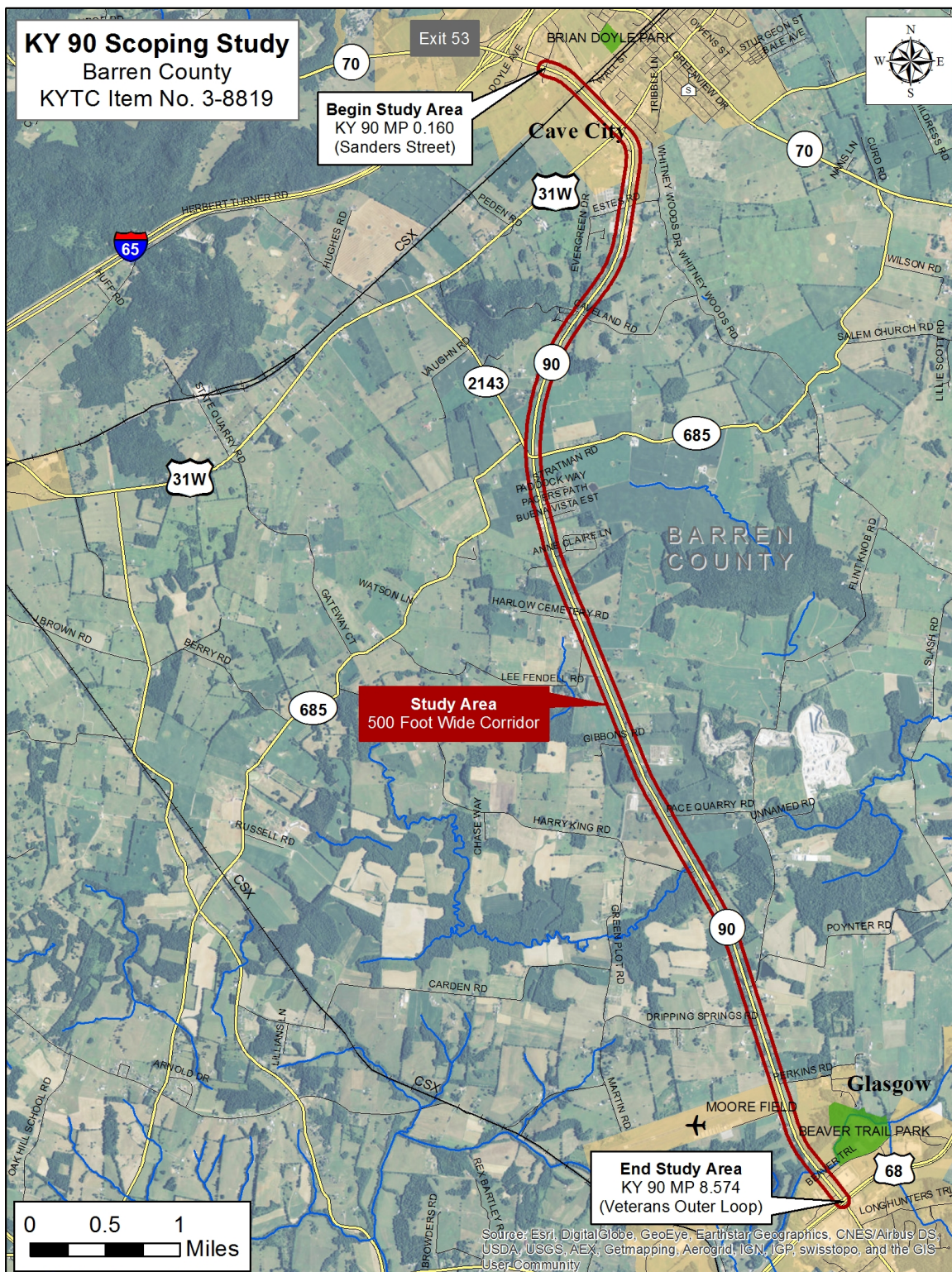
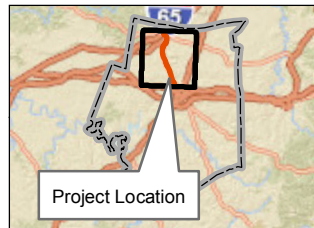
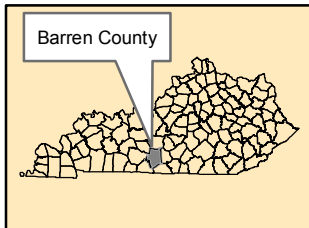
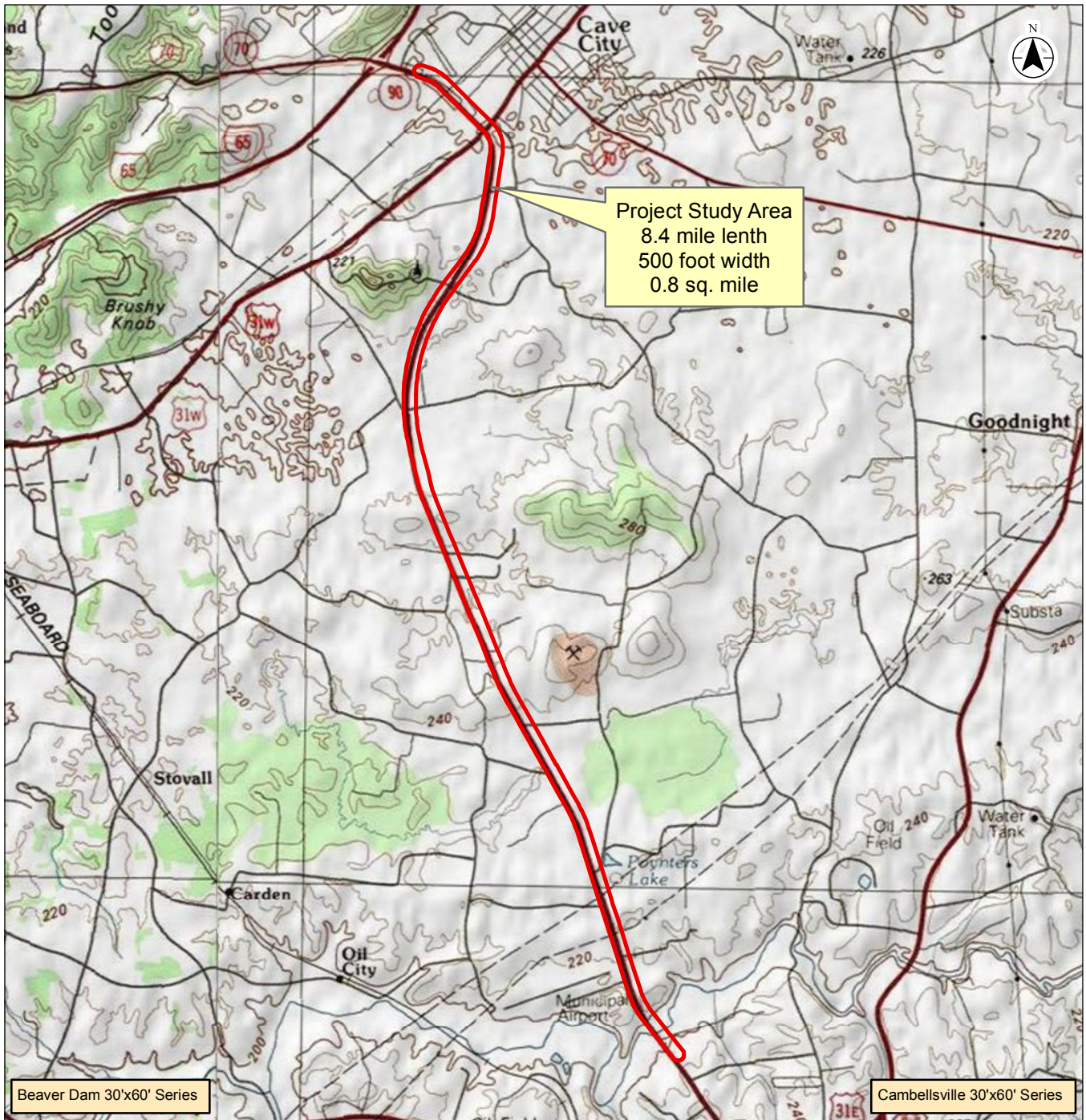


Figure 1: Study Area for the KY 90 Scoping Study





Project Location  
KY 90  
Barren County, Kentucky

178554021  
Prepared by BL on 2015-10-15

Client/Project  
KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00

Figure No.

**2**

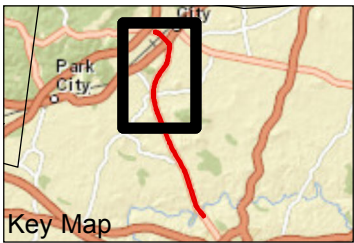
Title

**Project Location Map**

**Notes**

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Base features produced from project design elements.
3. Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community  
Copyright:© 2013 National Geographic Society, i-cubed





- Legend**
- Study Area
  - Photograph Number, Location and Direction
  - Streams (NHD)
  - 100-Year Flood Zone (FEMA)
  - Sinkhole (KGS)
  - Hydric Soils (USDA)

- Parks
- NWI Wetland (USFWS)
- City Boundary
- Water Well (KDOW)**
  - Domestic Use
  - Other

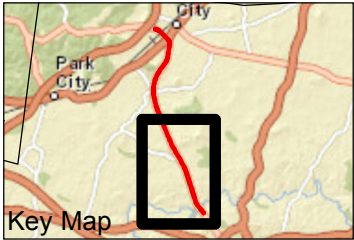
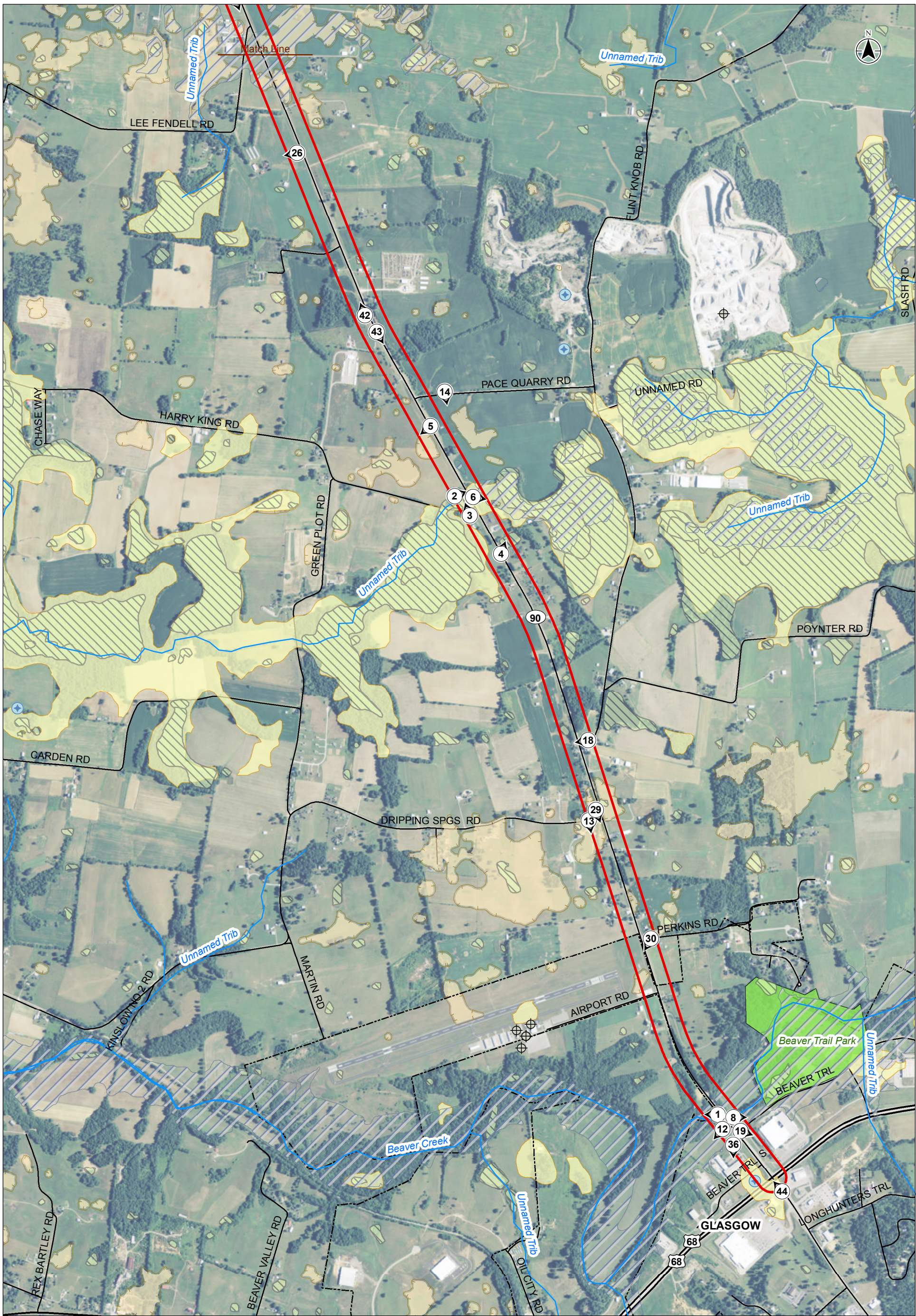
**Notes**

- Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
- Base features: see Sources and References.
- Base Imagery: USGS-NAIP, 2014.



Project Location  
KY 90  
Barren County, Kentucky  
Client/Project  
KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00  
Figure No.  
**3.1**  
Title  
**Environmental Footprint  
Natural Environment**





- Legend**
- Study Area
  - Photograph Number, Location and Direction
  - Streams (NHD)
  - 100-Year Flood Zone (FEMA)
  - Sinkhole (KGS)
  - Hydric Soils (USDA)
  - Parks
  - NWI Wetland (USFWS)
  - City Boundary
  - Water Well (KDOW)**
    - Domestic Use
    - Other

**Notes**

- Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
- Base features: see Sources and References.
- Base Imagery: USGS-NAIP, 2014.



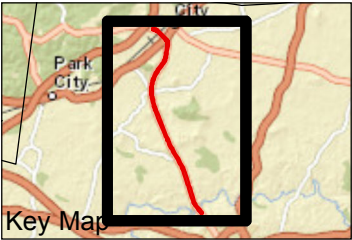
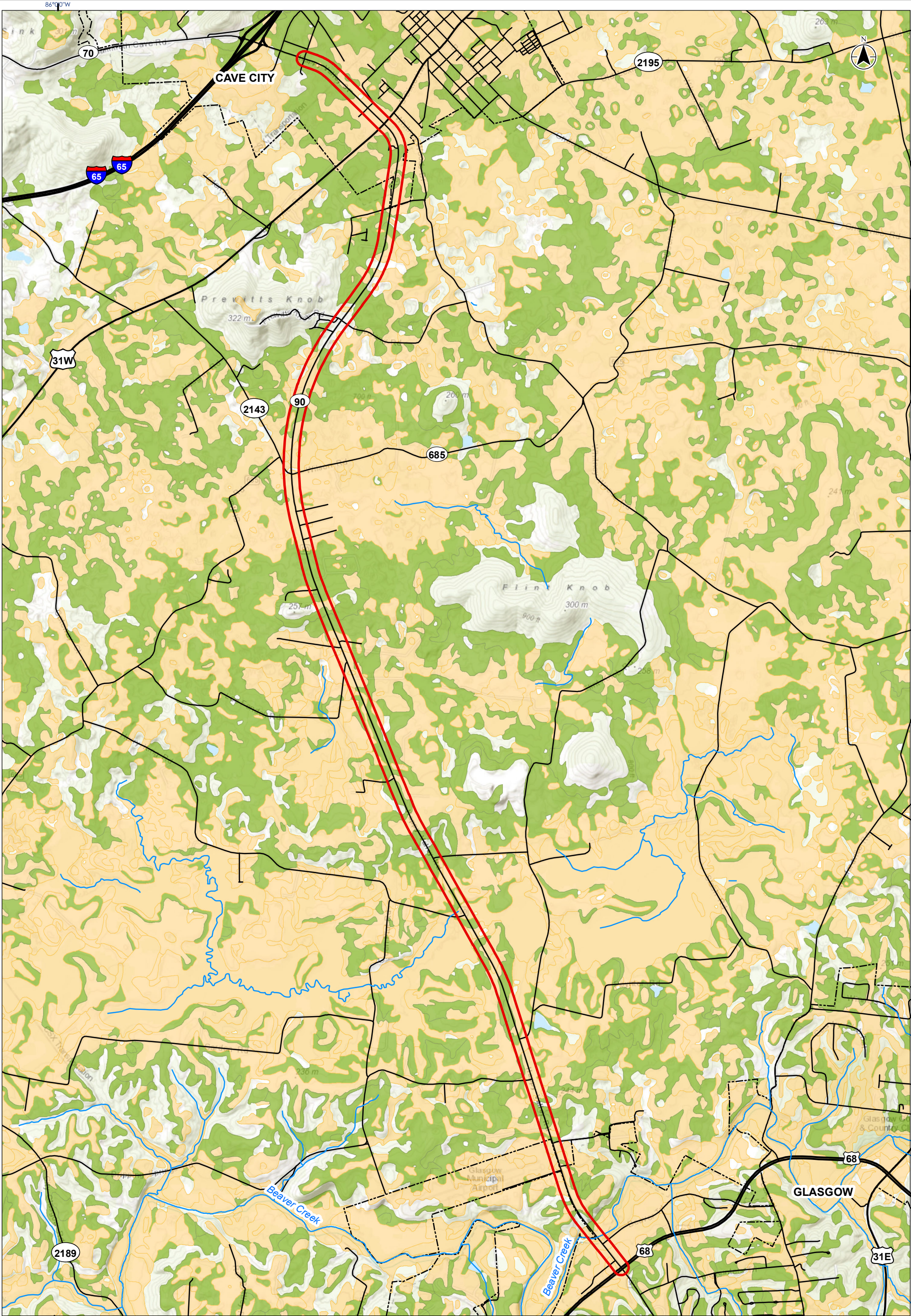
Project Location  
KY 90  
Barren County, Kentucky  
Prepared by BL on 2016-01-15

Client/Project  
KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00

Figure No.  
**3.2**

Title  
**Environmental Footprint  
Natural Environment**





- Legend**
- Study Area
  - Streams (NHD)
  - City Boundary
  - Farmland Classification (USDA-NRCS)**
  - Prime Farmland
  - Statewide Importance

0 1,900 3,800 Feet  
1:36,000 (At original document size of 11x17)

- Notes**
- Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
  - Base features: see Sources and References.
  - Base Imagery: Service Layer Credits: ESRI Map Services.



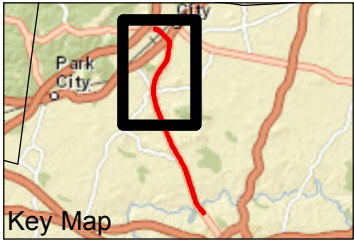
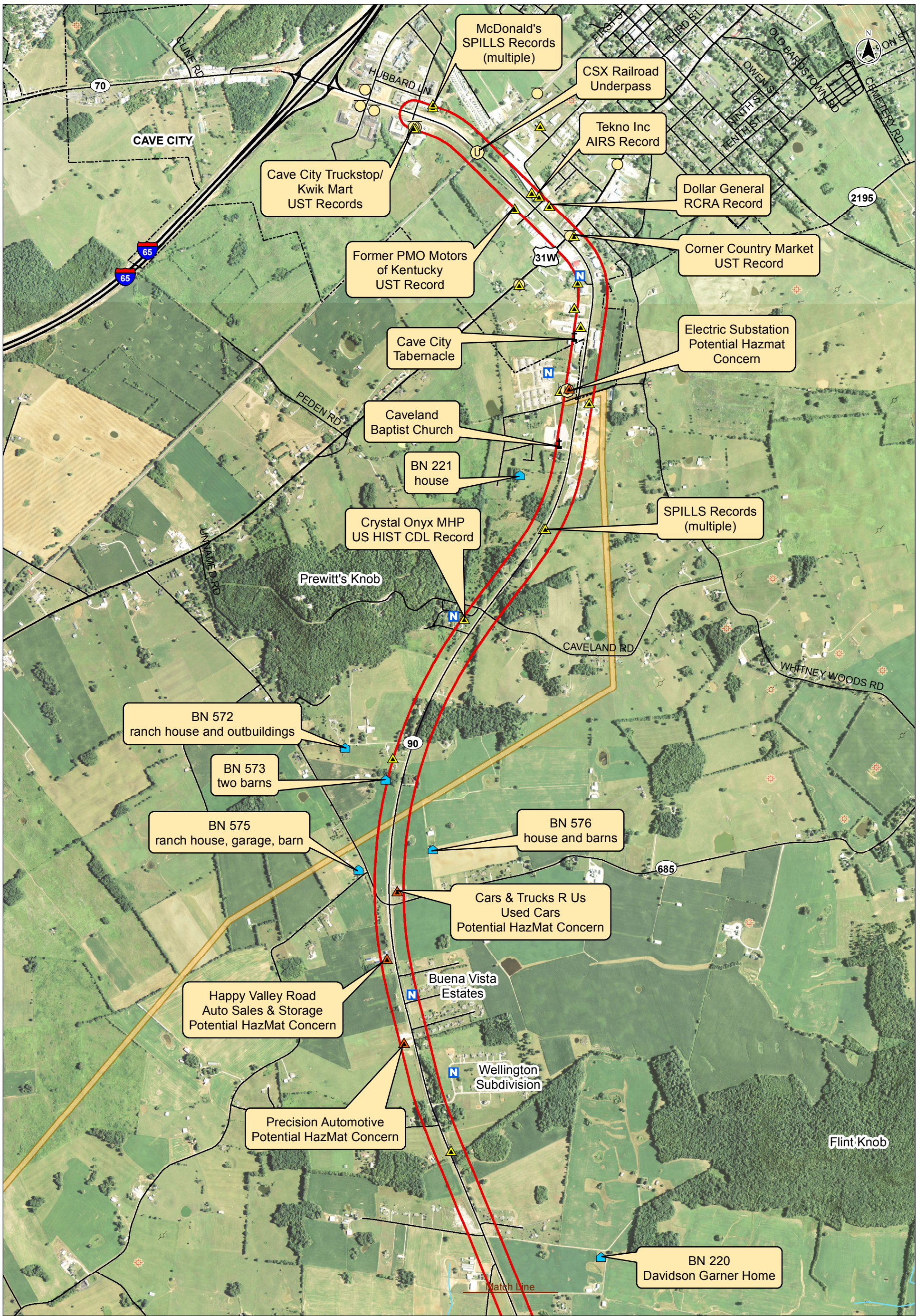
Project Location  
KY 90  
Barren County, Kentucky  
Prepared by BL on 2016-01-15

Client/Project  
KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00

Figure No.  
**3.3**  
Title

**Environmental Footprint  
Natural Environment-Farmland  
Classification of Soils**





- Legend**
- Study Area
  - City Boundary
  - HazMat Record (EDR/USEPA)
  - UST Record (KDWM)
  - Archaeology Surveyed Area (KYOSA)
  - Previously Surveyed CH Site (KHC)
  - Streams (NHD)

- Cemetery
- House of Worship
- Noise Receptor
- Utility
- Potential Hazmat Site
- Oil/Gas Well (KGS)
- Well Other

**Notes**

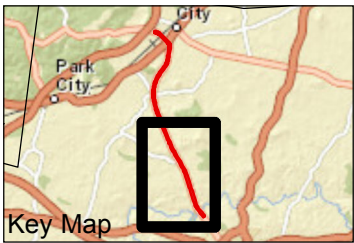
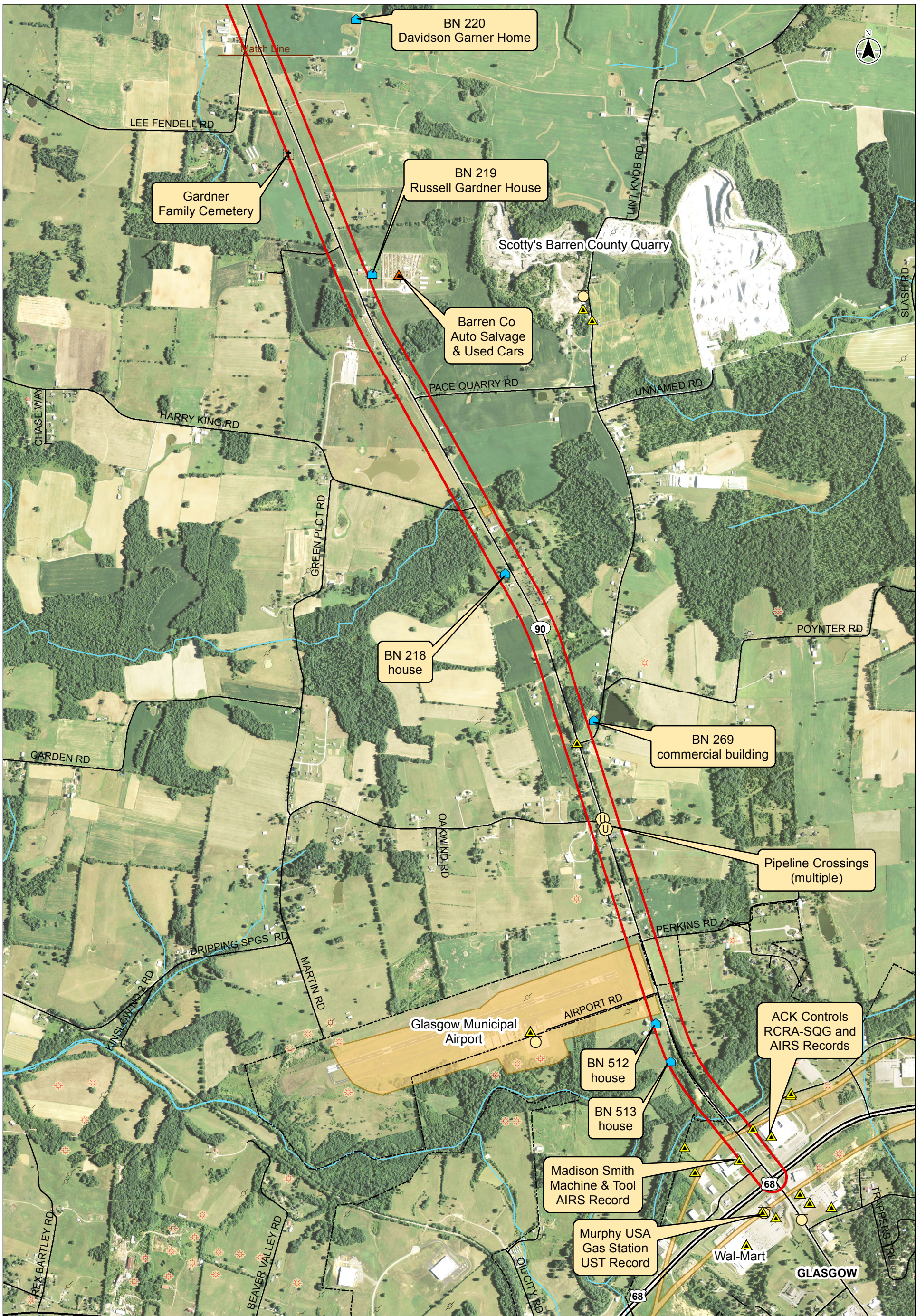
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- Base features: see Sources and References.
- Base Imagery: USGS-NAIP, 2014.



Project Location  
KY 90  
Barren County, Kentucky  
Client/Project  
KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00  
Figure No.  
**4.1**  
Title  
**Environmental Footprint  
Human Environment**

178554021  
Prepared by BL on 2016-01-15





- Legend**
- Study Area
  - City Boundary
  - HazMat Record (EDR/USEPA)
  - UST Record (KDWM)
  - Archaeology Surveyed Area (KYOSA)
  - Previously Surveyed CH Site (KHC)
  - Streams (NHD)

- Cemetery
- House of Worship
- Noise Receptor
- Utility
- Potential Hazmat Site
- Oil/Gas Well (KGS)
- Well Other

**Notes**

- Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
- Base features: see Sources and References.
- Base Imagery: USGS-NAIP, 2014.



Project Location  
KY 90  
Barren County, Kentucky  
Client/Project  
KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00  
Figure No.  
**4.2**  
Title  
**Environmental Footprint  
Human Environment**

178554021  
Prepared by BL on 2016-01-15



## **ATTACHMENTS**

1. Threatened and Endangered Species
2. Karst
3. Hazardous Materials Concerns
4. National Park Service LWCF (Section 6(f)) List for Barren County
5. Areas of Air Quality Concern in Kentucky
6. Environmental Justice
7. Cultural and Historic Resources
8. Photo Log



## **ATTACHMENT 1**

### **THREATENED AND ENDANGERED SPECIES**

- USFWS KY 90 IPaC Trust Resource Report
- USFWS Maps of Known Indiana and Northern Long-eared Bat Habitat
- KYTC Online Environmental Overview: Sensitive Resources in Project Vicinity
- KDFWR State-Listed Species, Barren County
- KSNPC Natural Heritage Database Response (redacted)

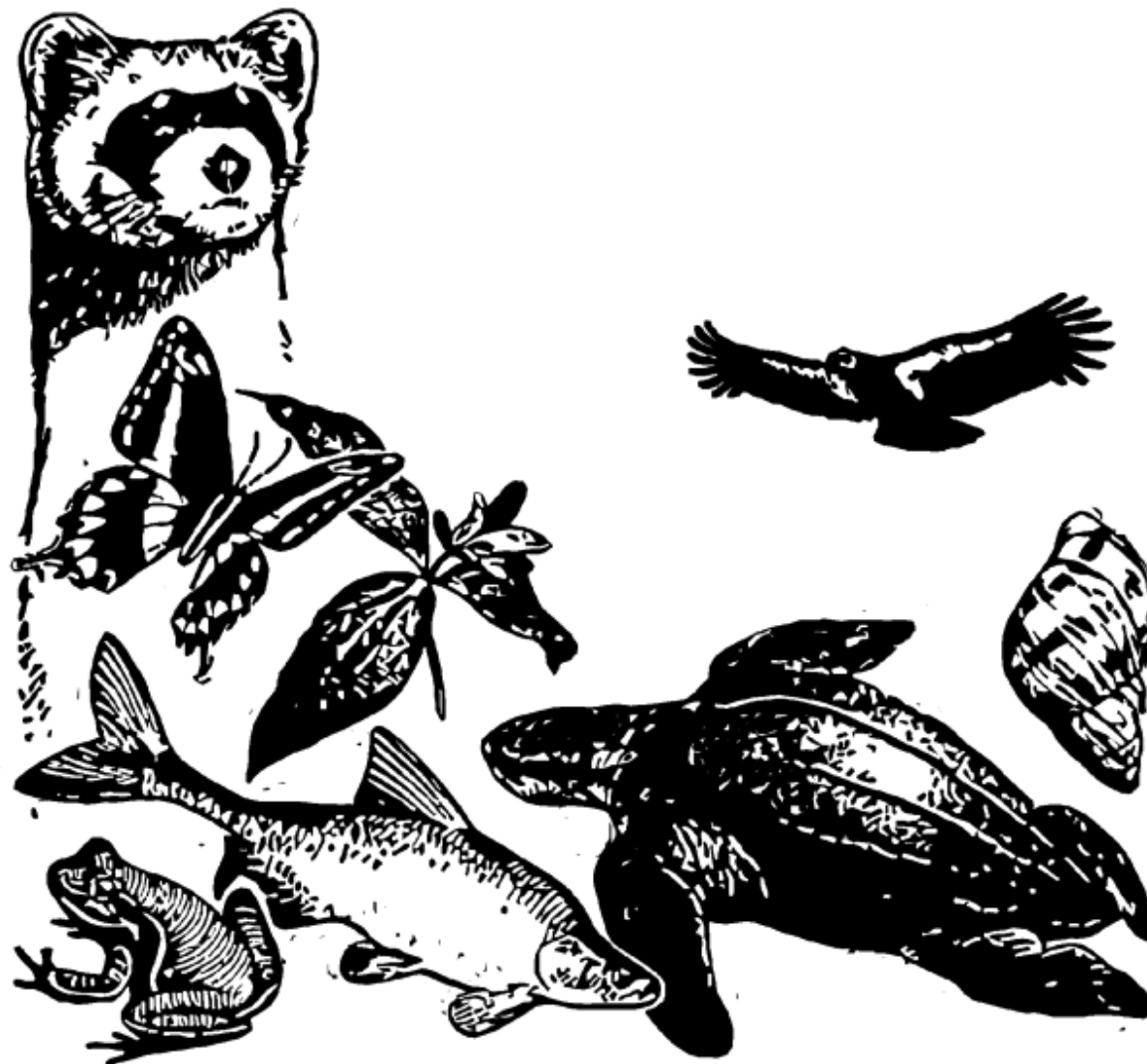
# KY90 Environmental Overview

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## *IPaC Trust Resource Report*

Generated January 13, 2016 09:18 AM MST, IPaC v2.3.2

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



US Fish & Wildlife Service

# IPaC Trust Resource Report



NAME

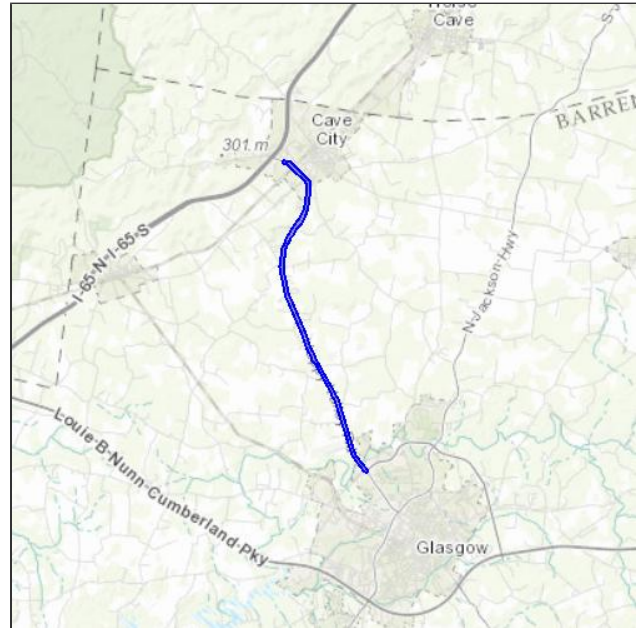
KY90 Environmental Overview

LOCATION

Barren County, Kentucky

IPAC LINK

<http://ecos.fws.gov/ipac/project/CIGYF-VMMOR-HDLGN-QB5DE-IEWMCU>



## U.S. Fish & Wildlife Contact Information

Trust resources in this location are managed by:

**Kentucky Ecological Services Field Office**

J C Watts Federal Building, Room 265

330 West Broadway

Frankfort, KY 40601-8670

(502) 695-0468

# Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

**This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.**

For project evaluations that require FWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[Section 7](#) of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

**A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from the Regulatory Documents section in IPaC.**

The list of species below are those that may occur or could potentially be affected by activities in this location:

## Clams

<b>Fanshell</b> <i>Cyprogenia stegaria</i>	Endangered
CRITICAL HABITAT	
No critical habitat has been designated for this species.	
<a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F02H">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F02H</a>	
<b>Rabbitsfoot</b> <i>Quadrula cylindrica cylindrica</i>	Threatened
CRITICAL HABITAT	
There is <b>final</b> critical habitat designated for this species.	
<a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F03X">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F03X</a>	
<b>Sheepnose Mussel</b> <i>Plethobasus cyphus</i>	Endangered
CRITICAL HABITAT	
No critical habitat has been designated for this species.	
<a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F046">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F046</a>	
<b>Snuffbox Mussel</b> <i>Epioblasma triquetra</i>	Endangered
CRITICAL HABITAT	
No critical habitat has been designated for this species.	
<a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F03J">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F03J</a>	

## Crustaceans

### **Kentucky Cave Shrimp** *Palaemonias ganteri*

Endangered

#### CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[https://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=K01X](https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K01X)

## Mammals

### **Gray Bat** *Myotis grisescens*

Endangered

#### CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[https://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=A04J](https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A04J)

### **Indiana Bat** *Myotis sodalis*

Endangered

#### CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[https://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=A000](https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A000)

### **Northern Long-eared Bat** *Myotis septentrionalis*

Threatened

#### CRITICAL HABITAT

**No critical habitat** has been designated for this species.

[https://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?spcode=A0JE](https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A0JE)

