

**Kentucky State Board on Electric Generation and Transmission Siting  
Meade County Solar, LLC – Case No. 2020-00390  
Application – Exhibit 14  
Volume 2, Tab 14**

**Additional Information**

**Respondent: Chris Killenberg**

As part of the investigation of the suitability of the proposed site for the Project, the Applicant commissioned additional studies which are summarized below and included as attachments to the Application.

**Wetlands Delineation Report**

A Wetland and Stream Delineation Report (“Wetlands Delineation”), of the proposed Project site was performed by Copperhead Environmental Consulting, Inc., environmental consulting engineers, 471 Main St., Paint Lick, KY 40461. The Wetlands Delineation is dated February 17, 2021.

The Wetlands Delineation identified a small number of likely jurisdictional wetlands and streams. A request for an Approved Jurisdictional Determination (AJD) has been submitted to the US Army Corps of Engineers. Action on the AJD is expected in mid-2021.

The Site Plan for the proposed facility avoids new encroachment on the aquatic features identified in the Wetlands Delineation. Where existing stream crossings may need to be improved or repaired, the Applicant will seek the necessary permits.

A copy of the Wetlands Determination is provided as Exhibit 14 Attachment 14.1.

**Phase I Environmental Site Assessment Report**

A Phase I Environmental Site Assessment (“Phase I ESA”) of the proposed Project site was performed by Linebach Funkhouser, Inc., environmental compliance and consulting engineers, 114 Fairfax Avenue, Louisville, KY 40207. The Phase I ESA is dated April 1, 2021.

The Phase I ESA revealed no evidence of recognized environmental conditions (“RECs”) in connection with the site.

A copy of the Phase I Environmental Site Assessment Report is provided as Exhibit 14 Attachment 14.2.

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Includes five Attachments**

*( 14.1 – 115 pages; 14.2 – 129 pages; 14.3 – 21 pages; 14.4 - 34 pages; 14.5 – 55 pages )*

### Cultural Resources – Historic

A Cultural Historic Overview Study of the proposed Project site was performed by Cultural Resource Analysts, Inc., 151 Walton Avenue, Lexington, KY 40508 (“CRA”). The related study is dated March 8, 2021.

CRA identified four historic resources in the study area for potential further investigation for eligibility for listing in the National Register of Historic Places (NRHP). However, these resources were determined to be off-site.

A copy of the Cultural Historic Overview Study is provided as Exhibit 14 Attachment 14.3.

### Cultural Resources – Archeology

An Archaeological Records Review and Site Reconnaissance of the proposed Project site was performed by Cultural Resource Analysts, Inc., 151 Walton Avenue, Lexington, KY 40508 (“CRA”). The related report is dated March 8, 2021.

The records review indicated a number of previously-mapped resources in the study area, all of which are located outside the footprint of the project. A walkover and visual inspection of the portions of the project site that had sufficient ground surface visibility did not identify any artifacts. Soil caps across the project site were occasionally opened up, only one of which revealed a prehistoric flake in an area outside the main footprint of the project. Nevertheless, it is likely that several archaeological sites are present within the project area. Further testing prior to construction will be conducted. Any resources identified at that time and eligible for listing in the NHRP will be avoided and left undisturbed.

A copy of the Archaeological Records Review and Site Reconnaissance Report is provided as Exhibit 14 Attachment 14.4.

### Threatened & Endangered Species Habitat

A Threatened and Endangered Species Habitat Assessment (“T&E Assessment”) of the proposed Project site was performed by Copperhead Environmental Consulting, Inc., 471 Main St., Paint Lick, KY 40461. The T&E Assessment is dated February 24, 2021.

The T&E Assessment identified three federally-listed species of bat with potential to occur within the Project Study Area. An analysis of suitable habitat on the proposed Project site, including karst features, indicated that effects to bat swarming habitat and critical habitat are expected be minimal or discountable. Potential effects to these species can be mitigated through project-specific conservation and mitigation methods including non-disturbance of karst features. The Applicant intends to observe these conservation and mitigation methods.

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The T&E Assessment concluded that the proposed Project is not likely to significantly affect any state-listed species.

A copy of the Threatened and Endangered Species Assessment is provided as Exhibit 14 Attachment 14.5.

### Cumulative Environmental Assessment

A Cumulative Environmental Assessment (“CEA”) of the proposed Project site was performed by Copperhead Environmental Consulting, Inc., 471 Main St., Paint Lick, KY 40461. The CEA is dated May 25, 2021.

The CEA concludes:

- Air Pollutants
  - Potential impacts to air quality from construction-related activities for the Project will be minor
  - Operation of the Project will result in a net benefit to local and regional air quality
- Water Pollutants
  - The operations and maintenance of the solar facility will have little impact on surface water
  - No direct adverse impacts to groundwater will be anticipated as a result of the Project
- Wastes
  - No adverse effects from waste are anticipated
- Water Withdrawal
  - Operation of solar electricity generating facilities is not water-use intensive

A copy of the Cumulative Environmental Assessment is provided as Exhibit 13 Attachment.

The Cumulative Environmental Assessment was submitted to the Kentucky Energy and Environment Cabinet on May 625, 2021.

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EXHIBIT 14  
ATTACHMENT 14.1



**COPPERHEAD**  
ENVIRONMENTAL CONSULTING

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## Wetland and Stream Delineation for the Proposed Meade County Solar LLC in Meade County, Kentucky



17 February 2021

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- Appendix A - Figures
- Appendix B - Representative Stream and Wetland Photographs
- Appendix C - USACE Wetland Determination Data Forms
- Appendix D - RBP Habitat Assessment Field Data Sheets

## ACRONYMS AND ABBREVIATIONS

FEMA	Federal Emergency Management Agency
GPS	global positioning system
KYWRAM	Kentucky Division of Water Wetland Rapid Assessment Method
NHD	National Hydrography Dataset
NLCD	National Land Cover Database
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OHWM	ordinary high-water mark
PEM	palustrine emergent wetland
PUB	palustrine unconsolidated bottom wetland (pond)
RBP	Rapid Bioassessment Protocol
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UT	Unnamed Tributary
WOTUS	Waters of the United States
WL	wetland

## 1 INTRODUCTION

Community Energy contracted Copperhead Environmental Consulting, Inc. (Copperhead) to conduct a wetland and stream delineation for the Meade County Solar LLC project (Project) in Meade County, Kentucky, to identify and delineate aquatic features that may be considered jurisdictional waters of the United States (WOTUS) or non-jurisdictional waters. The potential Project site consists of an 812-acre Survey Area located near Big Spring, Kentucky. Reference coordinates for the Project are 37.82585, -86.13023 as shown in Figure 1 – Project Location Map in Appendix A. The Survey Area lies within the U.S. Army Corps of Engineers (USACE) Eastern Mountains and Piedmont Region and is part of the Highland Rim and Pennyroyal Region (NRCS Major Land Resource Area N 122). Primary land covers are cultivated crops and hayfields. The field delineation was conducted on November 10-13, 2020 by Ray Eaton and Edward Bolenbaugh, of Copperhead.

## 2 METHODS

### 2.1 Preliminary Desktop Analysis

Prior to the field survey, a preliminary desktop analysis of available information was conducted using the following sources:

- ESRI GeoServer Web Map Service, National Land Cover Database (NLCD)\_2016 Land Cover L48;
- Federal Emergency Management Agency (FEMA) National Flood Hazard Map (FEMA 2015);
- National Wetlands Inventory (NWI) Maps (USFWS 2020);
- The National Hydrography Dataset (NHD; U.S. Geological Survey [USGS] 2006);
- U.S. Department of Agriculture (USDA) *Soil Survey of Breckinridge and Meade Counties, Kentucky* (2001);
- USDA Natural Resource Conservation Service (NRCS) Mead County hydric soils lists (USDA NRCS 2020a); and
- Web Soil Survey (USDA NRCS 2020b).

The locations of surface waters, wetlands, and floodplains identified during the preliminary desktop analysis were mapped (Figure 2 – Existing Hydrological Datasets Map in Appendix A) and used as a baseline reference that was compared, verified, and/or modified based on actual conditions observed during the field investigations using the methodologies outlined in Sections 2.2 and 2.3.

### 2.2 Methods for Delineating Wetlands

Copperhead conducted field investigations to identify the presence or absence of wetlands. When present, the location, extent, and boundaries of wetlands within the Survey Area were delineated in accordance with the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and *Regional Supplement to the Corps of Engineers' Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)* (USACE 2012). Wetland delineations were

based on the presence of hydric soils, hydrophytic (wetland) vegetation, and wetland hydrology. Wetlands were described utilizing Cowardin classes (Cowardin, et al. 1979). The Cowardin classification system was adopted by the US Fish and Wildlife Service (USFWS) and is used by federal agencies to describe the type of wetland feature present.

Soil profiles within each respective community were then sampled to a depth of approximately 18 inches to determine if hydric soil indicators were present. Soil colors were documented using a Munsell Soil Color Chart (Munsell Color 2010). Vegetative cover at each wetland was identified and the wetland indicator status of each plant species was determined according to the 2016 National Wetland Plant List (Lichvar et al. 2018). Finally, observations of the presence of wetland hydrology indicators were made. Areas with the presence of all three wetland indicators (i.e. hydric soils, hydrophytic vegetation, and wetland hydrology) were delineated as wetlands. Please note that long-term agricultural land practices have disturbed soils and vegetation in much of the Survey Area, including in and near wetlands. Therefore, hydric soil indicators were not always readily observable. In these instances, hydric soils were assumed to be disturbed and the predominance of wetland vegetation and multiple indicators of wetland hydrology were used to determine if a site met the criteria for wetlands. Problematic vegetation was also present in many wetland areas.

At locations where wetland indicators were observed a USACE Wetland Determination Data Form was completed. Each data form included supporting rationales for determining the presence or absence of each wetland parameter. The classification of wetlands deemed potentially jurisdictional was computed using the Kentucky Division of Water Wetland Rapid Assessment Method (KYWRAM) version 3. The KYWRAM rating denotes the quality of the wetland and can be used to evaluate mitigation efforts.

The wetland boundaries within the Survey Area were delineated using a Trimble global positioning system (GPS) handheld unit. GPS data were collected using Trimble TerraSync software. The GPS points of wetland boundaries and test pit locations (including coordinates and attribute information) were subsequently imported into ESRI ArcGIS software for creating maps of delineated wetlands and calculating wetland acreages.

### *2.3 Methods for Assessing Streams*

Hydrologic features other than wetlands (e.g. stream channels) were delineated in the field by identifying the ordinary high-water mark (OHWM). OHWM is defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR 328.3(c)(7)).

Streams were evaluated to assess the flow regime (i.e. ephemeral, intermittent, or perennial). Natural linear features with an intermittent or perennial flow regime with a defined bed and bank, OHWM, and observed or mapped hydrologic connection to navigable waters downstream were considered WOTUS. Natural linear features with an ephemeral flow regime were

considered non-jurisdictional. Man-made features (e.g. grassy swales or agricultural drainage ditches) with or without a bed and bank, but no discernable OHWM, were non-jurisdictional. Delineated streams and man-made features were evaluated and recorded with a Trimble GPS handheld unit.

Stream habitat was evaluated following methods described in the U.S. Environmental Protection Agency's (USEPA) *Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers* (Barbour et al. 1999). The Rapid Bioassessment Protocol (RBP) Habitat Assessment Field Data Sheets was completed to determine habitat quality of each stream.

### **3 REGULATORY AUTHORITY**

Wetlands are defined by the USACE (33 CFR 328.3, 1986) and the U.S. Environmental Protection Agency (40 CFR 230.3, 1980) as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions". Many wetlands and other surface water features, including intermittent and perennial streams, are considered waters of the United States by the USACE, and these "jurisdictional" areas are regulated under Section 404 of the Clean Water Act (CWA).

The jurisdictional status of the wetlands and other water features is generally based on the feature being adjacent to or having an obvious hydrologic connection to a known jurisdictional waterway or wetland ("Waters of the United States") as defined by the June 22, 2020 Navigable Waters Protection Rule in 33 CFR 328.3. In the USACE/Environmental Protection Agency CWA regulations (33 CFR 328.3(a)), the term "jurisdictional waters," which is considered waters of the United States, is defined as follows:

1. The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide;
2. Tributaries;
3. Lakes and ponds; and impoundments of jurisdictional waters; and
4. Adjacent wetlands, which is defined as (33 CFR 328.3(c)(1)) wetlands that:
  - a. Abut, meaning to touch at least at one point or side of, a water identified in paragraph (a)(1), (2), or (3).
  - b. Are inundated by flooding from a water identified in (a)(1), (2), or (3) in a typical year;
  - c. Are physically separated from a water identified in (a)(1), (2), or (3) only by a natural berm, bank, dune, or similar natural features; or
  - d. Are physically separated from a water identified in (a)(1), (2), or (3) of this section only by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrologic surface connection between the wetlands and the water identified in (a)(1), (2), or (3) in a typical year.

In the USACE/Environmental Protection Agency CWA regulations (33 CFR 328.3(b)), the term “non-jurisdictional waters,” which is not considered waters of the United States, is defined as follows:

1. Waters or water features that are not identified in paragraph (a)(1), (2), (3), or (4);
2. Groundwater, including groundwater drained through subsurface drainage systems;
3. Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools;
4. Diffuse stormwater run-off and directional sheet flow over upland;
5. Ditches that are not water identified in paragraph (a)(1) or (2) and those portions of ditches constructed in water identified in (a)(4) that do not satisfy the conditions of an adjacent wetland;
6. Prior converted cropland;
7. Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease;
8. Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters, so long as those artificial lakes and ponds are not impoundments of jurisdictional waters;
9. Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;
10. Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off;
11. Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention, and infiltration basins and ponds, constructed or excavated in upland or non-jurisdictional waters; and
12. Water treatment systems.

Impacts to jurisdictional waters will likely require a Section 404 permit and USACE approval. Impacts to non-jurisdictional waters will not require a Section 404 permit or USACE approval. However, impacts to non-jurisdictional water may require state specific Section 401 approval.

## **4 RESULTS**

### *4.1 Desktop Analysis Results*

The following information on soils and hydrology was gathered to inform and prepare the field team completing the delineation.

#### 4.1.1 Site Soils

A review of the NRCS’s Web Soil Survey and the Soil Surveys of Breckinridge and Meade Counties, Kentucky (USDA 2001, USDA NRCS 2020) identified 17 soil map units within the Survey Area. These soils are described primarily as silt loam substrate and karst geology. Two soil types are listed as hydric, which includes Newark silt loam (Ne) and Nolin silt loam (No) (Table 1 and Figure 3 - USDA Soil Types Map).

**Table 1. Soil map units in the Survey Area for the Meade County Solar LLC Project, Meade County, Kentucky.**

Map Unit Symbol	Map Unit Name	Acres	Survey Area %
BaC2	Baxter very gravelly silt loam, karst, 6-12% slopes, eroded	74.6	9.2
BcC3	Baxter very gravelly silt loam, karst, 6-12% slopes, severely eroded	8.9	1.1
CkD	Caneyville-Rock outcrop complex, 12-30% slopes	30.3	3.7
CrB2	Crider silt loam, 2-6% slopes, eroded	201.1	24.8
CrC2	Crider silt loam, 6-12% slopes, eroded	69.4	8.5
FcC2	Fredonia-Crider complex, karst, rocky, 6-12% slopes, eroded	39.2	4.4
FcD2	Fredonia-Crider complex, karst, rocky, 12-20% slopes, eroded	3.4	0.4
HaB2	Hammack silt loam, 2-6% slopes, eroded	36.9	4.5
HbC2	Hammack-Baxter complex, karst, 6-12% slopes, eroded	163.3	20.1
HbC3	Hammack-Baxter complex, karst, 6-12% slopes, severely eroded	1.2	0.1
Ln	Lindside silt loam, depressional, frequently flooded	3.7	0.5
Ne	Newark silt loam, depressional, frequently flooded	9.1	1.1
No	Nolin silt loam, 0-2% slopes, occasionally flooded	7.5	0.9
Nv	Nolin silt loam, depressional, frequently flooded	154.6	17.9
RmD	Rock outcrop-Corydon complex, 12-30 percent slopes	1.2	0.2
Rsd2	Rosine-Gilpin-Lenberg complex, 12-20% slope, eroded	2.5	0.3
W	Water	11.3	1.4
ZaC2	Zanesville silt loam, 6-12% percent slopes, eroded	2.5	0.3

Source: USDA 2001, USDA NRCS 2020

#### 4.1.2 Site Hydrology

The Survey Area is within the Pilot Ridge - Sinking Creek (Hydrologic Unit Code [HUC] 051401041302) and Lower Otter Creek (HUC 051401040105) subwatersheds. Both subwatersheds drain to Sinking Creek, which is considered a traditional navigable water. The hydrology within the watershed is influenced by karst geology and drainage for agriculture. The underlying karst geology directly influences the hydrology and may contribute to the input of the ponds and other wetlands within the Survey Area.

The NWI features in this area were photo-interpreted using 1:58,000 scale color infrared imagery from 1983 (USFWS 1983). The Survey Area includes 18 NWI wetlands and approximately 12,707 feet of NHD streams (Figure 2 - Existing Hydrological Datasets Map).

#### 4.2 Field Survey Results

The following sections provide the field survey results for the wetland and stream delineation. Photographic documentation of the site and delineated aquatic features is provided in Appendix B. USACE Wetland Determination Data Forms are provided in Appendix C. RBP Habitat Assessment Field Data Sheets are provided in Appendix D.

##### 4.2.1 Wetland Delineation

The field survey resulted in the identification and delineation of nine wetlands totaling 1.51 acres within the Survey Area. One wetland is defined as jurisdictional and eight wetlands are defined as non-jurisdictional (Figure 4 - Wetland and Stream Delineation Map). Classifications and acreages of each delineated wetland are described in Table 2.

**Table 2. Summary of delineated wetland resources within the Meade County Solar LLC Project Survey Area, Meade County, Kentucky.**

Feature Name	Data Point Number	Preliminary Jurisdictional Determination <sup>1</sup>	Feature Size (acres)	Cowardin Classification Code <sup>2</sup>
WL-A	DP-12	Non-Jurisdictional	0.05	PUB
WL-B	DP-15	Non-Jurisdictional	0.07	PEM
WL-C	DP-17	Jurisdictional	0.10	PEM
WL-D	-	Non-Jurisdictional	0.10	PUB
WL-E	DP-4	Non-Jurisdictional	0.22	PEM
WL-F	DP-3	Non-Jurisdictional	0.45	PEM
WL-G	DP-6	Non-Jurisdictional	0.15	PEM
WL-H	DP-7	Non-Jurisdictional	0.25	PEM
WL-I	DP-10	Non-Jurisdictional	0.12	PEM
<b>Total Non-Jurisdictional Wetlands</b>			<b>1.41</b>	
<b>Total Jurisdictional Wetlands</b>			<b>0.10</b>	

<sup>1</sup>Jurisdictional determinations and boundaries when presented are preliminary and are subject to final verification by the USACE.

<sup>2</sup>Classifications are based on Copperhead’s professional judgment of actual field conditions.

#### **WL-A (0.05 acres)**

**WL-A** is a palustrine unconsolidated bottom (PUB) pond located in the northwest of the Survey Area. WL-A receives hydrology from overland sheet flow from surrounding agricultural fields. Dominant vegetation consists of blunt spike-rush (*Eleocharis obtuse*), rice cut grass (*Leersia oryzoidez*), unidentified sedge species (*Carex sp.*), and narrow leaf cattail (*Typha angustifolia*). WL-A is considered non-jurisdictional, because it does not exhibit a significant nexus.

**WL-B (0.07 acres)**

WL-B is a palustrine emergent (PEM) wetland in the northwest of the Survey Area and receives hydrology from overland sheet flow from surrounding agricultural fields. Dominant vegetation consists of water pepper (*Persicaria hydropiper*) and unidentified sedge species. WL-B is considered non-jurisdictional, because it does not exhibit a significant nexus.

**WL-C (0.10 acres)**

WL-C is a PEM wetland located in the northwest of the Survey Area. Hydrology is received from intermittent Stream 3 and overland sheet flow from surrounding agricultural fields. Intermittent Stream 3 dissipates into WL-C. WL-C appears to have previously been a pond. The earthen berm was breached. The concave area no longer has the same water holding capacity. Portions of the concave area have reverted to PEM wetland. This wetland is within an active pasture. Vegetation has been heavily disturbed by cattle. WL-C is considered jurisdictional, due to it directly abutting intermittent Stream 3.

**WL-D (0.10 acres)**

WL-D is a PUB pond located in the north-central portion of the Survey Area and receives hydrology from overland sheet flow from surrounding agricultural fields. WL-D is considered non-jurisdictional, because it does not exhibit a significant nexus.

**WL-E (0.22 acres)**

WL-E is a PEM wetland located in the northeastern portion of the Survey Area and receives hydrology from surrounding agricultural fields. WL-E is located within an active agricultural field and has been disturbed. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area was previously a pond and is regularly inundated. WL-E is considered non-jurisdictional, because it does not exhibit a significant nexus.

**WL-F (0.45 acres)**

WL-F is a PEM wetland located in the northeastern portion of the Survey Area and receives hydrology from surrounding agricultural fields. WL-F is located within an active agricultural field and has been disturbed. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area was previously a pond and is regularly inundated. WL-F is considered non-jurisdictional, because it does not exhibit a significant nexus.

**WL-G (0.12 acres)**

WL-G is a PEM wetland located in the eastern portion of the Survey Area and receives hydrology from surrounding agricultural fields. WL-G is located within an active agricultural field and has been disturbed. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area is regularly inundated. WL-G is considered non-jurisdictional, because it does not exhibit a significant nexus.