## Critical Habitats

**There are no critical habitats in this location**

# Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

Additional information can be found using the following links:

- Birds of Conservation Concern  
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data  
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php>

The following species of migratory birds could potentially be affected by activities in this location:

<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i> Year-round <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B008">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B008</a>	Bird of conservation concern
<b>Black-billed Cuckoo</b> <i>Coccyzus erythrophthalmus</i> Season: Breeding <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HI">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HI</a>	Bird of conservation concern
<b>Blue-winged Warbler</b> <i>Vermivora pinus</i> Season: Breeding	Bird of conservation concern
<b>Chuck-will's-widow</b> <i>Caprimulgus carolinensis</i> Season: Breeding	Bird of conservation concern
<b>Dickcissel</b> <i>Spiza americana</i> Season: Breeding	Bird of conservation concern
<b>Fox Sparrow</b> <i>Passerella iliaca</i> Season: Wintering	Bird of conservation concern
<b>Henslow's Sparrow</b> <i>Ammodramus henslowii</i> Season: Breeding <a href="https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B09D">https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B09D</a>	Bird of conservation concern
<b>Kentucky Warbler</b> <i>Oporornis formosus</i> Season: Breeding	Bird of conservation concern

**Least Bittern** *Ixobrychus exilis*

Season: Breeding

Bird of conservation concern

**Loggerhead Shrike** *Lanius ludovicianus*

Year-round

Bird of conservation concern

[https://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=B0FY](https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0FY)

**Prairie Warbler** *Dendroica discolor*

Season: Breeding

Bird of conservation concern

**Prothonotary Warbler** *Protonotaria citrea*

Season: Breeding

Bird of conservation concern

**Red-headed Woodpecker** *Melanerpes erythrocephalus*

Year-round

Bird of conservation concern

**Rusty Blackbird** *Euphagus carolinus*

Season: Wintering

Bird of conservation concern

**Sedge Wren** *Cistothorus platensis*

Season: Migrating

Bird of conservation concern

**Short-eared Owl** *Asio flammeus*

Season: Wintering

Bird of conservation concern

[https://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=B0HD](https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HD)

**Willow Flycatcher** *Empidonax traillii*

Season: Breeding

Bird of conservation concern

[https://ecos.fws.gov/tess\\_public/profile/speciesProfile.action?sPCODE=B0F6](https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0F6)

**Wood Thrush** *Hylocichla mustelina*

Season: Breeding

Bird of conservation concern

**Worm Eating Warbler** *Helminthos vermivorum*

Season: Breeding

Bird of conservation concern

## Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

**There are no refuges in this location**



# Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

## DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

This location overlaps all or part of the following wetlands:

## Freshwater Emergent Wetland

<a href="#">PEM1A</a>	0.446 acre
<a href="#">PEM1F</a>	0.349 acre

## Freshwater Forested/shrub Wetland

<a href="#">PFO1A</a>	75.7 acres
-----------------------	------------

## Freshwater Pond

<a href="#">PUBHh</a>	2.86 acres
<a href="#">PUBF</a>	1.75 acres
<a href="#">PUBHx</a>	1.54 acres

PUBFh

0.709 acre

PUBH

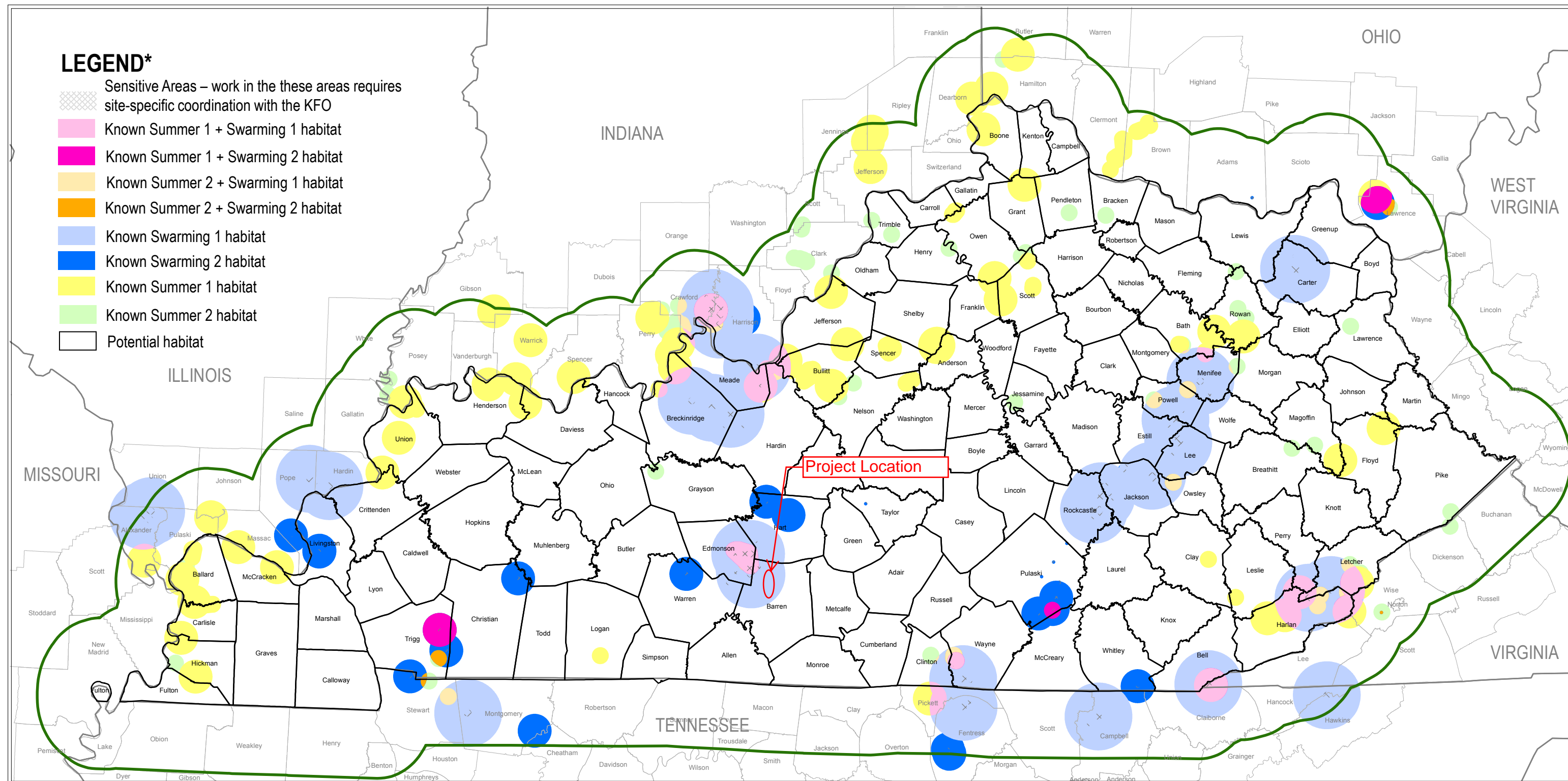
0.464 acre

A full description for each wetland code can be found at the National Wetlands Inventory website: <http://107.20.228.18/decoders/wetlands.aspx>



U.S. Fish & Wildlife Service

# Known Indiana bat habitat in Kentucky and within 20 miles (March 2015)



## LEGEND\*

- Sensitive Areas – work in these areas requires site-specific coordination with the KFO
- Known Summer 1 + Swarming 1 habitat
- Known Summer 1 + Swarming 2 habitat
- Known Summer 2 + Swarming 1 habitat
- Known Summer 2 + Swarming 2 habitat
- Known Swarming 1 habitat
- Known Swarming 2 habitat
- Known Summer 1 habitat
- Known Summer 2 habitat
- Potential habitat

NOTE: This map is based on species occurrence information and is subject to change as new data become available. Please contact our office at 502/695-0468 to ensure you are working with the most current version.

\*For an explanation of terms, please see the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky.

0 10 20 40 60 80 Miles

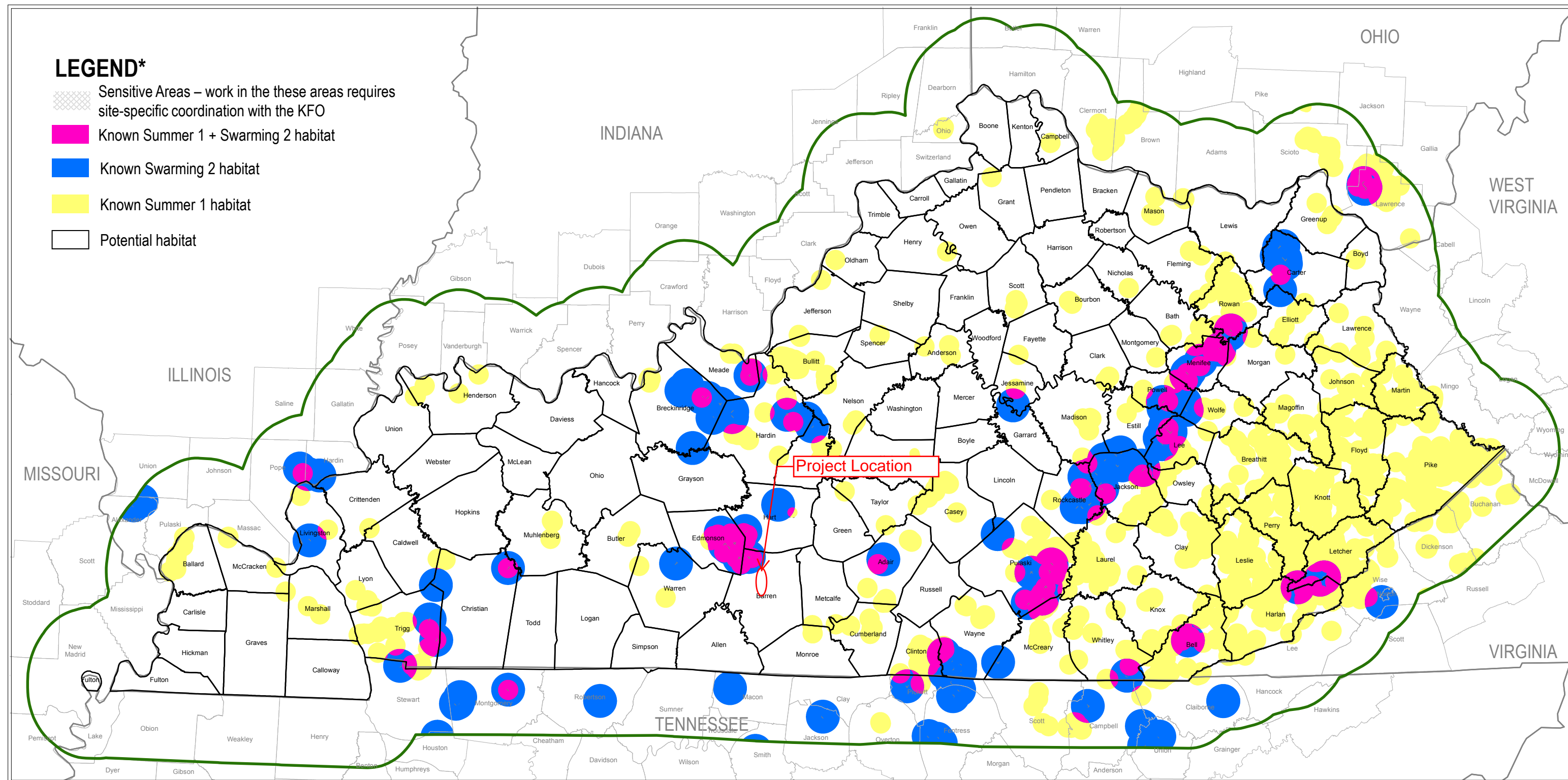
The USFWS makes no warranty for use of this map and cannot be held liable for actions or decisions based on map content. This map was produced as an appendix to the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky and should only be used in the context of this Strategy.





U.S. Fish & Wildlife Service

## Known northern long-eared bat habitat in Kentucky and within 20 miles (March 2015)



NOTE: This map is based on species occurrence information and is subject to change as new data become available. Please contact our office at 502/695-0468 to ensure you are working with the most current version.

\*For an explanation of terms, please see the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky.

0 10 20 40 60 80 Miles

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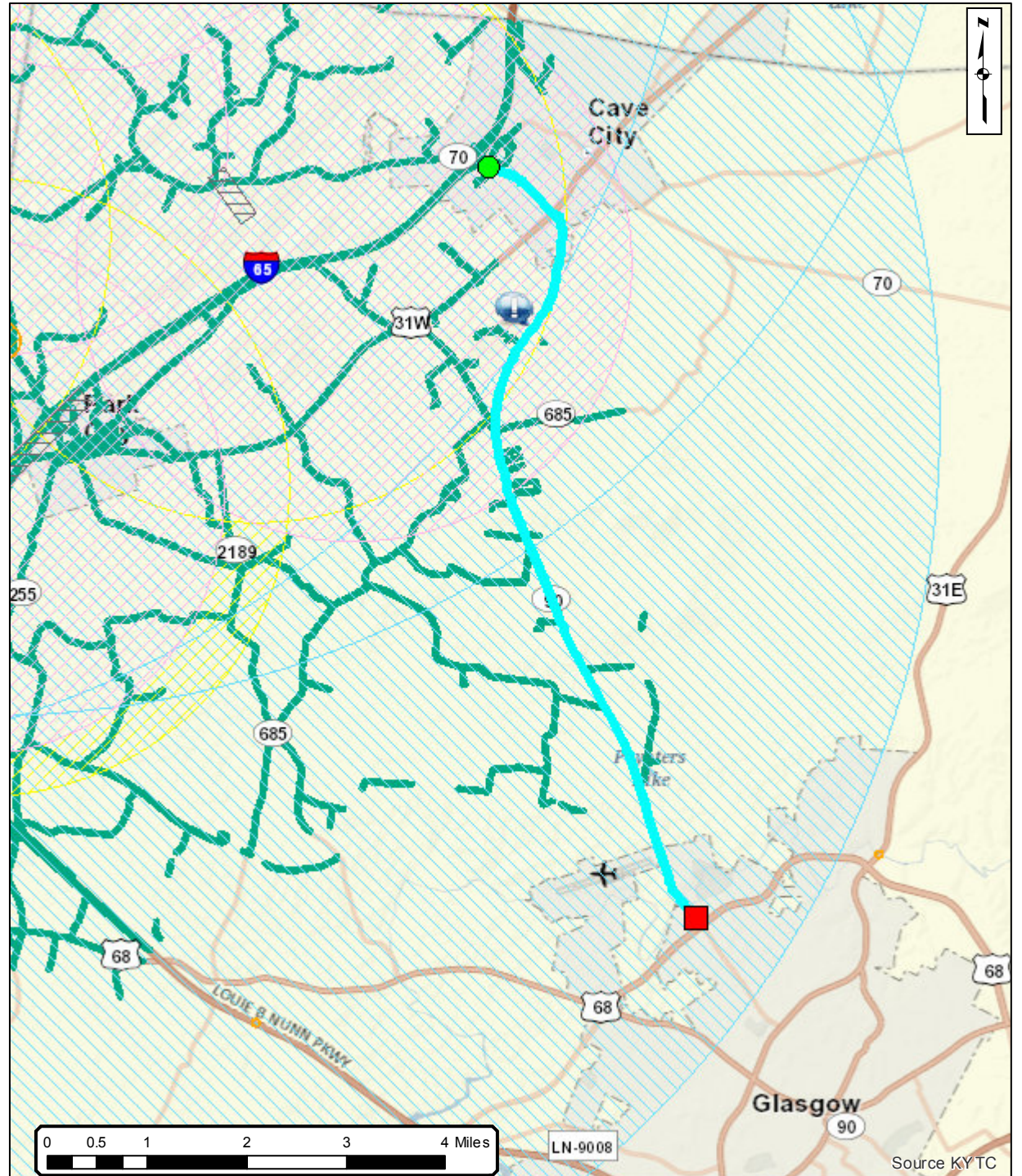
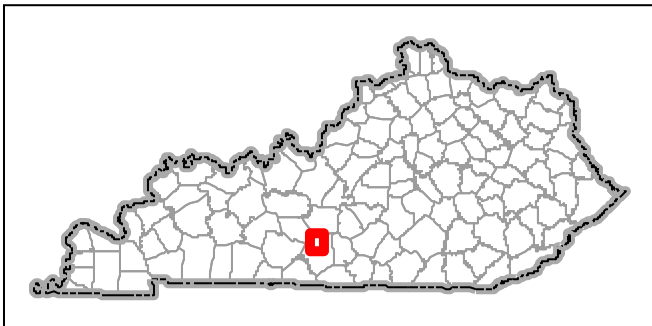


# KYTC Online Environmental Overview: Sensitive Resources in Project Vicinity

Date: 1/25/2016





**Kentucky Transportation Cabinet**  
200 Mero St, Suite W-5  
Frankfort, KY 40601  
Phone: (502) 564-4890











Environmental Overview


- ☒ Sensitive Water Area 


None present in study area
-  ☒ Deed Restricted Properties 

None present in study area
-  ☒ DEA Managed Areas 

None present in study area
-  ☐ 2015 Known Forest Dwelling Bat Habit
-  Sensitive Areas - Requires Coordination with KFO
-  Overlap: Summer 1 - Swarming 1 

Present in study area
-  Overlap: Summer 1 - Swarming 2
-  Overlap: Summer 2 - Swarming 1
-  Overlap: Summer 2 - Swarming 2
-  Known Swarming 2 Habitat
-  Known Swarming 1 Habitat 

Present in study area
-  Known Summer 1 Habitat 

Present in study area
-  Known Summer 2 Habitat
- ☒ DEA Special Use Water Compliance 

Multiple instances present in study area (thick green lines around roadways)

Layer: 2015 Known Forest Dwelling Bat Habit

Swarming 1

OBJECTID	1802
Shape	Polygon
RECORD_TYP	Known Swarming 1 Habitat
Name	Swarming 1
diameter	Null
actual_diameter	Null
radius	Null
Latitude	37.097425
longitude	-86.071273
Shape.STArea()	8522044050.051931
SHAPE_AREA	8522044050.051931

Swarming 1

Swarming 1

Summer 1

Summer 1/Swarming 1

Layer: DEA Special Use Water Compliance

TURNHOLE

OBJECTID	4533
FID_Road30	10992
LOCAL_KEY	009-01495
RT_UNIQUE	005-CR-1365 -000
LRS_ID	005 CR-1365
BEGIN_MP	0
END_MP	0.948
RD_NAME	CAVELAND RD
SURFTYPE	52
DMI_LEN_MI	0.948
COM_LEVEL	00

TURNHOLE

TURNHOLE

TURNHOLE

TURNHOLE

TURNHOLE

TURNHOLE



# Species Information

## State Threatened, Endangered, and Special Concern Species observations for selected counties

Linked life history provided courtesy of NatureServe Explorer .  
**Records may include both recent and historical observations.**  
[US Status Definitions](#)   [Kentucky Status Definitions](#)

List State Threatened, Endangered, and Special Concern Species observations in 1 selected county.  
Selected county is: Barren.

Scientific Name and Life History	Common Name and Pictures	Class	County	US Status	KY Status	WAP	Reference
<i>Accipiter striatus</i>	Sharp-shinned Hawk	Aves	Barren	N	S	Yes	Reference
<i>Ammodramus henslowii</i>	Henslow's Sparrow	Aves	Barren	N	S	Yes	Reference
<i>Anas clypeata</i>	Northern Shoveler	Aves	Barren	N	E		Reference
<i>Anas discors</i>	Blue-winged Teal	Aves	Barren	N	T		Reference
<i>Ardea alba</i>	Great Egret	Aves	Barren	N	T	Yes	Reference
<i>Arrhopalites bimus</i>	A Cave Obligate Springtail	Elliplura	Barren	N	T		Reference
<i>Asio flammeus</i>	Short-eared Owl	Aves	Barren	N	E	Yes	Reference
<i>Barbicambarus cornutus</i>	Bottlebrush Crayfish	Malacostraca	Barren	N	S	Yes	Reference



<i>Bartramia longicauda</i>	Upland Sandpiper	Aves	Barren	N	H	Yes	Reference
<i>Batrisodes henroti</i>	A Cave Obligate Beetle	Insecta	Barren	N	T		Reference
<i>Batrisodes hubrichti</i>	A Cave Obligate Beetle	Insecta	Barren	N	T		Reference
<i>Botaurus lentiginosus</i>	American Bittern	Aves	Barren	N	H	Yes	Reference
<i>Bubulcus ibis</i>	Cattle Egret	Aves	Barren	N	S		Reference
<i>Certhia americana</i>	Brown Creeper	Aves	Barren	N	E	Yes	Reference
<i>Chondestes grammacus</i>	Lark Sparrow	Aves	Barren	N	T	Yes	Reference
<i>Circus cyaneus</i>	Northern Harrier	Aves	Barren	N	T	Yes	Reference
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	Mammalia	Barren	N	S	Yes	Reference
<i>Crangonyx longidactylus</i>	An Amphipod ( <i>Crangonyx longidactylus</i> )	Malacostraca	Barren	N	T		Reference
<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	Amphibia	Barren	N	E	Yes	Reference
<i>Elaphe guttata</i>	Eastern Corn Snake	Reptilia	Barren	N	S	Yes	Reference
<i>Fulica americana</i>	American Coot	Aves	Barren	N	E		Reference
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Aves	Barren	N	T	Yes	Reference
<i>Helicodiscus notius specus</i>	A Terrestrial Snail	Gastropoda	Barren	N	T		Reference
<i>Ixobrychus exilis</i>	Least Bittern	Aves	Barren	N	T	Yes	Reference
<i>Junco hyemalis</i>	Dark-eyed Junco	Aves	Barren	N	S		Reference
<i>Kleptochthonius hubrichti</i>	A Cave Obligate Pseudoscorpion	Arachnida	Barren	N	T		Reference

<i>Lophodytes cucullatus</i>	Hooded Merganser	Aves	Barren	N	T	Yes	Reference
<i>Myotis grisescens</i>	Gray Myotis	Mammalia	Barren	E	T	Yes	Reference
<i>Myotis leibii</i>	Eastern Small-footed Myotis	Mammalia	Barren	N	T	Yes	Reference
<i>Myotis septentrionalis</i>	Northern Myotis	Mammalia	Barren	T	E		Reference
<i>Myotis sodalis</i>	Indiana Bat	Mammalia	Barren	E	E	Yes	Reference
<i>Notropis hudsonius</i>	Spottail Shiner	Actinopterygii	Barren	N	S		Reference
<i>Nyctanassa violacea</i>	Yellow-crowned Night-heron	Aves	Barren	N	T	Yes	Reference
<i>Nycticeius humeralis</i>	Evening Bat	Mammalia	Barren	N	S	Yes	Reference
<i>Ophisaurus attenuatus longicaudus</i>	Eastern Slender Glass Lizard	Reptilia	Barren	N	T	Yes	Reference
<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	Malacostraca	Barren	N	S	Yes	Reference
<i>Palaemonias ganteri</i>	Mammoth Cave Shrimp	Malacostraca	Barren	E	E	Yes	Reference
<i>Pandion haliaetus</i>	Osprey	Aves	Barren	N	S	Yes	Reference
<i>Passerculus sandwichensis</i>	Savannah Sparrow	Aves	Barren	N	S	Yes	Reference
<i>Percina macrocephala</i>	Longhead Darter	Actinopterygii	Barren	N	E	Yes	Reference
<i>Percopsis omiscomaycus</i>	Trout-Perch	Actinopterygii	Barren	N	S		Reference
<i>Peucaea aestivalis</i>	Bachman's Sparrow	Aves	Barren	N	E	Yes	Reference
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	Aves	Barren	N	T		Reference
<i>Phenacobius uranops</i>	Stargazing Minnow	Actinopterygii	Barren	N	S	Yes	Reference
<i>Pituophis melanoleucus melanoleucus</i>	Northern Pine Snake	Reptilia	Barren	N	E	Yes	Reference

<i>Pleurocera alveare</i>	Rugged Hornsnail	Gastropoda	Barren	N	S		Reference
<i>Pseudanophthalmus pubescens intrepidus</i>	A Cave Obligate Beetle	Insecta	Barren	N	T		Reference
<i>Quadrula cylindrica cylindrica</i>	Rabbitsfoot	Bivalvia	Barren	T	T	Yes	Reference
<i>Setophaga fusca</i>	Blackburnian Warbler	Aves	Barren	N	T	Yes	Reference
<i>Sitta canadensis</i>	Red-breasted Nuthatch	Aves	Barren	N	E	Yes	Reference
<i>Stygobromus vitreus</i>	An Amphipod (Stygobromus vitreus)	Malacostraca	Barren	N	S	Yes	Reference
<i>Thoburnia atripinnis</i>	Blackfin Sucker	Actinopterygii	Barren	N	S	Yes	Reference
<i>Typhlichthys subterraneus</i>	Southern Cavefish	Actinopterygii	Barren	N	S	Yes	Reference
<i>Villosa lienosa</i>	Little Spectaclecase	Bivalvia	Barren	N	S	Yes	Reference
<i>Villosa ortmanni</i>	Kentucky Creekshell	Bivalvia	Barren	N	T	Yes	Reference

55 species are listed

**Matt Bevin**  
Governor



**Charles G. Snively**  
Secretary  
Energy and Environment Cabinet

**Commonwealth of Kentucky**  
**Kentucky State Nature Preserves Commission**  
Teton Trail  
Frankfort, Kentucky 40601-1403  
502-573-2886 Voice  
502-573-2355 Fax

**Donald S. Dott, Jr.**  
Director

February 11, 2016

Michael David de Villiers  
Stantec Consulting Services, Inc.  
11687 Lebanon Road  
Cincinnati OH 45241

Data Request 16-063

Dear Mr. de Villiers,

This letter is in response to your data request of January 11, 2016 for the scoping study project of the KY 90 corridor located north of Glasgow in Barren County, Kentucky. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the Kentucky State Nature Preserves Commission occur within the general area of the KY 90 Corridor as indicated in the shapefile provided to us. Please see the attached reports for more information.

1-mile for all records – 10 records  
5-mile for aquatic records – 29 records  
5-mile for federally listed species – 9 records  
10-mile for mammals and birds – 76 records

Approximately 80% of the study area lies within the boundaries of the Green River Bioreserve, a system of surface and subterranean aquatic habitats comprising the recharge area of the Green River and associated Mammoth Cave Systems. This is the fourth most important site nationally for the conservation of rare aquatic organisms and biodiversity. It includes the largest number of imperiled aquatic organisms in Kentucky. Federal, state, private entities, and the public are working together to protect this important area. Because of the importance of the Green River Biosphere Reserve, we recommend strict monitoring of all practices with potential for impacts to streams, wetlands, and sinkholes to prevent erosion and sedimentation.

Three aquatic species and three plant species (see attached report DR16-063 1 mile for

full list) including federally listed *Palaemonias ganteri* (Mammoth Cave shrimp, federally listed endangered, KSNPC endangered) occurs near this project. This species is endemic to the Mammoth Cave/Flint Ridge Cave system in Kentucky. Designated Critical habitat for Mammoth Cave Shrimp occurs approximately 4.5 mi to the northwest of the study area.

American Chestnut (*Castanea dentata* a state threatened species) occurs in a small forest block (<200 acres) in the northwest section of the corridor within 0.5 mi of the study area. Although this species has no federal protection, the lack of viable specimens not affected by the chestnut-blight underline the importance of this record. If the study were to deviate from the 500 ft buffer provided in the data request, a thorough investigation of forested areas would be recommended.

There are several KSNPC- monitored cave obligate organisms known from within one mile of the project that occur in the subterranean habitats common to this area, including: *Typhlichthys subterraneus* (Southern Cavefish, federal species of management concern, KSNPC special concern), *Palaemonias ganteri* (Mammoth Cave shrimp, federally listed endangered, KSNPC endangered), *Orconectes pellucidus* (Mammoth Cave crayfish, USFWS Species of Management Concern, KSNPC Special Concern), and *Antroselates spiralis* (Shaggy Cavesnail, KSNPC Special Concern). Several other species are known from the one- to five mile buffer; please see the aquatics report for more information. The site is located within a karst landscape characterized by numerous sinkholes, underground conduits, or caves, which are heavily dependent on water quality and subject to impacts from activities that may contaminate groundwater many miles from the original disturbance. Caves in this area are sensitive ecosystems and are known to provide habitat for a number of rare or endangered species.

*Myotis sodalis* (Indiana myotis, federally listed endangered, KSNPC endangered) and *Myotis grisescens* (Gray myotis, federally listed endangered, KSNPC threatened) hibernacula and former roost sites occur within five miles of the project corridor. In addition to these federally listed species, *Myotis leibii* (Eastern small-footed myotis, federal species of management concern, KSNPC threatened), *Myotis austroriparius* (Southeastern myotis, federal species of management concern, KSNPC endangered), *Nycticeius humeralis* (Evening Bat, KSNPC special concern), and *Corynorhinus rafinesquii* (Rafinesque's big-eared bat, federal species of management concern, KSNPC special concern) occur within five miles of the study area.

In order to avoid impacts to bats, a thorough survey should be conducted by a qualified biologist. The survey should include a search for potential roost and winter sites, and a mist-netting census at numerous points within the proposed corridor, particularly in preferred summer habitat. Summer foraging habitats include upland forests, bottomland forests and riparian corridors. Suitable roost and winter sites include sandstone and limestone caves, rockhouses, cliffhines, auger holes, and abandoned mines. In order to avoid impacts to bats, bottomland forests and riparian corridors, particularly near caves, should not be disturbed.

I would like to take this opportunity to remind you of the terms of the data request license, which you agreed upon in order to submit your request. The license agreement states "Data and data

products received from the Kentucky State Nature Preserves Commission, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Kentucky State Nature Preserves Commission." The exact location of plants, animals, and natural communities, if released by the Kentucky State Nature Preserves Commission, may not be released in any document or correspondence. These products are provided on a temporary basis for the express project (described above) of the requester, and may not be redistributed, resold or copied without the written permission of the Kentucky State Nature Preserves Commission's Data Manager (801 Schenkel Lane, Frankfort, KY, 40601. Phone: (502) 573-2886).

Please note that the quantity and quality of data collected by the Kentucky Natural Heritage Program are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Kentucky have never been thoroughly surveyed, and new plants and animals are still being discovered. For these reasons, the Kentucky Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. Heritage reports summarize the existing information known to the Kentucky Natural Heritage Program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. We would greatly appreciate receiving any pertinent information obtained as a result of on-site surveys.

If you have any questions or if I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Sara Hines  
Data Manager

RIH/SGH

Enclosures: Data Report and Interpretation Key

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	UESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
Extant in Kentucky																		
Vascular Plants																		
PDFAG01020*001 1189	Castanea dentata	American Chestnut	G4	S1?	E			Y	1998-06-28	S	D	Barren	Glasgow North			051100020701 - Park City		Acidic upland soils (Gleason and Cronquist); mesic and xeric forests (Weakley 2011).
PDFAB27030*002 3711	Lespedeza capitata	Round-head Bush-clover	G5	S3	S			Y	1979-08-17	M	H	Barren	Glasgow North			051100020701 - Park City 051100010803 - Duff Branch		Prairie patches on limestone.
PMPOA5V050*010 5564	Sporobolus clandestinus	Rough Dropseed	G5	S2S3	T			Y	1996-09-20	S	E	Barren	Glasgow North			051100020701 - Park City 051100010803 - Duff Branch		Prairies, limestone glades, limestone cliff edges, along railroads.
Aquatic Snails																		
IMGASJ8010*001 8796	Antroselates spiralis	Shaggy Cavesnail	G3	S2	S			Y	1993-pre	G	B	Hart Edmonson Barren	Mammoth Cave Horse Cave Glasgow North  Rhoda Cub Run Park City			051100020702 - Little Sinking Creek 051100011302 - Buffalo Creek-Green River 051100011301 - Echo River-Green River 051100010808 - Ugly Creek-Green River 051100010807 - Waterloo Valley-Green River 051100010803 - Duff Branch 051100020701 - Park City		Found on the undersides of large stones in running water of springs and streams in caves (Hubricht 1963, Burch 1989). Occurs only in base-level cave streams and their spring orifices, and was taken on the undersides of submerged planks and slabs of breakdown in deep water (Lewis 1993a).
Freshwater Mussels																		

Page 2 of 4

02/11/2016

Standard Occurrence Report

KSNPC monitored speices within 1 mile of the 8 4 mile KY 90 corridor planning study buffer zone in Barren County, Kentucky

DRW: 10 000 1 mile

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	UESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
IMBIV47100*070  1871	<i>Villosa ortmanni</i>	Kentucky Creekshell	G2	S2	T	SOMC		Y	1993-09-24	S	F	Barren	Glasgow North			051100020305 - Little Beaver Creek-Beaver Creek		Free-flowing, upland rivers that range in size from small (1st order) spring fed streams to the Green River (Cicerello 1994). Many flow permanently, but others sometimes have no flow. Substrates range from cobble and boulder with mixed gravel and sand over bedrock to clayey-mud. Depths range from less than 6 inches to more than 2 meters.
Crustaceans																		
ICMAL12010*008  4772	<i>Palaemonias ganteri</i>	Mammoth Cave Shrimp	G1	S1	E	LE		Y	1994-08-19	M	D	Barren Edmonson Hart Warren	Park City Rhoda Mammoth Cave Smiths Grove Horse Cave Glasgow North			051100020306 - South Fork Beaver Creek-Beaver Creek 051100020705 - Smiths Grove 051100020305 - Little Beaver Creek-Beaver Creek 051100011301 - Echo River-Green River 051100011303 - Beaverdam Creek-Green River 051100010808 - Ugly Creek-Green River 051100020703 - Sinking Creek 051100010803 - Duff Branch 051100020701 - Park City 051100020702 - Little Sinking Creek	Turnhole Spring Basin.	Large base level stream passages (i.e., lowest level) and associated tributaries characterized by slow flow, coarse to fine grain sand and coarse silt sediments, and abundant quantities of organic material (USFWS 1988).
Fishes																		



EOCODE EIOD	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EORANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AFCLA04010*011  2479	<i>Typhlichthys subterraneus</i>	Southern Cavefish	G4	S2S3	S	SOMC		Y	1955-09-18	G	H	Hart Barren	Horse Cave			051100010804 - Lemon Branch 051100010807 - Waterloo Valley-Green River 051100010808 - Ugly Creek-Green River 051100010803 - Duff Branch		Subterranean waters where limestone bedrocks are honeycombed by subsurface drainages. Occurs in cave streams, most frequently over mixed gravel, sand, and mud, or rubble substrates and may occur at springs and wells (Cooper 1980, Cooper and Beiter 1972, Pflieger 1975, Starnes and Etnier 1980, Burr and Warren 1986).
AFCLA04010*013  10459	<i>Typhlichthys subterraneus</i>	Southern Cavefish	G4	S2S3	S	SOMC		Y	1905-	G	H	Barren	Glasgow South  Hiseville Glasgow North			051100020306 - South Fork Beaver Creek-Beaver Creek 051100020305 - Little Beaver Creek-Beaver Creek 051100020307 - Boyds Creek-Skaggs Creek		

SENSITIVE ELEMENTS: Locational information for sensitive plants, animals, and natural communities, if released by the Kentucky State Nature Preserves Commission, may not be released in any document or correspondence. Please refer to the Data License Agreement for a full description of rights and restrictions.