**WL-H (0.25 acre)**

WL-H is a PEM wetland located in the eastern portion of the Survey Area and receives hydrology from surrounding agricultural fields. WL-H is located within an active agricultural field and has

been disturbed. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area is regularly inundated. WL-H is considered non-jurisdictional, because it does not exhibit a significant nexus.

**WL-I (0.15 acre)**

WL-I is a PEM wetland located in the southeastern portion of the Survey Area and receives hydrology from surrounding agricultural fields. WL-I is located within an active agricultural field and has been disturbed. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area was previously a pond and is regularly inundated. WL-I is considered non-jurisdictional, because it does not exhibit a significant nexus.

**4.2.2 Streams Assessments**

The field survey resulted in the identification and delineation of one intermittent and two ephemeral streams based on field observation at the time of the survey (Figure 4 – Wetland and Stream Delineation Map). The one intermittent stream is considered jurisdictional due to its intermittent flow regime. The two ephemeral streams are considered non-jurisdictional due to their ephemeral flow regime. Flow regime and length of each stream are summarized in Table 3 and described in detail below.

**Table 3. Summary of delineated streams within the Meade County Solar LLC Project Survey Area, Meade County, Kentucky.**

<b>Stream Name</b>	<b>Preliminary Jurisdictional Determination<sup>1</sup></b>	<b>Linear Feet</b>	<b>Flow Regime</b>	<b>OHWM Average Width (ft)</b>	<b>USEPA RBP Score</b>
Stream 1	Non-Jurisdictional	982	Ephemeral	0.8	81
Stream 2	Non-Jurisdictional	793	Ephemeral	0.3	62
Stream 3	Jurisdictional	354	Intermittent	0.6	49
<b>Total Ephemeral Non-Jurisdictional</b>		<b>1,775</b>			
<b>Total Intermittent Jurisdictional</b>		<b>354</b>			

<sup>1</sup> Jurisdictional determinations and boundaries when presented are preliminary and are subject to final verification by the USACE.

**Stream 1 (982 linear feet)**

Stream 1 is an ephemeral stream located in the northwestern portion of the Survey Area. Stream 1 flows west through a wooded area and dissipates into an active agricultural field. Stream 1 is considered non-jurisdictional due to its ephemeral flow regime.

**Stream 2 (793 linear feet)**

Stream 2 is an ephemeral stream located in the northwestern portion of the Survey Area. Stream 2 flows south from County Road 1238 and dissipates into a sinkhole within an active agricultural field. Stream 2 is considered non-jurisdictional due to its ephemeral flow regime.

### **Stream 3 (354 linear feet)**

Stream 3 is an intermittent stream located in the northwestern portion of the Survey Area. Stream 3 flows north and dissipates within WL-C. Stream 3 is considered jurisdictional due to its intermittent flow regime. Stream 3 does not exhibit a significant nexus to a traditional navigable water through surface flow.

## **5 CONCLUSIONS**

It is Copperhead's professional judgment that the Survey Area contains nine wetland areas totaling approximately 1.51 acres that meet the technical criteria for wetlands. One wetland identified is defined as jurisdictional. The remaining eight wetlands are considered non-jurisdictional. In addition, one intermittent stream and two ephemeral streams were identified. The intermittent stream is considered jurisdictional. The two ephemeral streams are considered non-jurisdictional.

## 6 LITERATURE CITED

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## Appendix A - Figures



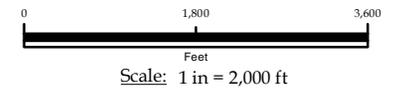
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Prepared for:

**Community Energy**

**FIGURE 1:**  
Project Location Map  
Meade County Solar LLC  
Meade County, Kentucky

**Legend**

Survey Area



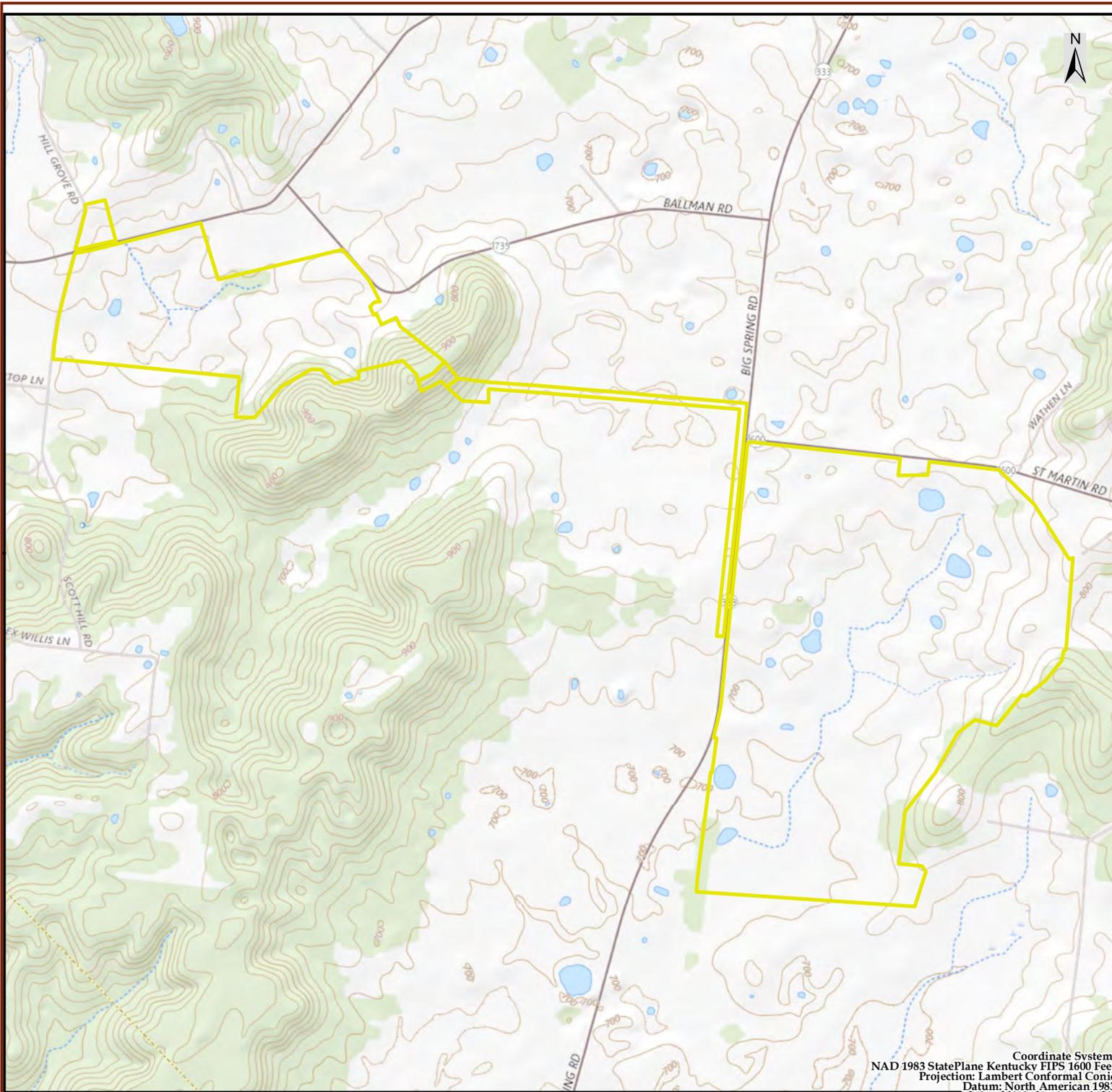
Prepared by :  
Copperhead Environmental Consulting, Inc.  
471 Main Street  
P.O. Box 73  
Paint Lick, Kentucky 40461

Drawn by: RE Date: 12/10/2020

Checked by: MT Revision: 03



Coordinate System:  
NAD 1983 StatePlane Kentucky FIPS 1600 Feet  
Projection: Lambert Conformal Conic  
Datum: North American 1983





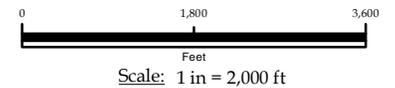
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**FIGURE 2:**  
Existing Hydrological Datasets Map  
Meade County Solar LLC  
Meade County, Kentucky

**Legend**

-  NHD Stream
-  NWI Wetland
-  Survey Area



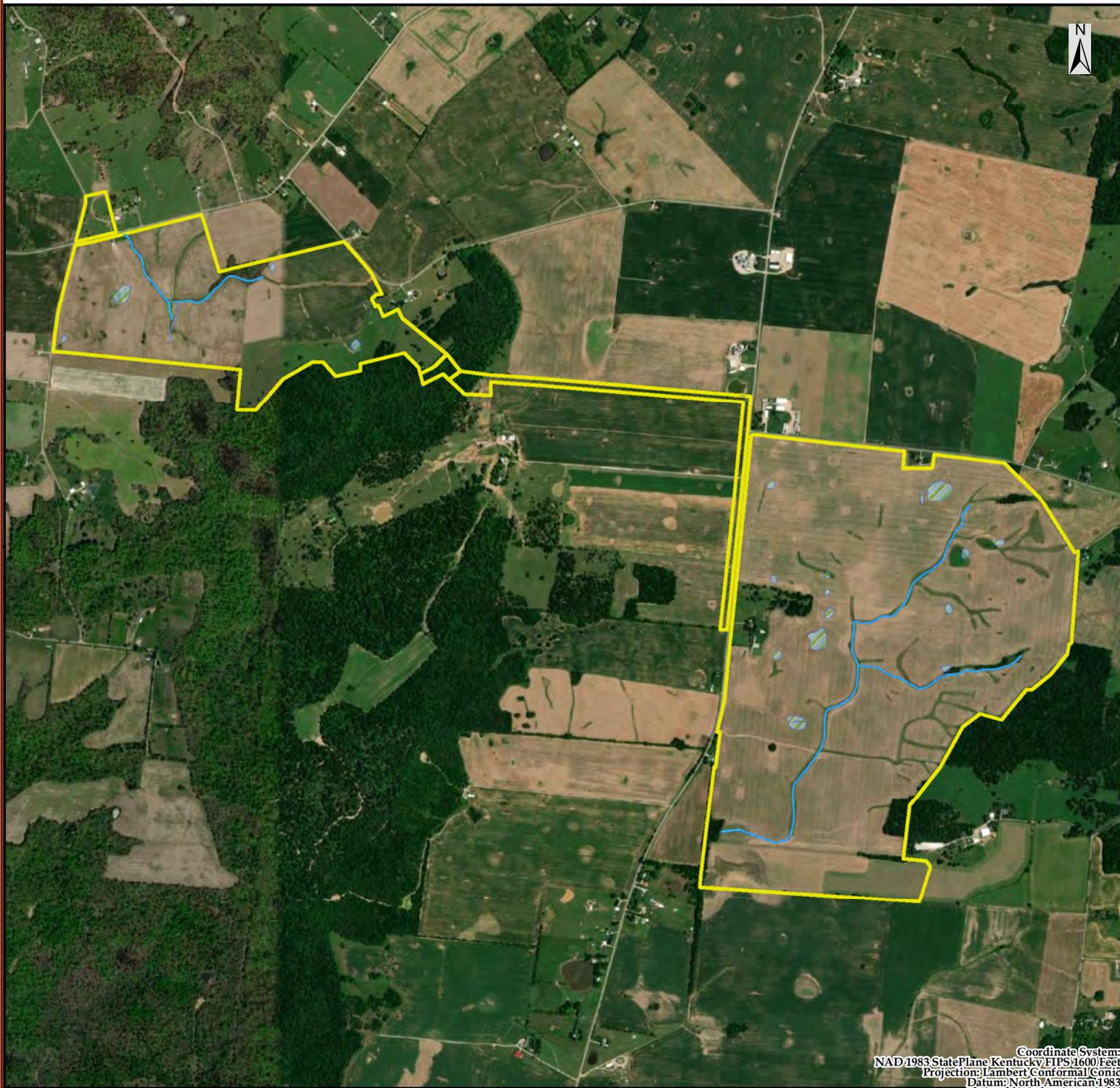
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Coordinate System:  
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Datum: North American 1983





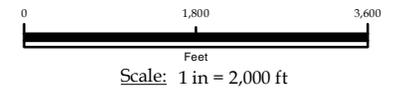
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FIGURE 3:  
USDA Soil Types Map  
Meade County Solar LLC  
Meade County, Kentucky

**Legend**

-  Soil Unit Boundary
-  Survey Area



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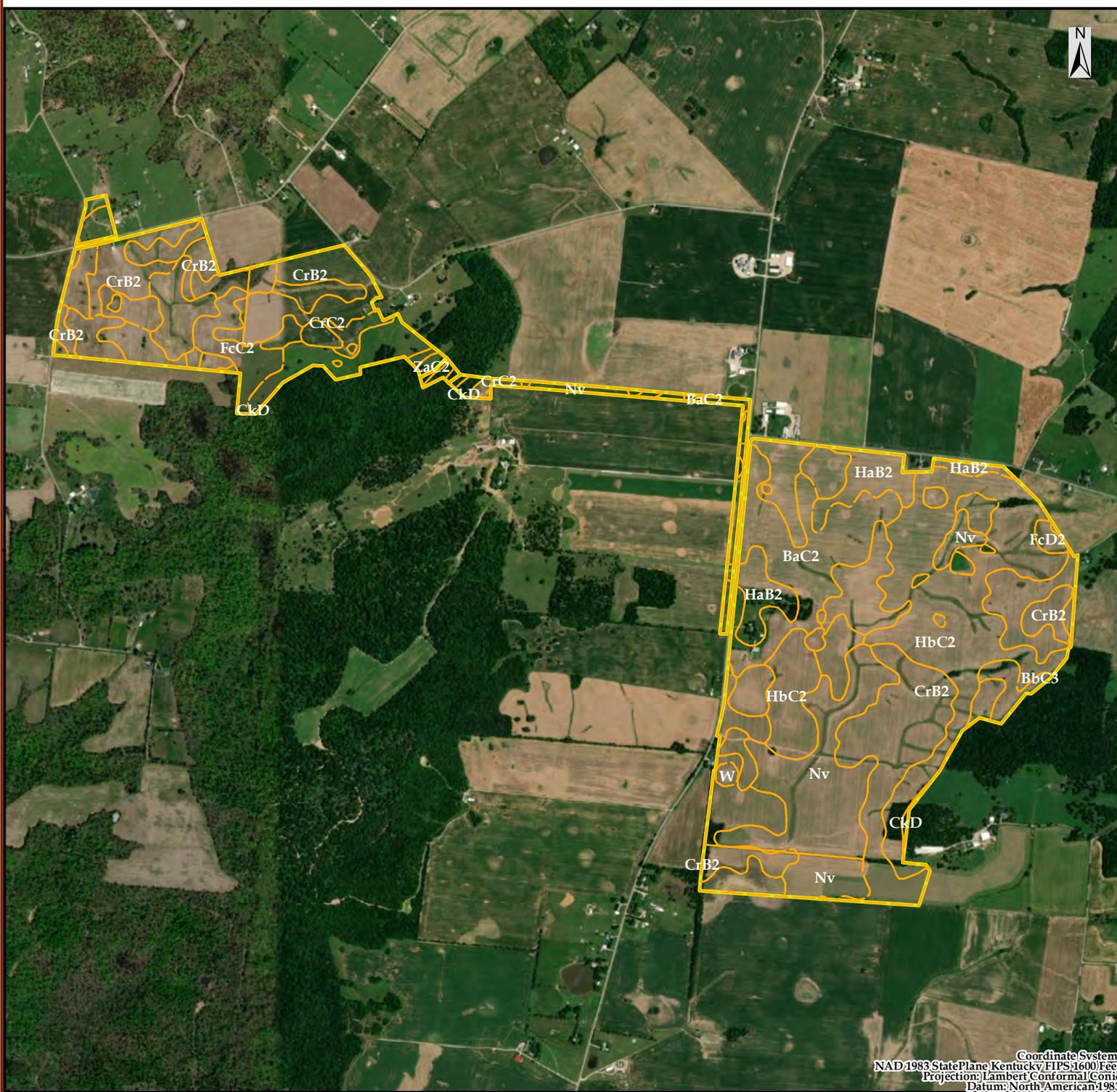
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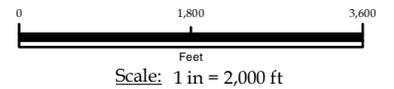
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FIGURE 4-1:  
Wetland and Stream Delineation Map  
Meade County Solar LLC  
Meade County, Kentucky

**Legend**

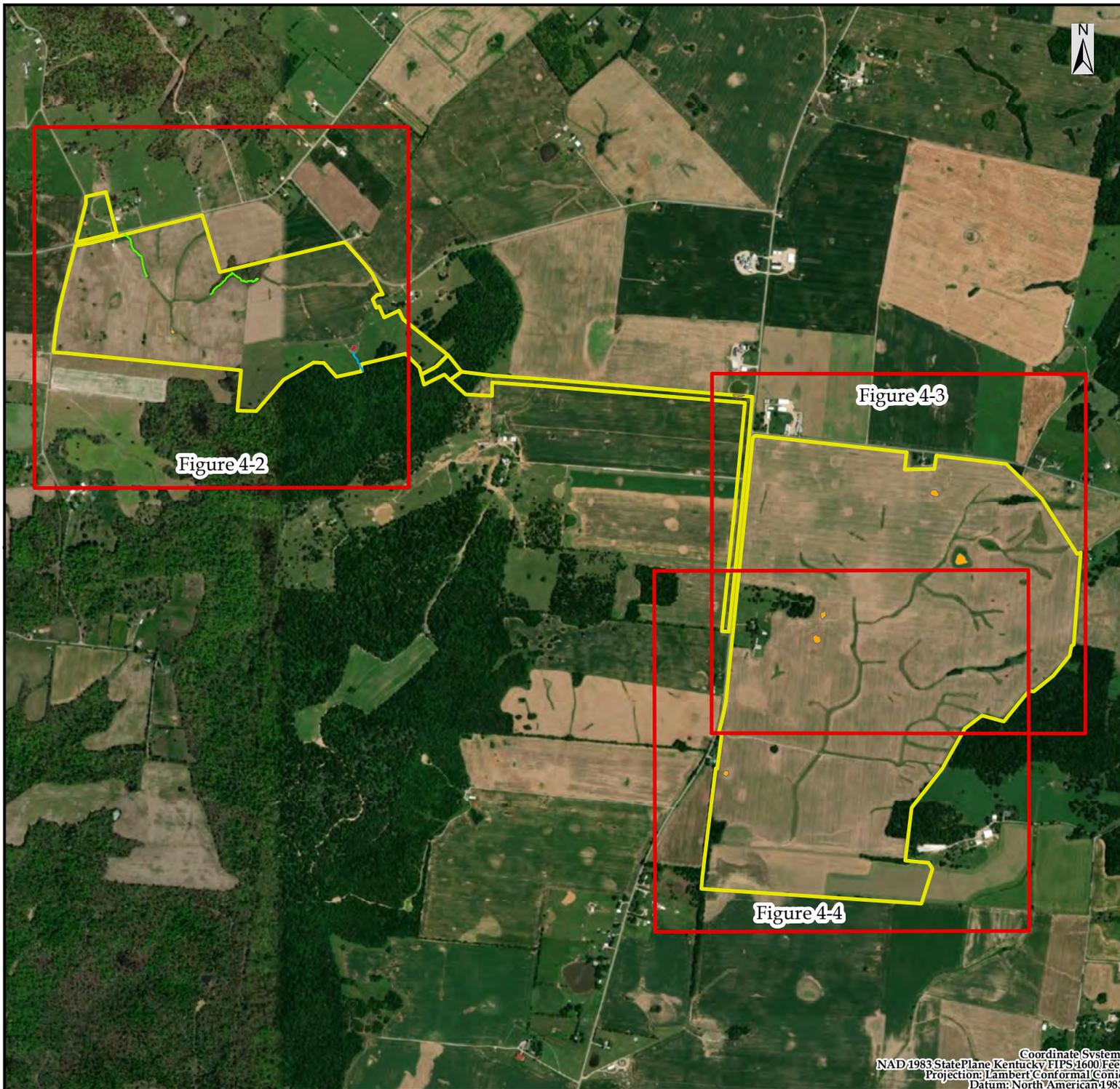
- Ephemeral Stream
- Intermittent Stream
- Jurisdictional Wetland
- Non-Jurisdictional Wetland
- Survey Area
- Inset



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Coordinate System:  
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Projection: Lambert Conformal Conic  
Datum: North American 1983



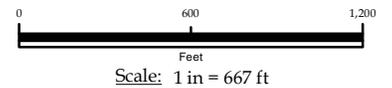
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FIGURE 4-2:  
Wetland and Stream Delineation Map  
Meade County Solar LLC  
Meade County, Kentucky