Extant in Kentucky

Crustaceans

ICMAL11070*006  9249	<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	G4	S3	S	SOMC		Y	1994-10-18	S	A	Barren		CONTACT KSNPC	CONTACT KSNPC		SENSITIVE ELEMENT- CONTACT KSNPC	Subterranean waters (Hobbs 1976).
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Fishes

Standard Occurrence Report  
KSNPC monitored speices within 1 mile of the 8 4 mile KY 90 corridor planning study buffer zone in Barren County, Kentucky

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USES A	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AFCLA04010*023	<i>Typhlichthys subterraneus</i>	Southern Cavefish	G4	S2S3	S	SOMC		Y	1994-10-18	S	B	Barren		CONTACT KSNPC	CONTACT KSNPC		SENSITIVE ELEMENT- CONTACT KSNPC	Subterranean waters where limestone bedrocks are honeycombed by subsurface drainages. Occurs in cave streams, most frequently over mixed gravel, sand, and mud, or rubble substrates and may occur at springs and wells (Cooper 1980, Cooper and Beiter 1972, Pflieger 1975, Starnes and Etnier 1980, Burr and Warren 1986).
5458																		

Standard Occurrence Report  
KSNPC federally monitored threatened and endangered species within 5 miles of the 8 4 mile KY 90 corridor planning study buffer zone in Barren County, Kentucky

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	UESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
Extant in Kentucky																		
Crustaceans																		
ICMAL12010*003	Palaemonias ganteri	Mammoth Cave Shrimp	G1	S1	E	LE		Y	1983-09-11	G	D	Hart	Munfordville Cub Run Mammoth Cave			051100011102 - Lower Bacon Creek 051100010807 - Waterloo Valley-Green River 051100010808 - Ugly Creek-Green River 051100011104 - Cane Run-Nolin River		Large base level stream passages (i.e., lowest level) and associated tributaries characterized by slow flow, coarse to fine grain sand and coarse silt sediments, and abundant quantities of organic material (USFWS 1988).
7715																		
ICMAL12010*008	Palaemonias ganteri	Mammoth Cave Shrimp	G1	S1	E	LE		Y	1994-08-19	M	D	Barren Edmonson Hart Warren	Park City Rhoda Mammoth Cave Smiths Grove Horse Cave Glasgow North			051100020306 - South Fork Beaver Creek-Beaver Creek 051100020705 - Smiths Grove 051100020305 - Little Beaver Creek-Beaver Creek 051100011301 - Echo River-Green River 051100011303 - Beaverdam Creek-Green River 051100010808 - Ugly Creek-Green River 051100020703 - Sinking Creek 051100010803 - Duff Branch 051100020701 - Park City 051100020702 - Little Sinking Creek	Turnhole Spring Basin.	
4772																		
Mammals																		
AMACC01040*121	Myotis grisescens	Gray Myotis	G3	S2	T	LE		Y	2005-07-20	S	E	Barren	Glasgow North			051100020701 - Park City	Flint Knob	
11982	Summer mist-net record																	
AMACC01040*123	Myotis grisescens	Gray Myotis	G3	S2	T	LE		Y	2005-08-09	S	E	Barren	Park City			051100020702 - Little Sinking Creek		
11986	Summer mist-net record																	

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
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<b>Extant in Kentucky</b>																		
<b>Crustaceans</b>																		
ICMAL12010*007	<i>Palaemonias ganteri</i>	Mammoth Cave Shrimp	G1	S1	E	LE		Y	1994-10-02	M	A	Barren Edmonson						Large base level stream passages (i.e., lowest level) and associated tributaries characterized by slow flow, coarse to fine grain sand and coarse silt sediments, and abundant quantities of organic material (USFWS 1988).
358																		
<b>Mammals</b>																		
AMACC01040*039	<i>Myotis grisescens</i>	Gray Myotis	G3	S2	T	LE		Y	1985-03-20	M	E	Barren Edmonson						Primarily use caves throughout the year, although they move from one cave to another seasonally. Males and young of the year use different caves in summer than females. Smaller colonies also occasionally roost under bridge structures.
10427	Transient roost site?																	
AMACC01040*058	<i>Myotis grisescens</i>	Gray Myotis	G3	S2	T	LE		Y	1985-03	S	H	Barren						
7029	Former roost site																	
AMACC01100*046	<i>Myotis sodalis</i>	Indiana Bat	G2	S1S2	E	LE		Y	2006-02-04	S	C	Hart						Primarily use caves for hibernacula, although they are occasionally found in old mine portals. During summer, colonies are found behind slabs of exfoliating bark of dead trees, often in bottomland or floodplain habitats, but also in upland situations.
5367	Hibernaculum																	

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AMACC01100*068	<i>Myotis sodalis</i>	Indiana Bat	G2	S1S2	E	LE		Y	1988-01	S	F	Barren						Primarily use caves for hibernacula, although they are occasionally found in old mine portals. During summer, colonies are found behind slabs of exfoliating bark of dead trees, often in bottomland or floodplain habitats, but also in upland situations.
7184	Hibernaculum																	

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	UESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
Extant in Kentucky																		
Aquatic Snails																		
IMGASJ8010*001 8796	Antroselates spiralis	Shaggy Cavesnail	G3	S2	S			Y	1993-pre	G	B	Hart Edmonson Barren	Mammoth Cave Horse Cave Glasgow North  Rhoda Cub Run Park City			051100020702 - Little Sinking Creek 051100011302 - Buffalo Creek-Green River 051100011301 - Echo River-Green River 051100010808 - Ugly Creek-Green River 051100010807 - Waterloo Valley-Green River 051100010803 - Duff Branch 051100020701 - Park City		Found on the undersides of large stones in running water of springs and streams in caves (Hubricht 1963, Burch 1989). Occurs only in base-level cave streams and their spring orifices, and was taken on the undersides of submerged planks and slabs of breakdown in deep water (Lewis 1993a).
IMGASJ8010*002 6340	Antroselates spiralis	Shaggy Cavesnail	G3	S2	S			Y	1994-10-17	G	B	Edmonson Barren Hart	Mammoth Cave Rhoda Smiths Grove Park City Horse Cave			051100011303 - Beaverdam Creek-Green River 051100020701 - Park City 051100010803 - Duff Branch 051100010808 - Ugly Creek-Green River 051100011301 - Echo River-Green River 051100011302 - Buffalo Creek-Green River 051100020702 - Little Sinking Creek		
Freshwater Mussels																		

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EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
IMBIV47100*056  237	<i>Villosa ortmanni</i>	Kentucky Creekshell	G2	S2	T	SOMC		Y	1993-07-23	S	H	Barren	Glasgow North			051100020305 - Little Beaver Creek-Beaver Creek		Free-flowing, upland rivers that range in size from small (1st order) spring fed streams to the Green River (Cicerello 1994). Many flow permanently, but others sometimes have no flow. Substrates range from cobble and boulder with mixed gravel and sand over bedrock to clayey-mud. Depths range from less than 6 inches to more than 2 meters.
IMBIV47100*070  1871	<i>Villosa ortmanni</i>	Kentucky Creekshell	G2	S2	T	SOMC		Y	1993-09-24	S	F	Barren	Glasgow North			051100020305 - Little Beaver Creek-Beaver Creek		
Crustaceans																		
ICMAL06250*001  12920	<i>Crangonyx longidactylus</i>	An Amphipod	G2	S2	T			Y	1956-03-20	M	H	Barren	Park City			051100020305 - Little Beaver Creek-Beaver Creek  051100020702 - Little Sinking Creek		
ICMAL11070*021  9184	<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	G4	S3	S	SOMC		?	1975-03-01	G	H	Barren Edmonson	Park City			051100020702 - Little Sinking Creek 051100020701 - Park City		Subterranean waters (Hobbs 1976).
ICMAL12010*003  7715	<i>Palaemonias ganteri</i>	Mammoth Cave Shrimp	G1	S1	E	LE		Y	1983-09-11	G	D	Hart	Munfordville Cub Run Mammoth Cave			051100011102 - Lower Bacon Creek 051100010807 - Waterloo Valley-Green River 051100010808 - Ugly Creek-Green River 051100011104 - Cane Run-Nolin River		Large base level stream passages (i.e., lowest level) and associated tributaries characterized by slow flow, coarse to fine grain sand and coarse silt sediments, and abundant quantities of organic material (USFWS 1988).

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EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	UESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
ICMAL12010*008  4772	<i>Palaemonias ganteri</i>	Mammoth Cave Shrimp	G1	S1	E	LE		Y	1994-08-19	M	D	Barren Edmonson Hart Warren	Park City Rhoda Mammoth Cave Smiths Grove Horse Cave Glasgow North			051100020306 - South Fork Beaver Creek-Beaver Creek 051100020705 - Smiths Grove 051100020305 - Little Beaver Creek-Beaver Creek 051100011301 - Echo River-Green River 051100011303 - Beaverdam Creek-Green River 051100010808 - Ugly Creek-Green River 051100020703 - Sinking Creek 051100010803 - Duff Branch 051100020701 - Park City 051100020702 - Little Sinking Creek	Turnhole Spring Basin. [REDACTED]	Large base level stream passages (i.e., lowest level) and associated tributaries characterized by slow flow, coarse to fine grain sand and coarse silt sediments, and abundant quantities of organic material (USFWS 1988).
Fishes																		
AFCLA04010*008  980	<i>Typhlichthys subterraneus</i>	Southern Cavefish	G4	S2S3	S	SOMC		Y	1962-09-28	G	H	Edmonson Barren Hart	Mammoth Cave Cub Run Nolin Lake Rhoda Park City Smiths Grove			051100020702 - Little Sinking Creek 051100011302 - Buffalo Creek-Green River 051100011301 - Echo River-Green River 051100010808 - Ugly Creek-Green River 051100011105 - Dog Creek 051100020701 - Park City	MAMMOTH CAVE.	Subterranean waters where limestone bedrocks are honeycombed by subsurface drainages. Occurs in cave streams, most frequently over mixed gravel, sand, and mud, or rubble substrates and may occur at springs and wells (Cooper 1980, Cooper and Beiter 1972, Pflieger 1975, Starnes and Etnier 1980, Burr and Warren 1986).



EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	UESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AFCLA04010*011  2479	<i>Typhlichthys subterraneus</i>	Southern Cavefish	G4	S2S3	S	SOMC		Y	1955-09-18	G	H	Hart Barren	Horse Cave			051100010804 - Lemon Branch 051100010807 - Waterloo Valley-Green River 051100010808 - Ugly Creek-Green River 051100010803 - Duff Branch		Subterranean waters where limestone bedrocks are honeycombed by subsurface drainages. Occurs in cave streams, most frequently over mixed gravel, sand, and mud, or rubble substrates and may occur at springs and wells (Cooper 1980, Cooper and Beiter 1972, Pflieger 1975, Starnes and Etnier 1980, Burr and Warren 1986).
AFCLA04010*013  10459	<i>Typhlichthys subterraneus</i>	Southern Cavefish	G4	S2S3	S	SOMC		Y	1905-	G	H	Barren	Glasgow South  Hiseville Glasgow North			051100020306 - South Fork Beaver Creek-Beaver Creek 051100020305 - Little Beaver Creek-Beaver Creek 051100020307 - Boyds Creek-Skaggs Creek		

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Extant in Kentucky

Crustaceans

ICCOP08012*001  1292	<i>Bryocamptus morrisoni elegans</i>	A Copepod	G3G4T3 T4	S1	T			Y	1968-pre	M	H	Hart						Troglobitic copepod that inhabits pools (Lewis 1993).
ICMAL11031*001  9100	<i>Orconectes inermis inermis</i>	Ghost Crayfish	G5T4	S3	S			Y	1963-11-02	M	H	Hart Barren						Subterranean waters (Hobbs 1989) in cave streams. This species is often found in larger base-level pools where mud and silt substrates predominate (Taylor and Schuster, 2004).

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EORANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
ICMAL11070*003 381	<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	G4	S3	S	SOMC		Y	1964-04	M	H	Barren Edmonson Hart						Subterranean waters (Hobbs 1976).
ICMAL11070*006 9249	<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	G4	S3	S	SOMC		Y	1994-10-18	S	A	Barren						
ICMAL11070*007 793	<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	G4	S3	S	SOMC		Y	1964-07-25	M	H	Barren Edmonson						
ICMAL11070*013 1631	<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	G4	S3	S	SOMC		Y	1994-10-17	S	B	Hart						
ICMAL11070*044 6326	<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	G4	S3	S	SOMC		Y	1994-11-12	S	A	Edmonson						
ICMAL11070*045 8715	<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	G4	S3	S	SOMC		Y	1994-08-16	S	A	Barren						
ICMAL11070*048 838	<i>Orconectes pellucidus</i>	Mammoth Cave Crayfish	G4	S3	S	SOMC		Y	1991-04-12	S	C	Edmonson						
ICMAL12010*007 358	<i>Palaemonias ganteri</i>	Mammoth Cave Shrimp	G1	S1	E	LE		Y	1994-10-02	M	A	Barren Edmonson						Large base level stream passages (i.e., lowest level) and associated tributaries characterized by slow flow, coarse to fine grain sand and coarse silt sediments, and abundant quantities of organic material (USFWS 1988).
ICMAL05720*001 2563	<i>Stygobromus vitreus</i>	An Amphipod	G4	S1	S			Y	1990-12-05-pre	S	E	Barren						Small drip and seep pools in caves, but occasionally is found in surface seeps in the Mammoth Cave area (Holsinger 1976).
ICMAL05720*005 9833	<i>Stygobromus vitreus</i>	An Amphipod	G4	S1	S			Y	1987	M	E	Edmonson Barren Hart						

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Fishes																		
AFCLA01020*029 1064	Amblyopsis spelaea	Northern Cavefish	G3G4	S3	S	SOMC		Y	1993-09-01	S	D	Edmonson						Subterranean streams with consolidated mud-rock substrates in shoals and silt-sand substrates in pools (Kuehne 1962, Poulson 1963, Clay 1975, Cooper 1980).
AFCLA01020*033 1695	Amblyopsis spelaea	Northern Cavefish	G3G4	S3	S	SOMC		?	197-	S	H	Hart						
AFCLA04010*007 7311	Typhlichthys subterraneus	Southern Cavefish	G4	S2S3	S	SOMC		Y	1994-10-17	S	C	Hart						Subterranean waters where limestone bedrocks are honeycombed by subsurface drainages. Occurs in cave streams, most frequently over mixed gravel, sand, and mud, or rubble substrates and may occur at springs and wells (Cooper 1980, Cooper and Beiter 1972, Pflieger 1975, Starnes and Etnier 1980, Burr and Warren 1986).
AFCLA04010*023 5458	Typhlichthys subterraneus	Southern Cavefish	G4	S2S3	S	SOMC		Y	1994-10-18	S	B	Barren						
AFCLA04010*024 4443	Typhlichthys subterraneus	Southern Cavefish	G4	S2S3	S	SOMC		Y	1994-11-12	S	A	Edmonson						
AFCLA04010*029 10068	Typhlichthys subterraneus	Southern Cavefish	G4	S2S3	S	SOMC		Y	1994-08-16	S	B	Barren						

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EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
Extant in Kentucky																		
Breeding Birds																		
ABNKC12020*015  1801	Accipiter striatus	Sharp-shinned Hawk	G5	S3B,S4 N	S			Y	1985-07-14	M	E	Barren	Glasgow South			051100020307 - Boyds Creek-Skaggs Creek	Brigadoon State Nature Preserve.	Forest and open woodland, coniferous, mixed, or deciduous, primarily in conif. In more northern and mountainous portion of range (B83COM01NA). Migrates through various habitats, mainly along ridges, lakeshores, & coastlines (B83NAT01NA).
ABPBX91050*025  4893	Aimophila aestivalis	Bachman's Sparrow	G3	S1B	E	SOMC		Y	1959-pre	G	X	Edmonson Hart Barren	Mammoth Cave Rhoda Park City Brownsville Bee Spring Cub Run Smiths Grove Nolin Lake			051100011303 - Beaverdam Creek-Green River 051100020701 - Park City 051100011107 - Bylew Creek-Nolin River  051100010808 - Ugly Creek-Green River 051100011301 - Echo River-Green River 051100011302 - Buffalo Creek-Green River 051100020702 - Little Sinking Creek	Mammoth Cave National Park.	Early successional areas with scattered saplings (often pines), bushes, or understory, brushy or overgrown hillsides, overgrown fields with thickets and brambles.
ABPBG10010*011  7302	Cistothorus platensis	Sedge Wren	G5	S3B	S			Y	1934	M	H	Edmonson	Mammoth Cave			051100011301 - Echo River-Green River		Grasslands and savanna, especially where wet or boggy, sedge marshes, locally in dry cultivated grainfields. In migration and winter also in brushy grasslands. (B83COM01NA)

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ABNSA01010*032	<i>Tyto alba</i>	Barn Owl	G5	S3	S			Y	1998-03	M	E	Hart	Munfordville			051100010804 - Lemon Branch 051100010807 - Waterloo Valley-Green River 051100010806 - Boiling Springs Hollow-Green River		Open and partly open country in a wide variety of situations, often around human habitation (B83COM01NA). In northern winter often roosts in dense conifers; also roosts in nest boxes if available (A85MAR01NA).
808																		
Mammals																		
AMACC08020*003	<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1935-06-29	S	H	Edmonson	Mammoth Cave			051100011301 - Echo River-Green River	Mammoth Cave	This bat uses a variety of sites for roosting including caves, protected sites along clifflines, large, hollow trees, old mine portals, abandoned tunnels, cisterns, old or seldom used buildings, etc.
8048	Summer roost site																	
AMACC08020*267	<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2007	S	E	Barren	Mammoth Cave			051100011301 - Echo River-Green River		
12422	Maternity site																Mammoth Cave National Park.	
AMACC08020*270	<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2007-07-12	S	B	Edmonson	Mammoth Cave			051100010808 - Ugly Creek-Green River		
12425	Maternity colony																Mammoth Cave National Park	
AMACC08020*271	<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2008-06-19	S	C	Edmonson	Mammoth Cave			051100011301 - Echo River-Green River		
12426	Maternity colony																Mammoth Cave National Park.	
AMACC08020*293	<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2007-08-08	S	E	Edmonson	Mammoth Cave			051100011301 - Echo River-Green River		
12633	Summer mist-net record																Mammoth Cave National Park.	
AMACC08020*294	<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2007-08-07	S	E	Hart	Mammoth Cave			051100010808 - Ugly Creek-Green River		
12634	Post-summer mist-net record																Mammoth Cave National Park.	

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AMACC01040*019  7987	<i>Myotis grisescens</i>  Former maternity site?	Gray Myotis	G3	S2	T	LE		Y	1979-08-25	M	X	Edmonson	Mammoth Cave			051100011301 - Echo River-Green River		Primarily use caves throughout the year, although they move from one cave to another seasonally. Males and young of the year use different caves in summer than females. Smaller colonies also occasionally roost under bridge structures.
AMACC01040*121  11982	<i>Myotis grisescens</i>  Summer mist-net record	Gray Myotis	G3	S2	T	LE		Y	2005-07-20	S	E	Barren	Glasgow North			051100020701 - Park City	Flint Knob,	
AMACC01040*122  11984	<i>Myotis grisescens</i>  Summer mist-net record	Gray Myotis	G3	S2	T	LE		Y	2005-08-10	S	E	Barren	Park City			051100020702 - Little Sinking Creek		
AMACC01040*123  11986	<i>Myotis grisescens</i>  Summer mist-net record	Gray Myotis	G3	S2	T	LE		Y	2005-08-09	S	E	Barren	Park City			051100020702 - Little Sinking Creek		
AMACC01100*203  12640	<i>Myotis sodalis</i>  Summer mist-net record	Indiana Bat	G2	S1S2	E	LE		Y	2004-07-01	S	E	Edmonson	Mammoth Cave			051100010808 - Ugly Creek-Green River		
AMACC06010*002  10028	<i>Nycticeius humeralis</i>  Summer collection record	Evening Bat	G5	S3	S			Y	1929-07-25	M	H	Edmonson	Mammoth Cave			051100011301 - Echo River-Green River		The evening bat is a colonial species that roosts in trees and houses. It apparently migrates southward in winter.
AMACC06010*012  958	<i>Nycticeius humeralis</i>  Summer collection record	Evening Bat	G5	S3	S			Y	1934-07-14	M	H	Edmonson Barren	Mammoth Cave			051100011301 - Echo River-Green River		
AMACC06010*037  4392	<i>Nycticeius humeralis</i>  Transient mist-net record	Evening Bat	G5	S3	S			Y	1998-09-12	S	E	Edmonson	Mammoth Cave			051100011301 - Echo River-Green River		

THESE DATA ARE VALID ONLY ON THE DATE ON WHICH THE REPORT WAS GENERATED.  
THESE DATA MAY ONLY BE USED FOR THE PROJECT NAMED ABOVE.

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	UESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AMACC06010*058  11985	<i>Nycticeius humeralis</i>  Summer mist-net record	Evening Bat	G5	S3	S			Y	2005-08-03	S	E	Barren	Park City			051100020702 - Little Sinking Creek		
AMACC06010*059  11988	<i>Nycticeius humeralis</i>  Summer mist-net record	Evening Bat	G5	S3	S			Y	2005-08-10	S	E	Barren	Park City			051100020702 - Little Sinking Creek		
AMACC06010*066  12440	<i>Nycticeius humeralis</i>  Summer mist-net record	Evening Bat	G5	S3	S			Y	2006-06-15	S	E	Edmonson	Mammoth Cave			051100011301 - Echo River-Green River		
AMACC06010*068  12442	<i>Nycticeius humeralis</i>  Summer mist-net record	Evening Bat	G5	S3	S			Y	2007-08-04	S	E	Edmonson	Mammoth Cave			051100011301 - Echo River-Green River		
AMACC06010*069  12443	<i>Nycticeius humeralis</i>  Maternity area mist-net record	Evening Bat	G5	S3	S			Y	2007-08-05	S	E	Hart	Mammoth Cave			051100010808 - Ugly Creek-Green River		

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**Extant in Kentucky**

Mammals

AMACC08020*014  2949	<i>Corynorhinus rafinesquii</i>  Hibernaculum	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1988-01	S	F	Barren						This bat uses a variety of sites for roosting including caves, protected sites along clifflines, large, hollow trees, old mine portals, abandoned tunnels, cisterns, old or seldom used buildings, etc.
AMACC08020*017  7293	<i>Corynorhinus rafinesquii</i>  Hibernaculum	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1985-01-20	S	C	Edmonson						
AMACC08020*021  5951	<i>Corynorhinus rafinesquii</i>  Summer roost site	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2002-04-16	S	C	Edmonson						
AMACC08020*029  8341	<i>Corynorhinus rafinesquii</i>  Hibernaculum	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1983-01	S	C	Edmonson						

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AMACC08020*030 8342	<i>Corynorhinus rafinesquii</i> Hibernaculum	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2005-01-26	S	D	Edmonson						This bat uses a variety of sites for roosting including caves, protected sites along clifflines, large, hollow trees, old mine portals, abandoned tunnels, cisterns, old or seldom used buildings, etc.
AMACC08020*047 1182	<i>Corynorhinus rafinesquii</i> Roost site	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2003-04-15	S	C	Hart						
AMACC08020*048 8162	<i>Corynorhinus rafinesquii</i> Roost site	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1960-01	M	H	Edmonson						
AMACC08020*076 12	<i>Corynorhinus rafinesquii</i> Summer roost site	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1984-06	S	C	Barren						
AMACC08020*077 10249	<i>Corynorhinus rafinesquii</i> Roost site	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1983-05	S	C	Edmonson						
AMACC08020*182 6561	<i>Corynorhinus rafinesquii</i> Hibernaculum	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1991-12-27	S	C	Edmonson						
AMACC08020*202 1562	<i>Corynorhinus rafinesquii</i> Year-round roost site; maternity site	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2003-01-17	S	B	Edmonson						
AMACC08020*210 2126	<i>Corynorhinus rafinesquii</i> Maternity site	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1995-07-08	S	C	Edmonson						
AMACC08020*231 7976	<i>Corynorhinus rafinesquii</i> Maternity area record	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1999-09-10	S	E	Edmonson						
AMACC08020*250 11546	<i>Corynorhinus rafinesquii</i> Hibernaculum	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2006-02-07	S	CD	Edmonson						
AMACC08020*251 11547	<i>Corynorhinus rafinesquii</i> Hibernaculum	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2006-02-06	M	D	Hart						
AMACC08020*253 11672	<i>Corynorhinus rafinesquii</i> Hibernaculum; year-round roost site?	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2008-02-15	S	A	Edmonson						

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Standard Occurrence Report  
KSNPC avian and mammalian species within 10 miles of the 8 4 mile KY 90 corridor planning study buffer zone in Barren County, Kentucky

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AMACC08020*260 12408	<i>Corynorhinus rafinesquii</i> Hibernaculum	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2007-05-01	S	E	Edmonson						
AMACC08020*263 12416	<i>Corynorhinus rafinesquii</i> Maternity site	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	1987-07-21	S	AB	Edmonson						
AMACC08020*266 12419	<i>Corynorhinus rafinesquii</i> Maternity site	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2007	S	E	Edmonson						
AMACC08020*296 13458	<i>Corynorhinus rafinesquii</i> Hibernaculum	Rafinesque's Big-eared Bat	G3G4	S3	S	SOMC		Y	2010-02-04	S	B	Edmonson						
AMACC01030*001 5989	<i>Myotis austroriparius</i> Hibernaculum?	Southeastern Myotis	G3G4	S1S2	E	SOMC		Y	1982-02-16	S	D	Edmonson						Primarily uses caves for hibernacula and uses caves, bridges, and hollow trees as summer maternity and roosting sites.
AMACC01030*004 4691	<i>Myotis austroriparius</i> Hibernaculum	Southeastern Myotis	G3G4	S1S2	E	SOMC		Y	1985-01-21	S	C	Edmonson						
AMACC01040*001 7957	<i>Myotis grisescens</i> Hibernaculum; former maternity site?	Gray Myotis	G3	S2	T	LE		Y	2009-02-05	S	C	Edmonson						Primarily use caves throughout the year, although they move from one cave to another seasonally. Males and young of the year use different caves in summer than females. Smaller colonies also occasionally roost under bridge structures.
AMACC01040*016 6166	<i>Myotis grisescens</i> Hibernaculum	Gray Myotis	G3	S2	T	LE		Y	2009-02-19	S	A	Edmonson						
AMACC01040*017 8717	<i>Myotis grisescens</i> Hibernaculum	Gray Myotis	G3	S2	T	LE		Y	2009-02-19	S	A	Edmonson						
AMACC01040*018 2151	<i>Myotis grisescens</i> Hibernaculum; former maternity site?	Gray Myotis	G3	S2	T	LE		Y	2007-01-24	S	C	Edmonson						

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EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EORANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AMACC01040*024 5849	<i>Myotis grisescens</i> Former maternity site?	Gray Myotis	G3	S2	T	LE		Y	1977	S	H	Edmonson					SENSITIVE ELEMENT- CONTACT KSNPC	Primarily use caves throughout the year, although they move from one cave to another seasonally. Males and young of the year use different caves in summer than females. Smaller colonies also occasionally roost under bridge structures.
AMACC01040*039 10427	<i>Myotis grisescens</i> Transient roost site?	Gray Myotis	G3	S2	T	LE		Y	1985-03-20	M	E	Barren Edmonson						
AMACC01040*049 246	<i>Myotis grisescens</i> Maternity site	Gray Myotis	G3	S2	T	LE		Y	2009-06-08	S	C	Barren						
AMACC01040*053 1739	<i>Myotis grisescens</i> Hibernaculum	Gray Myotis	G3	S2	T	LE		Y	2005-02-03	S	D	Edmonson						
AMACC01040*057 3592	<i>Myotis grisescens</i> Former maternity site?	Gray Myotis	G3	S2	T	LE		Y	1977	S	H	Edmonson						
AMACC01040*058 7029	<i>Myotis grisescens</i> Former roost site	Gray Myotis	G3	S2	T	LE		Y	1985-03	S	H	Barren						
AMACC01040*078 4678	<i>Myotis grisescens</i> Transient roost site?	Gray Myotis	G3	S2	T	LE		Y	2004-02-25	S	C	Edmonson						
AMACC01040*088 6209	<i>Myotis grisescens</i> Hibernaculum	Gray Myotis	G3	S2	T	LE		Y	2009-02-18	S	D	Hart						

Standard Occurrence Report  
KSNPC avian and mammalian species within 10 miles of the 8 4 mile KY 90 corridor planning study buffer zone in Barren County, Kentucky

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	UESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AMACC01130*001	<i>Myotis leibii</i>	Eastern Small-footed Myotis	G1G3	S2	T	SOMC		Y	2004-07-16	S	E	Edmonson						These bats use a wide variety of habitats for roosting. They occur in caves, mines, protected sites along clifflines, abandoned buildings, and are occasionally found roosting under rocks on the ground or on the floors of caves. Summer habitat is currently unknown, but may be similar sites.
796	Post-summer mist-net record; hibernaculum?																	
AMACC01130*005	<i>Myotis leibii</i>	Eastern Small-footed Myotis	G1G3	S2	T	SOMC		Y	2005-09-26	S	E	Edmonson						
3988	Post-summer roost site																	
AMACC01130*009	<i>Myotis leibii</i>	Eastern Small-footed Myotis	G1G3	S2	T	SOMC		Y	2005-07-27	S	E	Edmonson						
5718	Transient roost site; hibernaculum?																	
AMACC01130*010	<i>Myotis leibii</i>	Eastern Small-footed Myotis	G1G3	S2	T	SOMC		Y	2005-07-28	S	E	Edmonson						
5719	Transient roost site; hibernaculum?																	
AMACC01150*051	<i>Myotis septentrionalis</i>	Northern Long-Eared Bat	G2G3	S3	E	LT		Y	1980	S	C	Edmonson						
13741	hibernaculum																	
AMACC01100*005	<i>Myotis sodalis</i>	Indiana Bat	G2	S1S2	E	LE		Y	2007-05-01	S	C	Edmonson						Primarily use caves for hibernacula, although they are occasionally found in old mine portals. During summer, colonies are found behind slabs of exfoliating bark of dead trees, often in bottomland or floodplain habitats, but also in upland situations.
2917	Hibernaculum; maternity area																	
AMACC01100*006	<i>Myotis sodalis</i>	Indiana Bat	G2	S1S2	E	LE		Y	2009-02-05	S	B	Edmonson						
7604	Hibernaculum; maternity area																	
AMACC01100*012	<i>Myotis sodalis</i>	Indiana Bat	G2	S1S2	E	LE		Y	2009-02-10	S	C	Edmonson						
3990	Hibernaculum																	

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EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AMACC01100*013 8203	<i>Myotis sodalis</i> Former hibernaculum	Indiana Bat	G2	S1S2	E	LE		Y	1935	S	X	Edmonson						Primarily use caves for hibernacula, although they are occasionally found in old mine portals. During summer, colonies are found behind slabs of exfoliating bark of dead trees, often in bottomland or floodplain habitats, but also in upland situations.
AMACC01100*015 9648	<i>Myotis sodalis</i> Hibernaculum	Indiana Bat	G2	S1S2	E	LE		Y	1997-01-29	S	F	Edmonson						
AMACC01100*016 2432	<i>Myotis sodalis</i> Hibernaculum	Indiana Bat	G2	S1S2	E	LE		Y	2007-01-25	S	D	Edmonson						
AMACC01100*027 8510	<i>Myotis sodalis</i> Hibernaculum	Indiana Bat	G2	S1S2	E	LE		Y	2009-02-18	S	C	Hart						
AMACC01100*046 5367	<i>Myotis sodalis</i> Hibernaculum	Indiana Bat	G2	S1S2	E	LE		Y	2006-02-04	S	C	Hart						
AMACC01100*068 7184	<i>Myotis sodalis</i> Hibernaculum	Indiana Bat	G2	S1S2	E	LE		Y	1988-01	S	F	Barren						
AMACC01100*120 9947	<i>Myotis sodalis</i> Hibernaculum	Indiana Bat	G2	S1S2	E	LE		Y	2004-02-25	S	CD	Edmonson						
AMACC01100*176 11496	<i>Myotis sodalis</i> Maternity area mist-net record; maternity site	Indiana Bat	G2	S1S2	E	LE		Y	2007-08-04	S	E	Edmonson						
AMACC01100*183 11674	<i>Myotis sodalis</i> Hibernaculum	Indiana Bat	G2	S1S2	E	LE		Y	2006-02-01	S	D	Edmonson						
AMACC01100*198 12404	<i>Myotis sodalis</i> Summer mist-net record; roost site	Indiana Bat	G2	S1S2	E	LE		Y	2008-05-22	S	E	Hart						

Standard Occurrence Report  
KSNPC avian and mammalian species within 10 miles of the 8 4 mile KY 90 corridor planning study buffer zone in Barren County, Kentucky

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USESA	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
AMACC06010*003	<i>Nycticeius humeralis</i>	Evening Bat	G5	S3	S			Y	1974-pre	S	H	Edmonson						The evening bat is a colonial species that roosts in trees and houses. It apparently migrates southward in winter.
2772	Transient mist-net record																	

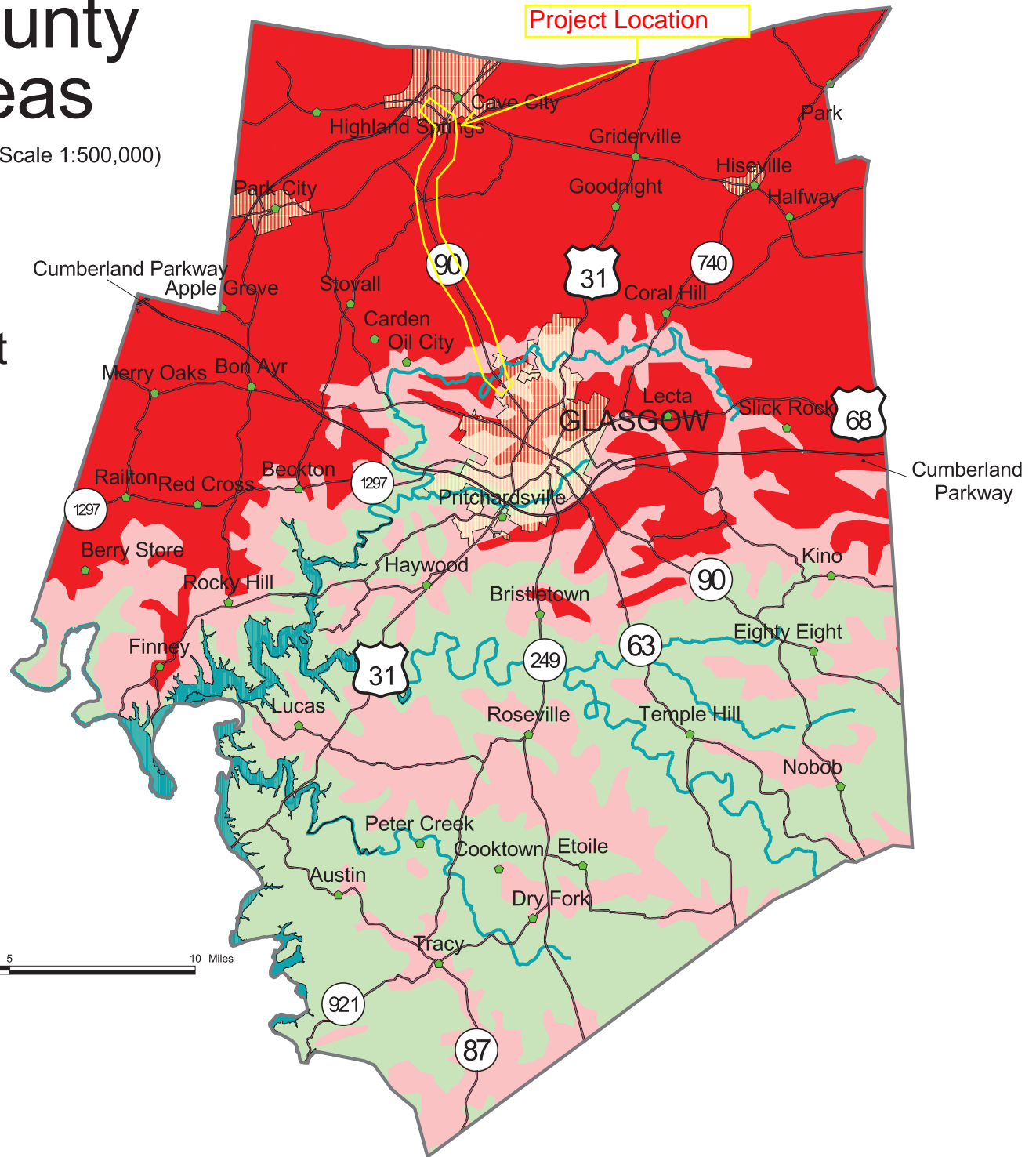
## **ATTACHMENT 2**

### **KARST**

- Barren County Karst Areas Map
- KSS Cave Data Request Response (redacted)
- KDOW Resources Reference Map for Study Area

# Barren County Karst Areas

(Source: Geologic Map of Kentucky, Scale 1:500,000)



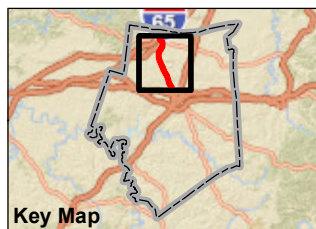
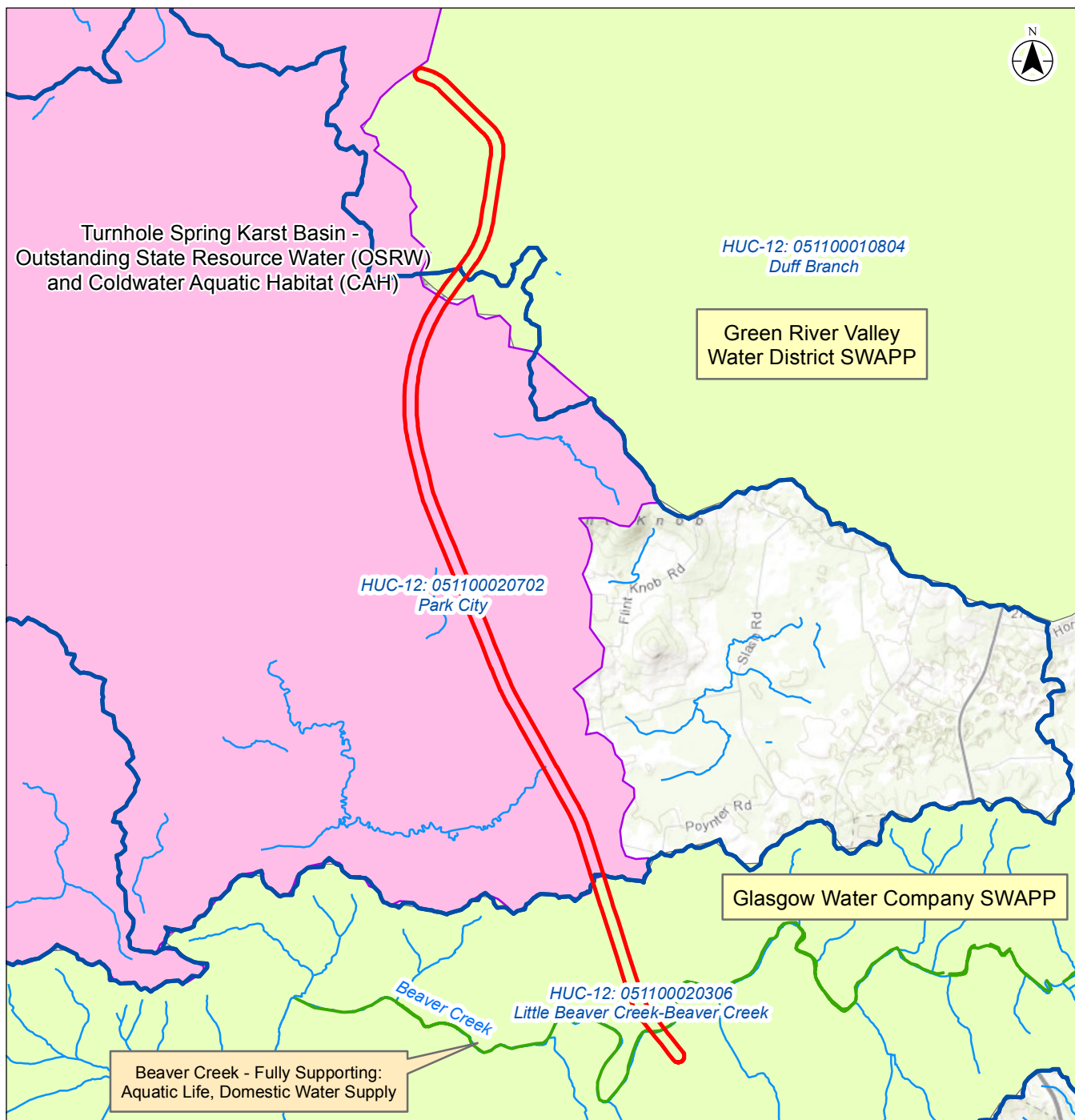
KSS_ID	CAVE NAME	X (Dec_Lon)	Y (Dec_Lat)	COUNTY	7.5 minute quadrangle	Duplicate ID Number	Alternate Name
8	L & N Cave			BARREN			Same as Cave City Cave ????
11	GERALDS CAVE			BARREN	PARK CITY		
58	HUCKLEBERRY KNOB CAVE, Otr# 18			BARREN	TRACY		
59	ONYX CAVE, 211			BARREN	HORSE CAVE		
74	CAVE A			BARREN	GLASGOW NORTH		
114	POWER POLE PIT			BARREN	GLASGOW NORTH		
140	ROOKIE DROP			BARREN	GLASGOW NORTH		
157	CRYSTAL ONYX CAVE			BARREN	GLASGOW NORTH		
162	CAVE			BARREN	LUCAS		
212	CAVE CITY CAVE			BARREN	PARK CITY	Was # 0005-0008	Same as L & N ????