**Legend**

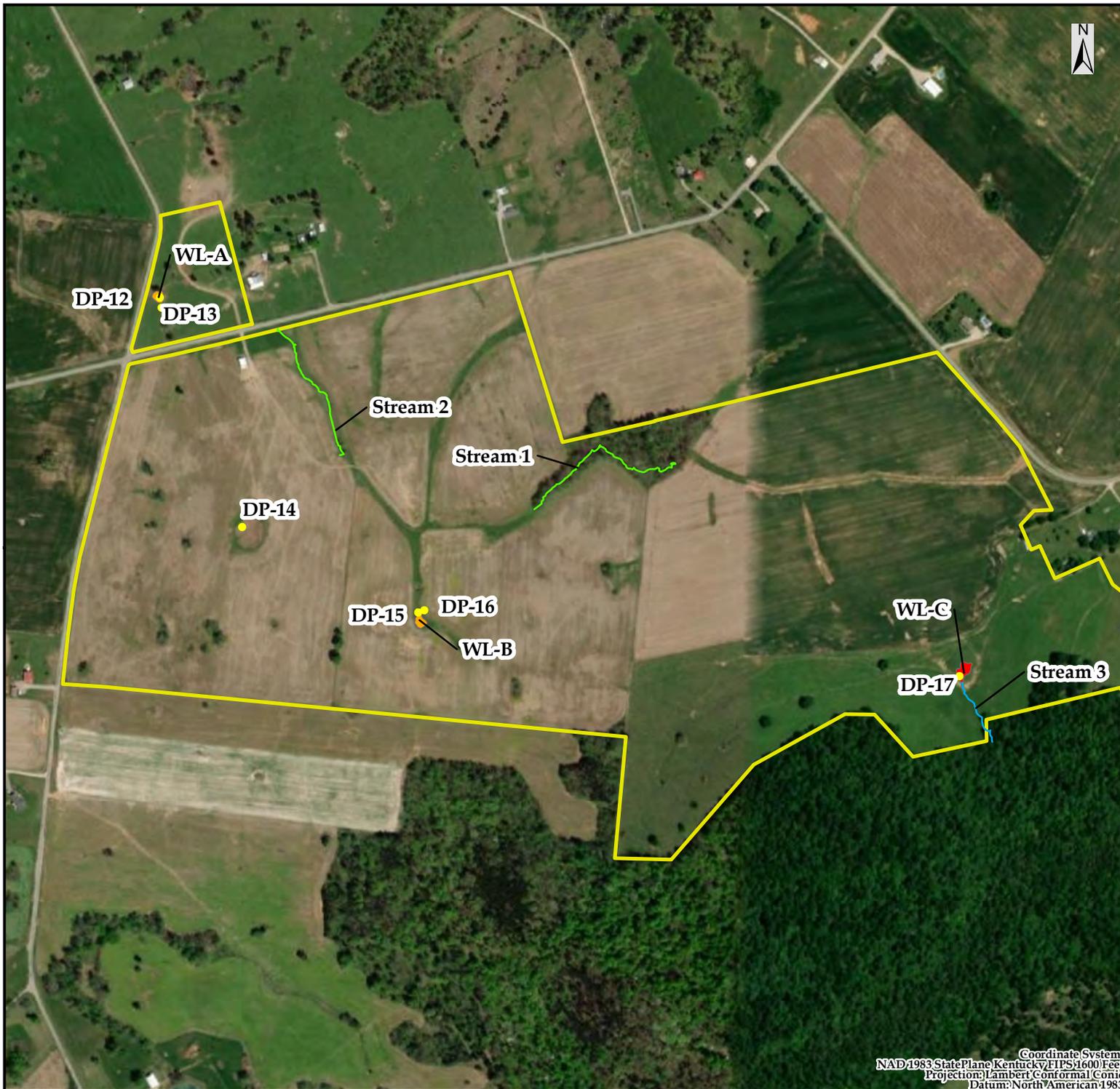
- Ephemeral Stream
- Intermittent Stream
- Data Point
- Jurisdictional Wetland
- Non-Jurisdictional Wetland
- Survey Area



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Coordinate System:  
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Projection: Lambert Conformal Conic  
Datum: North American 1983



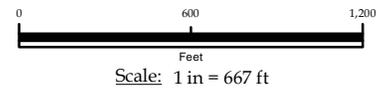
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FIGURE 4-3:  
Wetland and Stream Delineation Map  
Meade County Solar LLC  
Meade County, Kentucky

**Legend**

- Ephemeral Stream
- Intermittent Stream
- Data Point
- Jurisdictional Wetland
- Non-Jurisdictional Wetland
- Survey Area



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Coordinate System:  
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Projection: Lambert Conformal Conic  
Datum: North American 1983



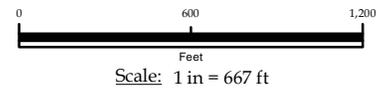
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FIGURE 4-4:  
Wetland and Stream Delineation Map  
Meade County Solar LLC  
Meade County, Kentucky

**Legend**

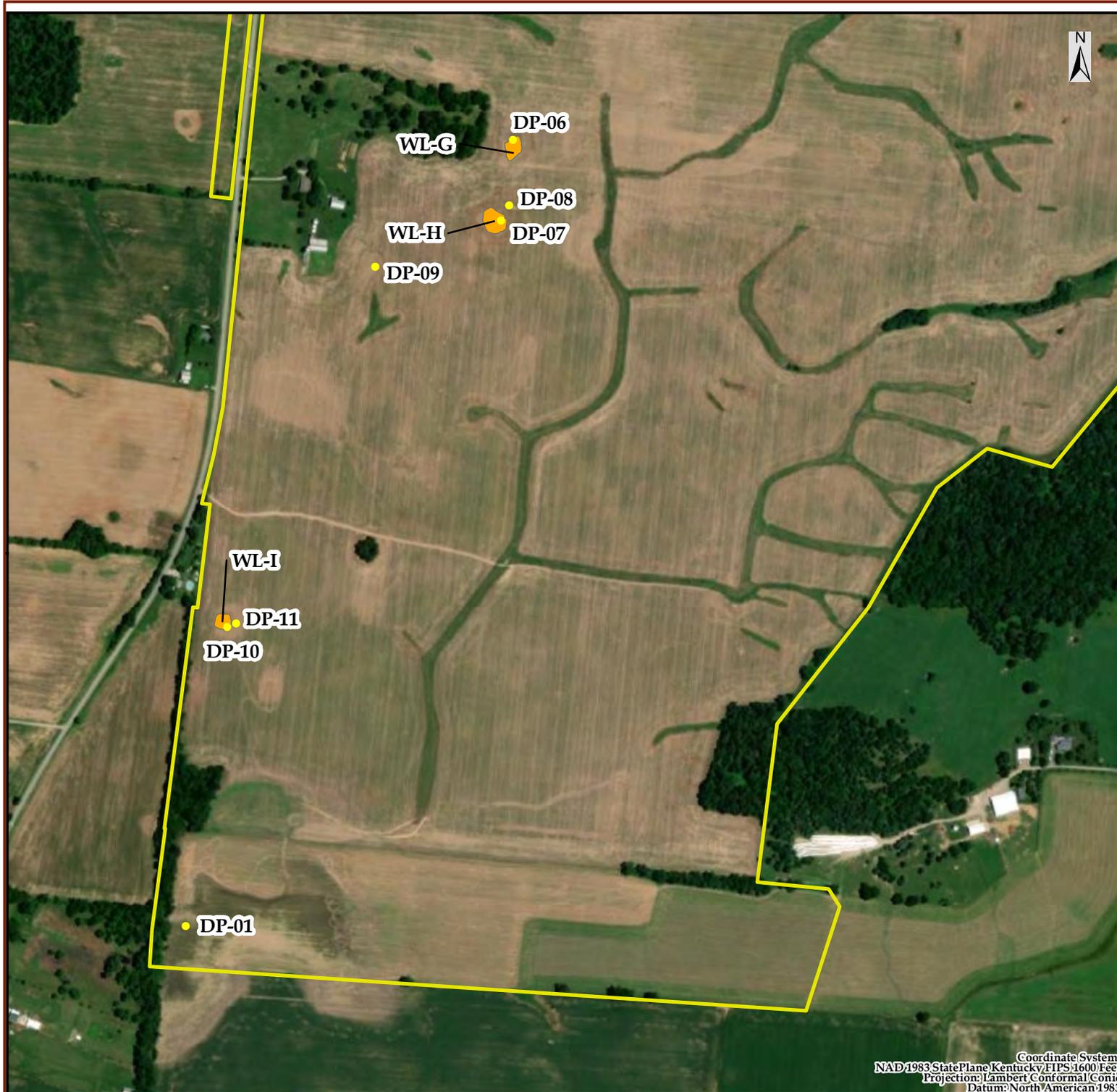
- Ephemeral Stream
- Intermittent Stream
- Data Point
- Jurisdictional Wetland
- Non-Jurisdictional Wetland
- Survey Area



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Coordinate System:  
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Projection: Lambert Conformal Conic  
Datum: North American 1983

## **Appendix B – Representative Stream and Wetland Photographs**



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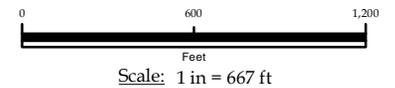
Prepared for:

**Community Energy**

Appendix B-1:  
Photo Location Map  
Meade County Solar LLC  
Meade County, Kentucky

**Legend**

- Photo Direction
- Ephemeral Stream
- Intermittent Stream
- Jurisdictional Wetland
- Non-Jurisdictional Wetland
- Survey Area

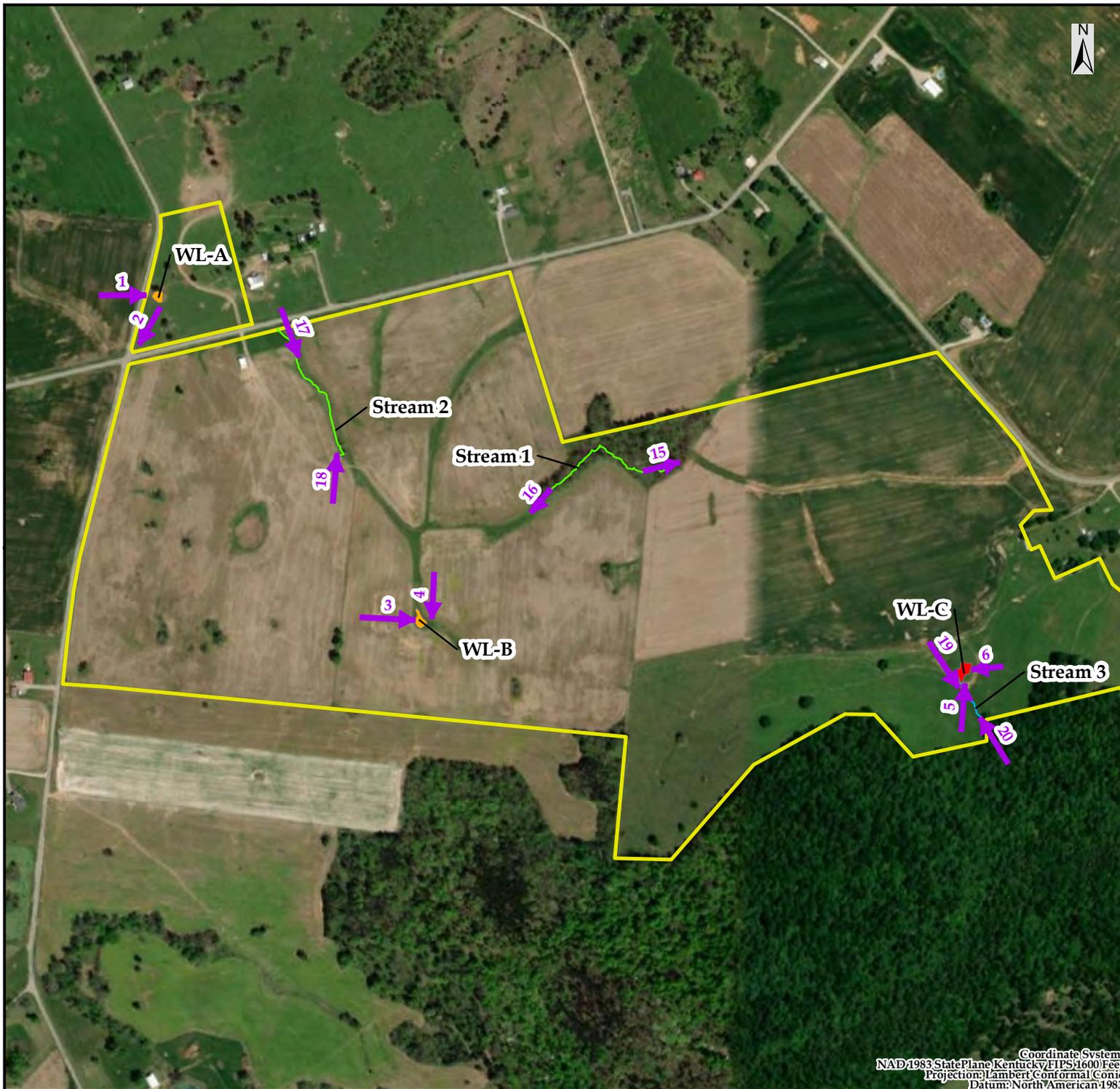


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Datum: North American 1983



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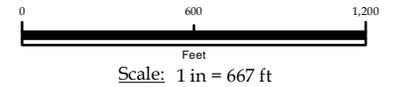
Prepared for:

### Community Energy

Appendix B-2:  
Photo Location Map  
Meade County Solar LLC  
Meade County, Kentucky

### Legend

- Photo Direction
- Ephemeral Stream
- Intermittent Stream
- Jurisdictional Wetland
- Non-Jurisdictional Wetland
- Survey Area



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Drawn by: RE Date: 12/10/2020

Checked by: MT Revision: 03



Coordinate System:  
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Projection: Lambert Conformal Conic  
Datum: North American 1983



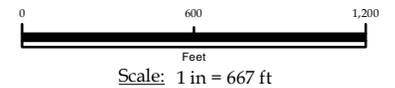
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**Community Energy**

Appendix B-3:  
Photo Location Map  
Meade County Solar LLC  
Meade County, Kentucky

**Legend**

- Photo Direction
- Ephemeral Stream
- Intermittent Stream
- Jurisdictional Wetland
- Non-Jurisdictional Wetland
- Survey Area

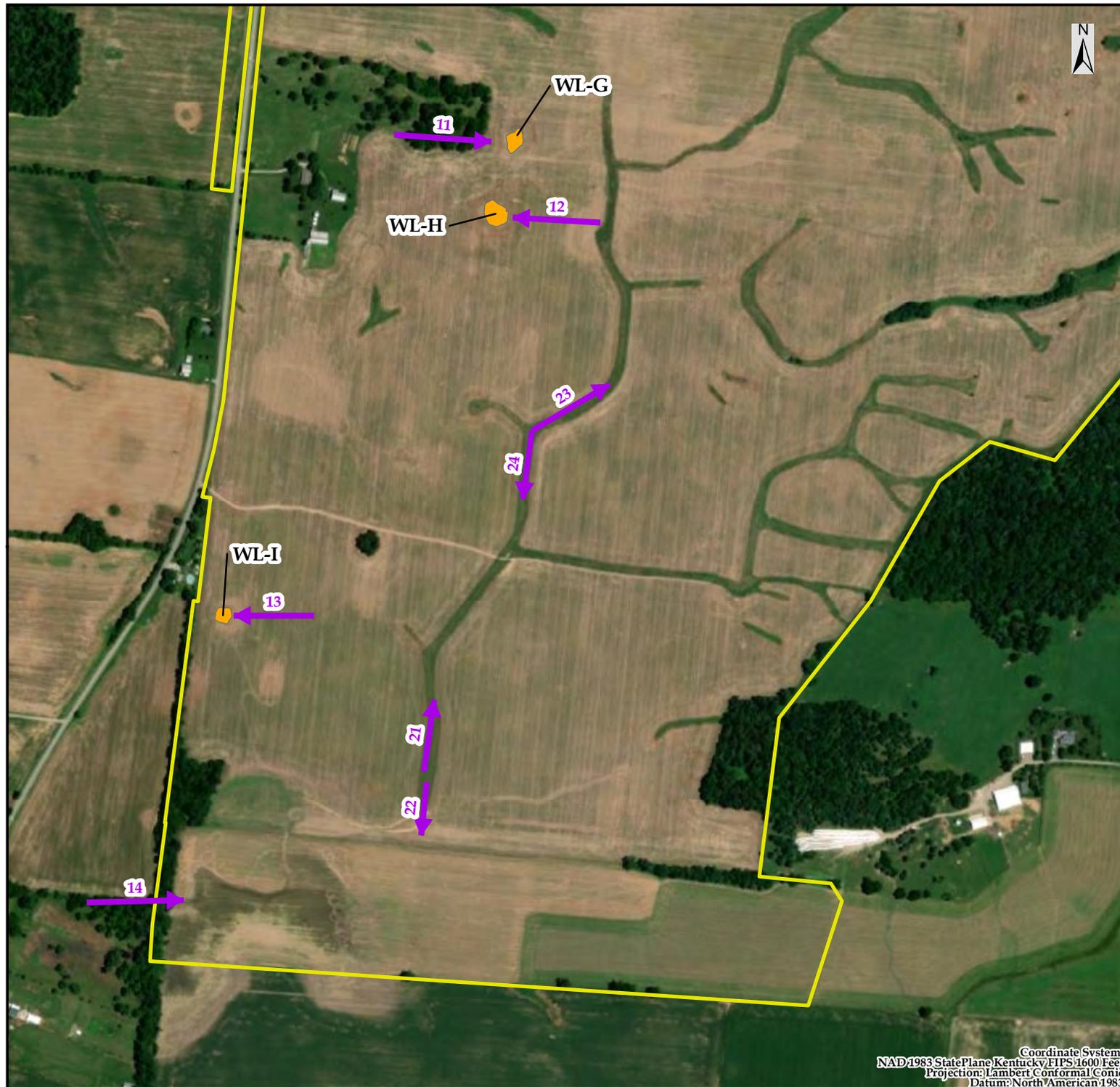


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Coordinate System:  
NAD1983 StatePlane Kentucky FIPS 1600 Feet  
Projection: Lambert Conformal Conic  
Datum: North American 1983



**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
1

**Date:**  
11/11/2020

**Description:**  
View of Wetland A from DP-12 facing east.



**Photo No.**  
2

**Date:**  
11/11/2020

**Description:**  
View of upland area surrounding Wetland A from DP-13 facing south.





**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
3

**Date:**  
11/12/2020

**Description:**  
View of Wetland B from DP-15 facing west.



**Photo No.**  
4

**Date:**  
11/12/2020

**Description:**  
View of upland area from DP-16 facing south.





**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
5

**Date:**  
11/12/2020

**Description:**  
View of Wetland C from DP-17 facing north.



**Photo No.**  
6

**Date:**  
11/12/2020

**Description:**  
View of upland surrounding Wetland C facing east.





**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
7

**Date:**  
11/10/2020

**Description:**  
View of Wetland D facing east.



**Photo No.**  
8

**Date:**  
11/11/2020

**Description:**  
View of upland area near DP-05 facing north.





Meade County Solar LLC  
Photographic Record

Project No.:  
1012

Location:  
Meade County, Kentucky

Client:  
Community Energy

Photo No.  
9

Date:  
11/11/2020

Description:  
View of Wetland E facing east.



Photo No.  
10

Date:  
11/17/2020

Description:  
View of Wetland F from DP-03 facing west.





**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
11

**Date:**  
11/11/2020

**Description:**  
View of Wetland G from DP-06 facing east



**Photo No.**  
12

**Date:**  
11/11/2020

**Description:**  
View of recently ponded sinkhole with corn from DP-07 facing west.





**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
13

**Date:**  
11/11/2020

**Description:**  
View of Wetland I from DP-10 facing west.



**Photo No.**  
14

**Date:**  
11/11/2020

**Description:**  
View from DP-01 facing east.





**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
15

**Date:**  
11/12/2020

**Description:**  
Ephemeral Stream 1 at a dam that prevents the head-cut from moving upstream.



**Photo No.**  
16

**Date:**  
11/12/2020

**Description:**  
Ephemeral Stream 1 facing downstream.





**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
17

**Date:**  
11/12/2020

**Description:**  
Ephemeral Stream 2 facing  
downstream.



**Photo No.**  
18

**Date:**  
11/17/2020

**Description:**  
Ephemeral Stream 2  
dissipating into a sinkhole.





**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
19

**Date:**  
11/12/2020

**Description:**  
Intermittent Stream 3 facing  
upstream.



**Photo No.**  
20

**Date:**  
11/17/2020

**Description:**  
Intermittent Stream 3 facing  
downstream showing it  
dissipate into WL-C.





**Meade County Solar LLC  
Photographic Record**

**Project No.:**  
1012

**Location:**  
Meade County, Kentucky

**Client:**  
Community Energy

**Photo No.**  
21

**Date:**  
11/12/2020

**Description:**  
General view facing north in the southeastern portion of the Survey Area. Desktop review indicated the presence of an NHD stream in this area, but it was confirmed to not be present.



**Photo No.**  
22

**Date:**  
11/17/2020

**Description:**  
General view facing south in the southeastern portion of the Survey Area. Desktop review indicated the presence of an NHD stream in this area, but it was confirmed to not be present.





**Meade County Solar LLC  
Photographic Record**

<b>Project No.:</b> 1012	<b>Location:</b> Meade County, Kentucky	<b>Client:</b> Community Energy
-----------------------------	--	------------------------------------

**Photo No.**  
23

**Date:**  
11/12/2020

**Description:**  
General view facing northeast in the southeastern portion of the Survey Area. Desktop review indicated the presence of an NHD stream in this area, but it was confirmed to not be present.



**Photo No.**  
24

**Date:**  
11/17/2020

**Description:**  
General view facing south in the southeastern portion of the Survey Area. Desktop review indicated the presence of an NHD stream in this area, but it was confirmed to not be present.



## **Appendix C – USACE Wetland Determination Data Forms**

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/10/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-01  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1-2  
 Subregion (LRR or MRLA): LRR N Lat: 37.815455 Long: -86.135070 Datum: NAD83  
 Soil Map Unit Name: Newark silt loam (Ne) NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes _____	No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>✓</u>
Hydric Soil Present?	Yes _____	No <u>✓</u>			
Wetland Hydrology Present?	Yes _____	No <u>✓</u>			

Remarks: Explain alternative procedures here or in a separate report.)  
**DP-01 representative of upland habitat within an agricultural field.**

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	Yes _____	No <u>✓</u>
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No wetland hydrology present. Area in an active agriculture field.**

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-01

Tree Stratum (Plot Size: <u>30 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
		_____ = Total Cover		
Sapling/Shrub Stratum (Plot Size: <u>15-ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		_____ = Total Cover		
Herb Stratum (Plot Size: <u>5 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	Glycine max	100	Yes	UPL
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
		100 = Total Cover		
Woody Vine Stratum (Plot Size: <u>30-ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		_____ = Total Cover		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_\_\_ 2 - Dominance Test is >50%
  - \_\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - \_\_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes \_\_\_\_\_ No

Remarks: (Include photo numbers here or on a separate sheet.)  
Vegetation present is soybeans. Area in an active agriculture field.

**SOIL**

**Sampling Point:** DP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR 4/3	100					SiL	
10-18	10YR 4/4	100					SiL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histic (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      Yes _____      No <input checked="" type="checkbox"/></p>
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**Remarks:**  
Hydric soil indicators not observed.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/10/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-02  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MRLA): LRR N Lat: 37.828461 Long: -86.121953 Datum: NAD83  
 Soil Map Unit Name: Water (W) NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes _____	No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>✓</u>
Hydric Soil Present?	Yes _____	No <u>✓</u>			
Wetland Hydrology Present?	Yes _____	No <u>✓</u>			

Remarks: Explain alternative procedures here or in a separate report.)

DP-02 is an upland plot located in an area that appears to be a drained pond.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B18)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction Tiled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?
Surface Water Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches): _____	Yes _____ No <u>✓</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators present.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-02

<u>Tree Stratum</u> (Plot Size: <u>30 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
		_____ = Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15-ft. radius</u> )				
1.	Salix nigra	10	Yes	OBL
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		10 = Total Cover		
<u>Herb Stratum</u> (Plot Size: <u>5 ft. radius</u> )				
1.	Ambrosia artemisifolia	25	Yes	FACU
2.	Schedonorus pratensis	15	Yes	FACU
3.	Ambrosia trifida	5	No	FAC
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
		45 = Total Cover		
<u>Woody Vine Stratum</u> (Plot Size: <u>30-ft. radius</u> )				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		_____ = Total Cover		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species	x 1 = _____
FACW species	x 2 = _____
FAC species	x 3 = _____
FACU species	x 4 = _____
UPL species	x 5 = _____
Column Totals:	(A) _____ (B) _____
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_\_\_ 2 - Dominance Test is >50%
  - \_\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - \_\_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes \_\_\_\_\_ No

Remarks: (Include photo numbers here or on a separate sheet.)  
Hydrophytic vegetation indicators not observed.

**SOIL**

**Sampling Point:** DP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-15	7.5YR 4/4	100					SiCL	
15-18	7.5YR 5/4	100					SiCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (LRR N)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F17)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**      Yes \_\_\_\_\_      No

**Remarks:**  
 Hydric soil indicators not present.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/10/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-03  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-3  
 Subregion (LRR or MRLA): LRR N Lat: 37.827969 Long: -86.123463 Datum: NAD83  
 Soil Map Unit Name: Water (W) NWI Classification: PUBHh

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation Yes, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <u>✓</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>✓</u>	No _____
Hydric Soil Present?	Yes <u>✓</u>	No _____			
Wetland Hydrology Present?	Yes <u>✓</u>	No _____			

Remarks: Explain alternative procedures here or in a separate report.)  
 DP-03 is representative of WL-F. WL-F is a PEM wetland located in an active agricultural field. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area was previously a pond and is regularly inundated.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required: Check all that apply)		Surface Soil Cracks (B6)	
<u>✓</u> Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
<u>✓</u> Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)	
<u>✓</u> Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)	

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes <u>✓</u>	No _____	Depth (inches):	<u>4</u>	Yes <u>✓</u> No _____
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches):	_____	
Saturation Present? (includes capillary fringe)	Yes <u>✓</u>	No _____	Depth (inches):	<u>0</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Wetland hydrology indicators are present.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-03

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot Size: <u>30 ft. radius</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
1.																				
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
			= Total Cover																	
<b>Sapling/Shrub Stratum</b> (Plot Size: <u>15-ft. radius</u> )				<b>Prevalence Index worksheet:</b> <table style="width:100%; border: none;"> <tr> <td style="width:50%; text-align: center;">Total % Cover of</td> <td style="width:50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td>x 1 =</td> </tr> <tr> <td>FACW species</td> <td>x 2 =</td> </tr> <tr> <td>FAC species</td> <td>x 3 =</td> </tr> <tr> <td>FACU species</td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> </tr> <tr> <td>Column Totals:</td> <td>(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	Total % Cover of	Multiply by:	OBL species	x 1 =	FACW species	x 2 =	FAC species	x 3 =	FACU species	x 4 =	UPL species	x 5 =	Column Totals:	(A) (B)	Prevalence Index = B/A =	
Total % Cover of	Multiply by:																			
OBL species	x 1 =																			
FACW species	x 2 =																			
FAC species	x 3 =																			
FACU species	x 4 =																			
UPL species	x 5 =																			
Column Totals:	(A) (B)																			
Prevalence Index = B/A =																				
1.																				
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
			= Total Cover																	
<b>Herb Stratum</b> (Plot Size: <u>5 ft. radius</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation x <u>    </u> 2 - Dominance Test is >50% <u>    </u> 3 - Prevalence Index is ≤ 3.0' <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) x <u>    </u> 5 - Problematic Hydrophytic Vegetation <sup>1</sup>  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1.	Amaranthus sp.	10	Yes		N/A															
2.	Ambrosia trifida	5	Yes		FAC															
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
			15 = Total Cover																	
<b>Woody Vine Stratum</b> (Plot Size: <u>30-ft. radius</u> )				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.  <b>Herb</b> - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.  <b>Woody vines</b> - All woody vines greater than 3.26 ft. in height																
1.																				
2.																				
3.																				
4.																				
5.																				
6.																				
			= Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
Wetland is in an active agriculture field. Growth of Zea mays appeared to be stunted within this wetland.																				

**SOIL**

**Sampling Point:** DP-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	7.5YR 5/2	70	7.5YR 4/4	30	C	M	SiCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input checked="" type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F17)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)</p> <p><input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)</p> <p><input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/>      No _____</p>
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**Remarks:**  
Hydric soils identified. Depleted matrix present. Area is in an active agriculture field.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-04  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MRLA): LRR N Lat: 37.83045476 Long: -86.12454991 Datum: NAD83  
 Soil Map Unit Name: Water (W) NWI Classification: PUBH

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation Yes, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <u>✓</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>✓</u>	No _____
Hydric Soil Present?	Yes <u>✓</u>	No _____			
Wetland Hydrology Present?	Yes <u>✓</u>	No _____			

Remarks: Explain alternative procedures here or in a separate report.)

DP-04 is representative of WL-E. WL-E is a PEM wetland located in an active agricultural field. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area was previously a pond and is regularly inundated.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required: Check all that apply)		Surface Soil Cracks (B6)	
<u>✓</u> Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
<u>✓</u> Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)	
<u>✓</u> Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)	

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes <u>✓</u>	No _____	Depth (inches):	<u>4</u>	Yes <u>✓</u> No _____
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches):	_____	
Saturation Present? (includes capillary fringe)	Yes <u>✓</u>	No _____	Depth (inches):	<u>0</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Wetland hydrology present. Surface water, saturation and inundation visible from aerial imagery. Area in an active agriculture field.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-04

	Absolute % Cover	Dominant Species?	Indicator Status
<b>Tree Stratum</b> (Plot Size: <u>30 ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		= Total Cover	
<b>Sapling/Shrub Stratum</b> (Plot Size: <u>15-ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
<b>Herb Stratum</b> (Plot Size: <u>5 ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
<b>Woody Vine Stratum</b> (Plot Size: <u>30-ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

**Hydrophytic Vegetation Indicators:**

\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation

\_\_\_\_ 2 - Dominance Test is >50%

\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>

\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

x \_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)

Wetland is in an active agriculture field. Growth of Zea mays appeared to be stunted within this wetland.

**SOIL**

**Sampling Point:** DP-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 5/3	90	7.5YR 4/4	10	C	M	CL	
12-18	10YR 5/2	85	7.5YR 4/4	15	C	M	CL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <b>(LRR N)</b> <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR N, MLRA 147, 148)</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(MLRA 147, 148)</b> <input type="checkbox"/> Thin Dark Surface (S9) <b>(MLRA 147, 148)</b> <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR N, MLRA 136)</b> <input type="checkbox"/> Umbric Surface (F13) <b>(MLRA 136,122)</b> <input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 148)</b> <input type="checkbox"/> Red Parent Material (F21) <b>(MLRA 127,147)</b>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) <b>(LRR N)</b> <input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 147, 148)</b> <input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 147, 148)</b> <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/>      No <input type="checkbox"/></p>
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**Remarks:**  
Hydric soils present. Presence of a depleted matrix. Areas is in an active agriculture field.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-05  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1-3  
 Subregion (LRR or MRLA): LRR N Lat: 37.83039379 Long: -86.12450759 Datum: NAD83  
 Soil Map Unit Name: Water (W) NWI Classification: PUBH

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation Yes, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes _____	No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>✓</u>
Hydric Soil Present?	Yes _____	No <u>✓</u>			
Wetland Hydrology Present?	Yes _____	No <u>✓</u>			

Remarks: Explain alternative procedures here or in a separate report.)  
 DP-05 is an upland plot located adjacent to WL-E.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	Yes _____	No <u>✓</u>
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 No wetland hydrology present.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-05

Tree Stratum (Plot Size: <u>30 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
		_____ = Total Cover		
Sapling/Shrub Stratum (Plot Size: <u>15-ft. radius</u> )				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		_____ = Total Cover		
Herb Stratum (Plot Size: <u>5 ft. radius</u> )				
1.	<u>Zea mays</u>	<u>100</u>	<u>Yes</u>	<u>UPL</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		_____ = Total Cover		
Woody Vine Stratum (Plot Size: <u>30-ft. radius</u> )				
1.				
2.				
3.				
4.				
5.				
6.				
		_____ = Total Cover		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_\_\_ 2 - Dominance Test is >50%
  - \_\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - \_\_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes \_\_\_\_\_ No

Remarks: (Include photo numbers here or on a separate sheet.)  
Area in an active agriculture field.

**SOIL**

**Sampling Point:** DP-05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR 5/3	80	7.5YR 4/4	20	C	M	SIL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b>                  Type: _____                  Depth (inches): _____</p>	<p><b>Hydric Soil Present?</b>      Yes _____      No <input checked="" type="checkbox"/></p>
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**Remarks:**  
No hydric soils present

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-06  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MRLA): LRR N Lat: 37.82584561 Long: -86.13023039 Datum: NAD 83  
 Soil Map Unit Name: Water (W) NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation Yes, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <u>✓</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>✓</u>	No _____
Hydric Soil Present?	Yes <u>✓</u>	No _____			
Wetland Hydrology Present?	Yes <u>✓</u>	No _____			

Remarks: Explain alternative procedures here or in a separate report.)

DP-06 is representative of WL-G. WL-G is a PEM wetland located in an active agricultural field. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area is regularly inundated.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required: Check all that apply)		Surface Soil Cracks (B6)	
<u>✓</u> Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
<u>✓</u> Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)	
_____ Water Marks (B1)	<u>✓</u> Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)	
<u>✓</u> Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)	

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes <u>✓</u>	No _____	Depth (inches):	<u>4</u>	Yes <u>✓</u> No _____
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches):	_____	
Saturation Present? (includes capillary fringe)	Yes <u>✓</u>	No _____	Depth (inches):	<u>6</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area in an active agricultural field. Wetland hydrology present; surface water and saturation.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-06

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot Size: <u>30 ft. radius</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
			_____ = Total Cover																	
<b>Sapling/Shrub Stratum</b> (Plot Size: <u>15-ft. radius</u> )				<b>Prevalence Index worksheet:</b> <table style="width:100%; border: none;"> <tr> <td style="width:50%; text-align: center;">Total % Cover of</td> <td style="width:50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____	(A) _____ (B) _____	Prevalence Index = B/A = _____	
Total % Cover of	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____	(A) _____ (B) _____																			
Prevalence Index = B/A = _____																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
			_____ = Total Cover																	
<b>Herb Stratum</b> (Plot Size: <u>5 ft. radius</u> )				<b>Hydrophytic Vegetation Indicators:</b> _____ 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤ 3.0' _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) x _____ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
			_____ = Total Cover																	
<b>Woody Vine Stratum</b> (Plot Size: <u>30-ft. radius</u> )				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.  <b>Herb</b> - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.  <b>Woody vines</b> - All woody vines greater than 3.26 ft. in height																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
			_____ = Total Cover																	
<b>Hydrophytic Vegetation Present?</b>																				
Yes <input checked="" type="checkbox"/> No _____																				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Wetland is in an active agriculture field. Growth of Zea mays appeared to be stunted within this wetland.

**SOIL**

**Sampling Point:** DP-06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 5/2	100					SiCL	
4-18	7.5YR 5/2	60	7.5YR 4/6	40	C	M	SiCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histic (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/>      No <input type="checkbox"/></p>
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**Remarks:**  
Depleted matrix was observed. Area has been disturbed by active agricultural activities.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-07  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-3  
 Subregion (LRR or MRLA): LRR N Lat: 37.82478188 Long: -86.13042688 Datum: NAD 83  
 Soil Map Unit Name: Water (W) NWI Classification: PUBH

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil Yes, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation Yes, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <u>✓</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>✓</u> No _____
Hydric Soil Present?	Yes <u>✓</u>	No _____	
Wetland Hydrology Present?	Yes <u>✓</u>	No _____	

Remarks: Explain alternative procedures here or in a separate report.)

DP-07 is representative of WL-H. WL-H is a PEM wetland located in an active agricultural field. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area is regularly inundated.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		_____ Surface Soil Cracks (B6)
<u>✓</u> Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)
<u>✓</u> Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)
<u>✓</u> Iron Deposits (B5)		_____ Geomorphic Position (D2)
<u>✓</u> Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?  Yes <u>✓</u> No _____
Surface Water Present?	Yes <u>✓</u>	No _____	Depth (inches): <u>4</u>	
Water Table Present?	Yes _____	No _____	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <u>✓</u>	No _____	Depth (inches): <u>6</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators present. Area in an active agricultural field.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-07

	Absolute % Cover	Dominant Species?	Indicator Status
<b>Tree Stratum</b> (Plot Size: <u>30 ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		= Total Cover	
<b>Sapling/Shrub Stratum</b> (Plot Size: <u>15-ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
<b>Herb Stratum</b> (Plot Size: <u>5 ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
<b>Woody Vine Stratum</b> (Plot Size: <u>30-ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = \_\_\_\_\_

- Hydrophytic Vegetation Indicators:**
- \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_ 2 - Dominance Test is >50%
  - \_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - x \_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)

Wetland is in an active agriculture field. Growth of Zea mays appeared to be stunted within this wetland.

**SOIL**

**Sampling Point:** DP-07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 5/2	95	7.5YR 4/6	5	C	M	SIL	
3-18	10YR 5/4	100					SIL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> Coast Prairie Redox (A16) ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 147, 148</b> )
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F17)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N, MLRA 147, 148</b> )	<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> )	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136,122</b> )	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127,147</b> )	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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**Remarks:**  
Depleted matrix was observed. Area has been disturbed by active agricultural activities.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-08  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1-3  
 Subregion (LRR or MRLA): LRR N Lat: 37.82498578 Long: -86.1302871 Datum: NAD 83  
 Soil Map Unit Name: Water (W) NWI Classification: PUBH

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil Yes, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes _____	No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>✓</u>
Hydric Soil Present?	Yes _____	No <u>✓</u>			
Wetland Hydrology Present?	Yes _____	No <u>✓</u>			

Remarks: Explain alternative procedures here or in a separate report.)  
 DP-08 is representative of upland habitat located in a concave hillslope. DP-08 is adjacent to WL-H.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	Yes _____	No <u>✓</u>
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Wetland hydrology indicators were not observed.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-08

Tree Stratum (Plot Size: <u>30 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
		_____ = Total Cover		
Sapling/Shrub Stratum (Plot Size: <u>15-ft. radius</u> )				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		_____ = Total Cover		
Herb Stratum (Plot Size: <u>5 ft. radius</u> )				
1.	<u>Zea mays</u>	<u>100</u>	<u>Yes</u>	<u>UPL</u>
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
		_____ = Total Cover		
Woody Vine Stratum (Plot Size: <u>30-ft. radius</u> )				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		_____ = Total Cover		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_\_\_ 2 - Dominance Test is >50%
  - \_\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - \_\_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes \_\_\_\_\_ No

Remarks: (Include photo numbers here or on a separate sheet.)

Area in an active agricultural field. Hydrophytic vegetation indicators were not observed.

**SOIL**

**Sampling Point:** DP-08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	7.5YR 4/3	100					SIL	
2-18	10YR 5/3	85	7.5YR 4/6	15	C	N	SIL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b>          Type: _____          Depth (inches): _____</p>	<p><b>Hydric Soil Present?</b>      Yes _____      No <input checked="" type="checkbox"/></p>
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**Remarks:**  
Area in an active agricultural field.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-09  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-3  
 Subregion (LRR or MRLA): LRR N Lat: 37.82416231 Long: -86.13252222 Datum: NAD 83  
 Soil Map Unit Name: Hammack-Baxter complex (HbC2) NWI Classification: PAB3H

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil Yes, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes _____	No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>✓</u>
Hydric Soil Present?	Yes _____	No <u>✓</u>			
Wetland Hydrology Present?	Yes _____	No <u>✓</u>			

Remarks: Explain alternative procedures here or in a separate report.)

DP-09 is an upland plot located in an active agriculture field.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B18)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction Tiled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?
Surface Water Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches): _____	Yes _____ No <u>✓</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology indicators not observed.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-09

Tree Stratum (Plot Size: <u>30 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
		_____ = Total Cover		
Sapling/Shrub Stratum (Plot Size: <u>15-ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		_____ = Total Cover		
Herb Stratum (Plot Size: <u>5 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Zea mays</u>	<u>100</u>	<u>Yes</u>	<u>UPL</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		<u>100</u> = Total Cover		
Woody Vine Stratum (Plot Size: <u>30-ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
		_____ = Total Cover		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_\_\_ 2 - Dominance Test is >50%
  - \_\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - \_\_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes \_\_\_\_\_ No

Remarks: (Include photo numbers here or on a separate sheet.)  
Area in an active agricultural field.

**SOIL**

**Sampling Point:** DP-09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 5/3	100					siL	
2-18	10YR 5/4	80	10YR 4/6	20	C	M	SiL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup></b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F17)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)		

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____      No <input checked="" type="checkbox"/>
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**Remarks:**  
Area in an active agricultural field.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-10  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-3  
 Subregion (LRR or MRLA): LRR N Lat: 37.81938616 Long: -86.13496781 Datum: NAD 83  
 Soil Map Unit Name: Water (W) NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil Yes, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <u>✓</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>✓</u>	No _____
Hydric Soil Present?	Yes <u>✓</u>	No _____			
Wetland Hydrology Present?	Yes <u>✓</u>	No _____			

Remarks: Explain alternative procedures here or in a separate report.)  
 DP-10 is representative of WL-I WL-I is a PEM wetland located in an active agricultural field. At the time of the delineation, vegetation appeared to be stunted. Review of historical imagery shows that this area was previously a pond and is regularly inundated.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required: Check all that apply)		Surface Soil Cracks (B6)	
<u>✓</u> Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
<u>✓</u> Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)	
<u>✓</u> Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)	

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes <u>✓</u>	No _____	Depth (inches):	<u>8</u>	Yes <u>✓</u> No _____
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches):	_____	
Saturation Present? (includes capillary fringe)	Yes <u>✓</u>	No _____	Depth (inches):	<u>3</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Wetland hydrology present.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-10

	Absolute % Cover	Dominant Species?	Indicator Status
<b>Tree Stratum</b> (Plot Size: <u>30 ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		= Total Cover	
<b>Sapling/Shrub Stratum</b> (Plot Size: <u>15-ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
<b>Herb Stratum</b> (Plot Size: <u>5 ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
<b>Woody Vine Stratum</b> (Plot Size: <u>30-ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_ 2 - Dominance Test is >50%
  - \_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - x \_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)

Wetland is in an active agriculture field. Growth of Zea mays appeared to be stunted within this wetland.

**SOIL**

**Sampling Point:** DP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 4/2	100					SIL	
3-10	10YR 5/2	85	10YR 4/4	15	C	M	SiCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	--	--

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/>      No <input type="checkbox"/></p>
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**Remarks:**  
Depleted matrix was observed. Area has been disturbed by active agricultural activities.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-11  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2-5  
 Subregion (LRR or MRLA): LRR N Lat: 37.81943275 Long: -86.16707507 Datum: NAD 83  
 Soil Map Unit Name: Water (W) NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil Yes, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes _____	No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>✓</u>
Hydric Soil Present?	Yes _____	No <u>✓</u>			
Wetland Hydrology Present?	Yes _____	No <u>✓</u>			

Remarks: Explain alternative procedures here or in a separate report.)