**DISCLAIMER:**

The coordinate locations of caves provided by the KSS are not warranted but are thought generally correct. The locations provided may not exhaustively locate every cave entrance in the requested search area, but are only those recorded in the Kentucky Speleological Survey files. A minimum search fee of \$50.00, and an additional fee of \$10.00 for each location provided, partly defrays the cost of providing this service.

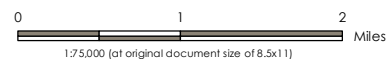
The KSS is a private non-profit and is not under the management of the University of Kentucky or the Kentucky Geological Survey. Location data provided by KSS should not become public domain, that is copies of the cave locations should not be widely distributed.





#### Legend

- Study Area
- HUC-12 Boundary (USGS)
- Special Use Waterbody/Basin
- SWAPP
- Streams (NHD)
- Designated Stream (305b)
- Fully Supporting



Project Location: KY 90, Barren County, Kentucky  
 17554021  
 Prepared by BL on 2014-02-17

Client/Project: KYTC District 3  
 Environmental Overview  
 KY 90 Scoping Study, KYTC Item # 3-8819.00

Figure No.: **Attachment 2**  
 Title:

**KDOW Resources  
 Reference Map for Study Area**

#### Notes

- Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
- Base features: KDOW 2008, 2012a, 2013, 2016a and 2016b, USGS 2004a and 2004b.
- Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community  
 Sources: Esri, DeLorme, HERE, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

### **ATTACHMENT 3**

#### **HAZARDOUS MATERIALS CONCERNS**

- EDR Radius Atlas™ Report Summary
- Table 2: KY 90 Hazmat Sites Identified by EDR
- Table 3: KY 90 UST Sites



## **KY 90 Environmental Overview**

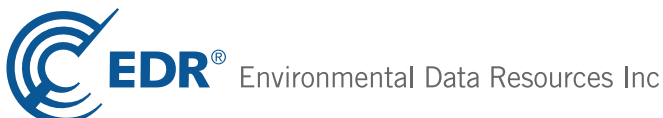
KY 90 Environmental Overview

Cave City, KY 42127

Inquiry Number: 4509942.2s

January 11, 2016

**The EDR Radius Atlas™ with GeoCheck®**



6 Armstrong Road, 4th floor  
Shelton, CT 06484  
Toll Free: 800.352.0050  
[www.edrnet.com](http://www.edrnet.com)

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***Thank you for your business.***  
Please contact EDR at 1-800-352-0050  
with any questions or comments.

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## EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

KY 90 ENVIRONMENTAL OVERVIEW  
CAVE CITY, KY 42127

#### COORDINATES

Latitude (North):	37.0901000 - 37° 5' 24.36"
Longitude (West):	85.9724000 - 85° 58' 20.64"
Universal Transverse Mercator:	Zone 16
UTM X (Meters):	591327.4
UTM Y (Meters):	4105158.0
Elevation:	683 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5940085 GLASGOW NORTH, KY
Version Date:	2013
North Map:	5939801 HORSE CAVE, KY
Version Date:	2013
West Map:	5940319 PARK CITY, KY
Version Date:	2013
Northwest Map:	5940313 MAMMOTH CAVE, KY
Version Date:	2013

### TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

### DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal NPL site list***

NPL..... National Priority List

## EXECUTIVE SUMMARY

Proposed NPL..... Proposed National Priority List Sites  
NPL LIENS..... Federal Superfund Liens

### ***Federal Delisted NPL site list***

Delisted NPL..... National Priority List Deletions

### ***Federal CERCLIS list***

FEDERAL FACILITY..... Federal Facility Site Information listing  
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System

### ***Federal CERCLIS NFRAP site List***

CERCLIS-NFRAP..... CERCLIS No Further Remedial Action Planned

### ***Federal RCRA CORRACTS facilities list***

CORRACTS..... Corrective Action Report

### ***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

### ***Federal RCRA generators list***

RCRA-LQG..... RCRA - Large Quantity Generators  
RCRA-SQG..... RCRA - Small Quantity Generators

### ***Federal institutional controls / engineering controls registries***

LUCIS..... Land Use Control Information System  
US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROL..... Sites with Institutional Controls

### ***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF..... Solid Waste Facilities List

### ***State and tribal leaking storage tank lists***

PSTEAF..... Facility Ranking List  
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land  
SB193..... SB193 Branch Site Inventory List

### ***State and tribal registered storage tank lists***

FEMA UST..... Underground Storage Tank Listing  
INDIAN UST..... Underground Storage Tanks on Indian Land

### ***State and tribal institutional control / engineering control registries***

ENG CONTROLS..... Engineering Controls Site Listing  
INST CONTROL..... State Superfund Database

### ***State and tribal voluntary cleanup sites***

INDIAN VCP..... Voluntary Cleanup Priority Listing

## EXECUTIVE SUMMARY

VCP..... Voluntary Cleanup Program Sites

### ***State and tribal Brownfields sites***

BROWNFIELDS..... Kentucky Brownfield Inventory

### **ADDITIONAL ENVIRONMENTAL RECORDS**

#### ***Local Brownfield lists***

US BROWNFIELDS..... A Listing of Brownfields Sites

#### ***Local Lists of Landfill / Solid Waste Disposal Sites***

HIST LF..... Historical Landfills

SWRCY..... Recycling Facilities

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

ODI..... Open Dump Inventory

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

#### ***Local Land Records***

LIENS 2..... CERCLA Lien Information

#### ***Records of Emergency Release Reports***

HMIRS..... Hazardous Materials Information Reporting System

#### ***Other Ascertainable Records***

FUDS..... Formerly Used Defense Sites

DOD..... Department of Defense Sites

SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing

US FIN ASSUR..... Financial Assurance Information

EPA WATCH LIST..... EPA WATCH LIST

2020 COR ACTION..... 2020 Corrective Action Program List

TSCA..... Toxic Substances Control Act

TRIS..... Toxic Chemical Release Inventory System

SSTS..... Section 7 Tracking Systems

ROD..... Records Of Decision

RMP..... Risk Management Plans

RAATS..... RCRA Administrative Action Tracking System

PRP..... Potentially Responsible Parties

PADS..... PCB Activity Database System

FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

MLTS..... Material Licensing Tracking System

COAL ASH DOE..... Steam-Electric Plant Operation Data

COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List

PCB TRANSFORMER..... PCB Transformer Registration Database

RADINFO..... Radiation Information Database

HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing

DOT OPS..... Incident and Accident Data

CONSENT..... Superfund (CERCLA) Consent Decrees

## EXECUTIVE SUMMARY

INDIAN RESERV.....	Indian Reservations
UMTRA.....	Uranium Mill Tailings Sites
LEAD SMELTERS.....	Lead Smelter Sites
US AIRS.....	Aerometric Information Retrieval System Facility Subsystem
COAL ASH.....	Coal Ash Disposal Sites
DRYCLEANERS.....	Drycleaner Listing
LEAD.....	Environmental Lead Program Report Tracking Database
UIC.....	UIC Information

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner.....	EDR Exclusive Historic Dry Cleaners

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

RGA HWS.....	Recovered Government Archive State Hazardous Waste Facilities List
RGA LF.....	Recovered Government Archive Solid Waste Facilities List

### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

### STANDARD ENVIRONMENTAL RECORDS

#### ***Federal RCRA generators list***

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 06/09/2015 has revealed that there is 1 RCRA-CESQG site within approximately 3.125 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b><i>DOLLAR GENERAL STORE</i></b>	<b><i>299 HAPPY VALLEY ST</i></b>	<b><i>N &gt;2 (2.783 mi.)</i></b>	<b><i>66</i></b>	<b><i>87</i></b>



## EXECUTIVE SUMMARY

### ***Federal ERNS list***

ERNS: The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

A review of the ERNS list, as provided by EDR, and dated 06/22/2015 has revealed that there is 1 ERNS site within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
Not reported	826 OLD HAPPY VALLEY	NNW 1 - 2 (1.233 mi.)	6	33

### ***State- and tribal - equivalent CERCLIS***

SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Environmental Protection's Uncontrolled Site Branch List.

A review of the SHWS list, as provided by EDR, and dated 09/18/2015 has revealed that there are 3 SHWS sites within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
LILE TRUCKING DIESEL Facility Id: 52536 Facility Status: Closed	HWY 68	NNE 1 - 2 (1.727 mi.)	A10	34
<b>HEERS PROPERTY</b> Facility Id: 110142 Facility Status: Closed	<b>104 C JULIAN LANE</b>	<b>NNE &gt;2 (2.106 mi.)</b>	<b>27</b>	<b>49</b>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
ROLCO MANUFACTURING Facility Id: 53153 Facility Status: Closed	HWY 31W	NNE >2 (2.837 mi.)	K71	96

### ***State and tribal registered storage tank lists***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Protection's Owner/Facility Report of All Tanks Regardless of Status list.

A review of the UST list, as provided by EDR, and dated 08/06/2015 has revealed that there are 12 UST sites within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
J F PACE QUARRY Tank Status: TRM	KY 90	SE >2 (2.047 mi.)	19	40

## EXECUTIVE SUMMARY

Facility Id: 65954 SCOTTYS CONTRACTING Tank Status: TAC Facility Id: 44735	1762 FLINT KNOB RD	SE >2 (2.053 mi.)	C22	44
BOBBY MONROE BEEF FA Tank Status: TRM Facility Id: 9251	THORNY RIDGE	WNW >2 (2.709 mi.)	54	78
FIVESTAR 2215 Tank Status: TAC Tank Status: TRM Facility Id: 57188	1004 DOYLE AVE	N >2 (3.057 mi.)	N86	113

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
COUNTRY CORNER MARKE Tank Status: TRM Facility Id: 65700	JCT OF US 31W & KY 9	NNE >2 (2.614 mi.)	50	71
CAVE CITY SPUR Tank Status: TR8 Facility Id: 69395	31 W	NNE >2 (2.659 mi.)	53	74
FORMER PMO MOTORS OF Tank Status: TCP Tank Status: TRM Facility Id: 125142	302 E HAPPY VALLEY S	N >2 (2.750 mi.)	H59	81
CAVE CITY TRUCKSTOP Tank Status: TRM Facility Id: 67375	1001 GARDENER LN	N >2 (2.933 mi.)	76	100
CAVE CITY Tank Status: TTC Facility Id: 57145 Closed In Place Date: 12/31/2012	1001 GARDNER LN	N >2 (2.969 mi.)	78	103
POYNTERS CHEVRON Tank Status: TR8 Facility Id: 64273	KY 90 & I65	N >2 (3.000 mi.)	79	105
TERI'S STOP N GO Tank Status: TTC Facility Id: 57500 Closed In Place Date: 01/31/2006	409 S DIXIE HWY	NNE >2 (3.016 mi.)	82	110
UPTON QUICK STOP Tank Status: TRM Tank Status: TAC Facility Id: 57161	1001 DOYLE AVE	N >2 (3.066 mi.)	N90	120

### ADDITIONAL ENVIRONMENTAL RECORDS

#### ***Local Lists of Hazardous waste / Contaminated Sites***

## EXECUTIVE SUMMARY

US HIST CDL: A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

A review of the US HIST CDL list, as provided by EDR, and dated 08/12/2015 has revealed that there is 1 US HIST CDL site within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
9187 W HAPPY VALLEY	9187 W HAPPY VALLEY	NNE 1 - 2 (1.633 mi.)	8	34

CDL: Clandestine drug lab site locations.

A review of the CDL list, as provided by EDR, and dated 09/18/2015 has revealed that there is 1 CDL site within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>HEERS PROPERTY</b> Closure Date: 12/09/2010 Site Status: Closed Agency Interest Id Number: 110142	<b>104 C JULIAN LANE</b>	<b>NNE &gt;2 (2.106 mi.)</b>	<b>27</b>	<b>49</b>

US CDL: A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

A review of the US CDL list, as provided by EDR, and dated 08/12/2015 has revealed that there is 1 US CDL site within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
441 LEE FENDEL ROAD	441 LEE FENDEL ROAD	S 1 - 2 (1.109 mi.)	5	33

### **Records of Emergency Release Reports**

SPILLS: A listing of spill and/or release related incidents.

A review of the SPILLS list, as provided by EDR, and dated 08/10/2015 has revealed that there are 28 SPILLS sites within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
Not reported Facility Status: Env. Closed		SSE 1/4 - 1/2 (0.406 mi.)	1	31

## EXECUTIVE SUMMARY

Inc ID: 2340944				
Not reported	NNW 1 - 2 (1.009 mi.)	4	32	
Facility Status: Env. Closed				
Inc ID: 186319				
Not reported	SW 1 - 2 (1.326 mi.)	7	33	
Facility Status: Env. Closed				
Inc ID: 2259336				
Not reported	NNW 1 - 2 (1.772 mi.)	14	37	
Facility Status: Env. Closed				
Inc ID: 180008				
Not reported	NNW 1 - 2 (1.780 mi.)	15	37	
Facility Status: Env. Closed				
Inc ID: 2284495				
Not reported	ENE 1 - 2 (1.987 mi.)	16	38	
Facility Status: Env. Closed				
Inc ID: 175544				
Not reported	SW 1 - 2 (1.991 mi.)	17	39	
Facility Status: Forwarded to Outside Agency				
Inc ID: 2253707				
Not reported	SSW >2 (2.015 mi.)	18	39	
Facility Status: Env. Closed				
Inc ID: 195806				
Not reported	SE >2 (2.080 mi.)	D25	48	
Facility Status: Env. Closed				
Inc ID: 2264930				
Not reported	SE >2 (2.080 mi.)	D26	48	
Facility Status: Env. Closed				
Inc ID: 2260069				
Not reported	ESE >2 (2.188 mi.)	29	50	
Facility Status: Env. Closed				
Inc ID: 193001				
Not reported	NNW >2 (2.253 mi.)	32	52	
Facility Status: Env. Closed				
Inc ID: 2259469				
Not reported	WNW >2 (2.547 mi.)	49	71	
Facility Status: Env. Closed				
Inc ID: 2265201				
Not reported	NNW >2 (2.616 mi.)	51	73	
Facility Status: Env. Closed				
Inc ID: 191385				
Not reported	NW >2 (2.719 mi.)	55	79	
Facility Status: Env. Closed				
Inc ID: 2255408				
Not reported	NW >2 (2.756 mi.)	161	84	
Facility Status: Env. Closed				
Inc ID: 191197				
Not reported	NNW >2 (2.809 mi.)	69	95	
Facility Status: Env. Closed				
Inc ID: 2359672				
Not reported	N >2 (3.092 mi.)	95	127	

## EXECUTIVE SUMMARY

Facility Status: Env. Closed  
Inc ID: 2351389

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
Not reported Facility Status: Env. Closed Inc ID: 2338135		NNE >2 (2.177 mi.)	28	50
Not reported Facility Status: Env. Closed Inc ID: 2278105		NNW >2 (2.220 mi.)	31	52
Not reported Facility Status: Env. Closed Inc ID: 2274830		NNE >2 (2.539 mi.)	48	70
Not reported Facility Status: Env. Closed Inc ID: 199855		NNE >2 (2.741 mi.)	58	81
Not reported Facility Status: Env. Closed Inc ID: 2251951		NNE >2 (2.766 mi.)	64	86
Not reported Facility Status: Response/Investigate Inc ID: 2360020		NNW >2 (2.838 mi.)	72	96
Not reported Facility Status: Env. Closed Inc ID: 2261698		N >2 (3.005 mi.)	80	109
Not reported Facility Status: Env. Closed Inc ID: 2274401		N >2 (3.013 mi.)	L81	109
Not reported Facility Status: Env. Closed Inc ID: 2342828		N >2 (3.053 mi.)	M85	112
Not reported Facility Status: Env. Closed Inc ID: 191375		N >2 (3.061 mi.)	M87	119

### ***Other Ascertainable Records***

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 06/09/2015 has revealed that there are 3 RCRA NonGen / NLR sites within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
SUNOCO SERVICE STATI	I-65 & KY HWYS 90 &	N >2 (3.078 mi.)	N94	126
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>MOONSHINE BOAT TRAIL</b>	<b>15 WALL ST</b>	<b>N &gt;2 (2.790 mi.)</b>	<b>J68</b>	<b>90</b>

## EXECUTIVE SUMMARY

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
CHEVRON USA PRODUCTS	I-64 & HWY 70	N >2 (3.075 mi.)	N92	124

ICIS: The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

A review of the ICIS list, as provided by EDR, and dated 01/23/2015 has revealed that there is 1 ICIS site within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>BARREN COUNTY PLT</b>	<b>1140 FLINT KNOB RD</b>	<b>SE &gt;2 (2.392 mi.)</b>	<b>E36</b>	<b>57</b>

US MINES: Mines Master Index File. The source of this database is the Dept. of Labor, Mine Safety and Health Administration.

A review of the US MINES list, as provided by EDR, and dated 08/18/2015 has revealed that there is 1 US MINES site within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
GLASS AGGREGATES		SE >2 (2.477 mi.)	45	63

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 07/20/2015 has revealed that there are 28 FINDS sites within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
BUNNELL BEEF FARM 2	8171 HAPPY VALLEY RD	N 1/2 - 1 (0.757 mi.)	2	31
LILE TRUCKING DIESEL	KY 90 (RIGHT SIDE)	NNE 1 - 2 (1.726 mi.)	A9	34
CAVELAND WOOD PRODUC	9376 HAPPY VALLEY RD	NNE 1 - 2 (1.754 mi.)	B12	36
HENNION DAIRY FARM	28405 LOUISVILLE RD	NNW 1 - 2 (1.756 mi.)	13	36
SCOTTYS CONTRACTING	1762 FLINT KNOB RD	SE >2 (2.053 mi.)	C23	46
SCOTTYS CONTRACTING	1140 FLINT KNOB ROAD	SE >2 (2.392 mi.)	E35	56
<b>BARREN COUNTY PLT</b>	<b>1140 FLINT KNOB RD</b>	<b>SE &gt;2 (2.392 mi.)</b>	<b>E36</b>	<b>57</b>
GLASS AGGREGATES LLC	1140 FLINT KNOB RD	SE >2 (2.392 mi.)	E38	59
LARRY GLASS CONST CO	1762 FLINT KNOB RD	SE >2 (2.406 mi.)	E40	61
LARRY GLASS CONST CO	1762 FLINT KNOB RD	SE >2 (2.406 mi.)	E41	61
JEFF SCOTT	NONE	SW >2 (2.524 mi.)	47	70
HERBERT TURNER ROAD	HERBERT TURNER RD	NW >2 (2.756 mi.)	I60	83
CLAUDE RAY	NONE	SW >2 (3.023 mi.)	83	112
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
BRIAN TURNER BEEF FA	OLD KY 90	NNW 1 - 2 (1.007 mi.)	3	32

## EXECUTIVE SUMMARY

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
PIER NINETEEN WHOLES	506 E HAPPY VALLEY S	NNE >2 (2.426 mi.)	42	62
FREDS DISCOUNT STORE	502 E HAPPY VALLEY S	NNE >2 (2.453 mi.)	F43	62
CAVE CITY DOLLAR GEN	305 HAPPY VALLEY STR	N >2 (2.730 mi.)	G57	80
TEKNO INC	1 WALL STREET	N >2 (2.759 mi.)	H62	84
MAMMOTH RESOURCES PA	ONE WALL ST BUILDING	N >2 (2.767 mi.)	65	87
<b>DOLLAR GENERAL STORE</b>	<b>299 HAPPY VALLEY ST</b>	<b>N &gt;2 (2.783 mi.)</b>	<b>66</b>	<b>87</b>
MOONSHINE BOAT TRAIL	15 WALL STREET AND M	N >2 (2.790 mi.)	J67	89
ROLCO MANUFACTURING	US 31 W	NNE >2 (2.837 mi.)	K70	95
CAVELAND ENVIRONMENT	508 S DIXIE HWY	NNE >2 (2.846 mi.)	K75	99
KWIK MART	1001 GARDNER LN	N >2 (2.962 mi.)	77	103
PARKHAVEN RENTALS	115 WALL ST	N >2 (3.029 mi.)	L84	112
TERI S STOP N GO	409 S DIXIE HWY	NNE >2 (3.063 mi.)	88	120
HIGDONS SERVICE CENT	1001 DOYLE AVE	N >2 (3.066 mi.)	N91	124
HIGHLAND GLEN INDUST	JCT OF KY 68 & US 80	NNE >2 (3.099 mi.)	96	127

AIRS: A listing of permitted Airs facilities.

A review of the AIRS list, as provided by EDR, and dated 09/04/2015 has revealed that there are 4 AIRS sites within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
SCOTTYS CONTRACTING Facility Id: 2100900086 Facility Id: 2100900101	1762 FLINT KNOB RD	SE >2 (2.053 mi.)	C20	41
<b>GLASS AGGREGATES LLC</b> Facility Id: 2100909058 Facility Id: 2100900096	<b>1140 FLINT KNOB RD</b>	<b>SE &gt;2 (2.392 mi.)</b>	<b>E33</b>	<b>53</b>

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<b>TEKNO INC</b> Facility Id: 2100900075	<b>1 WALL ST</b>	<b>N &gt;2 (2.759 mi.)</b>	<b>H63</b>	<b>85</b>
<b>MOONSHINE BOAT TRAIL</b> Facility Id: 2100900074	<b>15 WALL ST</b>	<b>N &gt;2 (2.790 mi.)</b>	<b>J68</b>	<b>90</b>

Financial Assurance: A listing of financial assurance information.

A review of the Financial Assurance list, as provided by EDR, and dated 08/24/2015 has revealed that there is 1 Financial Assurance site within approximately 3.125 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
CHEVRON USA PRODUCTS AI: 64707	KY HWY 70 & 90	N >2 (3.075 mi.)	N93	125

## EXECUTIVE SUMMARY

NPDES: A listing of permitted wastewater facilities.

A review of the NPDES list, as provided by EDR, and dated 09/02/2015 has revealed that there are 14 NPDES sites within approximately 3.125 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
CAVELAND WOOD PRODUC Facility Status: Effective KY DES #: KYR003951	9376 HAPPY VALLEY RD	NNE 1 - 2 (1.754 mi.)	B11	35
SCOTTYS CONTRACTING Facility Status: Terminated KY DES #: KYR003323	1762 FLINT KNOB RD	SE >2 (2.053 mi.)	C21	42
SCOTTYS CONTRACTING Facility Status: Effective KY DES #: KYG110036	1762 FLINT KNOB RD	SE >2 (2.053 mi.)	C24	46
GLENWOOD INC Facility Status: INACTIVE KY DES #: KYR10E149	9451 HAPPY VALLEY RD	N >2 (2.206 mi.)	30	51
<b>GLASS AGGREGATES LLC</b> Facility Status: ACTIVE KY DES #: KYG840003	<b>1140 FLINT KNOB RD</b>	<b>SE &gt;2 (2.392 mi.)</b>	<b>E33</b>	<b>53</b>
GLASS AGGREGATES LLC Facility Status: Effective KY DES #: KYG840339	1140 FLINT KNOB RD	SE >2 (2.392 mi.)	E34	55
SCOTTYS CONTRACTING Facility Status: Terminated KY DES #: KYR003322	1140 FLINT KNOB RD	SE >2 (2.392 mi.)	E37	58
SCOTTYS CONTRACTING Facility Status: Effective KY DES #: KYG110035	1140 FLINT KNOB RD	SE >2 (2.392 mi.)	E39	60
I 65 IN BARREN CO KY Facility Status: Effective KY DES #: KY0109835	I 65 IN BARREN COUNT	NW >2 (2.657 mi.)	52	74
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FREDS DISCOUNT STORE Facility Status: ACTIVE KY DES #: KYR10E254	502 E HAPPY VALLEY S	NNE >2 (2.453 mi.)	F44	62
CAVE CITY DOLLAR GEN Facility Status: ACTIVE KY DES #: KYR10F077	305 HAPPY VALLEY STR	N >2 (2.730 mi.)	G56	80
<b>TEKNO INC</b> Facility Status: INACTIVE KY DES #: KYR001869	<b>1 WALL ST</b>	<b>N &gt;2 (2.759 mi.)</b>	<b>H63</b>	<b>85</b>
CAVELAND ENVIRONMENT Facility Status: ACTIVE KY DES #: KY0091561	508 S DIXIE HWY	NNE >2 (2.846 mi.)	K73	97
CAVE CITY WATER IMPR Facility Status: Expired KY DES #: KYR10I061	508 S DIXIE HWY	NNE >2 (2.846 mi.)	K74	98



## EXECUTIVE SUMMARY

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 2 EDR Hist Auto sites within approximately 3.125 miles of the target property.

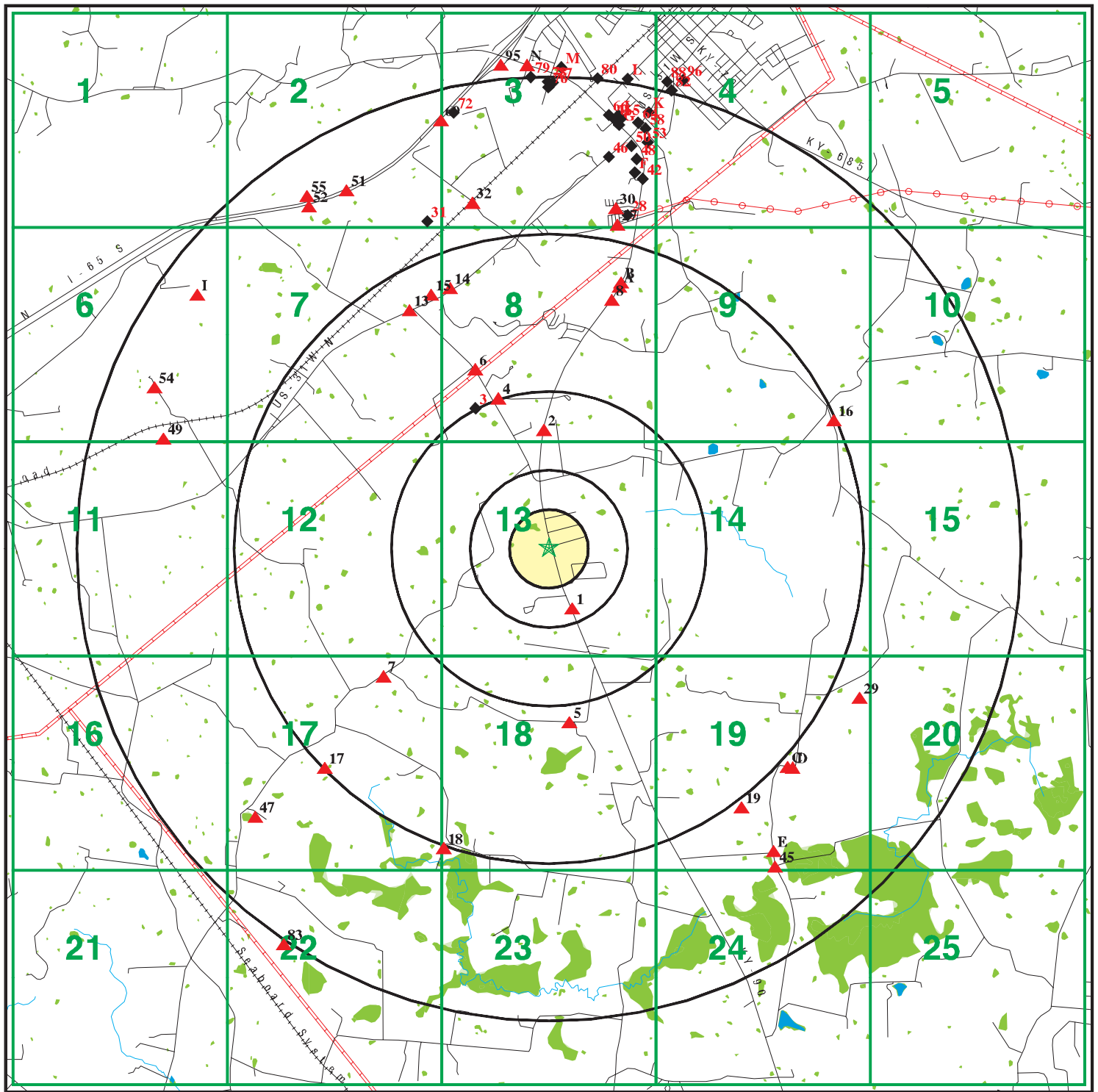
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
Not reported	1207 S DIXIE HWY	N >2 (2.520 mi.)	46	69
Not reported	1001 DOYLE AVE	N >2 (3.066 mi.)	N89	120

## EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 34 records.

Site Name	Database(s)
BOBBY MARTIN PROPERTY	SHWS, CDL
CAVERNA INDEP. SCHOOL DIST.	FTTS, HIST FTTS
EATON CORP./AXLE & BRAKE DIV.	FTTS, HIST FTTS
SKF BEARING INDUSTRIES, INC.	FTTS, HIST FTTS
KENTUCKY TOBACCO SALES	SHWS
PARK CITY STONE	AIRS
CHEVRON 49073	UST
SPRADLIN GROC	UST
WESTERN DIST WAREHOUSE	UST
JR FOOD STORE 15	UST
AT & T	RCRA NonGen / NLR
BARREN CO. AREA VOCATIONAL CTR.	RCRA NonGen / NLR
KEY GROCERY & HARDWARE	RCRA NonGen / NLR
CENTRAL SOYA COMPANY INC	RCRA NonGen / NLR
WOODS GROCERY	RCRA NonGen / NLR
KY 90 - BARREN CO	NPDES
KY 90 SEC2 RECONSTRUCTION AND WIDE	NPDES
LONGHUNTERS SQUARE	NPDES
LONGHUNTERS SQUARE	NPDES
KY HWY 70/90 UTILITY RELOCATION	NPDES
GLASGOW STATE NURSING FACILITY	NPDES
MURPHY OIL USA WAL-MART #711	NPDES
KYTC PCN 071158	NPDES
RITE AID PHARMACY	NPDES
KY PCN 09 1040	NPDES
CAVE CITY TRUCK STOP	Financial Assurance
GRIZZEL WORK SHOP	Financial Assurance
LAKESIDE TIRE	Financial Assurance
KEY GROCERY & HARDWARE	Financial Assurance
SOUTH CENTRAL RTC	Financial Assurance
GLASGOW KY BULK PLANT 261	Financial Assurance
ROLCO MANUFACTURING	RGA HWS
LILE TRUCKING DIESEL SPILL	RGA HWS
LILE TRUCKING DIESEL SPILL	RGA HWS

# OVERVIEW MAP - 4509942.2S



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

▲ Manufactured Gas Plants

■ National Priority List Sites

■ Dept. Defense Sites

■ Indian Reservations BIA

■ Power transmission lines

■ Pipelines

■ 100-year flood zone

■ 500-year flood zone

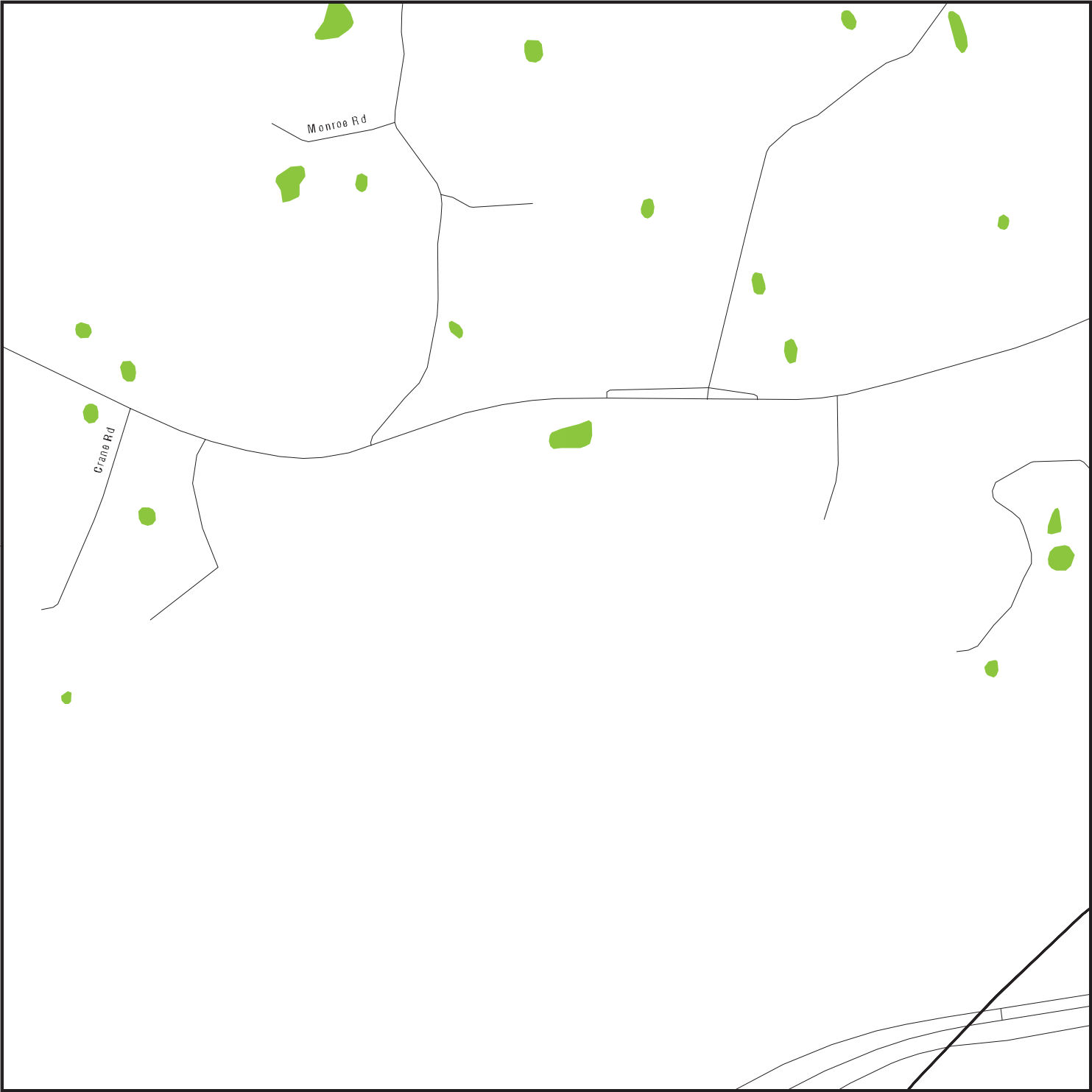
■ National Wetland Inventory

■ State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:48 pm

DETAIL MAP 1 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🚒 National Priority List Sites
- 🛡 Dept. Defense Sites

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
ADDRESS: KY 90 Environmental Overview  
Cave City KY 42127  
LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
CONTACT: Bill Leopold  
INQUIRY #: 4509942.2s  
DATE: January 11, 2016 1:48 pm



# DETAIL MAP 2 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🚒 National Priority List Sites
- 🚒 Dept. Defense Sites

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:49 pm

# DETAIL MAP 3 OF 25 - 4509942.2S



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

⚙ Manufactured Gas Plants

⚠ Sensitive Receptors

🏠 National Priority List Sites

🏠 Dept. Defense Sites

🏠 Indian Reservations BIA

⚡ Power transmission lines

⚡ Pipelines

🌊 100-year flood zone

🌊 500-year flood zone

🌿 National Wetland Inventory

🌿 State Wetlands

SITE NAME: KY 90 Environmental Overview  
ADDRESS: KY 90 Environmental Overview  
Cave City KY 42127  
LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
CONTACT: Bill Leopold  
INQUIRY #: 4509942.2s  
DATE: January 11, 2016 1:49 pm

# DETAIL MAP 4 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚙ Sensitive Receptors
- ⚙ National Priority List Sites
- ⚙ Dept. Defense Sites

- Indian Reservations BIA
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:49 pm

# DETAIL MAP 5 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

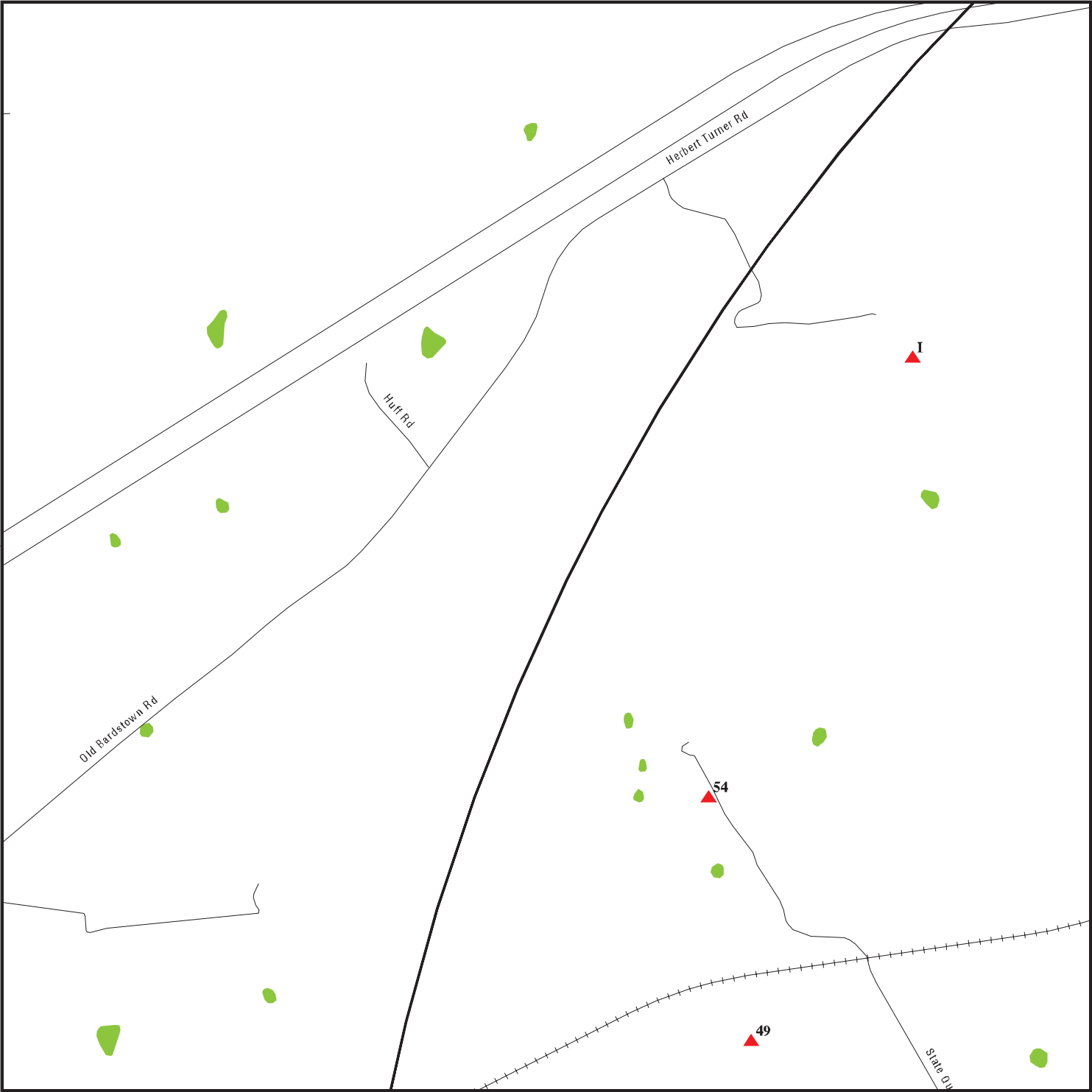
- ☐ Indian Reservations BIA
- ⚡ Power transmission lines
- ⚡ Pipelines
- ▨ 100-year flood zone
- ▨ 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:50 pm



DETAIL MAP 6 OF 25 - 4509942.2S



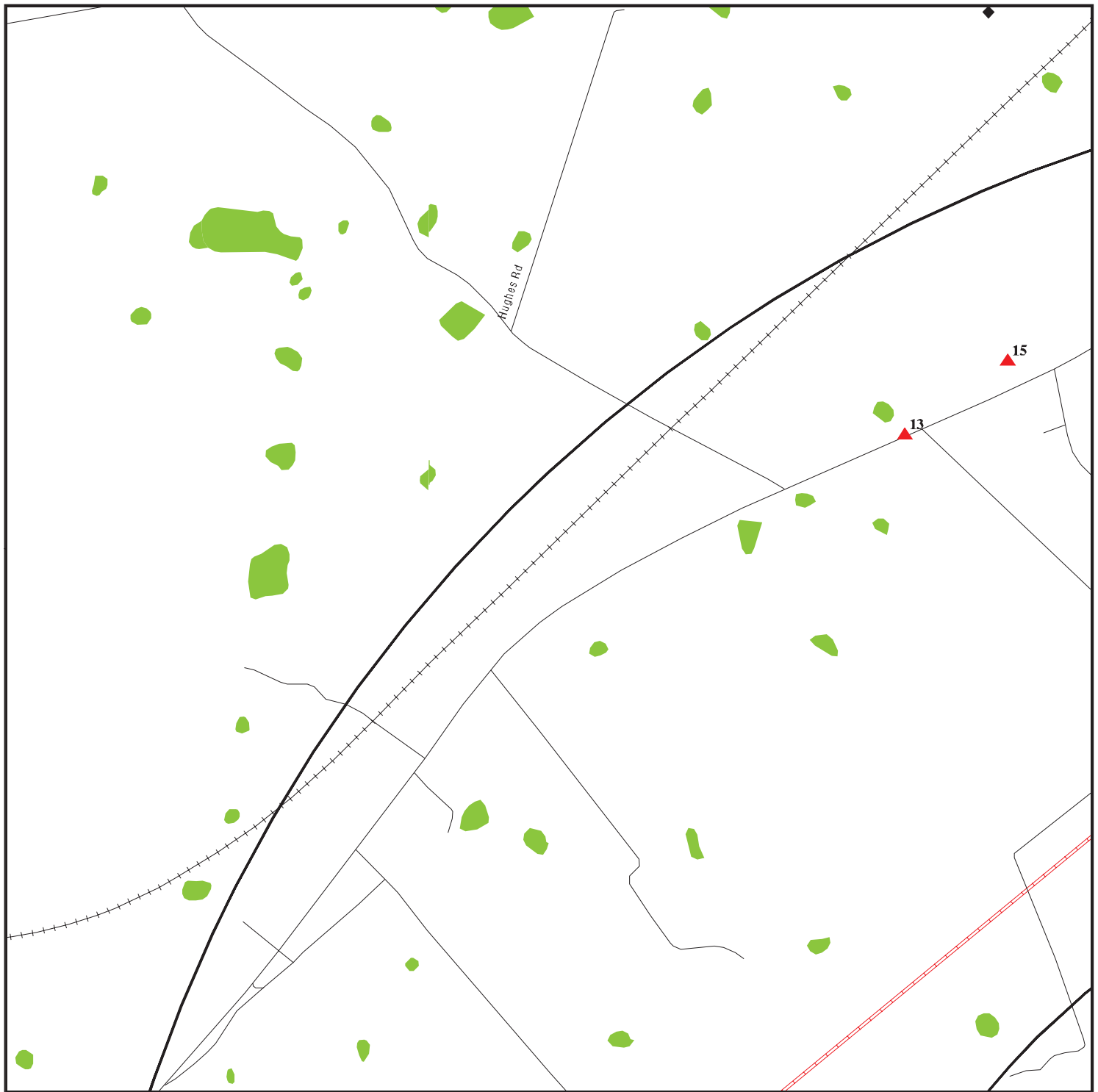
- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
ADDRESS: KY 90 Environmental Overview  
Cave City KY 42127  
LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
CONTACT: Bill Leopold  
INQUIRY #: 4509942.2s  
DATE: January 11, 2016 1:50 pm

# DETAIL MAP 7 OF 25 - 4509942.2S



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

⚙ Manufactured Gas Plants

⚡ Sensitive Receptors

🏠 National Priority List Sites

🏠 Dept. Defense Sites

🏠 Indian Reservations BIA

🔌 Pipelines

🌊 100-year flood zone

🌊 500-year flood zone

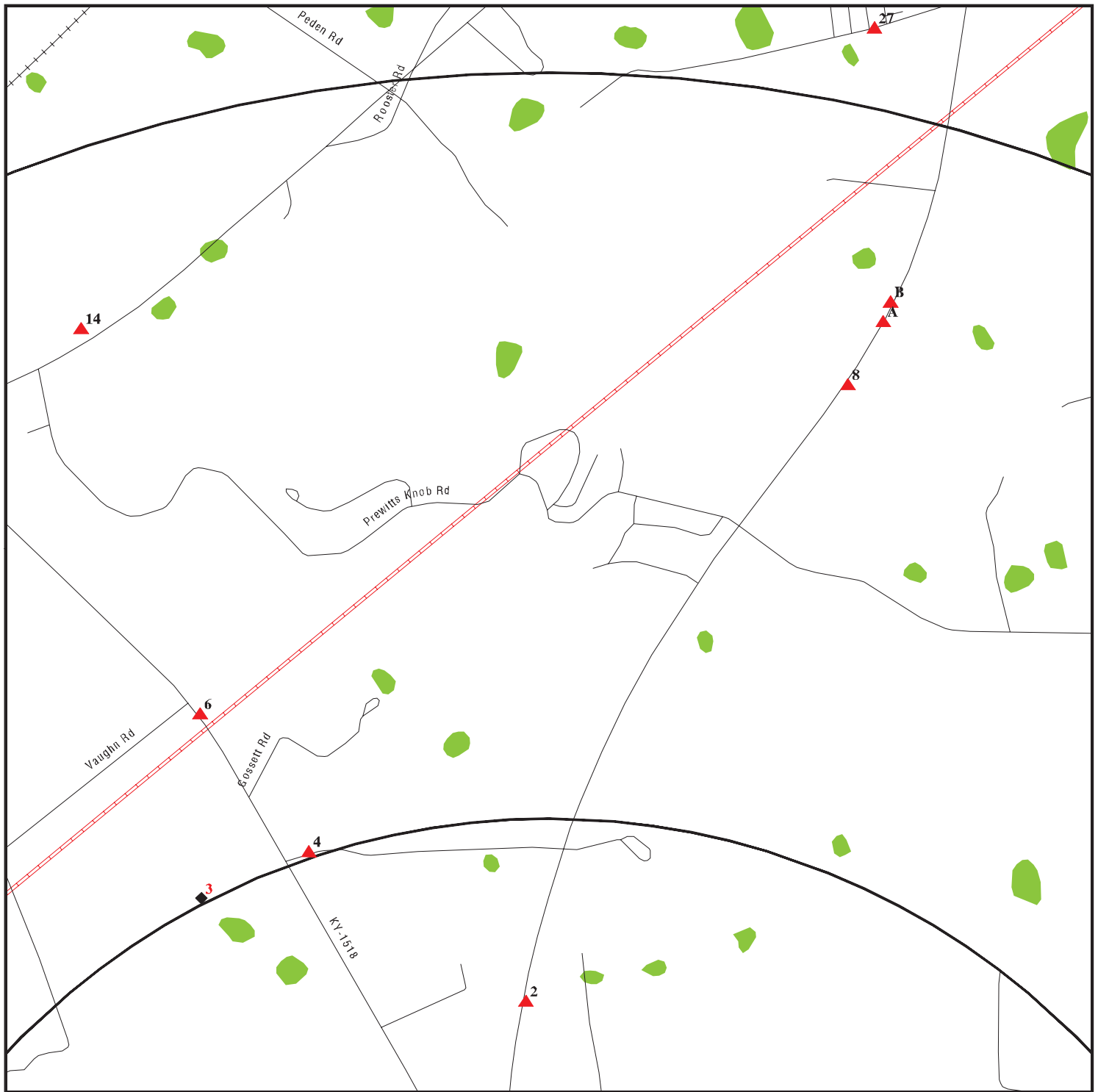
🌿 National Wetland Inventory

🌿 State Wetlands

SITE NAME: KY 90 Environmental Overview  
ADDRESS: KY 90 Environmental Overview  
Cave City KY 42127  
LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
CONTACT: Bill Leopold  
INQUIRY #: 4509942.2s  
DATE: January 11, 2016 1:51 pm

# DETAIL MAP 8 OF 25 - 4509942.2S



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

⚙ Manufactured Gas Plants

⚠ Sensitive Receptors

🏠 National Priority List Sites

🏠 Dept. Defense Sites

🏠 Indian Reservations BIA

🏠 Pipelines

🏠 100-year flood zone

🏠 500-year flood zone

🏠 National Wetland Inventory

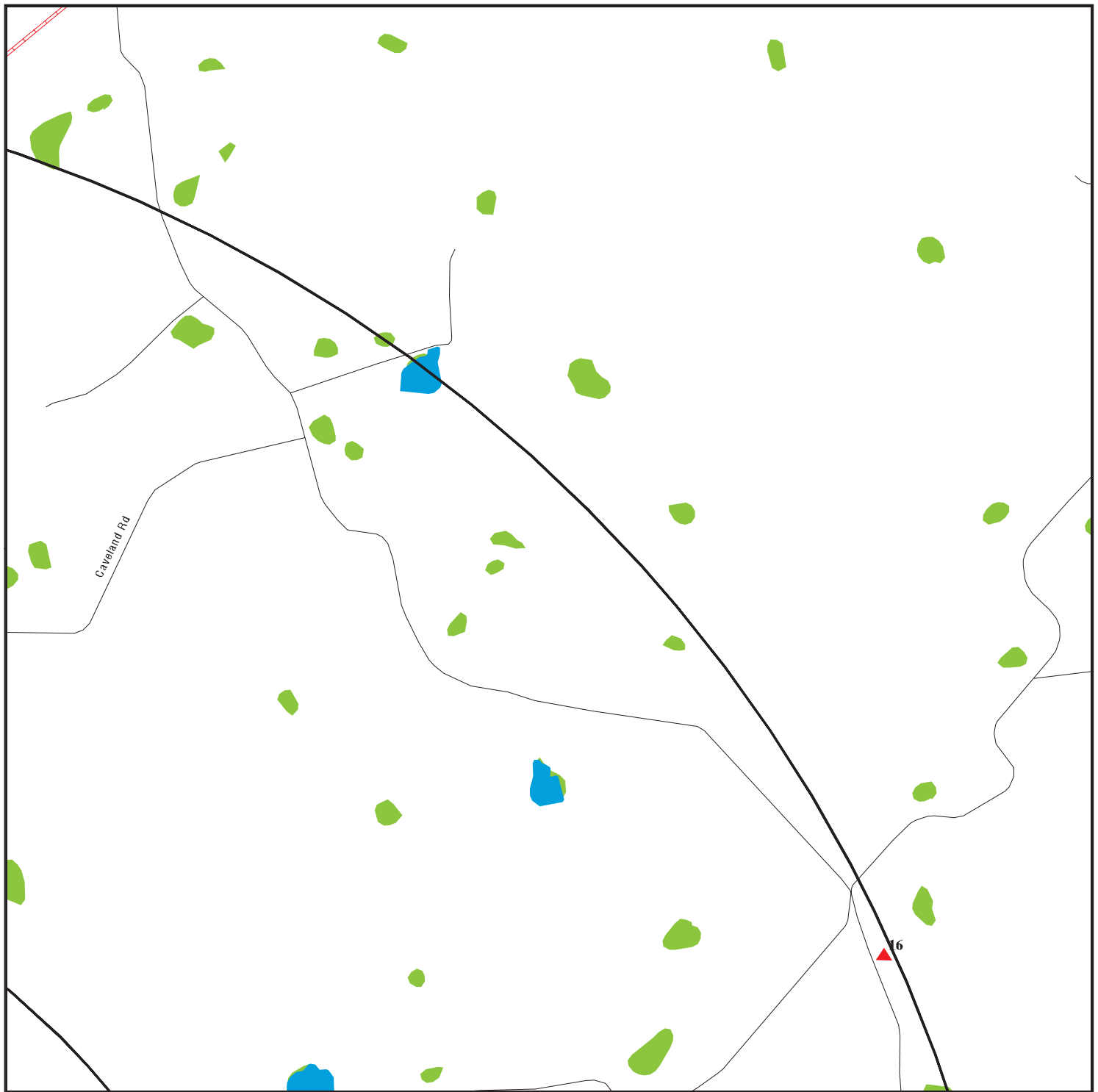
🏠 State Wetlands

0 1/8 1/4 1/2 Miles

SITE NAME: KY 90 Environmental Overview  
ADDRESS: KY 90 Environmental Overview  
Cave City KY 42127  
LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
CONTACT: Bill Leopold  
INQUIRY #: 4509942.2s  
DATE: January 11, 2016 1:51 pm

# DETAIL MAP 9 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🏠 National Priority List Sites
- 🏠 Dept. Defense Sites

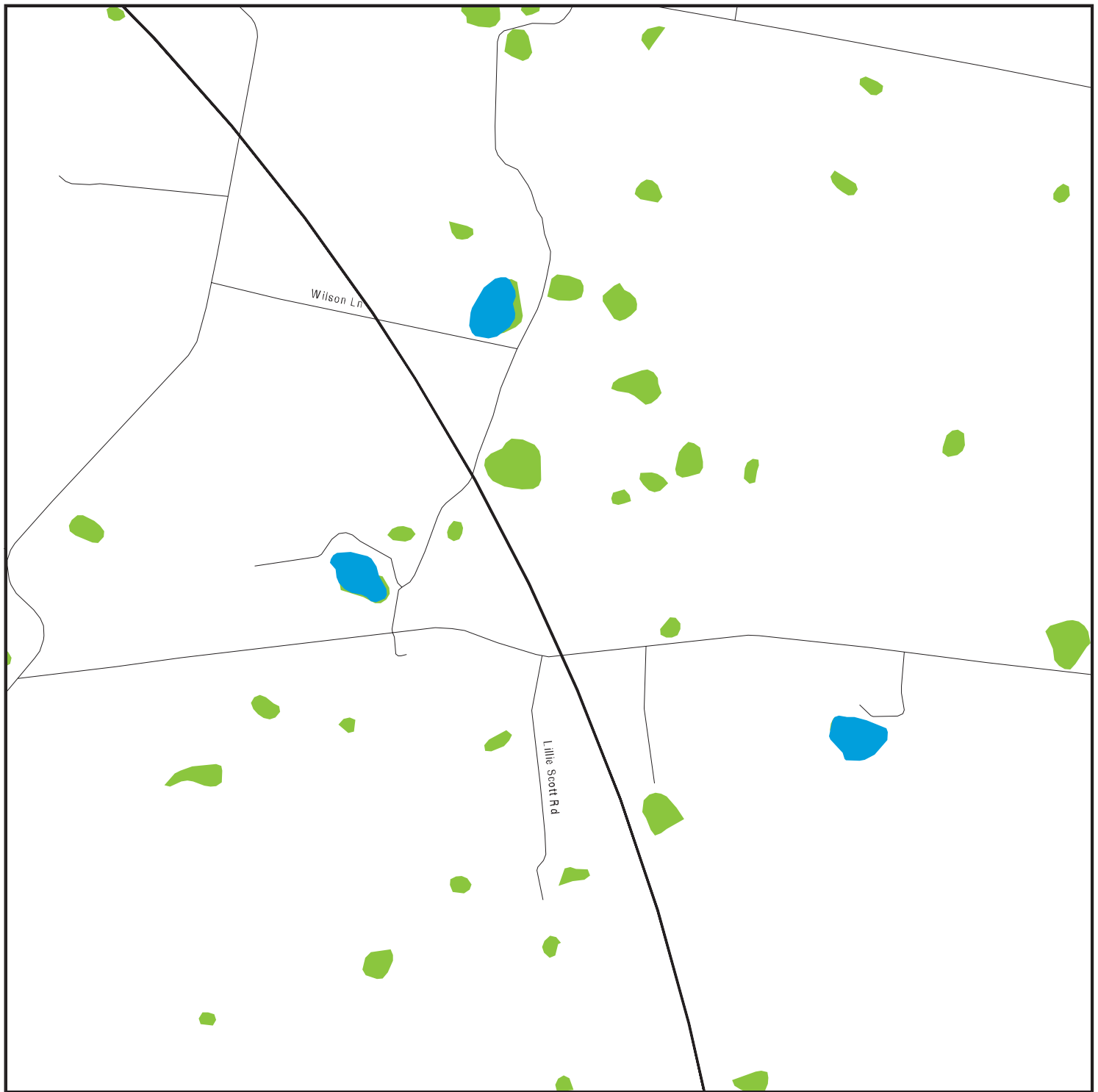
- 🏠 Indian Reservations BIA
- 📡 Pipelines
- 🌊 100-year flood zone
- 🌊 500-year flood zone
- 🌿 National Wetland Inventory
- 🌿 State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:52 pm



# DETAIL MAP 10 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

- ☐ Indian Reservations BIA
- ☐ 100-year flood zone
- ☐ 500-year flood zone
- ☐ National Wetland Inventory
- ☐ State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:53 pm

# DETAIL MAP 11 OF 25 - 4509942.2S



★ Target Property

▲ Sites at elevations higher than or equal to the target property

◆ Sites at elevations lower than the target property

⚙ Manufactured Gas Plants

⚠ Sensitive Receptors

🚧 National Priority List Sites

🏠 Dept. Defense Sites

🏠 Indian Reservations BIA

📡 Pipelines

🌊 100-year flood zone

🌊 500-year flood zone

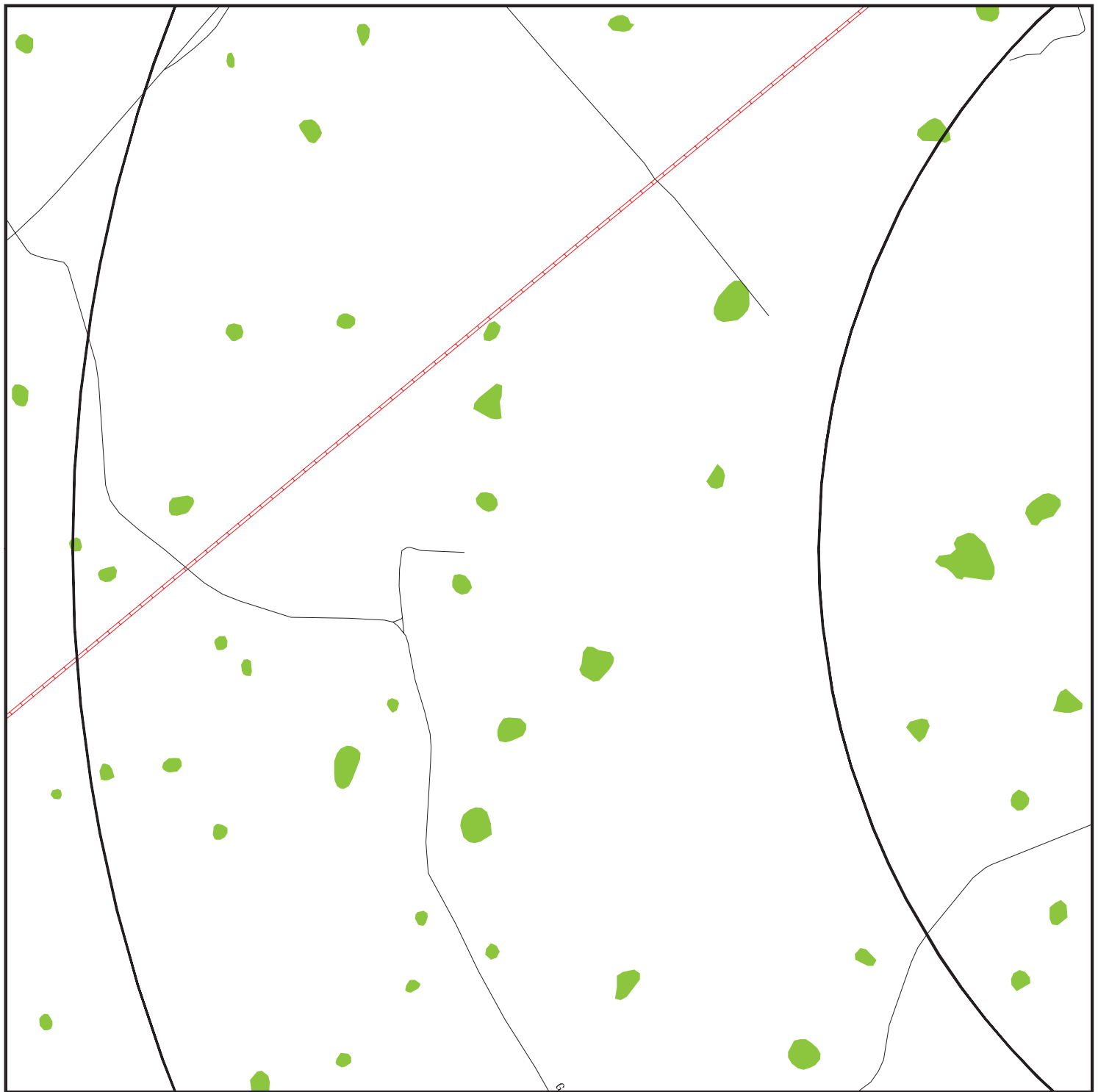
🟢 National Wetland Inventory

🟡 State Wetlands

SITE NAME: KY 90 Environmental Overview  
ADDRESS: KY 90 Environmental Overview  
Cave City KY 42127  
LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
CONTACT: Bill Leopold  
INQUIRY #: 4509942.2s  
DATE: January 11, 2016 1:53 pm

# DETAIL MAP 12 OF 25 - 4509942.2S



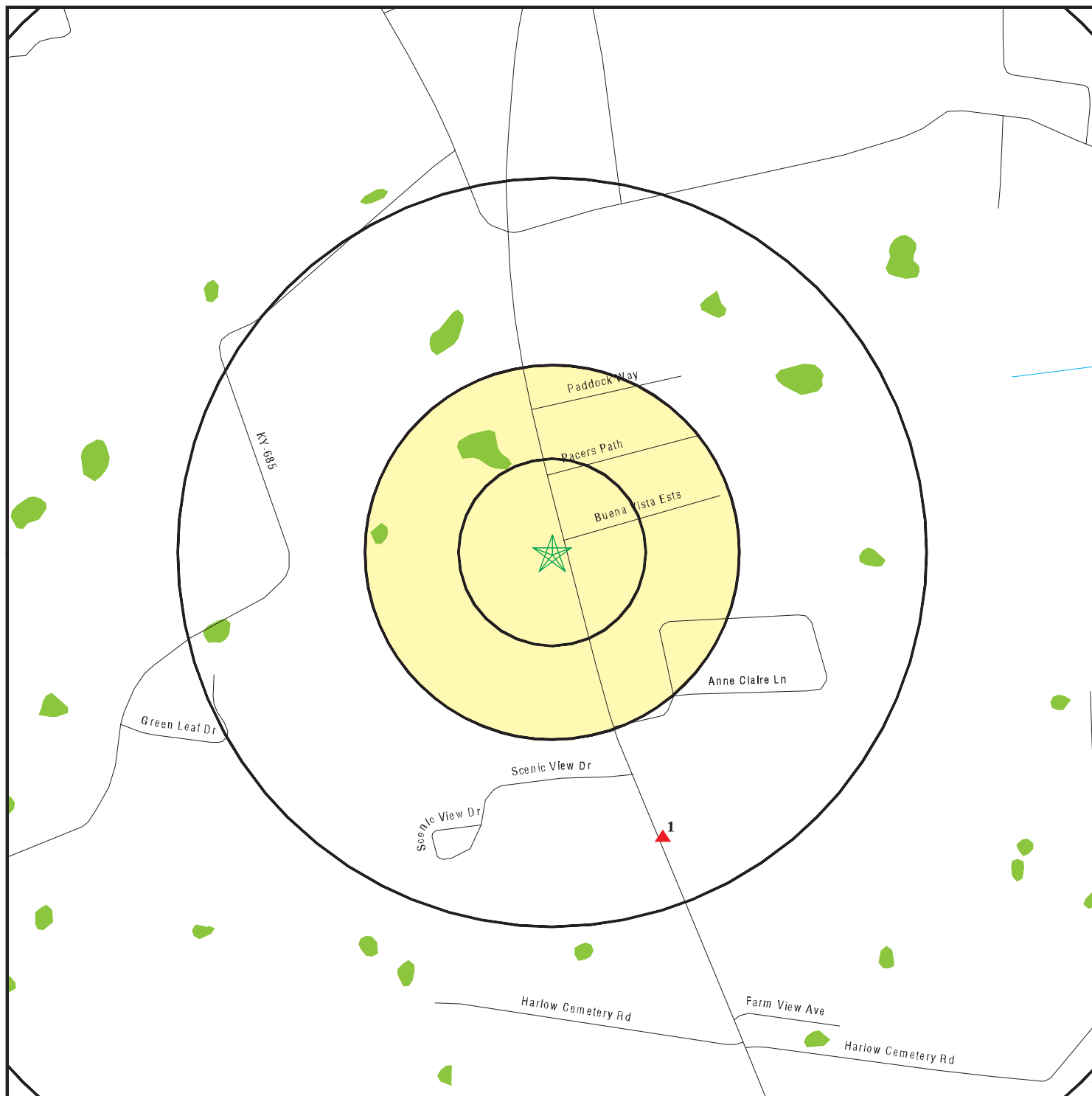
- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🚒 National Priority List Sites
- 🏢 Dept. Defense Sites

- 🏠 Indian Reservations BIA
- 📡 Pipelines
- 🌊 100-year flood zone
- 🌊 500-year flood zone
- 🌿 National Wetland Inventory
- 🌿 State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:54 pm

# DETAIL MAP 13 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

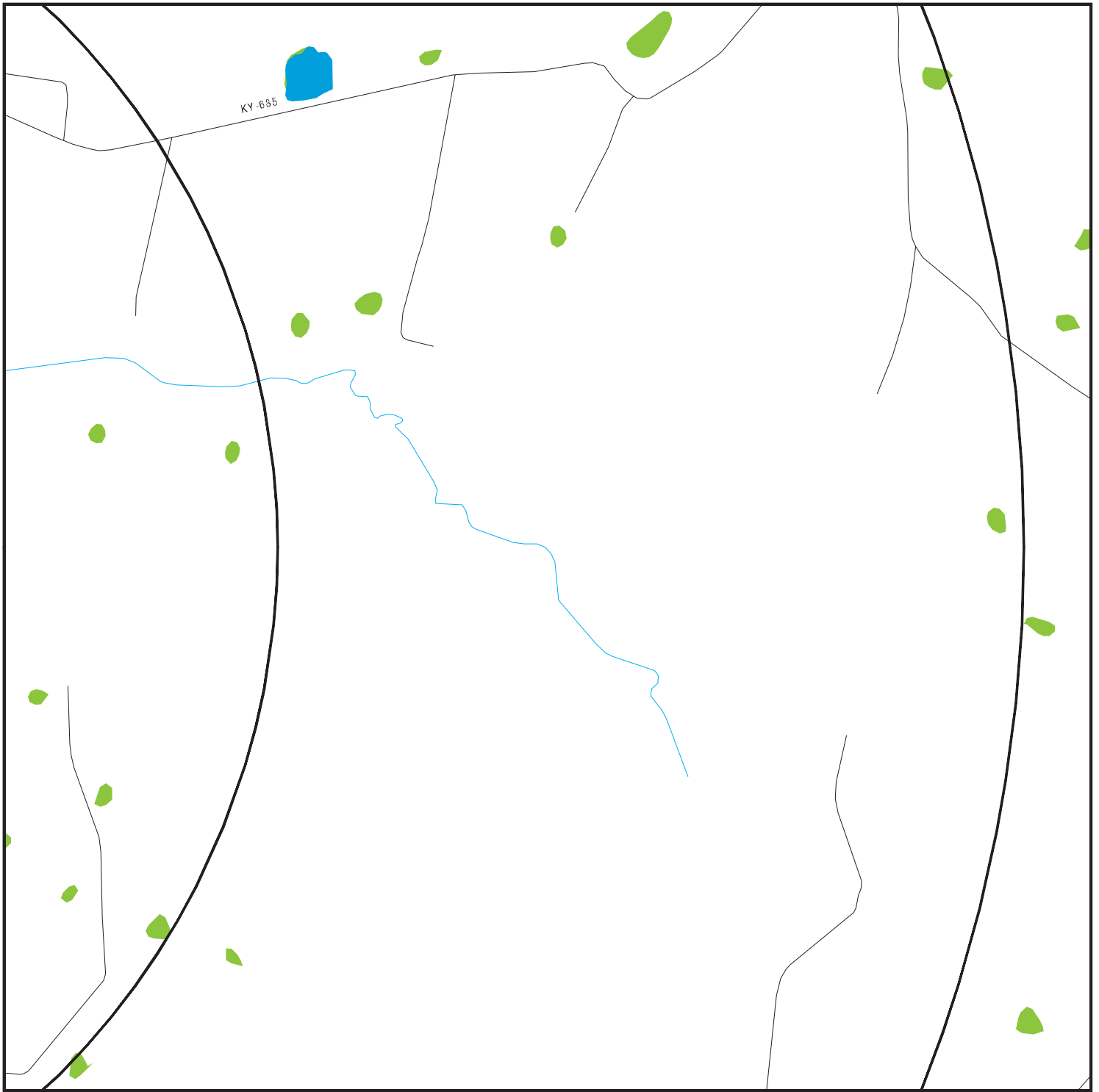
- ☐ Indian Reservations BIA
- ☐ 100-year flood zone
- ☐ 500-year flood zone
- ☐ National Wetland Inventory
- ☐ State Wetlands