DP-11 is an upland plot located in an active agriculture field. DP-11 is adjacent to WL-I.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	Yes _____	No <u>✓</u>
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area within an active agriculture field.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-11

<u>Tree Stratum</u> (Plot Size: <u>30 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
		_____	= Total Cover	
<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15-ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		_____	= Total Cover	
<u>Herb Stratum</u> (Plot Size: <u>5 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Zea mays</u>	<u>100</u>	<u>Yes</u>	<u>UPL</u>
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
		<u>100</u>	= Total Cover	
<u>Woody Vine Stratum</u> (Plot Size: <u>30-ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		_____	= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_\_\_ 2 - Dominance Test is >50%
  - \_\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - \_\_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes \_\_\_\_\_ No

Remarks: (Include photo numbers here or on a separate sheet.)

Area is an active agriculture field.

**SOIL**

**Sampling Point:** DP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR 5/3	70	10YR 5/4	30			SiCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p>	<p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)</p> <p><input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F17)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)</p> <p><input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)</p> <p><input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR N)</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)</p> <p><input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**      Yes \_\_\_\_\_      No

**Remarks:**  
No hydric soils present. Area within and active agriculture field.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-12  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3-5  
 Subregion (LRR or MRLA): LRR N Lat: 37.84107291 Long: -86.16707507 Datum: NAD 83  
 Soil Map Unit Name: Fredonia-Crider complex (FcC2) NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation Yes, Soil Yes, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <u>✓</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>✓</u>	No _____
Hydric Soil Present?	Yes <u>✓</u>	No _____			
Wetland Hydrology Present?	Yes <u>✓</u>	No _____			

Remarks: Explain alternative procedures here or in a separate report.)  
**DP-12 is representative of WL-A. WL-A is a PEM wetland.**

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		<u>_____</u> Surface Soil Cracks (B6)
<u>✓</u> Surface Water (A1)	<u>_____</u> True Aquatic Plants (B14)	<u>_____</u> Sparsely Vegetated Concave Surface (B8)
<u>_____</u> High Water Table (A2)	<u>_____</u> Hydrogen Sulfide Odor (C1)	<u>_____</u> Drainage Patterns (B10)
<u>✓</u> Saturation (A3)	<u>✓</u> Oxidized Rhizospheres on Living Roots (C3)	<u>_____</u> Moss Trim Lines (B18)
<u>_____</u> Water Marks (B1)	<u>_____</u> Presence of Reduced Iron (C4)	<u>_____</u> Dry-Season Water Table (C2)
<u>_____</u> Sediment Deposits (B2)	<u>_____</u> Recent Iron Reduction Tiled Soils (C6)	<u>_____</u> Crayfish Burrows (C8)
<u>_____</u> Drift Deposits (B3)	<u>_____</u> Thin Muck Surface (C7)	<u>_____</u> Saturation Visible on Aerial Imagery (C9)
<u>_____</u> Algal Mat or Crust (B4)	<u>_____</u> Other (Explain in Remarks)	<u>_____</u> Stunted or Stressed Plants (D1)
<u>_____</u> Iron Deposits (B5)		<u>_____</u> Geomorphic Position (D2)
<u>_____</u> Inundation Visible on Aerial Imagery (B7)		<u>_____</u> Shallow Aquitard (D3)
<u>_____</u> Water-Stained Leaves (B9)		<u>_____</u> Microtopographic Relief (D4)
<u>_____</u> Aquatic Fauna (B13)		<u>_____</u> FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes <u>✓</u>	No _____	Depth (inches):	<u>2</u>	Yes <u>✓</u> No _____
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches):	_____	
Saturation Present? (includes capillary fringe)	Yes <u>✓</u>	No _____	Depth (inches):	<u>0</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**Wetland hydrology present. Surface water and saturation.**

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-12

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot Size: <u>30 ft. radius</u> )				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>2</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:center;">Total % Cover of</td> <td style="width:50%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = _____</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p>_____ 1 - Rapid Test for Hydrophytic Vegetation</p> <p>x _____ 2 - Dominance Test is &gt;50%</p> <p>_____ 3 - Prevalence Index is ≤ 3.0<sup>1</sup></p> <p>_____ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p>_____ 5 - Problematic Hydrophytic Vegetation <sup>1</sup></p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.</p> <p><b>Herb</b> - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.</p> <p><b>Woody vines</b> - All woody vines greater than 3.26 ft. in height</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b></p> <p>Yes <u>✓</u> No _____</p>	Total % Cover of	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____	(A) _____ (B) _____	Prevalence Index = B/A = _____	
Total % Cover of	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____	(A) _____ (B) _____																			
Prevalence Index = B/A = _____																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
			_____ = Total Cover																	
<b>Sapling/Shrub Stratum</b> (Plot Size: <u>15-ft. radius</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
			_____ = Total Cover																	
<b>Herb Stratum</b> (Plot Size: <u>5 ft. radius</u> )																				
1. <u>Eleocharis obtusa</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Leersia oryzoides</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Carex sp.</u>	<u>25</u>	<u>Yes</u>	<u>N/A</u>																	
4. <u>Typha angustifolia</u>	<u>15</u>	<u>No</u>	<u>OBL</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
			<u>110</u> = Total Cover																	
<b>Woody Vine Stratum</b> (Plot Size: <u>30-ft. radius</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
			_____ = Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.)																				
<b>Hydrophytic vegetation present.</b>																				

**SOIL**

**Sampling Point:** DP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	7.5YR 4/2	70	7.5YR	30	C	PL	SiCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histic (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input checked="" type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input checked="" type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/>      No <input type="checkbox"/></p>
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**Remarks:**  
Hydric soils present.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-13  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MRLA): LRR N Lat: 37.84093578 Long: -86.16704104 Datum: NAD 83  
 Soil Map Unit Name: Fredonia-Crider complex (FcC2) NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes _____	No <u>✓</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>✓</u>
Hydric Soil Present?	Yes _____	No <u>✓</u>	
Wetland Hydrology Present?	Yes _____	No <u>✓</u>	

Remarks: Explain alternative procedures here or in a separate report.)  
**DP-13 is an upland plot located adjacent to WL-A.**

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present? Yes _____ No <u>✓</u>
Surface Water Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No wetland hydrology present.**

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-13

Tree Stratum (Plot Size: <u>30 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
		_____ = Total Cover		
Sapling/Shrub Stratum (Plot Size: <u>15-ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		_____ = Total Cover		
Herb Stratum (Plot Size: <u>5 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Poa pratensis</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>
2.	<u>Trifolium repens</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3.	<u>Taraxacum officinale</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
4.	<u>Plantago lanceolata</u>	<u>5</u>	<u>No</u>	<u>UPL</u>
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		<u>85</u> = Total Cover		
Woody Vine Stratum (Plot Size: <u>30-ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
		_____ = Total Cover		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_\_\_ 2 - Dominance Test is >50%
  - \_\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - \_\_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes \_\_\_\_\_ No

Remarks: (Include photo numbers here or on a separate sheet.)  
**No hydrophytic vegetation present.**

SOIL

Sampling Point: DP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR 5/4	100					SIL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**  
Type: \_\_\_\_\_  
Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**      Yes \_\_\_\_\_      No

**Remarks:**  
No hydric soils present.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/11/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-14  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): None Slope (%): 1  
 Subregion (LRR or MRLA): LRR N Lat: 37.838051 Long: -86.165682 Datum: NAD 83  
 Soil Map Unit Name: Water (W) NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes _____	No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>✓</u>
Hydric Soil Present?	Yes _____	No <u>✓</u>			
Wetland Hydrology Present?	Yes _____	No <u>✓</u>			

Remarks: Explain alternative procedures here or in a separate report.)  
**DP-13 is an upland plot located in an active agriculture field.**

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	Yes _____	No <u>✓</u>
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches): _____		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No wetland hydrology present.**

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-14

Tree Stratum (Plot Size: <u>30 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
		_____ = Total Cover		
Sapling/Shrub Stratum (Plot Size: <u>15-ft. radius</u> )				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		_____ = Total Cover		
Herb Stratum (Plot Size: <u>5 ft. radius</u> )				
1.	<u>Erigeron canadensis</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>
2.	<u>Persicaria hydropiper</u>	<u>25</u>	<u>Yes</u>	<u>OBL</u>
3.	<u>Ambrosia trifida</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
4.	<u>Plantago lanceolata</u>	<u>2</u>	<u>No</u>	<u>UPL</u>
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
		<u>72</u> = Total Cover		
Woody Vine Stratum (Plot Size: <u>30-ft. radius</u> )				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		_____ = Total Cover		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_\_\_ 2 - Dominance Test is >50%
  - \_\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - \_\_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes \_\_\_\_\_ No

Remarks: (Include photo numbers here or on a separate sheet.)

Presence of hydrophytic vegetation insufficient.

**SOIL**

**Sampling Point:** DP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	7.5YR 4/3	70	7.5YR 3/4	30	C	M	SiCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <b>(LRR N)</b> <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR N, MLRA 147, 148)</b> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) <b>(MLRA 147, 148)</b> <input type="checkbox"/> Thin Dark Surface (S9) <b>(MLRA 147, 148)</b> <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR N, MLRA 136)</b> <input type="checkbox"/> Umbric Surface (F13) <b>(MLRA 136,122)</b> <input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 148)</b> <input type="checkbox"/> Red Parent Material (F21) <b>(MLRA 127,147)</b>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) <b>(LRR N)</b> <input type="checkbox"/> Coast Prairie Redox (A16) <b>(MLRA 147, 148)</b> <input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 147, 148)</b> <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      Yes _____      No <input checked="" type="checkbox"/></p>
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**Remarks:**  
No hydric soil indicators were observed.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/12/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-15  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1-3  
 Subregion (LRR or MRLA): LRR N Lat: 37.83693593 Long: -86.16275696 Datum: NAD 83  
 Soil Map Unit Name: Nolin silt loam (Nv) NWI Classification: R4SBC

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <u>✓</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>✓</u>	No _____
Hydric Soil Present?	Yes <u>✓</u>	No _____			
Wetland Hydrology Present?	Yes <u>✓</u>	No _____			

Remarks: Explain alternative procedures here or in a separate report.)  
**DP-15 is representative of WL-B. WL-B is a PEM wetland.**

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required: Check all that apply)		_____ Surface Soil Cracks (B6)	
<u>✓</u> Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
<u>✓</u> Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)	

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes <u>✓</u>	No _____	Depth (inches):	<u>8</u>	Yes <u>✓</u> No _____
Water Table Present?	Yes _____	No _____	Depth (inches):	_____	
Saturation Present? (includes capillary fringe)	Yes <u>✓</u>	No _____	Depth (inches):	<u>12</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**There is a hard line between wetland and bank. Surface water and saturation present.**

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-15

Tree Stratum (Plot Size: <u>30 ft. radius</u> )		Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
		_____ = Total Cover		
Sapling/Shrub Stratum (Plot Size: <u>15-ft. radius</u> )				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		_____ = Total Cover		
Herb Stratum (Plot Size: <u>5 ft. radius</u> )				
1.	<u>Persicaria hydropiper</u>	<u>70</u>	<u>Yes</u>	<u>OBL</u>
2.	<u>Carex sp.</u>	<u>1</u>	<u>No</u>	<u>N/A</u>
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
		<u>71</u> = Total Cover		
Woody Vine Stratum (Plot Size: <u>30-ft. radius</u> )				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
		_____ = Total Cover		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - x \_\_\_\_\_ 2 - Dominance Test is >50%
  - \_\_\_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - \_\_\_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic vegetation is present.

**SOIL**

**Sampling Point:** DP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	7.5YR 5/2	100					CL	
4-18	7.5YR 5/2	80	7.5YR 4/6	20	C	M	CL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histic Sol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/>      No _____</p>
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**Remarks:**  
 Hydric soils present.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/12/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-16  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-3  
 Subregion (LRR or MRLA): LRR N Lat: 37.83697 Long: -86.162654 Datum: NAD 83  
 Soil Map Unit Name: Nolin silt loam (Nv) NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes _____	No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes _____	No <u>✓</u>
Hydric Soil Present?	Yes _____	No <u>✓</u>			
Wetland Hydrology Present?	Yes _____	No <u>✓</u>			

Remarks: Explain alternative procedures here or in a separate report.)  
**DP-16 is an upland plot located adjacent to WL-B.**

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: Check all that apply)		<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B18)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction Tiled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b>				Wetland Hydrology Present?
Surface Water Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches): _____	Yes _____ No <u>✓</u>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
**No wetland hydrology present.**

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-16

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot Size: <u>30 ft. radius</u> )				<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>2</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width:100%;"> <tr> <td style="width:50%;">Total % Cover of</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = _____</td> </tr> </table> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p>____ 1 - Rapid Test for Hydrophytic Vegetation</p> <p>____ 2 - Dominance Test is &gt;50%</p> <p>____ 3 - Prevalence Index is ≤ 3.0<sup>1</sup></p> <p>____ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p>____ 5 - Problematic Hydrophytic Vegetation <sup>1</sup></p> <p><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.</p> <p><b>Herb</b> - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.</p> <p><b>Woody vines</b> - All woody vines greater than 3.26 ft. in height</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b></p> <p>Yes _____ No <input checked="" type="checkbox"/></p>	Total % Cover of	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____	(A) _____ (B) _____	Prevalence Index = B/A = _____	
Total % Cover of	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____	(A) _____ (B) _____																			
Prevalence Index = B/A = _____																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
			_____ = Total Cover																	
<b>Sapling/Shrub Stratum</b> (Plot Size: <u>15-ft. radius</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
			_____ = Total Cover																	
<b>Herb Stratum</b> (Plot Size: <u>5 ft. radius</u> )																				
1. <u>Elymus virginicus</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Solidago canadensis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Ambrosia trifida</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Schedonorus arundinaceus</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Sorghum halepense</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Erigeron canadensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
			<u>85</u> = Total Cover																	
<b>Woody Vine Stratum</b> (Plot Size: <u>30-ft. radius</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
			_____ = Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.)																				
No hydrophytic vegetation indicators were observed.																				

**SOIL**

**Sampling Point:** DP-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	7.5YR 4/4	100					SIL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> ) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N, MLRA 147, 148</b> ) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> ) <input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> ) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> ) <input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136,122</b> ) <input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> ) <input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127,147</b> )	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> ) <input type="checkbox"/> Coast Prairie Redox (A16) ( <b>MLRA 147, 148</b> ) <input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 147, 148</b> ) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      Yes _____      No <input checked="" type="checkbox"/></p>
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**Remarks:**  
No hydric soils present.

**WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region**

Project/Site: Meade County Solar LLC City/County: Meade Sampling Date: 11/12/2020  
 Applicant/Owner: Community Energy State: KY Sampling Point: DP-17  
 Investigator(s): R. Eaton, E. Bolenbaugh Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convave Slope (%): 0  
 Subregion (LRR or MRLA): LRR N Lat: 37.83612836 Long: -86.15375191 Datum: NAD 83  
 Soil Map Unit Name: Water (W) NWI Classification: PUBH

Are climatic/hydrologic conditions of the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks)  
 Are vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present?  
 Are vegetation No, Soil No, or Hydrology No naturally problematic? Yes Yes No \_\_\_\_\_

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?	Yes <u>✓</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>✓</u>	No _____
Hydric Soil Present?	Yes <u>✓</u>	No _____			
Wetland Hydrology Present?	Yes <u>✓</u>	No _____			

Remarks: Explain alternative procedures here or in a separate report.)  
 DP-17 is representative of WL-C. WL-C is a PEM wetland. WL-C appears to have previously been a pond. The earthen berm was breached. The concave area no longer has the same water holding capacity. Portions of the concave area have reverted to PEM wetland.

**HYDROLOGY**

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required: Check all that apply)		_____ Surface Soil Cracks (B6)	
<u>✓</u> Surface Water (A1)	_____ True Aquatic Plants (B14)	_____ Sparsely Vegetated Concave Surface (B8)	
_____ High Water Table (A2)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Moss Trim Lines (B18)	
_____ Water Marks (B1)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)	
_____ Sediment Deposits (B2)	_____ Recent Iron Reduction Tiled Soils (C6)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Other (Explain in Remarks)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)		_____ Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)	
_____ Water-Stained Leaves (B9)		_____ Microtopographic Relief (D4)	
_____ Aquatic Fauna (B13)		_____ FAC-Neutral Test (D5)	

<b>Field Observations:</b>				Wetland Hydrology Present?	
Surface Water Present?	Yes <u>✓</u>	No _____	Depth (inches):	<u>4</u>	Yes <u>✓</u> No _____
Water Table Present?	Yes _____	No <u>✓</u>	Depth (inches):	_____	
Saturation Present? (includes capillary fringe)	Yes _____	No <u>✓</u>	Depth (inches):	_____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Area disturbed by cattle. Wetland hydrology present.

**VEGETATION** - Use scientific names of plants

Sampling Point: DP-17

	Absolute % Cover	Dominant Species?	Indicator Status
<b>Tree Stratum</b> (Plot Size: <u>30 ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		= Total Cover	
<b>Sapling/Shrub Stratum</b> (Plot Size: <u>15-ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		= Total Cover	
<b>Herb Stratum</b> (Plot Size: <u>5 ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
<b>Woody Vine Stratum</b> (Plot Size: <u>30-ft. radius</u> )			
1.			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

**Prevalence Index worksheet:**

Total % Cover of	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)
Prevalence Index = B/A = _____	

- Hydrophytic Vegetation Indicators:**
- \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation
  - \_\_\_ 2 - Dominance Test is >50%
  - \_\_\_ 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
  - x \_\_\_ 5 - Problematic Hydrophytic Vegetation <sup>1</sup>
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft. tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

**Woody vines** - All woody vines greater than 3.26 ft. in height

**Hydrophytic Vegetation Present?**

Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)

Area disturbed by cattle. Hydrophytic vegetation assumed to be present due to presence of wetland hydrology and hydric soils.

**SOIL**

**Sampling Point:** DP-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 4/2	100					SiL	Disturbed by cattle
6-10	10YR 5/1	100					SiL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histic (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F17) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136,122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127,147)	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup></b></p> <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 147, 148) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	--	--

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> Type: _____ Depth (inches): _____	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/>      No <input type="checkbox"/></p>
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**Remarks:**  
Area disturbed by cattle. Depleted matrix indicator observed.

## **Appendix D – RBP Habitat Assessment Field Data Sheets**

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS

STREAM NAME Stream 1		LOCATION Meade County KY	
SITE ID # _____ REACH ID # _____		STREAM CLASS Ephemeral	
Lat., Long. (WGS 84 DD) <u>37.838918, -86.158544</u>		RIVER BASIN	
STORET #		AGENCY Copperhead Environmental Consulting	
INVESTIGATORS R. Eaton, E. Bolenbaugh			
FORM COMPLETED BY E. Bolenbaugh		DATE <u>11/12/20</u> TIME <u>9:00</u> AM	REASON FOR SURVEY Proposed Development

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
SCORE 10	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3. Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE 12	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

Parameters to be evaluated in sampling reach

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
SCORE 12	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.
SCORE 1	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream.	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
SCORE 8 LB)	Left Bank 10 9	8 7 6	5 4 3	2 1 0
SCORE 8 RB)	Right Bank 10 9	8 7 6	5 4 3	2 1 0
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
SCORE 8 LB)	Left Bank 10 9	8 7 6	5 4 3	2 1 0
SCORE 8 RB)	Right Bank 10 9	8 7 6	5 4 3	2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.
SCORE 4 LB)	Left Bank 10 9	8 7 6	5 4 3	2 1 0
SCORE 4 RB)	Right Bank 10 9	8 7 6	5 4 3	2 1 0

Parameters to be evaluated broader than sampling reach

Total Score\_ 81

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS

STREAM NAME Stream 2		LOCATION Meade County KY	
SITE ID # _____ REACH ID # _____		STREAM CLASS Ephemeral	
Lat., Long. (WGS 84 DD) <u>37.840561, -86.164756</u>		RIVER BASIN	
STORET # _____		AGENCY Copperhead Environmental Consulting	
INVESTIGATORS R. Eaton, E. Bolenbaugh			
FORM COMPLETED BY E. Bolenbaugh		DATE <u>11/12/20</u> TIME <u>9:00</u> AM	REASON FOR SURVEY Proposed Development

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
SCORE 15	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3. Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
SCORE 1	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE 14	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

Parameters to be evaluated in sampling reach

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
SCORE 6	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.
SCORE 4	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8. Bank Stability (score each bank)  Note: determine left or right side by facing downstream.	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
SCORE 4 LB)	Left Bank 10 9	8 7 6	5 4 3	2 1 0
SCORE 4 RB)	Right Bank 10 9	8 7 6	5 4 3	2 1 0
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
SCORE 3 LB)	Left Bank 10 9	8 7 6	5 4 3	2 1 0
SCORE 3 RB)	Right Bank 10 9	8 7 6	5 4 3	2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.
SCORE 2 LB)	Left Bank 10 9	8 7 6	5 4 3	2 1 0
SCORE 2 RB)	Right Bank 10 9	8 7 6	5 4 3	2 1 0

Parameters to be evaluated broader than sampling reach

Total Score\_ 62

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS

STREAM NAME Stream 3		LOCATION Meade County KY	
SITE ID # _____ REACH ID # _____		STREAM CLASS Intermittent	
Lat., Long. (WGS 84 DD) <u>37.835479, -86.15334</u>		RIVER BASIN	
STORET #		AGENCY Copperhead Environmental Consulting	
INVESTIGATORS R. Eaton, E. Bolenbaugh			
FORM COMPLETED BY E. Bolenbaugh		DATE <u>11/12/20</u> TIME <u>9:00</u> AM	REASON FOR SURVEY Proposed Development

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE 4	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
SCORE 9	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3. Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE 10	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE 6	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

Parameters to be evaluated in sampling reach

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
SCORE 5	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.
SCORE 4	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream.	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
SCORE 2 LB)	Left Bank 10 9	8 7 6	5 4 3	2 1 0
SCORE 2 RB)	Right Bank 10 9	8 7 6	5 4 3	2 1 0
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
SCORE 2 LB)	Left Bank 10 9	8 7 6	5 4 3	2 1 0
SCORE 2 RB)	Right Bank 10 9	8 7 6	5 4 3	2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.
SCORE 1 LB)	Left Bank 10 9	8 7 6	5 4 3	2 1 0
SCORE 0 RB)	Right Bank 10 9	8 7 6	5 4 3	2 1 0

Parameters to be evaluated broader than sampling reach

Total Score\_ 49



# MICHAEL TINCHER, PWS

## NATURAL RESOURCES MANAGER

### Regulatory Expertise

- Clean Water Act
- National Pollutant Discharge Elimination System
- Federal, state, and local permitting

### Industry Clientele

- Oil & Gas
- Commercial Land Development
- Solar
- Energy Transmission
- Non-Profit Organizations

### Natural Resource Evaluations

- Stream and Wetland Delineations
- Endangered and Threatened Species
- Stream and Wetland Mitigation and Restoration

### Certifications

- Professional Wetland Scientist (PWS)
- Certified Erosion, Sediment, and Stormwater Inspector (CESSWI)
- Pennsylvania Sewage Enforcement Officer (SEO)

### Affiliations

- Society of Wetland Scientists
- Ohio Bat Working Group

### Education

**M.S. Wildlife and Fisheries Resources**, 2013, West Virginia University, Morgantown West Virginia

**B.S. Wildlife and Fisheries Resources**, 2010, West Virginia University, Morgantown West Virginia

### Experience

**Copperhead Environmental Consulting, Inc.**, Natural Resources Manager, 2020-present.

**Langan Engineering and Environmental Services, Inc.**, Appalachian Region Natural Resources Leader/Senior Staff Scientist, 2017-2020.