0 1/8 1/4 1/2 Miles

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:55 pm

# DETAIL MAP 14 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

- ☐ Indian Reservations BIA
- ☐ 100-year flood zone
- ☐ 500-year flood zone
- ☐ National Wetland Inventory
- ☐ State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:55 pm



# DETAIL MAP 15 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands



SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:56 pm

# DETAIL MAP 16 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🏠 National Priority List Sites
- 🏠 Dept. Defense Sites

- 🏠 Indian Reservations BIA
- 📡 Pipelines
- 🌊 100-year flood zone
- 🌊 500-year flood zone
- 🌿 National Wetland Inventory
- 🌿 State Wetlands

0 1/8 1/4 1/2 Miles

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:56 pm

# DETAIL MAP 17 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🏠 National Priority List Sites
- 🏠 Dept. Defense Sites

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:57 pm

# DETAIL MAP 18 OF 25 - 4509942.2S



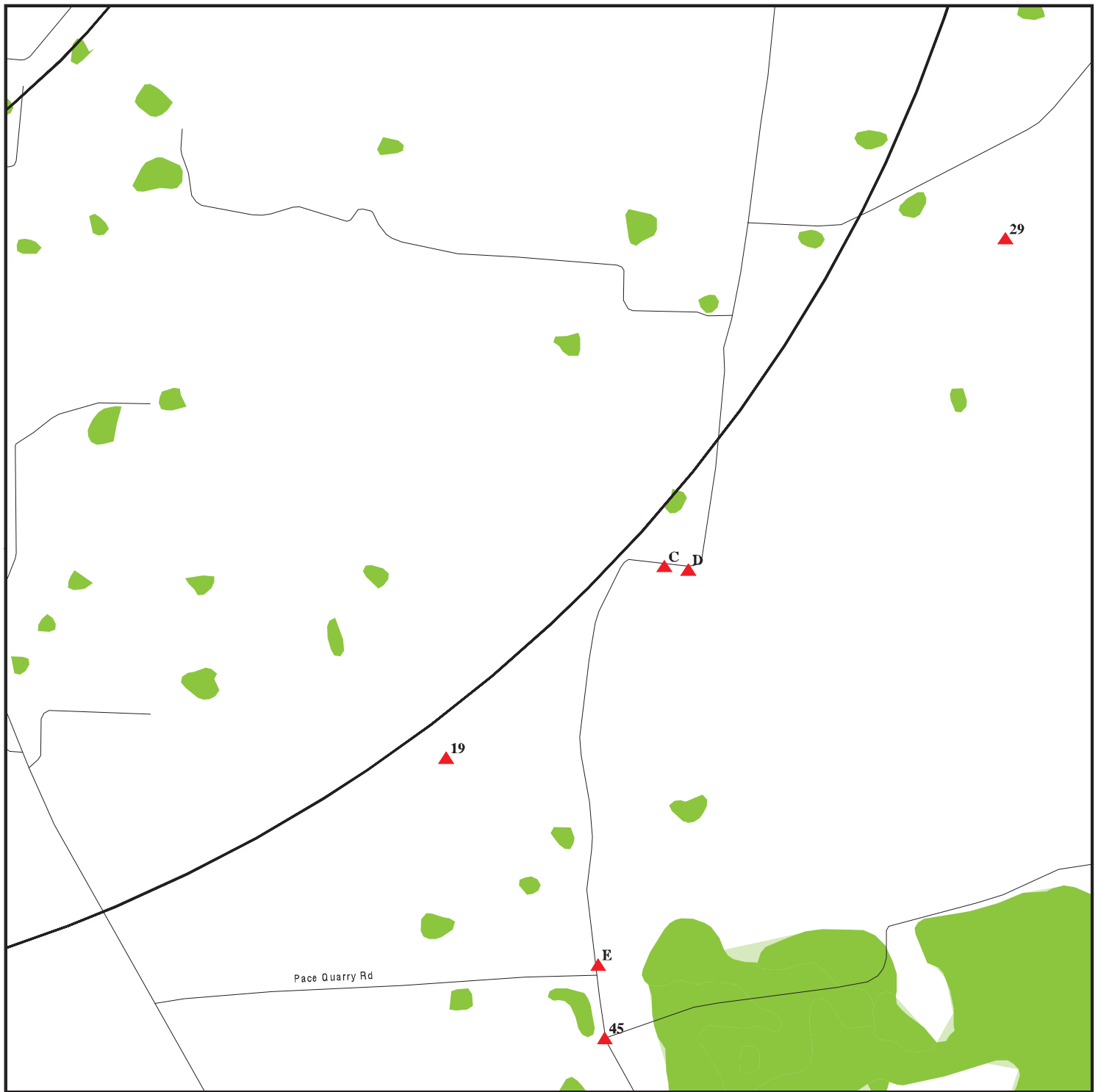
- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🚒 National Priority List Sites
- 🚒 Dept. Defense Sites

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:57 pm

# DETAIL MAP 19 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:58 pm



# DETAIL MAP 20 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🏠 National Priority List Sites
- 🏠 Dept. Defense Sites

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

0 1/8 1/4 1/2 Miles

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:58 pm

# DETAIL MAP 21 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

- ☐ Indian Reservations BIA
- ⚡ Pipelines
- ▨ 100-year flood zone
- ▨ 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 1:59 pm

# DETAIL MAP 22 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚡ Manufactured Gas Plants
- ⚠ Sensitive Receptors
- 🏠 National Priority List Sites
- 🏠 Dept. Defense Sites

- 🏠 Indian Reservations BIA
- 🏠 Pipelines
- 🏠 100-year flood zone
- 🏠 500-year flood zone
- 🏠 National Wetland Inventory
- 🏠 State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 2:00 pm

# DETAIL MAP 23 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚡ Sensitive Receptors
- 🏠 National Priority List Sites
- 🏠 Dept. Defense Sites

- 🏠 Indian Reservations BIA
- 🌊 100-year flood zone
- 🌊 500-year flood zone
- 🌿 National Wetland Inventory
- 🌿 State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 2:00 pm

# DETAIL MAP 24 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚡ Manufactured Gas Plants
- ⚠ Sensitive Receptors
- ☒ National Priority List Sites
- ☒ Dept. Defense Sites

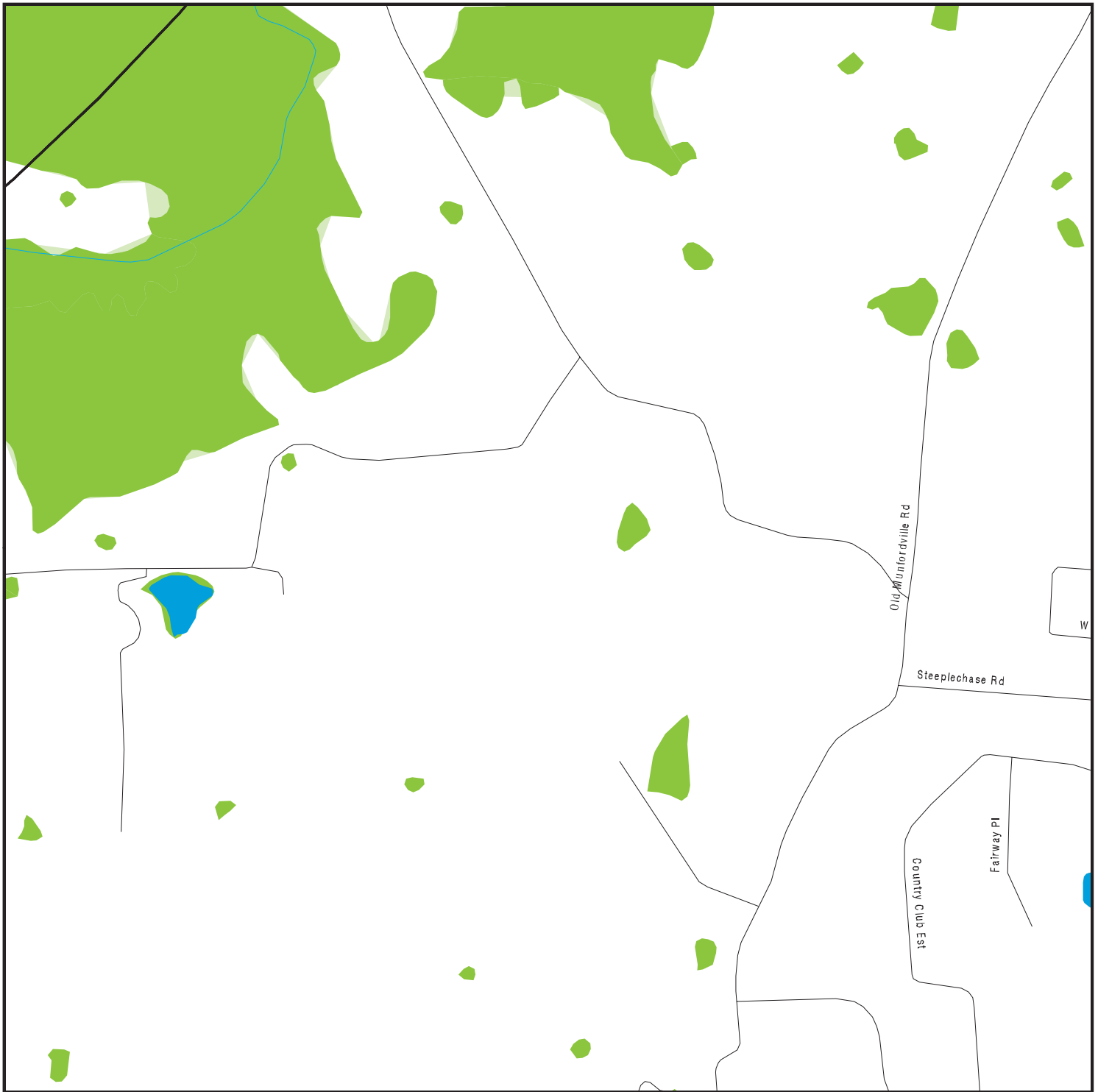
- 0 1/8 1/4 1/2 Miles
- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 2:01 pm



# DETAIL MAP 25 OF 25 - 4509942.2S



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⚙ Manufactured Gas Plants
- ⚠ Sensitive Receptors
- 🚧 National Priority List Sites
- 🚧 Dept. Defense Sites

- Indian Reservations BIA
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

SITE NAME: KY 90 Environmental Overview  
 ADDRESS: KY 90 Environmental Overview  
 Cave City KY 42127  
 LAT/LONG: 37.0901 / 85.9724

CLIENT: Stantec  
 CONTACT: Bill Leopold  
 INQUIRY #: 4509942.2s  
 DATE: January 11, 2016 2:02 pm

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<b>STANDARD ENVIRONMENTAL RECORDS</b>								
<b><i>Federal NPL site list</i></b>								
NPL	3.125		0	0	0	0	0	0
Proposed NPL	3.125		0	0	0	0	0	0
NPL LIENS	3.125		0	0	0	0	0	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	3.125		0	0	0	0	0	0
<b><i>Federal CERCLIS list</i></b>								
FEDERAL FACILITY	3.125		0	0	0	0	0	0
CERCLIS	3.125		0	0	0	0	0	0
<b><i>Federal CERCLIS NFRAP site List</i></b>								
CERCLIS-NFRAP	3.125		0	0	0	0	0	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	3.125		0	0	0	0	0	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	3.125		0	0	0	0	0	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	3.125		0	0	0	0	0	0
RCRA-SQG	3.125		0	0	0	0	0	0
RCRA-CESQG	3.125		0	0	0	0	1	1
<b><i>Federal institutional controls / engineering controls registries</i></b>								
LUCIS	3.125		0	0	0	0	0	0
US ENG CONTROLS	3.125		0	0	0	0	0	0
US INST CONTROL	3.125		0	0	0	0	0	0
<b><i>Federal ERNS list</i></b>								
ERNS	3.125		0	0	0	0	1	1
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
SHWS	3.125		0	0	0	0	3	3
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	3.125		0	0	0	0	0	0
<b><i>State and tribal leaking storage tank lists</i></b>								
PSTEAF	3.125		0	0	0	0	0	0
INDIAN LUST	3.125		0	0	0	0	0	0
SB193	3.125		0	0	0	0	0	0
<b><i>State and tribal registered storage tank lists</i></b>								
FEMA UST	3.125		0	0	0	0	0	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	3.125		0	0	0	0	12	12
INDIAN UST	3.125		0	0	0	0	0	0
<b>State and tribal institutional control / engineering control registries</b>								
ENG CONTROLS	3.125		0	0	0	0	0	0
INST CONTROL	3.125		0	0	0	0	0	0
<b>State and tribal voluntary cleanup sites</b>								
INDIAN VCP	3.125		0	0	0	0	0	0
VCP	3.125		0	0	0	0	0	0
<b>State and tribal Brownfields sites</b>								
BROWNFIELDS	3.125		0	0	0	0	0	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	3.125		0	0	0	0	0	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
HIST LF	3.125		0	0	0	0	0	0
SWRCY	3.125		0	0	0	0	0	0
INDIAN ODI	3.125		0	0	0	0	0	0
ODI	3.125		0	0	0	0	0	0
DEBRIS REGION 9	3.125		0	0	0	0	0	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US HIST CDL	3.125		0	0	0	0	1	1
CDL	3.125		0	0	0	0	1	1
US CDL	3.125		0	0	0	0	1	1
<b>Local Land Records</b>								
LIENS 2	3.125		0	0	0	0	0	0
<b>Records of Emergency Release Reports</b>								
HMIRS	3.125		0	0	0	0	0	0
SPILLS	3.125		0	0	1	0	27	28
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	3.125		0	0	0	0	3	3
FUDS	3.125		0	0	0	0	0	0
DOD	3.125		0	0	0	0	0	0
SCRD DRYCLEANERS	3.125		0	0	0	0	0	0
US FIN ASSUR	3.125		0	0	0	0	0	0
EPA WATCH LIST	3.125		0	0	0	0	0	0
2020 COR ACTION	3.125		0	0	0	0	0	0
TSCA	3.125		0	0	0	0	0	0

## MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS	3.125		0	0	0	0	0	0
SSTS	3.125		0	0	0	0	0	0
ROD	3.125		0	0	0	0	0	0
RMP	3.125		0	0	0	0	0	0
RAATS	3.125		0	0	0	0	0	0
PRP	3.125		0	0	0	0	0	0
PADS	3.125		0	0	0	0	0	0
ICIS	3.125		0	0	0	0	1	1
FTTS	3.125		0	0	0	0	0	0
MLTS	3.125		0	0	0	0	0	0
COAL ASH DOE	3.125		0	0	0	0	0	0
COAL ASH EPA	3.125		0	0	0	0	0	0
PCB TRANSFORMER	3.125		0	0	0	0	0	0
RADINFO	3.125		0	0	0	0	0	0
HIST FTTS	3.125		0	0	0	0	0	0
DOT OPS	3.125		0	0	0	0	0	0
CONSENT	3.125		0	0	0	0	0	0
INDIAN RESERV	3.125		0	0	0	0	0	0
UMTRA	3.125		0	0	0	0	0	0
LEAD SMELTERS	3.125		0	0	0	0	0	0
US AIRS	3.125		0	0	0	0	0	0
US MINES	3.125		0	0	0	0	1	1
FINDS	3.125		0	0	0	1	27	28
AIRS	3.125		0	0	0	0	4	4
COAL ASH	3.125		0	0	0	0	0	0
DRYCLEANERS	3.125		0	0	0	0	0	0
Financial Assurance	3.125		0	0	0	0	1	1
LEAD	3.125		0	0	0	0	0	0
NPDES	3.125		0	0	0	0	14	14
UIC	3.125		0	0	0	0	0	0

### EDR HIGH RISK HISTORICAL RECORDS

#### ***EDR Exclusive Records***

EDR MGP	3.125		0	0	0	0	0	0
EDR Hist Auto	3.125		0	0	0	0	2	2
EDR Hist Cleaner	3.125		0	0	0	0	0	0

### EDR RECOVERED GOVERNMENT ARCHIVES

#### ***Exclusive Recovered Govt. Archives***

RGA HWS	3.125		0	0	0	0	0	0
RGA LF	3.125		0	0	0	0	0	0

- Totals --		0	0	0	1	1	100	102
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#### NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Count: 34 records.

## ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BARREN COUNTY	S117569365	KY 90 - BARREN CO	KY 90	42141	NPDES
BARREN COUNTY	S117570757	KY 90 SEC2 RECONSTRUCTION AND WIDE	KY 90	42141	NPDES
BARREN COUNTY	S109093339	LONGHUNTERS SQUARE	HAPPY VALLEY RD	42141	NPDES
BARREN COUNTY	S117569541	LONGHUNTERS SQUARE	HAPPY VALLEY RD	42141	NPDES
BARREN COUNTY	S117570718	KY HWY 70/90 UTILITY RELOCATION	KY HWY 70/90	42127	NPDES
BARREN COUNTY	S117571462	GLASGOW STATE NURSING FACILITY	STATE AVE	42141	NPDES
CAVE CITY	1004504208	CAVERNA INDEP. SCHOOL DIST.	HWY 31 WEST	42127	FTTS, HIST FTTS
CAVE CITY	S115715665	ROLCO MANUFACTURING	HWY 31W		RGA HWS
CAVE CITY	S115713768	LILE TRUCKING DIESEL SPILL	HWY 68		RGA HWS
CAVE CITY	U003989807	CHEVRON 49073	KY 70 & KY 90	42127	UST
CAVE CITY	S115713769	LILE TRUCKING DIESEL SPILL	KY 90 (RIGHT SIDE)		RGA HWS
CAVE CITY	S108012525	CAVE CITY TRUCK STOP	HWY 90	42127	Financial Assurance
GAME	1000863948	AT & T	HWY 225 - 6 MI NORTH OF GAME	42141	RCRA NonGen / NLR
GLASGOW	U001185041	SPRADLIN GROC	RT 1	42141	UST
GLASGOW	S108015110	GRIZZEL WORK SHOP	HWY 249 2500 ROSEVILLE ROAD	42141	Financial Assurance
GLASGOW	S118153726	KENTUCKY TOBACCO SALES	US 31 E N	42141	SHWS
GLASGOW	U003415830	WESTERN DIST WAREHOUSE	HWY 31E N	42141	UST
GLASGOW	S108016806	LAKESIDE TIRE	HIGHWAY 31E SOUTH	42141	Financial Assurance
GLASGOW	1000355897	BARREN CO. AREA VOCATIONAL CTR.	RT. 6, ROSEVILLE RD.	42141	RCRA NonGen / NLR
GLASGOW	1006817049	KEY GROCERY & HARDWARE	HIGHWAY 63	42141	RCRA NonGen / NLR
GLASGOW	S108016571	KEY GROCERY & HARDWARE	HWY. 63	42141	Financial Assurance
GLASGOW	1006285764	EATON CORP./AXLE & BRAKE DIV.	RT 68	42141	FTTS, HIST FTTS
GLASGOW	S108082611	MURPHY OIL USA WAL-MART #711	HWY 68 BYPASS & HWY 90	42141	NPDES
GLASGOW	S108019847	SOUTH CENTRAL RTC	HIGHWAY 90 WEST, 13989 HAPPY V	42141	Financial Assurance
GLASGOW	1009523314	SKF BEARING INDUSTRIES, INC.	P.O. BOX 728, 1001 HAPPY VALLE	42141	FTTS, HIST FTTS
GLASGOW	U003990545	JR FOOD STORE 15	HAPPY VALLEY RD	42141	UST
GLASGOW	S110491754	KYTC PCN 071158	KY HWY 255	42141	NPDES
GLASGOW	S109495328	RITE AID PHARMACY	US HWY 31 & HWY 90	42141	NPDES
GLASGOW	S108014923	GLASGOW KY BULK PLANT 261	W MAIN & SAMPSON ST	42141	Financial Assurance
GLASGOW	S110777683	KY PCN 09 1040	US68/KY80 TO LOUIE B NUNN PKWY	42141	NPDES
PARK CITY	1000418708	CENTRAL SOYA COMPANY INC	HIGHWAY 255	42160	RCRA NonGen / NLR
PARK CITY	S116676369	BOBBY MARTIN PROPERTY	6100 DRIPPING SPRINGS ROAD	42160	SHWS, CDL
PARK CITY	S111834880	PARK CITY STONE	STATE QUARRY RD	42160	AIRS
RAILTON	1001219554	WOODS GROCERY	HWY 1297	42160	RCRA NonGen / NLR



Table 2: ky90 hazmat sites identified by EDR, 1/25/2016, Page 1-1

FID	Shape	DBACRON	DATAKEY	REFNO	FACILITY	STREET
25	Point	AIRS	DG 613	S109089595	N AMERICAN CAPACITOR	2601 HAPPY VALLEY RD
56	Point	AIRS	H 63	S108083563	TEKNO INC	1 WALL ST
37	Point	EDR Hist Auto	EU 873	1015443967		3515 HAPPY VALLEY RD
31	Point	Financial Assurance	EB 741	U001181318	GLASGOW AIRPORT MOORE FIELD	390 AIRPORT RD
20	Point	FINDS	CW 562	1015973582	MURPHY OIL USA INC 7206	2345 HAPPY VALLEY RD
24	Point	FINDS	DG 614	1004507643	MALLORY AC CAPACITOR LLC	2601 HAPPY VALLEY RD.
34	Point	FINDS	793	1011980017	GLASGOW MUNI	UNKNOWN
39	Point	FINDS	2	1015908511	BUNNELL BEEF FARM 2	8171 HAPPY VALLEY RD
41	Point	FINDS	A 9	1015891217	LILE TRUCKING DIESEL SPILL	KY 90 (RIGHT SIDE)
43	Point	FINDS	B 12	1016871559	CAVELAND WOOD PRODUCTS LLC	9376 HAPPY VALLEY RD
46	Point	FINDS	42	1015875890	PIER NINETEEN WHOLESALE	506 E HAPPY VALLEY ST
48	Point	FINDS	F 43	1012308195	FREDS DISCOUNT STORE	502 E HAPPY VALLEY STREET
53	Point	FINDS	G 57	1014716588	CAVE CITY DOLLAR GENERAL	305 HAPPY VALLEY STREET
55	Point	FINDS	H 62	1016180480	TEKNO INC	1 WALL STREET
58	Point	FINDS	65	1011971861	MAMMOTH RESOURCES PARTNERS INC	ONE WALL ST BUILDING B
60	Point	FINDS	66	1016676006	DOLLAR GENERAL STORE #3493	299 HAPPY VALLEY ST
65	Point	FINDS	77	1016364191	KWIK MART	1001 GARDNER LN
59	Point	RCRA-CESQG	66	1016676006	DOLLAR GENERAL STORE #3493	299 HAPPY VALLEY ST
42	Point	SHWS	A 10	S106884055	LILE TRUCKING DIESEL SPILL	HWY 68
8	Point	SPILLS	534	S117092471		
38	Point	SPILLS	1	S111458820		
45	Point	SPILLS	28	S111312035		
49	Point	SPILLS	48	S117129461		
67	Point	SPILLS	M 85	S111458945		
68	Point	SPILLS	M 87	S117086810		
40	Point	US HIST CDL	8	1009622817	9187 W HAPPY VALLEY RD	9187 W HAPPY VALLEY RD
23	Point	UST	CW 559	U003990914	MURPHY OIL USA INC 7206	2345 HAPPY VALLEY RD
32	Point	UST	EB 741	U001181318	GLASGOW AIRPORT MOORE FIELD	390 AIRPORT RD
50	Point	UST	50	U000811151	COUNTRY CORNER MARKET	JCT OF US 31W & KY 90
54	Point	UST	H 59	U004228224	FORMER PMO MOTORS OF KENTUCKY	302 E HAPPY VALLEY ST
64	Point	UST	76	U000206890	CAVE CITY TRUCKSTOP	1001 GARDNER LN
66	Point	UST	78	U003180077	CAVE CITY	1001 GARDNER LN

Table 2: ky90 hazmat sites identified by EDR, 1/25/2016, Page 1-2

CITY	STATE	ZIP	COUNTY	DISTANCE	DIRECTION	HIGHLOW	LON	LAT	ELEV
GLASGOW	KY	42141	BARREN	1.943802	NNW	L	-85.937843	37.025233	725.02618
CAVE CITY	KY	42127	BARREN	2.758602	North	L	-85.964618	37.130096	650.03168
GLASGOW	KY	42141	BARREN	3.024681	NNW	L	-85.947559	37.045124	765.11823
GLASGOW	KY	42141	BARREN	2.328517	NW	L	-85.950289	37.031349	700.40729
GLASGOW	KY	42141	BARREN	1.702323	NNW	L	-85.93647	37.022783	637.85663
GLASGOW	KY	421419063	BARREN	1.943802	NNW	L	-85.937843	37.025233	725.02618
GLASGOW	KY	00000	BARREN	2.403579	NW	L	-85.950289	37.031349	705.93011
CAVE CITY	KY	42127	BARREN	0.757006	North	H	-85.973249	37.103302	684.6806
CAVE CITY	KY	42129	BARREN	1.726323	NNE	H	-85.964286	37.114279	708.90698
CAVE CITY	KY	42127	BARREN	1.754131	NNE	H	-85.9616	37.12026	701.15729
CAVE CITY	KY	42127	BARREN	2.425862	NNE	L	-85.962126	37.123901	659.96558
CAVE CITY	KY	42127	BARREN	2.452626	NNE	L	-85.962499	37.124773	665.74542
CAVE CITY	KY	42127	BARREN	2.73031	North	L	-85.966073	37.129516	650.03149
CAVE CITY	KY	42127	BARREN	2.758602	North	L	-85.964618	37.130096	650.03168
CAVE CITY	KY	42127	CLINTON	2.766995	North	L	-85.965053	37.130289	651.03168
CAVE CITY	KY	42127	BARREN	2.782574	North	L	-85.963993	37.129647	651.64258
CAVE CITY	KY	42127	BARREN	2.962315	North	S	-85.971971	37.133332	679.84961
CAVE CITY	KY	42127	BARREN	2.782574	North	L	-85.963993	37.129647	651.64258
CAVE CITY	KY	42127	BARREN	1.727556	NNE	H	-85.964201	37.114279	707.36462
GLASGOW	KY		BARREN	1.63082	NNW	L	-85.937057	37.026751	651.39612
CAVE CITY	KY		BARREN	0.406212	SSE	H	-85.969721	37.084612	765.96112
GLASGOW	KY		BARREN	2.177478	NNE	L	-85.963334	37.120833	671.27228
CAVE CITY	KY		BARREN	2.538575	NNE	L	-85.962317	37.126018	666.20312
CAVE CITY	KY		BARREN	3.053286	North	L	-85.970943	37.134361	651.42328
CAVE CITY	KY		BARREN	3.060847	North	L	-85.970943	37.134471	651.08252
CAVE CITY	KY		BARREN	1.632817	NNE	H	-85.969006	37.109959	714.99731
GLASGOW	KY	42141	BARREN	1.702323	NNW	L	-85.93647	37.022783	637.85663
GLASGOW	KY	42141	BARREN	2.328517	NW	L	-85.950289	37.031349	700.40729
CAVE CITY	KY	42127	BARREN	2.613805	NNE	L	-85.962529	37.128234	660.01971
CAVE CITY	KY	42127	BARREN	2.749794	North	L	-85.966073	37.129516	649.60138
CAVE CITY	KY	42127	BARREN	2.932707	North	L	-85.972095	37.133352	664.00262
CAVE CITY	KY	42127	BARREN	2.968647	North	S	-85.972095	37.133352	675.65771

Table 3: ky90 UST sites, Page 1-1

FID	Shape *	LONG_DD	LAT_DD	COUNTY	SITE_SEQ_I	MASTER_AI_	MASTER_AI1	ADDRESS_1
0	Point	-85.95	37.029444	Barren	2705005	4541	Glasgow Airport Moore Field	390 Airport Rd
1	Point	-85.95	37.029444	Barren	2705005	4541	Glasgow Airport Moore Field	390 Airport Rd
2	Point	-85.95	37.029444	Barren	2705005	4541	Glasgow Airport Moore Field	390 Airport Rd
3	Point	-85.95	37.029444	Barren	2705005	4541	Glasgow Airport Moore Field	390 Airport Rd
4	Point	-85.95	37.029444	Barren	2705005	4541	Glasgow Airport Moore Field	390 Airport Rd
5	Point	-85.95	37.029444	Barren	2705005	4541	Glasgow Airport Moore Field	390 Airport Rd
6	Point	-85.95	37.029444	Barren	2705005	4541	Glasgow Airport Moore Field	390 Airport Rd
7	Point	-85.971944	37.133056	Barren	1012005	57145	Kwik Mart	1001 Gardner Ln
8	Point	-85.971944	37.133056	Barren	1012005	57145	Kwik Mart	1001 Gardner Ln
33	Point	-85	38	Barren	8428005	65700	Country Corner Market	Us 31 & Hwy 90
34	Point	-85	38	Barren	8428005	65700	Country Corner Market	Us 31 & Hwy 90
39	Point	-85.97245	37.13263	Barren	345005	67375	Cave City Truckstop	1001 Gardener Ln
40	Point	-85.97245	37.13263	Barren	345005	67375	Cave City Truckstop	1001 Gardener Ln
41	Point	-85.97245	37.13263	Barren	345005	67375	Cave City Truckstop	1001 Gardener Ln
42	Point	-85.97245	37.13263	Barren	345005	67375	Cave City Truckstop	1001 Gardener Ln
52	Point	-85.936333	37.022556	Barren	0	70943	Murphy Oil USA Inc 7206	2345 Happy Valley Rd
53	Point	-85.936333	37.022556	Barren	0	70943	Murphy Oil USA Inc 7206	2345 Happy Valley Rd
54	Point	-85.936333	37.022556	Barren	0	70943	Murphy Oil USA Inc 7206	2345 Happy Valley Rd

Table 3: ky90 UST sites, Page 1-2

ADDRESS_2	ADDRESS_3	MAILING_AD	MAILING__1	MAIL_ADD_Z	SUBJECT_IT	TANK_STATU	INSTALL_DA	CLOSED_IN_	REMOVAL_DA
		Glasgow	KY	42141	1	TRM	1/1/1974		8/22/1990
		Glasgow	KY	42141	2	TRM	1/1/1974		5/5/1991
		Glasgow	KY	42141	4	TRM	1/1/1974		3/13/1992
		Glasgow	KY	42141	5	TRM	1/1/1980		3/13/1992
		Glasgow	KY	42141	6	TAC	9/20/1991		<Null>
		Glasgow	KY	42141	7	TAC	3/15/1992		<Null>
		Glasgow	KY	42141	3	TRM	1/1/1974		5/17/1991
		Cave City	KY	42127	1	TAC	8/1/1996		<Null>
		Cave City	KY	42127	1	TAC	8/1/1996		<Null>
		Cave City	KY	42127	1	TRM	1/1/1972		2/23/1993
		Cave City	KY	42127	2	TRM	1/1/1972		2/23/1993
		Cave City	KY	42127	1	TRM	1/1/1979		5/4/1995
		Cave City	KY	42127	2	TRM	1/1/1979		5/4/1995
		Cave City	KY	42127	3	TRM	1/1/1979		5/4/1995
		Cave City	KY	42127	4	TRM	1/1/1979		5/4/1995
		Glasgow	KY	42141	1	TAC	2/16/2005		<Null>
		Glasgow	KY	42141	2	TAC	2/16/2005		<Null>
		Glasgow	KY	42141	2	TAC	2/16/2005		<Null>

Table 3: ky90 UST sites, Page 1-3

COMPARTMEN	TANK_SUBST	OWNER_NAME	OWNER_ADDR	OWNER_AD_1	OWNER_AD_2	OWNER_CITY
1	GAS	Glasgow Airport Board	390 AIRPORT RD			Glasgow
1	GAS	Glasgow Airport Board	390 AIRPORT RD			Glasgow
1	JET	Glasgow Airport Board	390 AIRPORT RD			Glasgow
1	JET	Glasgow Airport Board	390 AIRPORT RD			Glasgow
1	GAS	Glasgow Airport Board	390 AIRPORT RD			Glasgow
1	JET	Glasgow Airport Board	390 AIRPORT RD			Glasgow
1	GAS	Glasgow Airport Board	390 AIRPORT RD			Glasgow
2	GAS	Jeb Development Inc	430 COMMERCE DR			Elizabethtown
1	GAS	Jeb Development Inc	430 COMMERCE DR			Elizabethtown
1	GAS	Jr Food Stores Inc	PO Box 90009			Bowling Green
1	GAS	Jr Food Stores Inc	PO Box 90009			Bowling Green
1	DSL	Mark Strother	803 MAMMOTH CAVE RD	Box 114	Rt 2	Cave City
1	GAS	Mark Strother	803 MAMMOTH CAVE RD	Box 114	Rt 2	Cave City
1	GAS	Mark Strother	803 MAMMOTH CAVE RD	Box 114	Rt 2	Cave City
1	DSL	Mark Strother	803 MAMMOTH CAVE RD	Box 114	Rt 2	Cave City
1	GAS	Murphy Oil USA Inc	200 Peach St			Eldorado
1	GAS	Murphy Oil USA Inc	200 Peach St			Eldorado
2	DSL	Murphy Oil USA Inc	200 Peach St			Eldorado



Table 3: ky90 UST sites, Page 1-4

OWNER_STAT	OWNER_ZIP	F27	F28	F29	F30	F31	LONG_DD_1	LAT_DD_1
KY	42142		85.95	37.029444	85.95	37.029444	-85.95	37.029444
KY	42142		85.95	37.029444	85.95	37.029444	-85.95	37.029444
KY	42142		85.95	37.029444	85.95	37.029444	-85.95	37.029444
KY	42142		85.95	37.029444	85.95	37.029444	-85.95	37.029444
KY	42142		85.95	37.029444	85.95	37.029444	-85.95	37.029444
KY	42142		85.95	37.029444	85.95	37.029444	-85.95	37.029444
KY	42142		85.95	37.029444	85.95	37.029444	-85.95	37.029444
KY	42701		85.971944	37.133056	85.971944	37.133056	-85.971944	37.133056
KY	42701		85.971944	37.133056	85.971944	37.133056	-85.971944	37.133056
KY	421029023		0	0	85	38	-85	38
KY	421029023		0	0	85	38	-85	38
KY	42127		85.97245	37.13263	85.97245	37.13263	-85.97245	37.13263
KY	42127		85.97245	37.13263	85.97245	37.13263	-85.97245	37.13263
KY	42127		85.97245	37.13263	85.97245	37.13263	-85.97245	37.13263
KY	42127		85.97245	37.13263	85.97245	37.13263	-85.97245	37.13263
AR	71730		85.936333	37.022556	85.936333	37.022556	-85.936333	37.022556
AR	71730		85.936333	37.022556	85.936333	37.022556	-85.936333	37.022556
AR	71730		85.936333	37.022556	85.936333	37.022556	-85.936333	37.022556