**Dieffenbach & Hritz, LLC**, Project Scientist, 2013 - 2017.

**GAI Consultants, Inc.**, Wetland Specialist, 2013.



**West Virginia University**, Research and Teaching Assistant, 2010-2013.

### Qualifications and Background

Mr. Tinchler is an experienced stream ecologist and aquatic biologist with extensive experience with Clean Water Act permitting, stream and wetland delineations, stream ecology, fish and aquatic macroinvertebrate surveys, plant species and habitat surveys, and stream and groundwater sampling. He has performed work over a wide geographic area throughout the United States. Specific states include Florida, Kansas, Kentucky, Missouri, New York, North Dakota, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and West Virginia. He has served as project manager and field lead on various projects requiring federal, state, and local permitting studies.

## Trainings

Tennessee Hydrologic Determination Training (2020); Stream Functions Pyramid and Stream Quantification Tool (SQT) Workshop (2020); Certified Erosion, Sediment, and Stormwater Inspector (2018); Pennsylvania Sewage Enforcement Officer (2017); Freshwater Mussels of West Virginia: Life History and Identification (2016); Morphological Soil Investigations, A Plus Environmental Training (2016); Pennsylvania Botany Consulting Botanist's Toolkit Workshop (2015); Swamp School Wetland Delineation Certification (2013).

## Project Experience

### **Wetland Delineation for Project NASA 1(9) - Wallops Island Causeway Bridge, Accomack County, VA - 2020**

Project manager and field lead for a stream and wetland delineation and associated Section 404 and Section 10 permitting of a bridge replacement in Accomack County, VA. Two tidal wetlands and one tidally influenced stream were identified. Mean high water, mean tide line, and mean low water were determined and delineated in the field.

### **Hydrologic Determination for Confidential Project, Campbell County, TN - 2020**

Project manager and field lead for a stream and wetland delineation of a 10-acre site in Campbell County, TN. A Hydrologic Determination form was completed for one channel identified on site. The channel was determined to be a wet weather conveyance.

### **Hydrologic Determination for Holliday Landowner, Jackson County, TN - 2020**

Project manager and field lead for a stream and wetland delineation of a 15-acre site in Jackson County, TN. A Hydrologic Determination form was completed for two channels identified on site. One channel was determined to be a wet weather conveyance. The second channel was determined to be an intermittent stream.

### **Environmental Boundaries Report for SR-2 (US-11) Widening Project, Bradley County, TN - 2020**

QA/QC of hydrological determinations (HD), Stream Quantification Tool (SQT) data collection, and all associated reporting. Also conducted an HD and collected SQT data for one wet weather conveyance/ephemeral stream.

### **Botanical and Wildlife Surveys for Jug Handle Project, Forest County, PA - 2020**

Project manager and field lead for botanical and wildlife surveys in the Allegheny National Forest associated with the Jug Handle project. Surveyed for over 40 plant species and 30 wildlife species.

### **Botanical Survey, Aquatics Survey, and Soils Analysis for proposed Tillman Trails Project, Augusta and Rockingham Counties, VA - 2020**

Field lead for botanical and aquatics surveys in the George Washington National Forest for the proposed Tillman Trails. Lead technical writer for botanical, aquatics, and soil analysis reports. The aquatics report also included field results, watershed analysis, and riparian management objective analysis.

### **Wetland Delineation and Permitting for Proposed Swagelok Building Expansion, Cuyahoga County, OH - 2019**

Project manager for the project and conducted the wetland and stream delineation. The project design proposed to permanently impact one PEM wetland and one PSS wetland. A Nationwide Permit 39 (NWP-39) was required and obtained in January 2020 through the USACE. Coordinated with USFWS, ODNR, and OHPO. Mitigation was required was also required for the project. Mitigation credits were purchased through multiple mitigation banks to meet the OEPA and USACE requirements.

**Wetland Delineation and Permitting for Proposed Brew Kettle Restaurant, Medina County, OH - 2019-2020**

Project manager for the project and conducted the wetland and stream delineation. The project design proposed to permanently impact two PFO wetlands. A Nationwide Permit 39 (NWP-39) was required. Coordinated with USFWS, ODNR, and OHPO. Mitigation was required was also required for the project. Mitigation credits were purchased through multiple mitigation banks to meet the OEPA and USACE requirements.

**Wetland Delineation for Proposed Weymouth Road Project, Medina County, OH - 2020**

Project manager and field lead for a wetland and stream delineation and associated reporting for an approximately 6-acre site in Medina County, Ohio.

**Wetland Delineation for Proposed Franklin Solar Energy Project, Crawford County, PA - 2020**

Project manager and field lead for a wetland and stream delineation and associated reporting for an approximately 396-acre site in Crawford County, Pennsylvania.

**Wetland Delineation for Proposed Big Bell Solar Energy Project, Crawford County, PA - 2020**

Project manager and field lead for a wetland and stream delineation and associated reporting for an approximately 308-acre site in Crawford County, Pennsylvania.

**Wetland Delineation for Proposed Ingersoll Solar Energy Project, Crawford County, PA - 2020**

Project manager and field lead for a wetland and stream delineation and associated reporting for an approximately 244-acre site in Crawford County, Pennsylvania.

**Wetland Delineation for Proposed Gratz Solar Energy Project, Dauphin County, PA - 2020**

Project manager for a wetland and stream delineation and associated reporting for an approximately 135-acre site in Dauphin County, Pennsylvania.

**Wetland Delineation for Proposed Solar Energy Project, Taylor County, KY - 2020**

Project manager for a wetland and stream delineation and associated reporting for an approximately 460-acre site in Taylor County, Kentucky.

**Wetland Delineation for Proposed Solar Energy Project, Metcalfe County, KY - 2020**

Project manager for a wetland and stream delineation and associated reporting for an approximately 575-acre site in Metcalfe County, Kentucky.

**Wetland Delineation for Proposed Solar Energy Project, Russell and Adair Counties, KY - 2020**

Project manager and field lead for a wetland and stream delineation and associated reporting for an approximately 548-acre site in Russell and Adair Counties, Kentucky.

**Wetland Delineation for Proposed Solar Energy Project, Green County, KY - 2020**

Project manager and field lead for a wetland and stream delineation and associated reporting for an approximately 654-acre site in Green County, Kentucky. Approved jurisdictional determination through the USACE Louisville District was also obtained.

**Wetland Delineation for Proposed Solar Energy Project, Garrard County, KY - 2020**

Project manager for a wetland and stream delineation and associated reporting for an approximately 787-acre site in Metcalfe County, Kentucky. Approved jurisdictional determination through the USACE Louisville District was also obtained.

**Wetland Delineation and Permitting for Proposed Distribution Center, James City County, VA - 2018-2020**

Conducted a stream and wetland delineation on a 200-acre site in Williamsburg, Virginia. Section 404/401 permitting was required through the USACE and Virginia Department of Environmental Quality to fill 1,115 linear feet of stream and 0.413 acres of wetlands. Mitigation was required and credits were purchased from a mitigation bank within the James River watershed. Section 7 Endangered Species Act coordination was required through the USFWS's Information for Planning and Consultation (IPaC). The project was also within 660-ft of a known bald eagle nest, which required direct coordination with the USFWS and restriction periods for when construction could occur. Project also required coordination with an archaeological subconsultant, Virginia Department of Historic Resources, and James City County due to results from a Phase I archaeological survey. The project required additional Phase II and Phase III archaeological surveys.

**Wetland Delineation and Permitting for Proposed BULOD002 to Sand Hill Natural Gas Pipeline, Belmont County, OH - 2019-2020**

Project manager for the natural resource aspects of an approximately 1.0 mile proposed natural gas pipeline. Conducted a stream and wetland delineation for the project. A Nationwide Permit 12 (NWP-12) and Director's Authorization through the OEPA were required. In addition, an in-water work waiver for work within perennial streams through ODNR and a county floodplain permit were required and obtained. Assisted with the mussel survey and reporting.

**Wetland Delineation and Permitting for Various Proposed Williams Natural Gas Pipelines, Carroll, Columbiana, Harrison, and Jefferson Counties, OH - 2017-2020**

Project manager for natural resource aspects of more than 20 natural gas pipeline projects. Conducted route development walks and stream and wetland delineations for over 50 miles of proposed pipeline. NWP-12 through USACE and Director's Authorizations through OEPA were required and obtained for specific projects. All projects required threatened and endangered species coordination with USFWS and ODNR. In-water work waivers were required and obtained through ODNR on specific projects. Two projects also required plant surveys for state listed endangered species. I conducted the plant surveys and associated report writing to obtain ODNR approval.

**Threatened and Endangered Species Coordination for 23rd and Railroad Project, Allegheny County, PA - 2020**

Coordinated with PAFBC and USFWS for state and federal listed threatened and endangered species and obtained clearance to proceed with proposed work.

**Threatened and Endangered Species Coordination for Proposed Gas Station, Allegheny County, PA - 2020**

Coordinated with PAFBC and USFWS for state and federal listed threatened and endangered species and obtained clearance to proceed with proposed work.

**Wetland Delineation and Permitting for Proposed DCNR Tract 25-4 Well Plugging, Elk County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 11 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed DCNR Tract 37-2 Well Plugging, Elk County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 11 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed DCNR Tract 49-2 Well Plugging, Clearfield County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 11 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed WM A Donaldson 965 Well Plugging, Washington County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed JF Markle Well Plugging, Clarion County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 11 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed HJ Walker 1 Well Plugging, Westmoreland County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed J. Pepler 827 Well Plugging, Armstrong County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 11 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation for Proposed F.F. Piatt 1001 Well Plugging, Washington County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed GW McIntire 394 Well Plugging, Armstrong County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed W Bowser 892 Well Plugging, Armstrong County, PA - 2019-2020**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Warehouse Facility, Portage County, OH - 2019**

Responsible for project management of natural resources. Conducted a stream and wetland delineation for a proposed distribution center in Streetsboro, Portage County, Ohio. Created a permit matrix for the client to help them understand the various construction and permitting scenarios. Also responsible for report writing and review.

**NPDES Stormwater Sampling for Antero Landfill and Antero Clearwater Facilities, Doddridge County, WV 2017-2020**

Obtained Individual NPDES permits for a landfill site and an industrial site. Project manager and field lead for stormwater and groundwater sampling, site inspections, and reporting. Collected monthly and quarterly stormwater, groundwater monitoring, and leachate samples and analyzed the data. Authored quarterly and annual reports that went to the West Virginia Department of Environmental Protection (WVDEP).

**Stormwater Sampling for Pipeyard, Harrison County, WV - 2018-2020**

Conducted and oversaw stormwater sampling, site inspections, and reporting for a small pipeyard in Harrison County, West Virginia. Results were reported bi-annually to WVDEP.

**Environmental Remediation Groundwater Sampling for FCI McKean, McKean County, PA - 2017-2019.**

Conducted field work, created hydrologic groundwater flow maps, and authored reports for groundwater sampling at an environmental remediation site in Pennsylvania. Required knowledge of groundwater hydrology to determine flow of groundwater and whether environmental contaminants were spreading.

**Threatened and Endangered Species Coordination for Proposed Great Lakes Cheese Building, Summit County, OH - 2019**

Project manager for coordinating with USFWS for potential mist-net survey for the Indiana bat. Responsible for overseeing the mist-net survey and reporting to USFWS.

**Wetland Delineation and Permitting for Proposed McClellan Pipeline, Monongahela County, WV - 2019**

Served as project manager and field lead for wetland delineation, report writing, preliminary jurisdictional determination, threatened and endangered species coordination, bat habitat assessment and mitigation plan, preparation of a Stream Activity Application through the West Virginia Division of Natural Resources (WVDNR), and preparation of a Nationwide Permit 12 (NWP-12) through the USACE for proposed temporary impacts to streams and wetlands. The project proposed to construct approximately 5.0 miles of natural gas pipeline. The bat habitat assessment and study plan was approved by U.S. Fish and Wildlife Service in January 2020. A Stream Activity Application was approved by WVDNR in November 2019. A NWP-12 was approved by the USACE in January 2020.

**Wetland Delineation and Permitting for WALD Passive Treatment Design, Tucker County, WV - 2019**

Natural resources project manager for project completed near Thomas, West Virginia. The project paralleled the North Fork Blackwater River and an existing rail trail. A wetland anoxic limestone drain (WALD) system had been installed parallel to the rail trail in the 1990s to remediate acid mine drainage that was flowing from a historic mine portal. The WALD system was no longer functioning properly and was not reducing acidity efficiently. A redesigned system was deemed necessary to lower acidity. A stream and wetland delineation was conducted along the approximately 3,000 linear foot WALD system and rail trail. Non-reporting Section 404/401 permitting was required to impact and redesign the WALD system.

**Wetland Delineation for Proposed Distribution Center, Medina County, OH - 2019**

Responsible for project management of natural resources. Conducted a stream and wetland delineation for a proposed distribution center in Westfield Township, Medina County, Ohio. Created a permit matrix for the client to help them understand the various construction and permitting scenarios. Also responsible for report writing and review.

**Botanical Surveys for Various Proposed Projects, Greene and Washington Counties, PA - 2013-present**

Served as project manager and field lead for several botanical surveys in Greene and Washington Counties, Pennsylvania, for state listed plant species of special concern (SOSC) and their habitats. Projects have included linear projects up to 10 miles in length and static, non-linear projects up to 200 acres in size. Specific plant SOSC and associated habitat that have been surveyed for include: single-headed pussy-toe (*Antennaria solitaria*), blue false indigo (*Baptisia australis*), tall larkspur (*Delphinium exaltatum*), American beakgrass (*Diarrhena americana*), white trout lily (*Erythronium albidum*), sourwood (*Oxydendrum arboreum*), yellow passionflower (*Passiflora lutea*), limestone petunia (*Ruellia strepens*), wild senna (*Senna marilandica*), leaf-cup (*Smilacina uvealensis*), and snow trillium (*Trillium nivale*). Plant SOSC identified in the field include: white trout lily, sourwood, yellow passionflower, wild senna, and leaf-cup. Due to project designs and specific constraints, several projects required transplanting and relocating plant SOSC. When relocating plant SOSC, suitable habitat was identified in close proximity to the project. Specific plant SOSC that were successfully transplanted and relocated include: white trout lily, wild senna, and leaf-cup.

**Wetland Delineation, Botanical Survey, Soil Profile/Infiltration Testing, and Permitting for Proposed Barley Wine Well Pad, Greene County, PA - 2019**

Served as natural resources project manager and responsible for the wetland delineation, botanical surveys, infiltration testing of proposed BMPs, and stream impact permitting. Botanical survey was conducted for single-headed pussy-toe (*Antennaria solitaria*) and wild senna (*Senna marilandica*). Permit modification to an existing General Permit 11 for replacing an existing culvert was completed.

**Wetland Delineation for Meighan Well Pad, Greene County, PA - 2019**

Conducted a stream and wetland delineation for a proposed well pad in Greene County, Pennsylvania. Wrote report describing delineation field results.

**Wetland Permitting for Proposed Distribution Center, Erie County, NY - 2019**

Completed Nationwide Permit 6 (NWP-6) permitting for a proposed distribution center project in Tonawanda, Erie County, New York. The project had several wetlands located throughout the site and geotechnical surveys needed to be conducted within the wetlands.

**Approved Jurisdictional Determination for Proposed Redevelopment Site, Franklin County, OH - 2019**

Project manager and responsible for obtaining an approved jurisdictional determination through the USACE for a proposed redevelopment site in an urban area in Franklin County, Ohio.

**Permitting for Distribution Center, Dorchester County, SC - 2019**

Project manager for natural resource aspects for a proposed distribution center in Ridgeville, Dorchester County, South Carolina. Client had recently purchased the property. The previous property owner had obtained several stream and wetland permits for development purposes. Responsible for reviewing the existing permits to ensure the scope of the project would work with existing permits, that the existing

permits were still valid and had not expired, and determine if any other permits or modifications to existing permits would be required.

**Wetland Delineation and Approved Jurisdictional Determination for Proposed Distribution Center, Summit County, OH - 2019**

Responsible for managing the natural resource aspects of the project for a proposed distribution center in Akron, Summit County, Ohio. Obtained an approved jurisdictional determination with the USACE. The site design avoided impacts to wetland and stream features. Also coordinated with USFWS to determine if clearing trees during the restricted time frame was a possibility. However, USFWS stated there is a known Indiana bat maternity roost within 1.0-miles of the project and that seasonal tree clearing would be required.

**Wetland Delineation for Proposed Commercial Development, Lake County, OH - 2019**

Responsible for project management of natural resources. Conducted a stream and wetland delineation for a proposed commercial development in the City of Wickliffe, Lake County, Ohio. Also responsible for report writing and review.

**Wetland Delineation for Proposed Hospital, Summit County, OH - 2019**

Responsible for project management of natural resources. Conducted a stream and wetland delineation for a proposed hospital in Fairlawn, Summit County, Ohio.

**Wetland Delineation for Proposed Office Building, Cuyahoga County, OH - 2019**

Responsibilities included being the project manager for natural resources, conducting a stream and wetland delineation, reporting, and obtaining a preliminary Jurisdictional Determination.

**Wetland Delineation for Proposed Verizon Work Center, Allegheny County, PA - 2019**

Responsibilities included being the project manager for natural resources, conducting a stream and wetland delineation, and report writing.

**Wetland Delineation for Proposed Mixed-Use Development, Allegheny County, PA - 2019**

Responsible for project management of natural resources. Conducted a stream and wetland delineation for a proposed commercial and residential mixed-use development project in Sharpsburg, Allegheny County, Pennsylvania. Created a permit matrix for the client to help them understand the various construction and permitting scenarios. Also responsible for report writing and review.

**Wetland Delineation for Proposed Seneca Valley Aquatics Facility, Butler County, PA - 2019**

Responsibilities included being the project manager for natural resources, conducting a stream and wetland delineation, and report writing.

**Erosion and Sediment Control Environmental Inspections for Various Proposed Natural Gas Projects, Doddridge, Tyler, and Wetzel Counties, WV - 2017-2019.**

Conducted environmental inspections for seven Antero Resources projects in Doddridge, Tyler, and Wetzel Counties, West Virginia. Responsibilities included reviewing site design plans and submitting to state regulatory agencies for approval; overseeing E&S installation to make sure it was installed according to WVDEP approved site plans; making field changes to include more stringent E&S controls when it appeared approved plans were not sufficient in certain locations, due to slight variations in survey data used for the design compared to existing field conditions; inspecting sites during construction until close of construction stormwater permit to ensure E&S controls were being maintained

and sediment was not leaving the site; and regularly communicate with the client project manager and construction crews.

**Wetland Delineation for Proposed Metzgar, Ursina F-58 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Smith, A.H. #70 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Raset, E. #1 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation and Permitting for Proposed Day, E.D. #134 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed McCullough, S.G. #577 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation for Proposed McCullough, N. 1 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Thompson, T.H. #680 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Burns, A. #779 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Gilkeson, C. #934 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Grimes, A. #3645 Well Plugging, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation and Permitting for Proposed Martin, E. #3715 Well Plugging, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed Morris, G. 355 Well Plugging, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a Joint Permit through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed Horn, Z. #784 Well Plugging, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed Bailey, H.H. 1021 Well Plugging, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation for Proposed Gordon, W. I. 297 Well Plugging, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Huffman, John J. 3566 Well Plugging, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Nichols, L. #411 Well Plugging, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation and Permitting for Proposed Higgins, J. 106 Well Plugging, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation for Proposed Lantz Heirs 594 and Amada Rice 2910 Well Pluggings, Greene County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation and Permitting for Proposed Vendette 3 Well Plugging, Butler County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation for Proposed Boddorf 9071 Well Plugging, Jefferson County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Dobson, W.D. 1291 Well Plugging, Jefferson County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Texas Gulf B-05 Well Plugging, Clinton County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Post, J.M. Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed J.W. Taylor Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed W.M. Evans 1015 Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Thomas Hays 1 Well Plugging, Armstrong County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Finleyville Oil and Gas Well Plugging, Washington County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation and Permitting for Proposed Hob Nob - Pearls Café 2, Allegheny County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed enclosure of 136-linear feet of perennial stream. Responsibilities included conducting a stream and wetland delineation, environmental assessment, report writing, designing on-site stream mitigation, and obtaining a Joint Permit through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation for Proposed R.G. Altman 1 and 2 Well Pluggings, Armstrong County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Charleroi 1423 Well Plugging, Elk County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Charleroi MT 1424 Well Plugging, Elk County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed CNG #347 Well Plugging, Elk County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation and Permitting for Proposed E.T. Culp 666 Well Plugging, Armstrong County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed Isaac Heilman 1137 Well Plugging, Armstrong County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 11 through the Pennsylvania Department of Environmental Protection.