**ATTACHMENT 4**

**NATIONAL PARK SERVICE  
LWCF (SECTION 6(f)) LIST FOR BARREN COUNTY**

**United States Department of the Interior  
National Park Service  
Land & Water Conservation Fund**

**Detailed Listing of Grants Grouped by County**

Today's Date: 10/14/2015

**KENTUCKY - 21**

Page: 4

Grant ID & Element	Type	Grant Element Title	Grant Sponsor	Amount	Status	Date Approved	Exp. Date	Cong. District
<b>BARREN</b>								
2 - XXX	D	BARREN RIVER STATE PARK	DEPT. OF PARKS	\$1,734,500.00	C	12/17/1966	12/31/1972	2
10 - XXX	A	BARREN RIVER STATE PARK ADDITION	DEPT. OF PARKS	\$182,920.00	C	10/22/1968	6/30/1973	2
65 - XXX	D	GLASGOW MINI PARK	DEPT. OF HIGHWAYS	\$27,151.95	C	12/30/1969	12/31/1971	2
179 - XXX	D	GORIN PARK TENNIS COURTS	CITY OF GLASGOW	\$15,699.26	C	7/10/1972	12/31/1973	2
239 - XXX	C	AMERICAN LEGION PARK	CITY OF GLASGOW	\$68,357.25	C	3/1/1974	6/30/1976	2
293 - XXX	D	AMERICAN LEGION PARK POOL	CITY OF GLASGOW	\$40,109.95	C	12/6/1972	12/31/1976	2
449 - XXX	D	BARREN RIVER ST. PK. BICYCLE TRAILS	DEPT. OF PARKS	\$23,974.21	C	3/17/1977	6/30/1979	2
476 - XXX	D	GORIN PARK TENNIS COURTS	CITY OF GLASGOW	\$26,436.01	C	8/10/1977	12/31/1979	2
587 - XXX	D	BARREN RIVER GOLF COURSE EXPANSION	DEPT. OF PARKS	\$306,230.80	C	3/7/1979	3/31/1984	2
646 - XXX	D	GORIN PARK FENCING	CITY OF GLASGOW	\$36,166.71	C	3/3/1980	1/31/1985	2
877 - XXX	A	BRIGADOON NATURE PRESERVE	NATURE PRESERVE COMM.	\$42,029.28	C	9/5/1984	8/31/1986	2
1101 - XXX	D	BRIAN DOYLE PARK IMPROVEMENTS	CITY OF CAVE CITY	\$22,281.82	C	7/31/1991	7/31/1993	2
1135 - XXX	R	GORIN PARK	CITY OF GLASGOW	\$23,000.00	C	6/22/1993	6/30/1995	2
1196 - XXX	D	BEAVER CREEK PARK LIGHTS	CITY OF GLASGOW	\$16,373.14	C	4/22/1997	3/31/1999	2
1220 - XXX	R	CAVE CITY - CAVERNA SCHOOL PARK	CITY OF CAVE CITY	\$22,145.00	C	12/31/2001	9/30/2006	2
1249 - XXX	D	BARREN COUNTY LITTLE LEAGUE FOOTBALL FIELD	BARREN COUNTY FISCAL COURT	\$61,950.00	C	8/8/2002	9/30/2007	2
<b>BARREN County Total:</b>				<b>\$2,649,325.38</b>	<b>County Count:</b>		<b>16</b>	

## **ATTACHMENT 5**


### **AREAS OF AIR QUALITY CONCERN IN KENTUCKY**

- PM 2.5 [1997 Standard] and 8-Hour Ozone [2008] (2013)
- SO<sub>2</sub> [2010] (2015)

# Areas of Air Quality Concern in KY: Nonattainment and Maintenance Areas

## 1997 PM 2.5:

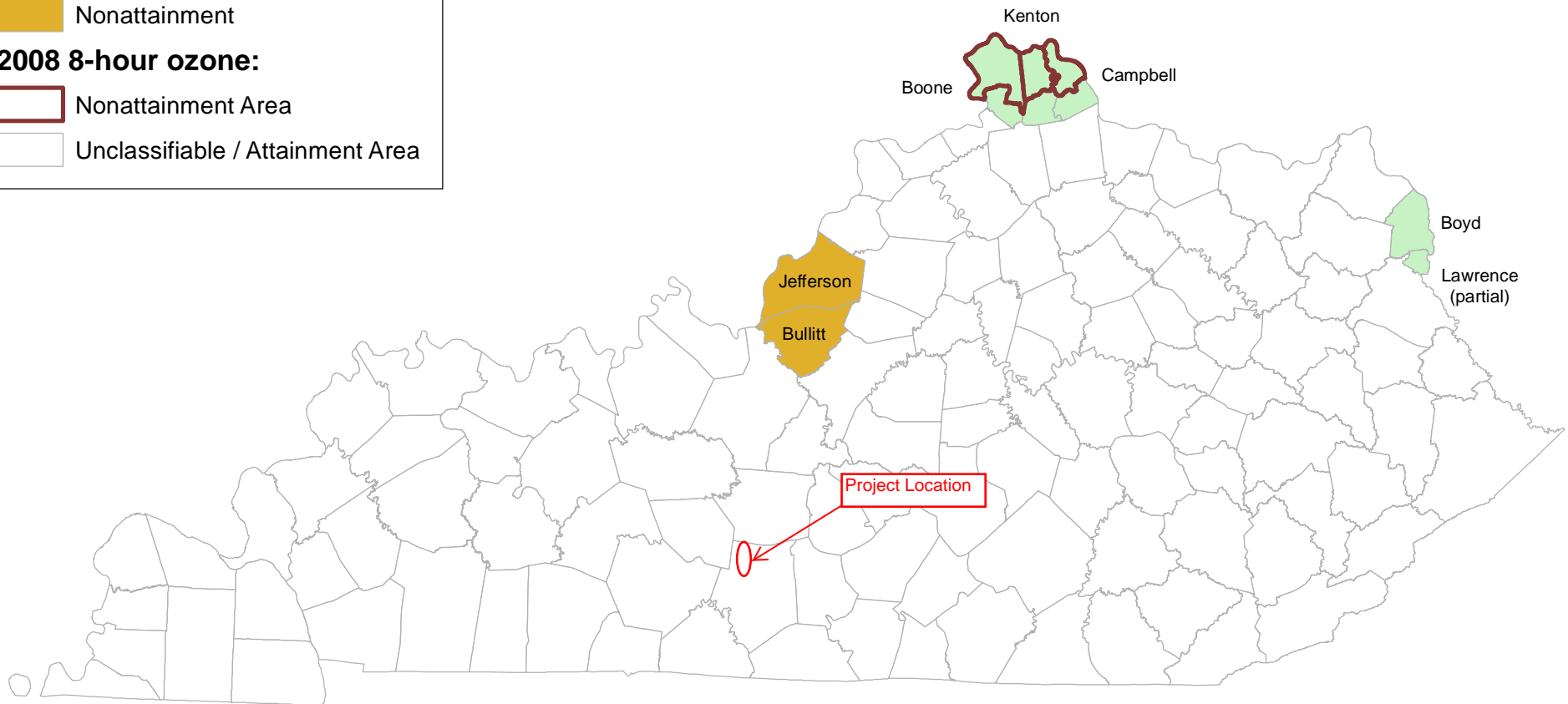
 Maintenance

 Nonattainment

## 2008 8-hour ozone:

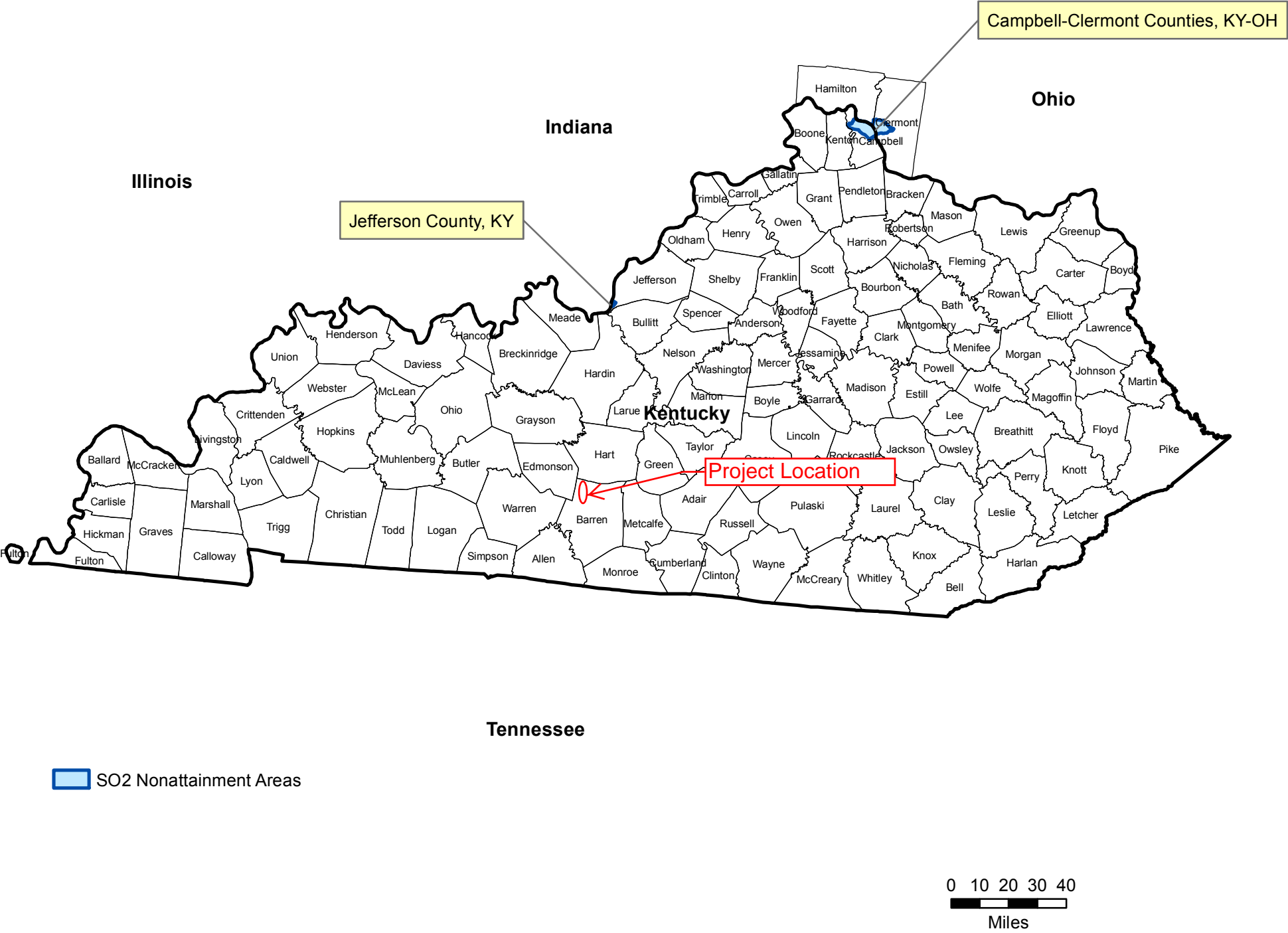
 Nonattainment Area

 Unclassifiable / Attainment Area



As of October 2013





## **ATTACHMENT 6**

### **ENVIRONMENTAL JUSTICE**

- EJ Analysis
- 2010 Census – Census Tract Reference Map for Study Area and Vicinity

**KY 90 Scoping Study  
EJ Write-Up**

The project area includes portions of Census Tracts 9501, 9502, 9503, and 9505 in Barren County. Based on the most recent U.S. Census American Community Survey (ACS) data available (2010-2014), the percentage of minority population in the project area is 10.4%, which is slightly higher than the percentage of minority population in Barren County (9.2%) but less than the percentage of minority population in the Commonwealth of Kentucky (14.6%). The percentage of low income population in the project area is 18.4%, which is lower than the percentages of low income population for both Barren County (19.5%) and Kentucky (19.1%).

**Environmental Justice Analysis**

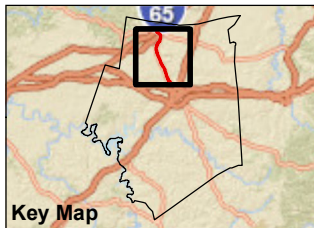
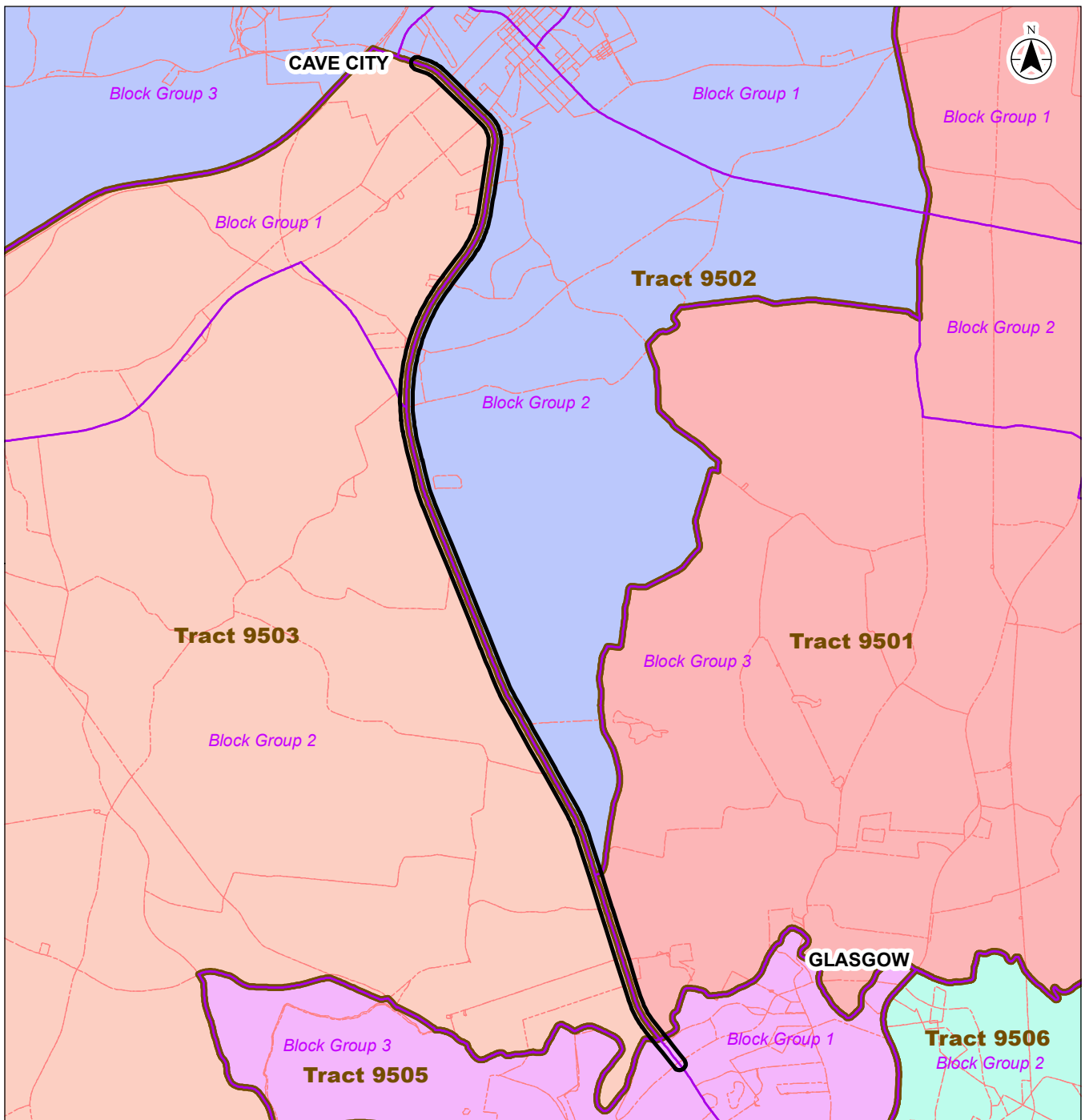
The following Environmental Justice Analysis was completed utilizing the socioeconomic data from the most recent U.S. Census American Community Survey (ACS). The most current data set is the 2008-2014 ACS.

**Table 4. EJ Populations**

<b>EJ Population</b>	<b>Kentucky</b>	<b>Barren County</b>	<b>Barren County Census Tracts</b>
			<b>Census Tracts 9501, 9502, 9503, and 9505</b>
Minority	14.6%	9.2%	10.4%
Low Income	19.1%	19.5%	18.4%

Sources: US Census 2015, American Community Survey (ACS) 2010-2014

Prepared February 2016

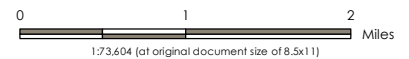


#### Legend

- Study Area
- Census 2010 Boundary**
  - Block
  - Blockgroup (labelled)
  - Tract (labelled)

#### Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Base features produced from project design elements, US Census Bureau TIGER/Shapefiles, 2010.
3. Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Project Location: 178554021  
KY 90  
Barren County, Kentucky  
Prepared by BL on 2014-01-27

Client/Project: KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00

Figure No.: **Attachment 6**  
Title:

**2010 Census - Census Tract  
Reference Map for Study Area**

## **ATTACHMENT 7**

### **CULTURAL AND HISTORIC RESOURCES**

- An Archaeological Overview for the Proposed KY 90 Improvements Project in Barren County, Kentucky (Item No. 3-8819.00); CRA Project No.: K16S003, Prepared by Cultural Resource Analysts, Inc. (CRA), February 5, 2016 [excludes sensitive location information]
- A Cultural Historic Resource Records Review for the KY 90 Scoping Study, Barren County, Kentucky; CRA Project No.: K16S004, Prepared by Cultural Resource Analysts, Inc. (CRA), February 16, 2016

# An Archaeological Overview for the Proposed KY 90 Improvements Project in Barren County, Kentucky (Item No. 3-8819.00)

By:  
James Heideman  
With a contribution by Heather Barras



Cultural Resource Analysts, Inc.  
151 Walton Avenue  
Lexington, Kentucky 40508  
CRA Project No.: K16S003



Bill Leopold  
Environmental Specialist  
Stantec  
11687 Lebanon Road  
Cincinnati, Ohio 45241-2012  
Phone: (513) 619-6461  
Bill.Leopold@stantec.com

February 5, 2016





## Project Description

In January 2016, Cultural Resource Analysts, Inc. (CRA), personnel completed an archaeological records review for the proposed KY 90 Improvements project in Barren County, Kentucky (Item No. 3-8819.00). The review was conducted at the request of Bill Leopold of Stantec Consulting Services, Inc., on behalf of the Kentucky Transportation Cabinet (KYTC). The study area is generally located between Sanders Street in Cave City, and the intersection with U.S. 68 (the Glasgow Outer Loop) in Barren County. The basic goals for the project area are as follows:

- a. Evaluate crash history and geometric deficiencies to identify possible safety improvements.
- b. Use the traffic forecast, completed by KYTC, for evaluation of the capacity of the corridor.
- c. Evaluate possible improvement concepts for KY 90, including corridor wide improvements and spot improvements. Determine potential impacts and costs for improvement options.
- d. Determine which improvements, if any, should move forward to design.

Proposed study activities include, but may not be limited to, an inventory of existing conditions, establishing project purpose and goals, proposing and analyzing alternate improvement options, developing practical solutions and cost estimates, conducting public involvement activities throughout the study process, prioritizing improvements, and writing a technical report(s) to document the study process and results.

The area of potential effect (APE) has been defined as an approximately 152 m (500 ft) wide corridor centered on existing KY 90 (76 m [250 ft] on either side of the highway centerline) for approximately 13.82 km (8.59 mi). In total, the study area encompasses approximately 208.88 ha (516.16 acres) of land. The study area only has one major drainage crossing in the southern portion where it crosses over Beaver Creek. Elevations throughout the study area range from approximately 192 m (630 ft) above mean sea level (AMSL) along the floodplains of Beaver Creek to approximately 253 m (830 ft) AMSL in the uplands of the central portion of the study area.

## Records Review

A search of records maintained by the National Register of Historic Places (NRHP) (available at: <http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome>) and the Office of State Archaeology (OSA, number not assigned) was conducted to: 1) determine if the study area had been previously surveyed for archaeological resources; 2) identify any previously recorded archaeological sites that were situated within the study area; 3) provide information concerning what archaeological resources could be expected within the study area; and 4) provide a context for any archaeological resources recovered within the study area. The NRHP records indicated that no archaeological sites listed on the NRHP were situated within the current study area.

OSA Geographic Information Systems data requested by CRA on January 13, 2016, was returned on January 20, 2016. The results were researched by Heather Barras of CRA at the OSA between January 21 and 26, 2016. The results of the OSA records review are depicted in Figure 1 (see electronic file). The work at the OSA consisted of a review of professional survey reports and records of archaeological sites located within and/or adjacent to the study area. The study area is within the Glasgow North (United States Geological Survey [USGS] 1973 [Photinspected 1979]) and Horse Cave (USGS 1966), Kentucky, 7.5-minute series topographic quadrangles.

## *Archaeological Resource Review Results*

*Heather Barras*

OSA records revealed that four previous professional archaeological surveys have been conducted within, or adjacent to, the current study area. Six archaeological sites have been recorded in this area also. The records review revealed that all six sites in the file search area (15Bn40, 15Bn41, 15Bn79, 15Bn96, 15Bn161, and 15Bn165) are prehistoric open habitations without mounds.

On April 23 and 24, 1975, Ohio Valley Archaeological Research Associates personnel completed an archaeological survey of the proposed expansion to the Glasgow Municipal Airport in Barren County, Kentucky (Turnbow and Allen 1975). At the request of John Talbert & Associates, Inc., an area of unspecified size was investigated by pedestrian survey. Six archaeological sites were documented within the project area (15Bn40–15Bn45).

Of these, Sites 15Bn40 and 15Bn41 are located within the current file search area. Site 15Bn40 is a large prehistoric open habitation without mounds consisting of three areas of concentration (A–C). The site contains Middle to Late Archaic and Early Woodland occupations. Site 15Bn41 is a large prehistoric open habitation without mounds with a possible Middle Archaic occupation. Further archaeological work in the form of test pits was recommended for both sites (Turnbow and Allen 1975).

Between June 8 and 26, 1995, Cultural Horizons, Inc., personnel conducted an archaeological survey at the request of American Engineers for the proposed construction of a bypass around the town of Glasgow in Barren County, Kentucky (Stallings and Ross-Stallings 1996). The entire length of Alternate A, 9.9 km (6.15 mi) with a 90 m (300 ft) wide corridor, was surveyed. Only high probability areas along Alternate B were surveyed. Field methods consisted of pedestrian survey supplemented with screened shovel testing. Twenty-one archaeological sites (15Bn77–15Bn97) were documented during the survey.

Of these, two are located within the current file search area (15Bn79 and 15Bn96). Site 15Bn79 is a prehistoric open habitation without mounds of indeterminate temporal affiliation. The site was disturbed by the construction of the Beaver Trail. It was considered ineligible for NRHP inclusion, and no further work was recommended. Site 15Bn96 is a large prehistoric open habitation without mounds containing a high density of lithic material dating to the Early Woodland period. Most of the site, however, had been largely destroyed by earth moving equipment and the artifacts were redeposited over a large area. The site was considered ineligible for NRHP inclusion, and no further work was recommended (Stallings and Ross-Stallings 1996).

On June 17, 2004, Arrow Enterprises personnel completed an archaeological survey of .4 ha (1.0 acre) for the proposed Cave City Fire Department sub-station in Barren County, Kentucky (Schock 2004). At the request of Mayor Bob Hunt of Cave City, Kentucky, the project area was investigated by pedestrian survey supplemented with screened shovel testing. No archaeological sites were documented, and project clearance was recommended.

Between May 2 and May 17, 2012, CRA personnel conducted an archaeological survey of a proposed 69kV overhead transmission line between the communities of Cave City and Bon Ayr in Barren County, Kentucky (Kelley and Calhoun 2012). At the request of Josh Young on behalf of East Kentucky Power Cooperative, 43 ha (107 acres) were investigated by intensive pedestrian survey, screened shovel testing, and auger testing. Six archaeological sites (15Bn160–15Bn165) and two isolated finds were documented during the survey.

Sites 15Bn161 and 15Bn165 are located within the current file search area. Both sites are prehistoric open habitations without mounds of indeterminate temporal affiliation. No evidence of intact subsurface features or deposits was found on either site. They were considered ineligible for NRHP inclusion, and no further work was recommended (Kelley and Calhoun 2012).

## *Archaeological Site Data*

The OSA records show that prior to this records review, 291 archaeological sites had been recorded in Barren County (Table 1). The site data indicate that the majority of archaeological sites recorded in Barren County consist of prehistoric open habitations without mounds (n = 126; 43.3 percent) and undetermined site types (n = 108; 37.11 percent). The only other site types recorded in substantial numbers are historic farms/residences (n = 23; 7.9 percent) and caves (n = 16; 5.5 percent). Additional site types recorded in the county include industrial, isolated find, military, mound complex, non-mound earthwork, open habitation with mounds, other, other special activity area, quarry, rockshelter, and workshop.

Table 1. Summary of Selected Information for Previously Recorded Archaeological Sites in Barren County, Kentucky. Data Obtained from OSA and May Contain Coding Errors.

Site Type:	N	%
Cave	16	5.5
Historic Farm/Residence	23	7.9
Industrial	1	0.34
Isolated Find	2	0.69
Military	1	0.34
Mound Complex	2	0.69
Non-mound Earthwork	2	0.69
Open Habitation with Mounds	1	0.34
Open Habitation without Mounds	126	43.3
Other	1	0.34
Other Special Activity Area	1	0.34
Quarry	2	0.69
Rockshelter	4	1.37
Undetermined	108	37.1
Workshop	1	0.34
Total	291	100
Time Periods Represented	N	%
Archaic	36	9.86
Woodland	33	9.04
Late Prehistoric	27	7.4
Indeterminate Prehistoric	223	61.1
Historic	39	10.7
Unspecified	7	1.92
Total	365*	100
Landform	N	%
Dissected Upland	56	19.2
Floodplain	72	24.7
Hillside	37	12.7
Other	1	0.34
Terrace	78	26.8
Undissected Upland	37	12.7
Unspecified	10	3.44
Total	291	100

*\*One site may represent more than one time period.*

Temporal periods recorded for sites in Barren County consisted of Archaic (n = 36; 9.86 percent), Woodland (n = 33; 9.04 percent), Late Prehistoric (n = 27; 7.4 percent), Indeterminate Prehistoric (n = 223; 61.1 percent), and Historic (n = 39; 10.68 percent). Seven sites recorded in the county are from an unspecified temporal period.

The most common landform locations for sites in Barren County are terraces (n = 78; 26.8 percent) and floodplains (n = 72; 24.74 percent). Sites also are commonly located on dissected uplands (n = 56; 19.24 percent), undissected uplands (n = 37; 12.71 percent), and hillsides (n = 37; 12.71 percent). The 11 remaining sites recorded in the county have been located on other/unspecified landforms.

## Map Data

In addition to the file search, a review of the 1879 Barren County atlas (Beers and Lanagan) and the 1938 Horse Cave topographic quadrangle (USGS) was initiated to help identify potential historic properties (structures) or historic archaeological site locations within the proposed study area. The historic maps indicate a number of map structures are located within and/or directly adjacent to the study area. The 1879 county atlas indicated that 19 structures (18 residential, 1 school) are depicted in the vicinity of the study area (Figure 2; see electronic file). The majority of the structures are located along old county roads that have since been rerouted to follow the current KY 90.

The 1938 USGS Horse Cave topographic quadrangle depicts 30 structures (27 residential, 2 schools, 1 church) in the vicinity of the study area (Figure 3; see electronic file). Again, the majority of the structures are located along old county roads that have since been rerouted to follow the current KY 90.

In summary, at least 30 historic structures are located within or directly adjacent to the current study area. The structures depicted were primarily residential, but several schools and one church were also present. The locations depicting historic structures may contain intact archaeological remains associated with historic occupations of the structures. The location depicting a church (Mt. Tabor Church) on the 1938 quadrangle may contain an associated cemetery on the property.

## Soil Review

The soils mapped within the study area were also reviewed in order to define areas that may contain intact cultural deposits. The review indicated that a total of 20 soil series were mapped in the study area. These included Baxter, Christian, Crider, Cumberland, Dickson, Garmon, Hamblen, Humphreys, Melvin, Needmore, Newark, Nolichucky, Pembroke, Ramsey, Roellen, Staser, Taft, Talbott, Tarklin, and Weikert series soils. The soil series are classified by the amount of time it has taken them to form and the landscape position they are found on (Birkeland 1984; Soil Survey Staff 1999). This information can provide a relative age of the soils and can express the potential for buried archaeological deposits within them (Stafford 2004). The soil order and group classifications for each soil series are used to assist with determining this potential.

The Baxter (mesic Typic Paleudalfs), Crider (mesic Typic Paleudalfs), Cumberland (thermic Rhodic Paleudalfs), Humphreys (thermic Ultic Hapludalfs), Needmore (mesic Ultic Hapludalfs), Pembroke (mesic Mollic Paleudalfs), and Talbott (thermic Typic Hapludalfs) soil series are classified as Alfisols, which are found on landforms that formed during the late Pleistocene or earlier (Soil Survey Staff 1999:163–167). Archaeological deposits would only be found on or very near the ground surface on landforms mapped with these soils.

The Christian (mesic Typic Hapludult), Dickson (thermic Glossic Fragiudults), Nolichucky (mesic Typic Paleudults), Taft (thermic Glossaquic Fragiudults), and Tarklin (mesic Typic Fragiudults) series soils are classified as Ultisols. These soils can be found on landforms that formed during the late Pleistocene or earlier (Soil Survey Staff 1999:721–726). Archaeological deposits would only be found on or very near the ground surface on landforms mapped with these soils.

The Garmon (mesic Dystric Eutrudepts), Hamblen (thermic Fluvaquentic Eutrudepts), Melvin (mesic Fluvaquentic Endoaquepts), Newark (mesic Fluventic Endoaquepts), Ramsey (mesic Lithic Dystrudepts), and Weikert (mesic Lithic Dystrudepts) soil series are classified as Inceptisols that are found on landforms that formed during the late Pleistocene or Holocene time periods (Soil Survey Staff 1999:489–493). These may have deeply buried and intact archaeological deposits, depending upon the landform on which they formed (e.g., sideslope vs. alluvial terrace).

The Roellen (thermic Vertic Epiaquolls) and Staser (thermic Cumulic Hapludolls) series soils are classified as Mollisols that are found on landforms that formed during the late Pleistocene to Holocene or even earlier (Soil Survey Staff 1999:555–557). They have the potential to contain deeply buried and intact archaeological deposits on level floodplain or terrace landforms.

The Hamblen, Melvin, Newark, Roellen, and Staser series soils have been defined as alluvial soils and encompass 17.95 ha (44.36 acres) of the entire 208.88 ha study area (Figure 4, see electronic file; Table 2). With less than 10 percent of the study area known to contain alluvial soils, the potential for intact deeply buried cultural deposits to be present is low when considering the entire study area.

Table 2. Alluvial soils in the study area.

Soil Symbol	Soil Name	Drainage Class	Soil Family	Age	Acres in APE
Ha	Hamblen silt loam	moderately well drained	thermic Fluvaquentic Eutrudepts	developed in Holocene or late Pleistocene age deposits	7.57
Me	Melvin silt loam	poorly drained	mesic Fluvaquentic Endoaquepts	developed mostly in Holocene deposits	6.26
Nn	Newark silt loam	somewhat poorly drained	mesic Fluventic Endoaquepts	typically developed in Holocene deposits	4.67
Rs	Roellen silty clay loam	poorly drained	thermic Vertic Epiaquolls	developed in Holocene or late Pleistocene age deposits	3.25
St	Staser silt loam	well drained	thermic Cumulic Hapludolls	developed in Holocene or late Pleistocene age deposits	22.61
Total:					44.36

## Summary

The OSA and archaeological resource review indicated that approximately 3.88 ha (9.59 acres) of the entire 208.88 ha study area have been previously surveyed. However, approximately 2.50 ha (6.17 acres) of the previously surveyed study area would need to be resurveyed in order to meet current State Historic Preservation Office (SHPO) specifications for conducting archaeological surveys. No previously recorded archaeological sites have been recorded in and/or directly adjacent to the current study area. A historic maps review indicated that a number of structures were located within and/or directly adjacent to the study area from the mid- to late nineteenth century into the early to mid-twentieth century. These structures may be associated with unrecorded historic archaeological sites; however, the majority of the historic structures are depicted in locations that appear to possibly have been disturbed to an unknown extent by road construction activities associated with rerouting old county roads to follow the current route of KY 90. As a result of the low percentage (8.59 percent) of alluvial soils mapped within the study area, the potential for intact deeply buried cultural deposits to be present throughout the study area is relatively low.



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Turnbow, Christopher and Roger Allen

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United States Geological Survey

1938 Horse Cave, Kentucky, 15-minute series topographic quadrangle. United States Department of the Interior. Washington, D.C.

1966 Horse Cave, Kentucky, 7.5-minute series topographic quadrangle. United States Department of the Interior. Washington, D.C.

1973 (Photorevised 1979) Glasgow North, Kentucky, 7.5-minute series topographic quadrangle. United States Department of the Interior. Washington, D.C.

**Figure 1** excluded due to containing sensitive location information.  
See Environmental Overview **Figures 4.1 and 4.2** for mapping of previously surveyed archaeological areas.



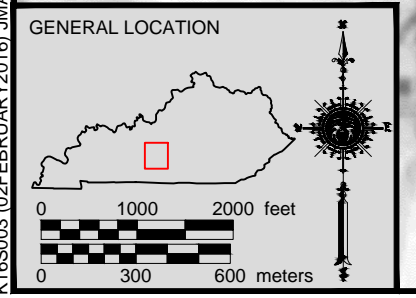
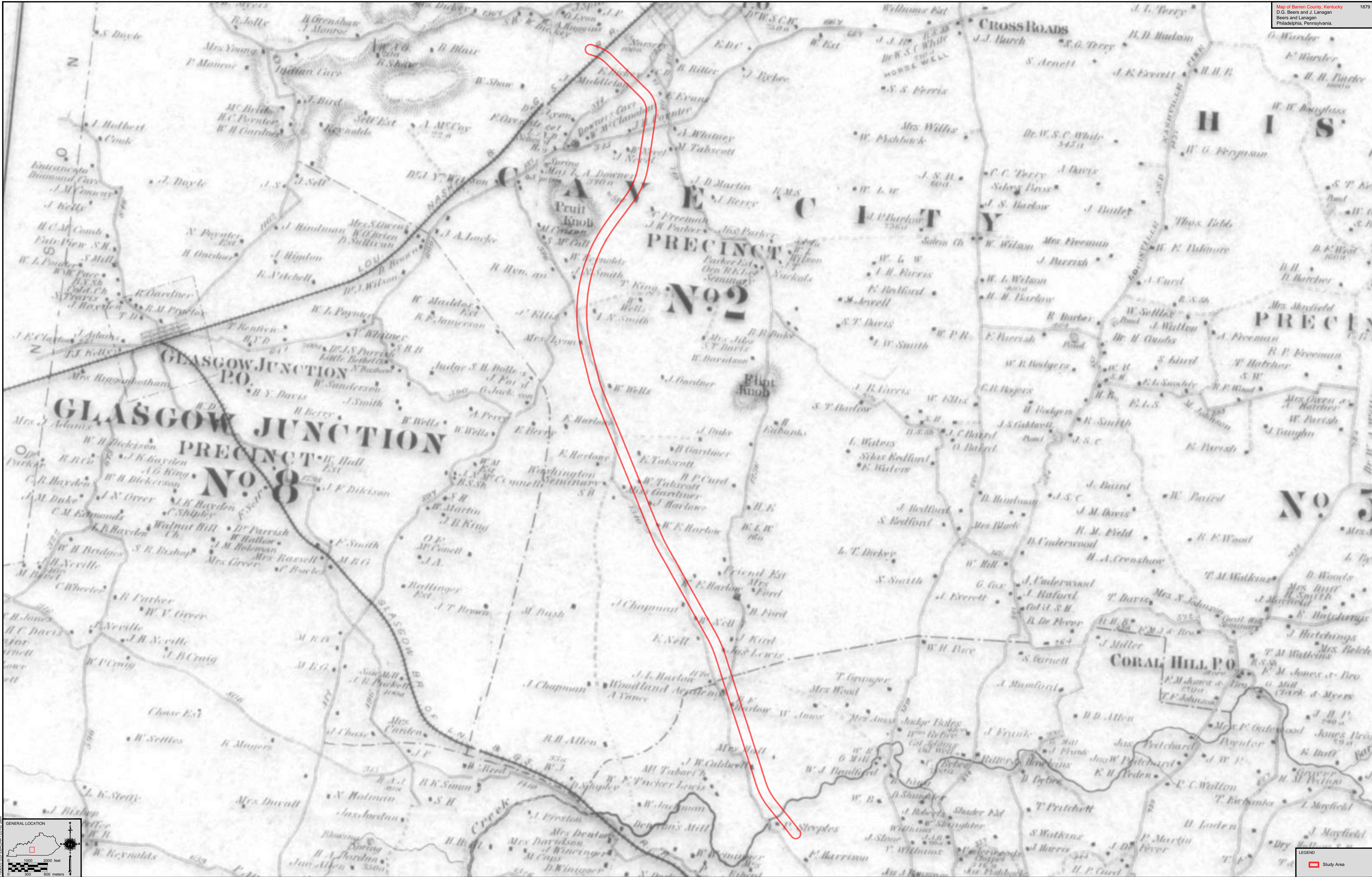


Figure 2. Section of 1879 Map of Barren County showing the current study area.





Figure 3. Section of 1938 USGS Horse Cave topographic quadrangle map showing the current study area.



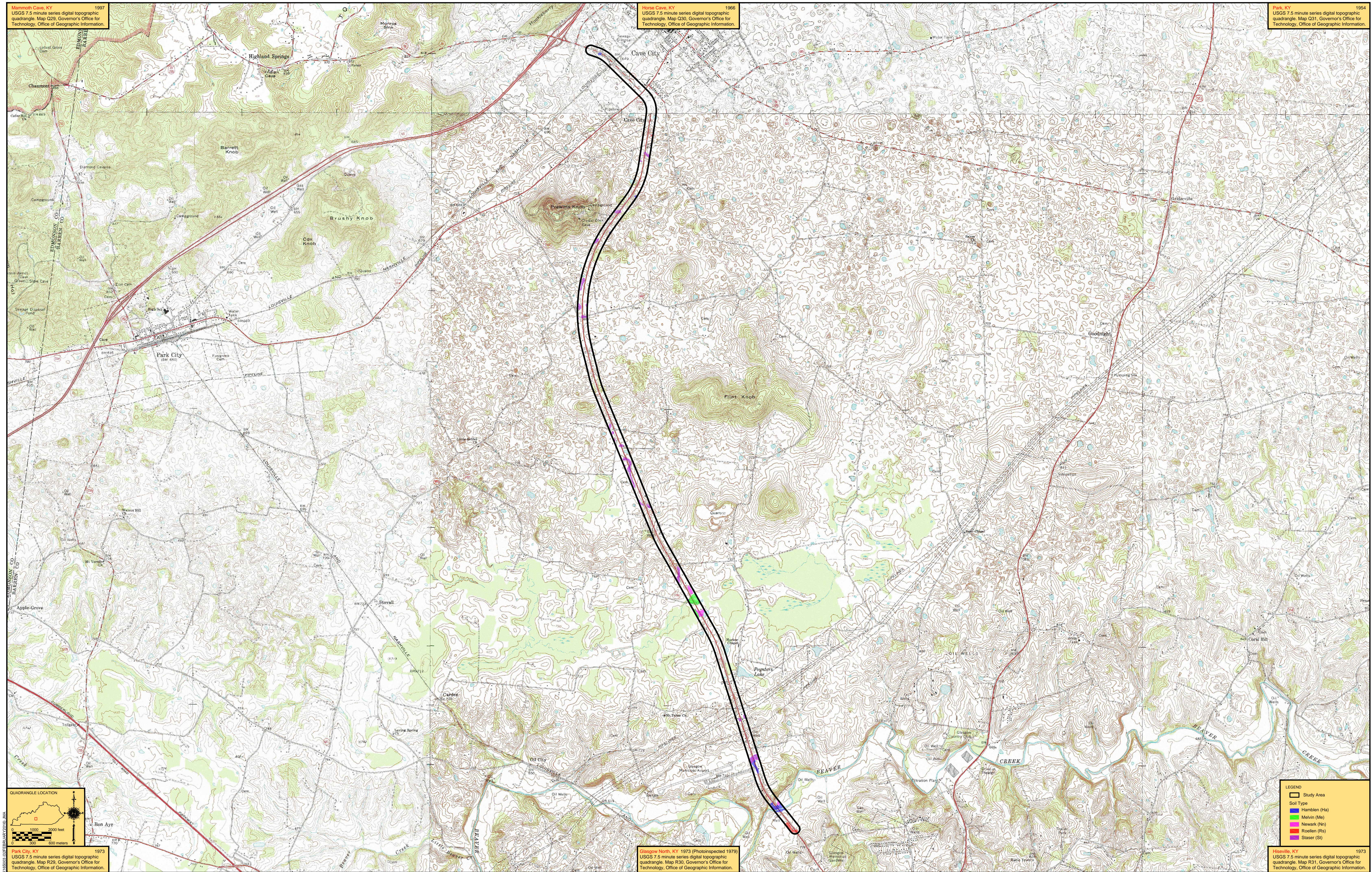


Figure 4. Alluvial soils in the study area with the potential for buried cultural deposits.



# A CULTURAL HISTORIC RESOURCE RECORDS REVIEW FOR THE KY 90 SCOPING STUDY, BARREN COUNTY, KENTUCKY

By:  
Trent Spurlock, MHP

*Prepared by:*



Cultural Resource Analysts, Inc.  
151 Walton Avenue  
Lexington, Kentucky 40508  
CRA Project No.:K16S004

*Prepared for:*



Bill Leopold  
Environmental Specialist  
Stantec  
11687 Lebanon Road  
Cincinnati, Ohio 45241-2012  
Phone: (513)619-6461  
Email: Bill.Leopold@stantec.com

February 16, 2016





## Project Background

In January and February 2016, Cultural Resource Analysts, Inc. (CRA), conducted a cultural resource records review for the KY 90 scoping study that closely follows the KY 90 alignment from Glasgow to Cave City in Barren County, Kentucky. The review was conducted at the request of Bill Leopold, Environmental Specialist with Stantec. The study area is centered on the KY 90 alignment as it extends from the intersection of Veterans Outer Loop (US 68 Bypass) northwest of downtown Glasgow, the county seat, and continues in a general northwest direction to near the I-65 interchange west-southwest of downtown Cave City in Barren County, Kentucky. The cultural historic resources along the KY 90 corridor study area are discussed in this report.

## Cultural Historic Records Review

A search of records maintained by the National Register of Historic Places (NRHP) (available online at: <http://www.nps.gov/nr/research/>) and the Kentucky Heritage Council (KHC) (FY16\_2376) was conducted to: 1) determine if the study area had been previously surveyed for cultural historic resources; 2) identify any previously recorded cultural historic sites that were situated within the study area; and 3) provide information concerning what cultural historic resources could be expected within the study area.

KHC geographic information system (GIS) data requested by CRA on January 14, 2016, was returned on January 19, 2016, and researched by Trent Spurlock and Sarah Reynolds of CRA. The work at the KHC consisted of a review of professional survey reports and records of cultural historic sites for the scoping study.

KHC records revealed that there are four previously surveyed properties that have an undetermined status in the KHC database that are located within the study area. There are also three previously recorded sites with an undetermined status in the KHC database that are outside but near the study area and indicated on the mapping (KHC n.d.). One site located in the study area and three additional sites situated near but outside the study area were identified in a 2012 report. These four sites are not indicated in the KHC database but were recommended not eligible for listing in the NRHP in the 2012 report (Higgins and Martinolich 2012:i). The previously surveyed properties that are outside the study area were included in this report because of their proximity to the study area. The rural setting of the study area enhances the possibility that large property boundaries of the previously surveyed sites could extend into the study area.

### *Historic Properties and Districts*

One multiple resource area nomination has been completed for Barren County. This is not a nomination, per say, but is a cover document that includes contexts and information to determine the NRHP eligibility of associated properties. Individual properties or groups of properties may be listed in the NRHP under the cover document, thereby creating a multiple property submission. The Barren County Multiple Resource Area (MRA) NRHP nomination was completed in August 1982 by Jayne Henderson, Main Street Project Director for the Carrollton Development Corporation. The nomination focuses on five historic contexts for the county: early Barren County development (1799–1850); Glasgow's early settlement; religion; stabilization and late nineteenth century growth; twentieth century growth in the county. No sites located in the study area were individually nominated to the NRHP under the Barren County MRA NRHP nomination. The Cave City Commercial Historic District, located east of the northern terminus and outside the study area, was listed in the NRHP under the Barren County MRA (Henderson 1982).

## *Properties with Undetermined Status in the KHC Database*

Four previously surveyed properties that have an undetermined status in the KHC database are situated within the study area (Table 1). The four properties, all of which are residences, include: BN 218; BN 219; BN 512; and BN 513. Three previously surveyed properties are also situated near but outside the study area (BN 220, BN 221, and BN 269) (KHC n.d.). One site (BN 573) located in the study area and three additional sites (BN 572, BN 575, and BN 576) situated near but outside the study area were identified in a 2012 report. These four sites are not indicated in the KHC database but were recommended not eligible for listing in the NRHP in the 2012 report (Higgins and Martinolich 2012:i). Because of their proximity to the study area, the six previously identified properties outside the study area are included in Table 1 and the mapping for this report.

Table 1. Cultural Historic Resources with Undetermined NRHP Status located within the Study Area.

KHC Resource Number	Resource Name	Address	Notes
BN 218	House	HWY 90	
BN 219	Russell Gardner House	HWY 90 4.5 miles north of US 31E	
BN 512	House	3079 Happy Valley Road (KY 90)	Recommended not eligible for NRHP in 2009 report
BN 513	House	2951 Happy Valley Road (KY 90)	Recommended not eligible for NRHP in 2009 report
BN 573	Two barns	Old Happy Valley Road (KY 2143)	Recommended not eligible for NRHP in 2012 report
BN 220	Davidson Garner Home	Happy Valley Road (KY 90)	Located near but outside the study area; recommended not eligible for NRHP in 2006 report
BN 221	House	9187 Happy Valley Road (KY 90)	Located near but outside the study area; recommended not eligible for NRHP in 2012 report
BN 269	Commercial building	Flint Knob Road	Located near but outside the study area
BN 572	Ranch house and outbuildings	598 Old Happy Valley Road (KY 2143)	Located near but outside the study area; recommended not eligible for NRHP in 2012 report
BN 575	Ranch house, garage, barn	137 Old Happy Valley Road (KY 2143)	Located near but outside the study area; recommended not eligible for NRHP in 2012 report
BN 576	House and barns	150 Wilson Road (KY 685)	Located near but outside the study area; recommended not eligible for NRHP in 2012 report

## *Previous Cultural Historic Reports within the Study Area*

*Barren County Heritage: A Pictorial History of Barren County, Kentucky* was located in the files of the KHC. The book, published in 1980 and including numerous photographs, was compiled by the South Central Kentucky Historical and Genealogical Society, Inc., with Cecil E. Goode and Woodford L. Gardner, Jr. serving as editors. Chapters in the book address the various towns and communities in the county, aspects of rural life, historic residences, social institutions such as schools and churches, economic engines over the county's history, and chapters about professions and military history (Goode and Woodford 1980).

In 1992 the Barren County Bicentennial Commission published *Then and Now: Barren County's Celebration* pamphlet in observance of Kentucky's Bicentennial celebration. Brief chapters in the publication address the history of the county, businesses, communities, residences, county and city government, agriculture, and various other industries and entertainment (Barren County Bicentennial Commission 1992).

Helen C. Powell of H. Powell and Company, Inc., completed the *Cultural Resource Survey of the Proposed Construction (of the) Glasgow Outer Loop From KY 80 to the Cumberland Parkway in Glasgow, Barren County, Kentucky* in 1995. The report was prepared for American Engineers of Glasgow, Kentucky. The purpose of the report was to survey for the proposed 6.15 mi half loop road that would extend from the east to west side of Glasgow along a northern route. The proposed project began at U.S. 68 west of Glasgow and curved to the north of the county seat ending at Salem Road



southeast of the Cumberland Parkway. Twenty-six properties were surveyed for the 1995 report. No NRHP-listed properties were located along the proposed roadway corridor, and three properties along the corridor were recommended as eligible for listing in the NRHP. The proposed 1995 project crossed the current study area. The three properties recommended as NRHP eligible in the 1995 report are not located in or near the current study area. It appears two sites surveyed for the 1995 report that were recommended not eligible for listing in the NRHP were located on either side of KY 90 in the vicinity of present-day Veterans Outer Loop (US 68). KHC site numbers and KHC historic resources survey forms were not completed for the properties surveyed for the 1995 report (Powell 1995:I-1, V-1, Figure 1, Map with Photograph Key).

A May 1996 report entitled *Description of the Jackman Bank Barn* was completed by David and Donna G. Logsdon of Logsdon and Logsdon Architects for the Glasgow Airport Board. The barn, situated near the Glasgow Municipal Airport possibly near Martin Road was described as a timber-framed structure utilizing mortise and tenon and false plate roof construction. In June 1996 David and Donna G. Logsdon prepared the report entitled *Specifications for the Dismantling and Re-Erection of the Jackman Bank Barn* for the Glasgow Airport Board. The barn was to be re-erected at 238 Caveland Road south of Cave City to the west of KY 90 and outside the current study area. The June 1996 report includes details and specifications for the dismantling and reconstruction of the barn such as site work, concrete, stonework and masonry, qualified contractors, procedures for dismantling and re-erection, carpentry work, and roofing specifications. Although the two locations of the barn are outside the current study area, because of the barn's relocated proximity to the study area (approximately .17 mi southeast of the study area along Caveland Road), the 1996 reports were included in this study (Logsdon and Logsdon 1996a:1-4; Logsdon and Logsdon 1996b:1-9).

In 2000 Donna G. Logsdon of Logsdon and Logsdon Architects prepared the Barren County Historic Sites Survey Proposal for the South Central Kentucky Historical and Genealogical Society and the KHC. The proposal included a windshield survey, updating previously surveyed sites, and the documentation of approximately 500 sites that had not been previously identified, including photography and completion of KHC inventory forms (Logsdon 2000:3).

The *EPRI Overhead Electric Transmission Line Siting Methodology Results for East Kentucky Power Cooperative's Memphis Junction – Natcher Parkway Junction 161 kV Transmission Line, Barren – Oakland – Magna 1614 kV Transmission Line, and Wilson – Aberdeen – Morgantown 161 kV Transmission Line Projects* report was located during the records review. This report is undated but was probably completed circa 2005 by Photo Science, Inc., of Lexington, Kentucky, and East Kentucky Power Cooperative (EKPC) of Winchester, Kentucky. The report addresses the methodology utilized for determining the siting of the three proposed electric transmission lines that were to be located in portions of Ohio, Butler, Warren, and Barren Counties, Kentucky. The proposed Barren – Oakland – Magna transmission line project would have extended over KY 90 in the current study area. This circa 2005 report does not include information concerning historic sites in the corridors for the three proposed electric transmission line corridors (Photo Science Inc. and EKPC n.d.)

Craig A. Potts of CRA completed the *Cultural Historic Reconnaissance Survey for the Proposed Barren County-Oakland-Magna Transmission Line Project in Barren and Warren Counties, Kentucky* in March 2006. The report was prepared for the EKPC in Winchester, Kentucky. The APE for the 2006 report crossed the KY 90 study area in the vicinity of BN 220, near its intersection with Lee Fendell Road and Harlow Cemetery Road. Site BN 220, which includes a log core, was surveyed for the 2006 report and recommended not eligible for listing in the NRHP. The State Historic Preservation Officer (SHPO) concurred Site BN 220 was not eligible for listing in the NRHP (Potts 2006:40 and 43; D. L. Morgan to M. S. Plank, letter 31 October 2006, report files of the KHC, Frankfort, Kentucky).

In 2009 the *Form 620 Submission Packet, Glasgow III Telecommunications Tower, Glasgow, Barren County, Kentucky* was completed by Patriot Engineering and Environmental, Inc. for

Cumberland Cellular Partnership dba Bluegrass Cellular. The cultural historic portion of the report was prepared by Fred J. Rogers and R. Glen Payne, with contributions from Ginger M. Shank, of Preservation Services and Technology Group, LLC. One previously identified site (BN 208) could not be located during the survey and was assumed no longer extant. Two previously unidentified resources (BN 512 and BN 513) were located during the field survey and recommended not eligible for listing in the NRHP. The SHPO agreed with these recommendations. Resources BN 512 and BN 513 have an undetermined NRHP-status according to the KHC GIS database. The APE for the 2009 report overlaps with the current study area in the vicinity of the Glasgow Municipal Airport and both BN 512 and BN 513 are located in the current study area (Rogers and Payne 2009; M. Dennen to L. R. Barrow, letter 15 June 2009, report files of the KHC, Frankfort, Kentucky).

Holly B. Higgins and Kathy Martinolich of CRA completed the *Cultural Historic Resource Survey for the Proposed Cave City – Bon Ayr 69KV Transmission Line in Barren County, Kentucky* in 2012. The report was prepared for EKPC of Winchester, Kentucky. The newly identified sites surveyed for the 2012 report are not indicated in the KHC GIS database. One site (BN 573) recorded for the 2012 report is located in the study area. Four additional sites (BN 221, BN 572, BN 575, and BN 576) identified for the 2012 report are located near but outside the current study area. The 2012 report recommended all five sites were not eligible for listing in the NRHP. The SHPO concurrence letter did not specifically agree with the NRHP eligibility recommendations of the authors (Higgins and Martinolich 2012:I; L. Casebier to J. Young, letter 1 August 2012, report files of the KHC, Frankfort, Kentucky).

## Cultural Historic Records Review Results

As indicated on the ARC GIS mapping, historic resources have been surveyed in and near the study area along the KY 90 alignment. All of the previously identified historic properties within and near the study area have an undetermined status in the KHC database.

Numerous historic resources have been recorded in the rural areas within and outside the study area. It would be expected that many more historic resources are located in or near the study area, especially properties with outbuildings associated with agricultural operations. These rural agricultural properties may retain landscapes with intact integrity that could support large boundaries, if the sites are eligible for listing in the NRHP. Mid-twentieth-century residences are expected to be located within the study area as residents began building dwellings outside the central sections of Glasgow and Cave City.

CRA recommends that any projects developed as a result of this scoping study should avoid impacts to historic properties that may be later identified in the study area. Additional cultural historic investigations may be required to identify previously undocumented cultural historic resources in the vicinity of any such projects.

## References Cited

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Photo Science Inc. and East Kentucky Power Cooperative

n.d. *EPRI Overhead Electric Transmission Line Siting Methodology Results for East Kentucky Power Cooperative's Memphis Junction – Natcher Parkway Junction 161 kV Transmission Line, Barren – Oakland – Magna 1614 kV Transmission Line, and Wilson – Aberdeen – Morgantown 161 kV Transmission Line Projects*. Photo Science Inc., Lexington, Kentucky and East Kentucky Power Cooperative, Winchester, Kentucky.

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Potts, Craig A.

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Rogers, Fred J. and R. Glen Payne

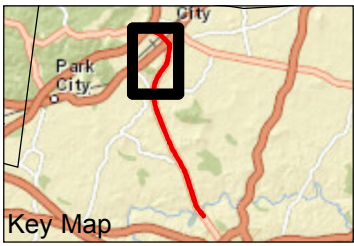
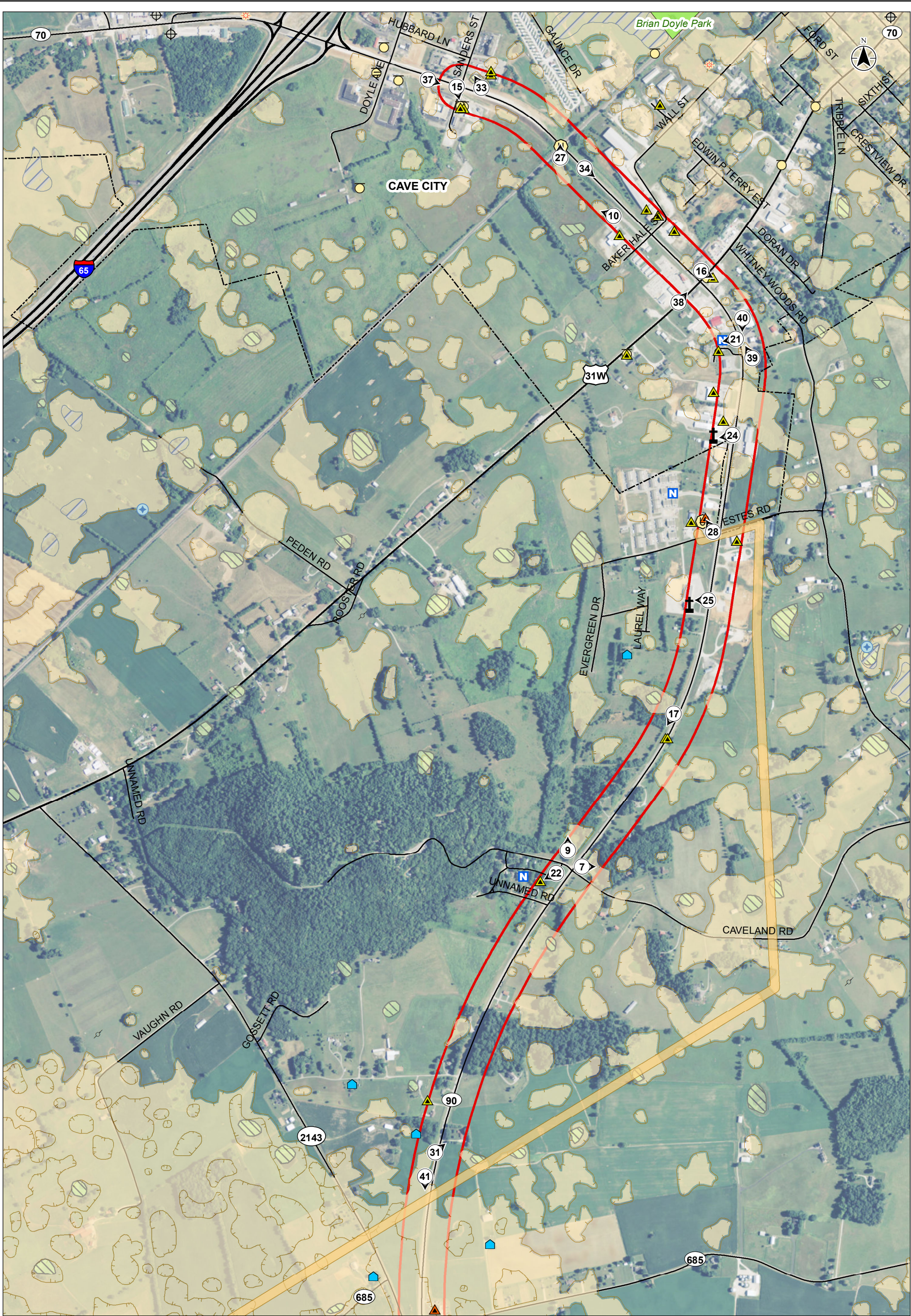
2009 A Cultural Historic Resource Evaluation for the Proposed Construction of a Cellular Communications Tower at the Glasgow III Site in Barren County, Kentucky. Preservation Services and Technology Group, LLC, Nicholasville, Kentucky. Located in *Form 620 Submission Packet Glasgow III Telecommunications Tower, Glasgow, Barren County, Kentucky*. Patriot Engineering and Environmental, Inc., Louisville, Kentucky.



**ATTACHMENT 8**

**PHOTO LOG**





- Legend**
- Study Area
  - Photograph Number, Location and Direction
  - Streams
  - 100-Year Flood Zone
  - Sinkhole
  - Hydric Soils
  - Parks
  - NWI Wetland
  - City Boundary

- Cemetery
- House of Worship
- Noise Receptor
- Potential Hazmat
- Utility
- Cultural/Historic Site
- Archaeology Survey

- HazMat Record
- UST Record
- Oil/Gas Well
- Well Other
- Water Well
- Domestic Use
- Other

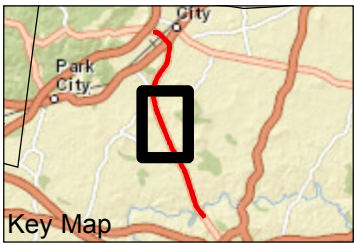
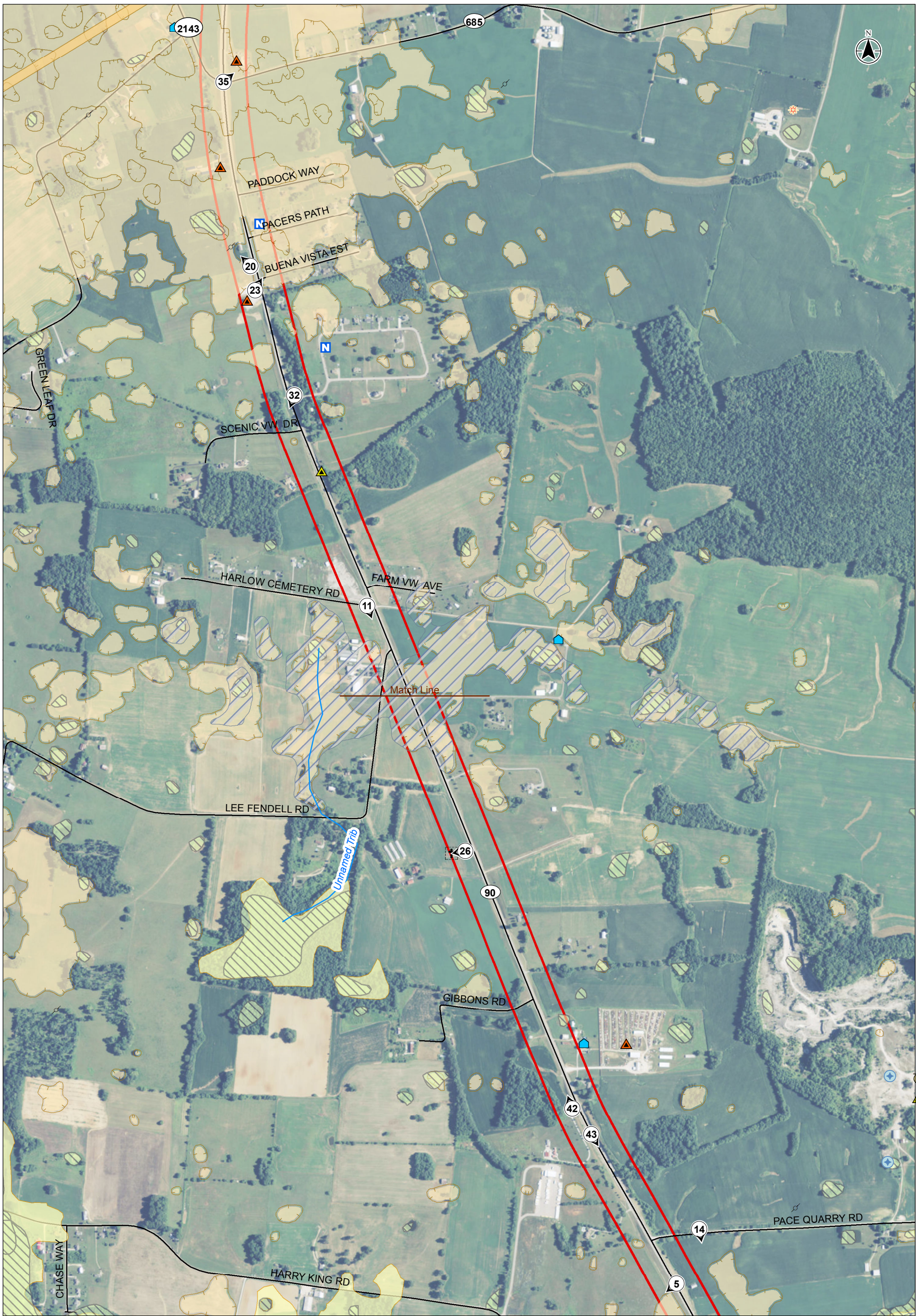
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**Notes**  
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet  
2. Base features: see Figure 3, Figure 4 and Sources and References.  
3. Base Imagery: USGS-NAIP, 2014.

Project Location  
KY 90  
Barren County, Kentucky  
Client/Project  
KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00  
Figure No.  
**Index-1**  
Title  
**Photolog Index**

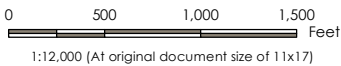




**Legend**

- Study Area
- Photograph Number, Location and Direction
- Streams
- 100-Year Flood Zone
- Sinkhole
- Hydric Soils
- Parks
- NWI Wetland
- City Boundary
- Cemetery
- House of Worship
- Noise Receptor
- Potential Hazmat
- Utility
- Cultural/Historic Site
- Archaeology Survey

- HazMat Record
- UST Record
- Oil/Gas Well
- Well Other
- Water Well
  - Domestic Use
  - Other



- Notes**
- 1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
  - 2. Base features: see Figure 3, Figure 4 and Sources and References.
  - 3. Base Imagery: USGS-NAIP, 2014.

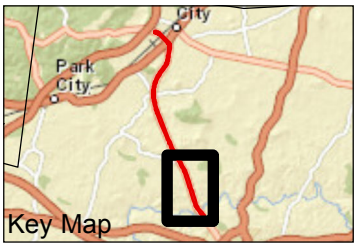
Project Location  
KY 90  
Barren County, Kentucky  
Prepared by BL on 2016-01-15

Client/Project  
KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00

Figure No.  
**Index-2**

Title  
**Photolog Index**





- Legend**
- Study Area
  - Photograph Number, Location and Direction
  - Streams
  - 100-Year Flood Zone
  - Sinkhole
  - Hydric Soils
  - Parks
  - NWI Wetland
  - City Boundary

- Cemetery
- House of Worship
- Noise Receptor
- Potential Hazmat
- Utility
- Cultural/Historic Site
- Archaeology Survey

- HazMat Record
- UST Record
- Oil/Gas Well
- Well Other
- Water Well
  - Domestic Use
  - Other

0 500 1,000 1,500 Feet  
1:12,000 (At original document size of 11x17)



**Notes**  
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet  
2. Base features: see Figure 3, Figure 4 and Sources and References.  
3. Base Imagery: USGS-NAIP, 2014.

Project Location  
KY 90  
Barren County, Kentucky  
Client/Project  
KYTC District 3  
Environmental Overview  
KY 90 Scoping Study, KYTC Item # 3-8819.00  
Figure No.  
**Index-3**  
Title  
**Photolog Index**





**Photo 1:** Beaver Creek at KY 90 bridge, with narrow to moderate wooded riparian corridor; fully supporting warmwater aquatic habitat and drinking water supply; facing downstream, west.



**Photo 2:** Unnamed, intermittent stream flowing under KY 90; the only other USGS mapped stream (aside from Beaver Creek) within the study area; facing upstream, northeast.



**Photo 3:** Representative view of forested NWI mapped wetland in study area; facing northwest.



**Photo 4:** Representative view of excavated pond NWI mapped wetland observed in study area; facing northeast.





**Photo 5:** Representative view of intermittent pond NWI mapped wetland in study area; pond located in sinkhole; facing southwest.



**Photo 6:** Representative view of emergent/scrub-shrub wetland observed in study area; facing east.



**Photo 7:** Representative view of potential Indiana bat and Northern long-eared bat foraging habitat, upland woodlot in study area; facing east.



**Photo 8:** Representative view of potential habitat for federal-listed snuffbox and rabbitsfoot mussels, Beaver Creek, and Indiana bat and Northern long-eared bat foraging habitat, riparian woodland; facing upstream, east.





**Photo 9:** Indication of potential habitat for gray bat and Kentucky cave shrimp in study area vicinity, known cave entrance present adjacent to study area; facing north.



**Photo 10:** Representative view of evidence of karst landscape, sinkholes present in open field; facing northwest.



**Photo 11:** Representative view of karst landscape along KY 90 alignment; sinkholes and associated FEMA 100-year floodplain in depression; facing southeast.



**Photo 12:** Representative view of FEMA 100-year floodplain along Beaver Creek, riparian woods and open field; facing southwest.





**Photo 13:** Active horse farm present in and adjacent to study area; facing south.



**Photo 14:** Agricultural fields and active farmland in study area; facing south.



**Photo 15:** Mammoth Liquors, former gas station; representative hazardous materials concern site, FINDS and UST database records; facing south.



**Photo 16:** Dollar General Store #3493; representative hazardous materials concern site, RCRA and FINDS database records; facing southeast.





**Photo 17:** Approximate location of hazardous materials concern, SPILLS (3) and SHWS database records, all resulting from traffic accidents; facing southwest.



**Photo 18:** Hazardous materials concern site, EDR Historical Auto Station record; facing west.



**Photo 19:** ACK Controls, Inc.; representative hazardous materials concern site, RCRA, AIRS and FINDS database records; facing southeast.



**Photo 20:** Oil well storage tank located in study area, well presently reported as dry and abandoned; facing northwest.





**Photo 21:** Happy Valley Apartments, representative noise sensitive receptor multi-family housing in study area; facing west.



**Photo 22:** Crystal Onyx MHP (mobile home park), representative noise sensitive receptor residential neighborhood, also location of hazardous materials concern site (US HIST CDL [meth lab] database record); facing southwest.



**Photo 23:** Buena Vista Estates, representative noise receptor residential development in study area; facing northwest.



**Photo 24:** Cave City Tabernacle, house of worship located in commercial structure (right of center) in study area; facing west.





**Photo 25:** Caveland Church, house of worship in study area; facing west.



**Photo 26:** Family cemetery (Gardner) located in study area; facing west.



**Photo 27:** CSX railroad underpass (public service) at KY 90; facing north.



**Photo 28:** Electrical substation (utility) located at Estes Road and KY 90 in study area; facing northwest.





**Photo 29:** Two gas pipeline markers indicating pipeline crossings of KY 90 just south of Dripping Springs Road; facing southeast.



**Photo 30:** Glasgow Municipal Airport facility buildings adjacent to KY 90; facing southwest.



**Photo 31:** Typical view of rural residential land use in study area, along KY 90 south of Cave City; facing northeast.



**Photo 32:** Typical view of rural residential land use in study area along KY 90 through center of study area; facing southwest.





**Photo 33:** View of commercial land use at north project terminus in Cave City; facing northwest.



**Photo 34:** View of commercial land use concentrated along KY 90 in Cave City; facing southeast.



**Photo 35:** View of scattered commercial land use (Cars & Trucks R Us used car sales) along KY 90 outside of city limits; facing northeast.



**Photo 36:** Madison Smith Machine & Tool, industrial facility at south project terminus in Glasgow; facing south.





**Photo 37:** View of KY 90 at project north terminus, intersection with Sanders Street, Cave City; commercial land uses adjacent to KY 90, where roadway constricts from 4-lanes to 2-lanes; facing southeast.



**Photo 38:** US 31W and KY 90 intersection, Cave City; commercial land uses adjacent to only signalized intersection in project corridor with the exception of south terminus; facing northeast.



**Photo 39:** View of KY 90 into Cave City commercial area; facing northwest.



**Photo 40:** View of KY 90 heading south out of Cave City; commercial interspersed with agricultural/undeveloped lands; facing south.





**Photo 41:** KY 90 in unincorporated Barren County; agricultural with scattered rural residential and commercial land uses, area of extensive sinkhole development; facing south.



**Photo 42:** KY 90 in unincorporated Barren County; agricultural with scattered rural residential and commercial land uses; southbound passing lane present; facing northwest.



**Photo 43:** KY 90 looking towards Glasgow from approximately the highest elevation in the project corridor; facing southeast.



**Photo 44:** KY 90 at US 68 (Glasgow Outer Loop) in Glasgow, south project terminus; industrial and commercial land uses adjacent to roadway; facing northwest.