**Permitting for Proposed Isaac Heilman 1137 Well Plugging, Armstrong County, PA - 2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included obtaining a minor modification to an existing General Permit 11 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed J.N & Mary Moore 1343 Well Plugging, Armstrong County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation and Permitting for Proposed Keck, D.A. #448 Well Plugging, Clarion County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation for Proposed Mary Stitt 3001 Well Plugging, Armstrong County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation and Permitting for Proposed Miller, M. #409 Well Plugging, Clarion County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation for Proposed Minick, C. #1 Well Plugging, Clarion County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Reinsel, B.J. #1 Well Plugging, Clarion County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Shick, R.W. #1147 Well Plugging, Armstrong County, PA - 2018-2019**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation and Permitting for Sheetz Racetrack Road, Washington County, PA - 2018**

Project manager for the natural resource aspects of a proposed gas station. A stream and wetland delineation was conducted. The project required a Joint Permit Application through the PADEP for impacts to one stream. The permit was approved in November 2018.

**Wetland Delineation, Permitting, and Mussel Survey for Proposed BULOD002 Natural Gas Pipeline, Belmont County, OH - 2018**

Project manager for the natural resource aspects of an approximately 5.0 mile proposed natural gas pipeline. Conducted a stream and wetland delineation for the project. A Nationwide Permit 12 (NWP-12) was required and obtained in December 2018. A Director's Authorization through the OEPA was also required and obtained in January 2019. In addition, an in-water work waiver for work within perennial streams through ODNR and a county floodplain permit were required and obtained. Assisted with the mussel survey and reporting.

**Wetland Delineation for Proposed Academic Solutions Academy, Broward County, FL - 2018**

Responsibilities included conducting a stream and wetland delineation, report writing, and permit strategizing on a 20-acre site in Fort Lauderdale, Broward County, Florida. Assisted the client with permit strategizing and regulatory agency coordination for potentially impacting wetlands and bald cypress (*Taxodium distichum*).

**Wetland Delineation for Proposed Charleroi Mtn Club #1 Well Plugging, Elk County, PA - 2018**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed CNG #355 Well Plugging, Elk County, PA - 2018**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed CNG #431 Well Plugging, Elk County, PA - 2018**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Richardson, A. #9064 Well Plugging, Armstrong County, PA - 2018**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation and Permitting for Proposed Schaeffer #2 Well Plugging, Armstrong County, PA - 2018**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation, report writing, and obtaining a General Permit 8 through the Pennsylvania Department of Environmental Protection.

**Wetland Delineation for Proposed Snyder, L.M. #1 Well Plugging, Clarion County, PA - 2018**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed Isaiah Span #1221 Well Plugging, Armstrong County, PA - 2018**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed R.M. Townsend #455 Well Plugging, Armstrong County, PA - 2018**

Project manager for the natural resource aspects of a proposed well plugging project. Responsibilities included conducting a stream and wetland delineation and report writing.

**Wetland Delineation for Proposed ProLogis Distribution Center, Harris County, TX - 2017**

Responsibilities included conducting a stream and wetland delineation, report writing, and permit strategizing for a 65-acre project located in Harris County, Texas.

**Wetland Delineation for Proposed Beltway 8 - Energy Commerce Center, Harris County, TX - 2017**

Responsibilities included conducting a stream and wetland delineation, report writing, and permit strategizing for a 29-acre project located in Pasadena, Harris County, Texas.

**Wetland Delineation for Proposed ProLogis Guhn Road Development, Harris County, TX - 2017**

Responsibilities included conducting a stream and wetland delineation, report writing, and permit strategizing for a 10-acre project located in Harris County, Texas.

**Wetland Delineation for Proposed American Airlines Expansion, Dallas, TX - 2017**

Responsibilities included conducting a stream and wetland delineation, report writing, and permit strategizing for project located at Dallas Fort Worth International Airport.

**Spill Prevention, Control, and Countermeasure Plan for Wheatland Meter and Regulation Station, Williams County, North Dakota - 2017**

Responsibilities included field work and writing report to complete a Spill Prevention, Control, and Countermeasure Plan for an existing facility in Ray, Williams County, North Dakota.

**Spill Prevention, Control, and Countermeasure Plan for DeWitt Compressor Station, Divide County, North Dakota - 2017**

Responsibilities included field work and writing report to complete a Spill Prevention, Control, and Countermeasure Plan for an existing facility in Fortuna, Divide County, North Dakota.

**Phase II Environmental Site Assessment for Proposed Distribution Center, Cuyahoga County, OH - 2017**

Conducted field work related to a Phase II Environmental Site Assessment for a proposed distribution center in North Randall, Cuyahoga County, Ohio. Responsibilities included overseeing excavation of an underground oil storage tank and plugging of a groundwater monitoring well.

**Wetland Delineation and Botanical Survey for Proposed Santora Well Pad, Washington County, PA - 2017**

Served as natural resources project manager and responsible for the wetland delineation and botanical surveys. Botanical survey was conducted for American beakgrass (*Diarrhena americana*).

**Wetland Delineation and Permitting for Westfield Group Country Club, Medina County, OH - 2017**

Conducted a stream and wetland delineation of the South Course at the Westfield Group Country Club in Westfield Township, Medina County, Ohio. A Nationwide Permit 39 (NWP-39) was obtained through USACE in 2017.

**Wetland Delineation and Permitting for Various Proposed CNX Natural Gas Pipelines, Greene and Washington Counties, PA- 2013-2017**

Conducted route development walks and stream and wetland delineations for over 100 miles of proposed pipeline for CNX in Greene and Washington Counties, Pennsylvania. General Permit 5 and General Permit 8 applications were required and obtained for several projects through the PADEP for temporary stream and/or wetland impacts.

**Wetland Delineation and Permitting for Various Proposed CNX Natural Gas Pipelines, Belmont County, OH- 2015-2017**

Conducted route development walks and stream and wetland delineations for over 10 miles of proposed pipeline for CNX in Belmont County, Ohio. NWP-12 through USACE and Director's Authorizations through OEPA were required and obtained for specific projects. All projects required threatened and endangered species coordination with USFWS and ODNR.

**Wetland Delineation and Permitting for Various Proposed CNX Natural Gas Well Pads, Barbour, Marshall, and Tyler Counties, WV - 2013-2017**

Conducted stream and wetland delineations for over 15 CNX natural gas well pad and compressor station projects in Barbour, Marshall, and Tyler Counties, West Virginia. NWP-39 through USACE and Stream Activity Applications through WVDNR were required and obtained for specific projects.

**Wetland Delineation and Permitting for Various Proposed CNX Natural Gas Well Pads, Belmont, Monroe, and Noble Counties, OH - 2013-2017**

Conducted stream and wetland delineations for over 15 CNX natural gas well pad projects in Belmont, Monroe, and Noble Counties, Ohio. NWP-39 through USACE were required and obtained for specific projects.

**Wetland Delineation and Permitting for Various Proposed CNX Natural Gas Well Pads, Greene and Washington Counties, PA - 2013-2017**

Conducted stream and wetland delineations for over 30 CNX natural gas well pad and compressor station projects located in Greene and Washington Counties, Pennsylvania. Also conducted soil and infiltration testing to comply with Pennsylvania best management practices. Wrote reports describing delineation and infiltration testing results.

**Wetland Delineation and Permitting for Various Proposed Rice Midstream Natural Gas Pipelines, Greene and Washington Counties, PA- 2013-2017**

Conducted route development walks and stream and wetland delineations for over 100 miles of proposed pipeline for Rice Midstream in Greene and Washington Counties, Pennsylvania. General Permit 5 and General Permit 8 applications were required and obtained for several projects through the PADEP for temporary stream and/or wetland impacts.

**Wetland Delineation and Permitting for Various Proposed Rice Midstream Natural Gas Pipelines, Belmont and Monroe Counties, OH- 2013-2017**

Conducted route development walks and stream and wetland delineations for over 100 miles of proposed pipeline for Rice Midstream in Belmont and Monroe Counties, Ohio. NWP-12 through USACE and Director's Authorizations through OEPA were required and obtained for specific projects.

**Wetland Delineation and Permitting for Various Proposed Rice Energy Natural Gas Well Pads, Belmont and Monroe Counties, OH - 2013-2017**

Conducted stream and wetland delineations for over 30 Rice Energy natural gas well pad projects in Belmont and Monroe Counties, Ohio. NWP-39 through USACE were required and obtained for specific projects.

**Wetland Delineation and Permitting for Various Proposed Rice Energy Natural Gas Well Pads, Greene and Washington Counties, PA - 2013-2017**

Conducted stream and wetland delineations for over 50 Rice Energy natural gas well pad and compressor station projects located in Greene and Washington Counties, Pennsylvania. Also conducted soil and infiltration testing to comply with Pennsylvania best management practices. Wrote reports describing delineation and infiltration testing results.

**Wetland Delineation and Permitting for Various Proposed EQT Natural Gas Well Pads, Greene and Washington Counties, PA - 2013-2017**

Conducted stream and wetland delineations for over 20 EQT natural gas well pad and compressor station projects located in Greene and Washington Counties, Pennsylvania. Also conducted soil and infiltration testing to comply with Pennsylvania best management practices. Wrote reports describing delineation and infiltration testing results.

**Wetland Delineation for Sheme Centralized Pit, Taylor County, WV - 2017**

Conducted a stream and wetland delineation for a proposed centralized pit by Mountaineer Keystone, LLC in Taylor County, West Virginia. Wrote report describing delineation field results.

**Erosion and Sediment Control Environmental Inspections for Various Proposed Natural Gas Projects, Greene and Washington Counties, PA - 2013-2017.**

Conducted environmental inspections for over 50 natural gas projects (i.e. well pads and pipelines) in Greene and Washington Counties, Pennsylvania. Responsibilities included reviewing site design plans and inspecting sites during construction until close of construction stormwater permit to ensure E&S controls were being maintained and sediment was not leaving the site.

**Wetland Delineation and Permitting for Wendel Centralized Pit, Taylor County, WV - 2016**

Conducted a stream and wetland delineation for a proposed centralized pit by Mountaineer Keystone, LLC in Taylor County, West Virginia. Obtained an approved jurisdictional determination through the USACE. A NWP-39 was also obtained.

**Wetland Delineation for AR East Well Pad, Taylor County, WV - 2016**

Conducted a stream and wetland delineation for a proposed natural gas well pad by Mountaineer Keystone, LLC in Taylor County, West Virginia. Wrote report describing delineation field results.

**Wetland Delineation for SHL1 Centralized Pit, Marshall County, WV - 2016**

Conducted a stream and wetland delineation for a proposed centralized pit by Noble Energy in Marshall County, West Virginia. Wrote report describing delineation field results.

**Wetland Delineation and Bat Box Installation for RHL1, Greene County, PA - 2016**

Conducted a stream and wetland delineation for a proposed project by Noble Energy in Greene County, Pennsylvania. Wrote report describing delineation field results. Also installed mitigation bat boxes.

**Wetland Delineation, Water Sampling, and Bat Box Installation for WFN6 Well Site, Washington County, PA - 2014-2016**

Conducted a stream and wetland delineation for a proposed project by Noble Energy in Washington County, Pennsylvania. Wrote report describing delineation field results. Conducted pre-drill water well sampling. Also installed mitigation bat boxes.

**Wetland Delineation and Water Sampling for WFN10 Well Site, Washington County, PA - 2014**

Conducted a stream and wetland delineation for a proposed project by Noble Energy in Washington County, Pennsylvania. Wrote report describing delineation field results. Conducted pre-drill water well sampling.

**Mussel Survey for Proposed Water In-take Withdrawal, Tyler County, WV - 2016**

Helped conduct Phase 1 and Phase 2 mussel surveys following the West Virginia Mussel Survey Protocols in Middle Island Creek.

**Macroinvertebrate and Salamander Surveys for Proposed Athena to Walters Natural Gas Pipeline, Belmont County, OH - 2017**

Conducted macroinvertebrate and salamander surveys in several streams that were proposed to be impacted by construction of a natural gas pipeline. Macroinvertebrate and salamander species were identified to species level.

**Macroinvertebrate and Salamander Surveys for Proposed Horsemill to Marauder Natural Gas Pipeline, Belmont County, OH - 2016**

Conducted macroinvertebrate and salamander surveys in several streams that were proposed to be impacted by construction of a natural gas pipeline. Macroinvertebrate and salamander species were identified to species level.

**Macroinvertebrate and Salamander Surveys for Proposed Marauder Phase 1 Natural Gas Pipeline, Belmont County, OH - 2016**

Conducted macroinvertebrate and salamander surveys in several streams that were proposed to be impacted by construction of a natural gas pipeline. Macroinvertebrate and salamander species were identified to species level.

**Macroinvertebrate and Salamander Surveys for Proposed El Toro Loco Well Pad, Belmont County, OH - 2015**

Conducted macroinvertebrate and salamander surveys in two streams that were proposed to be impacted by construction of a natural gas well pad. Macroinvertebrate and salamander species were identified to species level.

**Macroinvertebrate and Salamander Surveys for Proposed Tuna II Natural Gas Pipeline, Belmont County, OH - 2014-16**

Conducted macroinvertebrate and salamander surveys in several streams that were proposed to be impacted by construction of a natural gas pipeline. Macroinvertebrates and salamanders were identified to species level.

**Macroinvertebrate and Fish Surveys for Grant Research Project, WV - 2010-2012**

Conducted macroinvertebrate and fish surveys within hundreds of streams throughout southern West Virginia. Macroinvertebrates and fishes were identified to species level. Tributaries within the following Hydrologic Unit Code (HUC) 8 watersheds were sampled: Big Sandy, Coal, Elk, Gauley, Greenbrier, Upper Guyandotte, Lower Guyandotte, Upper Kanawha, Tug, and Twelvepole.

**Macroinvertebrate and Fish Surveys for Grant Research Project, WV - 2009-2012**

Conducted macroinvertebrate and fish surveys within Upper Shavers Fork and several tributaries. Macroinvertebrates and fishes were identified to species level.

**Macroinvertebrate and Fish Surveys for Grant Research Project, KY - 2010-2012**

Conducted macroinvertebrate and fish surveys within hundreds of streams throughout eastern Kentucky. Macroinvertebrates and fishes were identified to species level. Tributaries within the following HUC 8 watersheds were sampled: Big Sandy, Upper Cumberland, North Fork Kentucky, Middle Fork Kentucky, South Fork Kentucky, Lower Levisa, Licking, and Tug.



# RAY EATON

## BIOLOGIST

### Regulatory Expertise

- ESA (Section 7 & 10)
- CWA

### Industry Clientele

- Wind
- Utilities/Traditional Energy Sources
- Mines and Reclamation
- US Department of Defense
- US Forest Service
- US Fish and Wildlife Service
- National Park Service
- Corresponding State Agencies
- Transportation
- Tribal Lands
- Academic Institutions & NGOs

### Listed Taxa Expertise

- Federal Threatened and Endangered Species Permit Number TE-88809B-0  
*Corynorhinus townsendii virginianus*,  
*Myotis grisescens*, *Myotis sodalis*,  
*Myotis septentrionalis*

### Survey Expertise

- Habitat Assessments
- Aquatic Resource Assessments
- Presence/ Absence
- Vegetation Index of Biotic Integrity

### Certifications/Trainings

- Hands-on Wetland Restoration Workshop (Biebighauser), 2015
- Bats and Fire Workshop (CAFMS), 2014
- Wetland Plant Identification Course (NCTC), 2014
- Advanced Hydric Soils Course (WTI), 2014
- Vertical Rope Training (Mirza), 2013
- Acoustic Bat Research Techniques (Anabat) Course, 2013
- USACE Wetland Delineation Course (Chin), 2012
- KY Prescribed Fire Council Controlled Burn Workshop, 2012
- USFWS Range-wide Indiana Bat Protection and Enhancement Plan Guidelines Workshop, 2010
- Developing a Biological Assessment (ECS3152), 2009



### Qualifications and Background

After earning a B.S. degree in Environmental Studies from Eastern Kentucky University, Ray Eaton started his environmental consulting career in 2009 as an environmental scientist. He worked on a wide variety of natural resource conservation issues for a few years before deciding on the specialty of bat ecology. Since then, conservation research has led him to 18 states and tribal lands. He stays up-to-date with bat research and volunteers with educational programs, winter bat census, and white-nose syndrome (WNS) research.

Ray's skill-set includes designing and implementing study-plans for bat research. He has an understanding of the habitat requirements of all bat species living in the eastern US and can assess habitat suitability for listed and non-listed bats. Research-techniques that he is experienced with include mist-netting, cave census using photography, IR and thermal video recording, ultra-sonic acoustic recording and analysis, and harp-trapping portals. He has a strong understanding of radio-telemetry, and thrives to gather new data on foraging, migration, and roosting. He is adept with GIS and home-range analysis.

Ray has also been working with stream and wetland restoration since 2011, and regularly attends professional conferences regarding the CWA and training courses on soils and botany. He has planted thousands of trees and shrubs, delineated countless wetlands, and classified miles of streams and enjoys the work.

### Education

**B.S. Environmental Studies**, 2008,  
Eastern Kentucky University,  
Richmond, Kentucky

EXHIBIT 14  
ATTACHMENT 14.2

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'RJ CUG'KGP XKTQP O GP VCN'UKVG''  
CUUGUO GP V'TGRQTV''  
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Hrc j gt v{ . 'Mgpwen{ ''  
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Linebach ■ Funkhouser, Inc.  
ENVIRONMENTAL COMPLIANCE & CONSULTING



**Linebach ■ Funkhouser, Inc.**  
ENVIRONMENTAL COMPLIANCE & CONSULTING

April 1, 2021

Community Energy  
Meade County Solar LLC  
Copperhead Environmental Consulting, Inc.  
Mr. Marty Marchaterre  
151 Walton Avenue  
Lexington, Kentucky 40508

***Re: Phase I Environmental Site Assessment Report  
Meade County Solar LLC Project  
Flaherty, Kentucky  
Linebach Funkhouser Project Number 320-20***

Dear Mr. Marchaterre:

Linebach Funkhouser, Inc. (LFI) has completed the enclosed *Phase I Environmental Site Assessment Report* for the above-referenced property. The assessment activities included a site reconnaissance, interviews with persons knowledgeable about the site, a review of available literature, maps, historical information, and a review of the local, state and federal regulatory agency files regarding the site. The attached report documents the conditions encountered during the assessment and presents our summary and recommendations relative to the site.

We appreciate the opportunity to provide our services to you. Please contact us if you have any questions or comments regarding this submittal, or if we can be of additional service to you.

Sincerely,

Jason P. Boston  
Project Scientist

R. William Johnston, PG  
Principal Geologist

Enclosure

" **GZGEWKXG'UWO O CT[ "** "

Linebach Funkhouser, Inc. (LFI) has completed a Phase I Environmental Site Assessment (ESA) of the farm properties located near Flaherty in Meade County, Kentucky. This ESA was prepared in accordance with the scope and limitations of ASTM's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13), recognized by the U.S. Environmental Protection Agency (USEPA) as compliant with *Standards and Practices for All Appropriate Inquiries* (AAI) promulgated at 40 CFR Part 312. Results of the assessment, including a site reconnaissance, a review of historical information, a review of federal, state and local records, as well as interviews with persons knowledgeable about the site, are summarized as follows:

Tgr qt v'' Ugevkqp''	Gpxkt qpo gpvcn'Tgrvfg 'Kgo "	F guet lr v'kqp''	TGE''
<b>UKVGICTGC'FGUETRVIQP</b>			
2.6	Current Use of Property	Agricultural, residential and farm related structures	NO
2.7	Current Use of Adjoining Properties	Agricultural; wooded; rural residential	NO
<b>UKVG'J KUVQT[ 'CPF'J KUVQTKECN'TGEQTFUTGXIGY</b>			
3.1	Past Uses of Property	Agricultural; wooded; rural residential	NO
3.2	Past Uses of Adjoining Properties		NO
<b>GPXKIQPO GPVCN'TGEQTFUTGXIGY</b>			
4.1	Subject Property	No listings	NO
	Adjoining Properties		NO
4.2	Listings within Established Search Radii	No listings	NO
4.3	Vapor Encroachment Screen	Does not exist	NO
<b>UKVG'TGEQPPCKUCPEG</b>			
5.2	Haz. Substances/Waste and Petroleum Products	None observed	NO
5.3	Storage Tanks (UST/AST)	One diesel and one empty AST	NO
5.8	Pits, ponds and lagoons	Few farm ponds	NO
5.9	Stained soil/pavement	None observed	NO
5.11	Waste Generation, Storage, and Disposal	Few areas of historical dumping were observed in wooded portions of the Hamilton property.	NO
5.13	Wells	Water supply well	NO
<b>KPVGTXIGY U</b>			
6.1	Site Representative	Ms. Diane Medley, Mr. Jeff Hamilton, Ms. Ann Doman & Mr. Karl Gohl were interviewed	NO

Tgr qt v'' Ugevkqp''	Gpxkt qpo gpvcnTgrvgf 'Kgo ''	F guet lr vdkp''	TGE''
		throughout the course of this assessment. LFI reached out to Mr. Jerry Phillips, call not returned.	
6.3	Local Government Officials	None based on historical and regulatory information	NO
<b>PQP/UEQRG'EQPUF'GTCVKQPU</b>			
7.1	Asbestos Containing Materials (ACMs)	Property is to be leased from current owners; no survey was completed.	N/A
7.2	Lead Based Paint (LBP)		
<b>WGT'RTQXKF'GF'PHQTO CVKQP</b>			
8.1	Env. Liens / AULs	None provided for review.	NO
9.0	<b>F CVC'I CRU''</b>		NO
10.0	<b>HRF'PI U'CPF'QRPKQPU''</b>		NO
Recognized Environmental Conditions (RECs)		None Identified	
Historical Recognized Environmental Conditions (HRECs)		None Identified	
Controlled Recognized Environmental Conditions (CRECs)		None Identified	
De Minimis Conditions		None Identified	

''

**Eqpenwukqu'c'pf 'Tgeqo o gpf cvkqu''**

This assessment has revealed no evidence of *recognized environmental conditions* (RECs) in connection with the property. Therefore, no further assessment is recommended.

This Executive Summary provides a summation of the results of the Phase I ESA and is not intended to be all-inclusive. The complete report lists the procedures used during our assessment and provides our conclusions and recommendations regarding the site.

VCDNG'QHTEQP VGP VU

"

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"

"  
NKUV'QH'HKI WTGU"  
"

Figure 1 – Site Location Map  
Figure 2 – Aerial Photograph Showing Site and Vicinity

NKUV'QH'CRRGPF KEGU'

- Appendix A – Site Photographs
- Appendix B – Historical Research Documentation
- Appendix C – Regulatory Database Documentation

"

**302'PVTQF WEVKQP "**

Linebach Funkhouser, Inc. (LFI) was retained by Copperhead Environmental Consulting, Inc., Meade County Solar LLC and Community Energy Solar (the Clients), to conduct a Phase I Environmental Site Assessment (ESA) of the farm properties located near Flaherty in Meade County, Kentucky (the "subject property"). LFI understands the properties are to be under a long term lease agreement with the current owners.

**308'Rwt r qug"**

The purpose of this ESA was to document current and historical information on the subject property and surrounding areas in order to identify *recognized environmental conditions* (RECs), defined in ASTM E1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

The term is not intended to include *de minimis* conditions, defined in ASTM E1527-13 as a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* conditions are not *recognized environmental conditions* nor *controlled recognized environmental conditions*.

The term *historical recognized environmental condition* (HREC), is defined by ASTM E1527-13 as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority (as evidenced by the issuance of a no further action letter or other equivalent closure documentation) or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restriction, activity and use limitations, institutional controls, or engineering controls).

The term *controlled recognized environmental condition* (CREC), is defined by ASTM E1527-13 as an REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the

issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, activity and use limitations, institutional controls, or engineering controls).

### **304'Ueqr g'qhl'Y qt ml'**

This ESA was conducted utilizing standard practices consistent with ASTM E1527-13. Any significant scope-of-work additions, deletions or deviations to ASTM E1527-13 are noted below or in the corresponding sections of this report. The scope-of-work for this ESA included an evaluation of the following:

- General physical setting characteristics of the subject property and immediate vicinity through a review of one or more referenced sources, including topographic and geologic maps, soils and hydrologic reports.
- Historical usage of the subject property, adjoining properties, and surrounding area through a review of reasonably ascertainable sources such as land title records, fire insurance maps, city directories, aerial photographs, property tax files, prior environmental assessment reports, and interviews.
- Current land use and existing conditions of the subject property including observations and interviews regarding the use, treatment, storage, disposal or generation of hazardous substances, petroleum products and hazardous, regulated, or medical wastes; equipment that is known or likely to contain polychlorinated biphenyls (PCBs); storage tanks and drums; wells, drains and sumps; and pits, ponds or lagoons.
- Current land use of adjoining and surrounding area properties and the likelihood of known or suspected releases of hazardous substances or petroleum products to impact the subject property.
- Environmental regulatory database information and local environmental records within specified minimum search distances.

Unless otherwise identified in the report, the scope-of-work for this ESA did not include a consideration of the following potential environmental conditions that are outside the scope of ASTM Practice E1527-13 including but not limited to: asbestos-containing building materials, biological agents, cultural and historic resources, ecological resources, endangered species, health and safety, indoor air quality (unrelated to releases of hazardous substances or petroleum products into the environment), industrial hygiene, lead-based paint, lead in drinking water, mold, radon, regulatory compliance, and wetlands.

### **305'Vgt o u'čpf 'Eqpf kłqpu'**

This Phase I ESA was performed on behalf of, and solely for the exclusive use of the Clients. No other company, entity, or person shall have any rights with regard to LFI's contract with the Clients including but not limited to indemnification by LFI, or any rights of reliance on the findings, conclusions, and recommendations of this or any subsequent reports regarding the subject property.

In accordance with ASTM E1527-13 provisions, this report is presumed to be valid for up to one year prior to the date of acquisition or transaction of the property. This presumption assumes that the following components of the report are updated within 180 days prior to the intended date of acquisition or transaction of the property: interviews, environmental lien search, government records reviews, visual inspection of the property and surrounding properties, and declaration by the environmental professional.

### **306'Cuwo r vłqpu 'Nlo kcvłqpu'čpf 'Gzegr vłqpu'**

This ESA was prepared in accordance with the scope and limitations of ASTM's *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13), recognized by the U.S. Environmental Protection Agency (USEPA) as compliant with *Standards and Practices for All Appropriate Inquiries* (AAI) promulgated at 40 CFR Part 312.

This Phase I Environmental Site Assessment has been prepared to assess the property with respect to hazardous substances defined in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601), and petroleum products. As such, this assessment is intended to permit the Client to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide purchaser limitations on CERCLA liability: that is, the practices that constitute "all appropriate inquiry into the previous ownership and uses of the subject property consistent with good commercial or customary practice" as defined in 42 USC §9601 (35)(B).

LFI conducted this ESA using reasonable efforts to identify recognized environmental conditions on the subject property. Findings within this report are based on the information obtained during the site reconnaissance, the electronic regulatory file review, a review of historical records,

interviews, and from reasonably ascertainable and publicly available information obtained from public agencies and other referenced sources. The presence of recognized environmental conditions on a site may not always be apparent; consequently, the completion of a Phase I ESA cannot provide a guarantee that recognized environmental conditions do not exist in connection with a site.

This report is not definitive and should not be assumed to be a complete or specific determination of all conditions above or below grade. Current subsurface conditions may differ from the conditions indicated by surface observations or historical sources and can be most reliably evaluated through intrusive techniques that were beyond the scope of this ESA. Information in this report is not intended for use as a construction document and should not be used for demolition, renovation, or other construction purposes. LFI makes no representation or warranty that the past or current operations at the site are, or have been, in compliance with applicable federal, state and local laws, regulations and codes.

Environmental Data Resources, Inc. (EDR), an independent environmental data research company, provided the records from the government agency databases referenced in this report. Information regarding surrounding area properties was requested for the specified minimum search distances and was assumed to be correct and complete unless obviously contradicted by LFI's observations or other credible referenced sources reviewed during the ESA. LFI is not a professional title insurance or land surveying firm and makes no guarantee, explicit or implied, that any land title records acquired or reviewed, or any physical descriptions or depictions of the site in this report, represent a comprehensive definition or precise delineation of property ownership or boundaries.

#### **40'UK/G'FGUETIRVIQP''**

The location, description, and current uses of the subject property, as well as surrounding properties are presented in the following sections.

#### **40'Nqecvkqp'cpf 'Fguetlr vkqp''**

The subject property is located in Flaherty, Kentucky within Meade County. The property consists of approximately 811 acres of predominately agricultural land that is owned by six separate

entities. A site location map is provided in **Hi wt g'3** and an aerial photograph depicting the site and surrounding property use is provided in **Hi wt g'4**. Site photographs are included in **Crr gpf lz''** C.

**40'Ut wevt gu'rk r t qxgo gpv'**

The subject property is predominately undeveloped farmland. Residential and barn structures are located on the eastern and western portions of the site.

**45'O wplek r nUgt xlegu'cpf 'Wrlklu'**

Properties in the vicinity are serviced by the following municipal services and private utilities:

Utility	Provider
Potable Water Supply	Supply Well
Sewage Disposal	Septic System
Natural Gas	Kentucky Utilities
Electricity	

"

**46'T qcf u'**

The property is located along Big Spring Road / KY Route 333, St. Martins Road / KY Route 1600 and Stith Valley Road / KY Route 1238. Private drives are located throughout the site. No publicly owned roads are located on the property.

"

**47'Vqr qi tcr j { 'cpf 'F t clpci g'**

A review of the *Big Spring, KY* United States Geological Survey (USGS) Topographic Quadrangle (2013) indicates a surface elevation for the subject property averages approximately 740 feet above the National Geodetic Vertical Datum (NGVD) of 1929 (approximately mean sea level). A copy of the topographic map is provided in **Hi wt g'3** and **Crr gpf lz'D**. According to the United States Department of Agriculture (USDA) Soil Conservation Service (SCS), the dominant soil composition in the vicinity of the subject property is classified as Crider, a well-drained silt loam. Major hydrogeologic features such as a river or lake generally influence regional groundwater flow direction. Surface and/or bedrock topography may also influence regional groundwater flow direction. Based on information gathered during the site visit, the topography of the land, and information contained in the Environmental Data Resources, Inc. (EDR) report, the direction of

surface and groundwater flow is interpreted to be east with the local topographic gradient towards Otter Creek located approximately 6-miles to the east eventually flowing to the Ohio River.

**408'Ewt t gpv'Wug'qh'Rt qr gt v{ "**

The subject property is predominately undeveloped farmland. Few wooded areas are located on the site. Residential and barn structures are located on the eastern and western portions of the site.

**40'Ewt t gpv'Wug'qh' Cf lqlplpi 'Rt qr gt v{gu'**

Nearby property usage could potentially impact the surface and subsurface conditions of a site. Developing a history of past to present uses or occupancies can provide an indication of the likelihood of environmental concern. In general, the subject property is located in a low-density area predominantly composed of agricultural and residential properties. An aerial photograph illustrating the surrounding property-use relative to the subject property is included as **Hi wt g'4**.

A general description of surrounding land use is as follows:

**Current Use of Adjoining Properties**

Direction	Description
North	The subject property is bordered to the north by St. Martins Road, agricultural properties, residential properties and Stith Valley Road.
South	The subject property is adjoined by agricultural, wooded and residential properties.
East	
West	The subject property is bordered to the west by Big Springs Road, agricultural, wooded and residential properties.

No evidence of potential adverse environmental conditions was observed during the survey of adjacent properties from the subject site.

**502'UK'G'J KUVQT[ 'CPF'J KUVQTIECN'TGEQTFUT'GXKGY "**

Historical information about the subject property, based on an evaluation of available records reviewed during the Phase I, is included in the following sections.

"

**508'Rcuw'Wugu'qh'Rt qr gt v{ "**

LFI attempted to determine the historical use of the subject property dating back to 1940 or the first developed use. The following table summarizes the historical use of the subject property:

**Historical Use Summary**

Subject Property		
Period		Source(s)
1940 - Current	The subject property has been historically and primarily used for agricultural and rural residential purposes.	Topographic Maps Aerial Photographs Interview

**504'Rcu'Wigu'qh' Cf lqk'pi 'Rt qr gt v'gu' "**

Properties in the vicinity of the subject property have been predominately utilized for agricultural and residential purposes.

**505'Vqr qi t cr j le'O cru'**

Historical topographic maps provide information related to physical land configuration such as elevation, ground slope, surface water and other features. While most buildings in densely developed urban centers are not depicted, topographic maps typically show structures equal to or larger than the size of a single-family residence in rural areas. A search for historical topographic maps of the subject property and surrounding area was conducted by EDR and provided to LFI in a *Historical Topographic Map Report* dated December 15, 2020. Topographic maps were provided for various years between 1941 and 2013. A copy of the EDR *Historical Topographic Map Report* is included in **Cr r gpf k'D** and summarized as follows:

**Historical Topographic Maps**

Year	Issues Noted	Observations
1941 - 1991	No	<b>Subject Property:</b> Sparse residential or barn structures are depicted along Big Springs Road and Stith Valley Road. <b>Surrounding Properties:</b> Sparse rural residential properties are observed. Predominately undeveloped property.
2013 <sup>(1)</sup>	No	<b>Subject Property:</b> No structures or identifying features are shown. <b>Surrounding Properties:</b> Major roads and highways are shown, no individual structures.

(1) Beginning with the 2010 map updates, the USGS elected to omit building footprints, urban designations, and other points of interest from topographic map updates.

"

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**506' Cgt kcl Rj qvqi t cr j u'**

Aerial photographs are generally of very small scale and only provide a general idea of activity in the area. Aerial photographs are instantaneous records and their usefulness is limited because they do not necessarily reflect the condition of a site before or after the photographs were taken. A search for aerial photographs of the subject property and surrounding area was conducted by EDR and provided to LFI in an *Aerial Photo Decade Package* dated December 17, 2020. Aerial photographs were provided for various years from 1978 to 2016. Additional aerial photographs were obtained from the Google Earth® program. A copy of the EDR *Aerial Photo Report* is included in **Cr r gpf k' D** and a summary is presented in the following table:

**Aerial Photographs**

Year	Issues Noted	Observations
1978 - 1983	No	<b>Subject Property:</b> Subject property appears to be predominately agricultural in nature. Few residential and barn structures are observed. <b>Surrounding Properties:</b> The surrounding properties are generally agricultural in nature. Sparse rural residential and farm structures are observed. Few ponds are observed on the eastern and western portions of the site.
1998 - 2016	No	<b>Subject Property:</b> Property appears as it is today. Multiple natural gas wells are observed on the subject property. Some minor dumping can be seen in certain areas. <b>Surrounding Properties:</b> Adjoining properties are developed similar to their present-day configuration.

**507' Ucpdqtp' Hk g' kpw t cpeg' O cr u'**

A search for Sanborn fire insurance maps for the subject property and surrounding area was conducted by EDR and provided to LFI in a *Certified Sanborn Map Report*, dated December 15, 2020. Fire insurance maps were unavailable for the subject property and surrounding areas. A copy of the report stating “Unmapped Property” is provided in **Cr r gpf k' D**.

"

**508' Elw' Fk gevqt lgu'**

A search of historical city directories for the subject property and surrounding properties was conducted by EDR and provided to LFI in a *City Directory Abstract* dated December 17, 2020. City directories along Big Springs Road, St. Martins Road and Stith Valley Road were reviewed for various years between 1992 and 2017. Listings for the surrounding area were found to be primarily residential listings with no evidence of obvious adverse environmental conditions. A copy of the report is provided in **Cr r gpf k' D**.

**602'GPXK'QPO GPVCN'TGEQTFU'TGXKGY "**

An electronic database search of files maintained by the U. S. EPA and the Kentucky Department for Environmental Protection (KDEP) was conducted by EDR on December 15, 2020 to evaluate the regulatory history of the subject property and surrounding properties. The search of standard federal, state, and tribal regulatory agency databases was conducted to (1) identify listings for the subject property and adjoining properties and (2) evaluate sites within applicable ASTM E1527-13 and AAI defined search radii that could cause actual or potential environmental impacts to the subject property. A summary of the results of the regulatory agency database search is provided in the following table:

**Regulatory Database Search Summary**

<b>Regulatory Database</b>	<b>Minimum Search Distance</b>	<b>Property Listed?</b>	<b># Sites Listed</b>
Federal National Priority List (NPL)	1 Mile	No	0
Federal De-Listed NPL	½ Mile	No	0
Federal CERCLIS	½ Mile	No	0
Federal CERCLIS NFRAP	½ Mile	No	0
Federal RCRA CORRACTS	1 Mile	No	0
Federal RCRA non-CORRACTS TSD	½ Mile	No	0
Federal RCRA Generators	¼ Mile	No	0
Federal Institutional/Engineering Control Registry	½ Mile	No	0
Federal ERNS	¼ Mile	No	0
State/Tribal Haz. Waste Sites (NPL/CERCLIS)	1 Mile	No	0
State/Tribal Landfill or Solid Waste Disposal Sites	½ Mile	No	0
State/Tribal Leaking Storage Tank Lists	½ Mile	No	0
State/Tribal Registered Storage Tank Lists	¼ Mile	No	0
State/Tribal Institutional/Engineering Control Registry	½ Mile	No	0
State/Tribal Voluntary Cleanup Sites	½ Mile	No	0
Federal/State Brownfield Sites	½ Mile	No	0

The fact that sites do or do not appear on a list does not necessarily indicate that an environmental concern exists. In addition, sites may not be mapped in a list search due to inaccuracy of owner/operator records, government records, or errors occurring during conversion of the data by informational sources. A copy of the EDR report that includes a detailed description of each database and the results of the database inquiries is provided in **Cr r gpf k'E**.

**608'Nkwlpi ulqt 'Uwdlgev'Uvg'qt 'Cf lqlplpi 'Rt qr gt vlgv'**

The EDR database search did not identify the subject property or any adjoining properties on ASTM or AAI required databases.

"

**604'Nkwlpi u'y kj lp'Gwcdrluj gf 'Ugctej 'Tcf k'**

No additional site listings were identified in the EDR report.

The EDR environmental records search also provides a list of “orphan” sites, which are properties identified on ASTM/AAI required databases but that could not be mapped due to poor or inaccurate address information. EDR’s records search listed no orphan sites.

**605'Xcr qt 'Gpetqcej o gpv'Uetggp''**

LFI conducted a Vapor Encroachment Screen (VES) utilizing the Tier 1 methodology provided in ASTM’s *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions* (E2600-15). The Tier 1 methodology in E2600-15 was utilized in order to identify a *Vapor Encroachment Condition* (VEC), which is “the presence or likely presence of chemicals of concern (COC) (i.e. – petroleum hydrocarbons and/or chlorinated solvents) vapors in the vadose zone of the subject property caused by the release of vapors from contaminated soil and/or groundwater either on or near the subject property”. Information provided by EDR was reviewed to identify facilities within the Area of Concern (AOC) to evaluate whether contamination at nearby properties could represent a vapor encroachment condition (VEC) on the Site. The AOC for chlorinated solvents is defined in ASTM E2600-15 as the area within 1/3 mile of the property boundaries. For facilities at which the only COCs are petroleum hydrocarbons, the AOC includes the area within 0.1 mile of the property boundaries.

A review of historical use information and regulatory database documentation collected in the course of this Phase I ESA did not identify obvious evidence of COC that may migrate as vapors onto the subject property as a result of contaminated soil and/or groundwater known to be present on or near the subject property. Therefore, our opinion based on the Tier 1 VES is that a VEC does not exist on the property.

**702'UKVG'TGEQPPCKUCPEG'**

A site reconnaissance was conducted on December 2, 2020 by Mr. Jason Boston, Project Scientist with LFI. Mr. Boston was unaccompanied during the site reconnaissance.

**703'Ukg'Tgeqppckucpeg'O gjf qfi lgu'**

The purpose of the reconnaissance was to gather information regarding the environmental conditions at the subject property and surrounding areas. The site reconnaissance consisted of visual observations of the subject property and any existing improvements, adjoining properties as viewed from the subject property, and observations of nearby properties made from public thoroughfares.

At the time of the site reconnaissance, weather conditions were clear and approximately 65° Fahrenheit. No limiting conditions were present. Photographs taken during the site reconnaissance, depicting site conditions at the time of the visit, are provided in **Cr r gpf k'C**.

**704'J c| ctf qwu'UwducpegulY cug't'pf 'Rgt qrgwo 'Rt qf wew'**

Aboveground diesel storage was observed near the Hamilton property barns. No other obvious indications of generation, use, storage, treatment, or disposal of hazardous substances/wastes or petroleum products were observed during site reconnaissance.

**705'Wpf gti tqwvf 'Uqtcig'Vcpmi'\*WUVu+' ('Cdqxi tqwvf 'Uqtcig'Vcpmi'\*CUVu+''**

The site reconnaissance included a search for physical features such as fill ports, slumped pavement/ground surface, patched pavement, and evidence of underground piping or pump stations commonly associated with the current or historical presence of storage tanks. The absence of common physical features cannot completely rule out the current or historical existence of storage tanks. Site characteristics such as overgrown vegetation, new pavement, or past renovation/construction/demolition activities may prevent the identification of storage tanks.

**706'Wpf gti tqwvf 'Uqtcig'Vcpmi'\*WUVu+''**

No evidence of current or former USTs was observed or reported during site reconnaissance.

**705 'Cd q x g i t q w p f ' U q t c i g ' V c p m i ' \* C U V u i'**

One 200-gallon diesel and one empty 200-gallon AST for fueling farm equipment are located near the Hamilton property barns. No significant staining was observed near the tanks. No other evidence of current or former ASTs was observed during site reconnaissance.

**706 'Q f q t u'**

No strong, pungent or noxious odors were noticed during the site reconnaissance.

**707 'F t w o u ' e p f ' E q p v c k p g t u'**

No obvious indications of drums or containers were observed during the site reconnaissance.

**708 'R q r f e j n q t k p c v g f ' D k r j g p { n i ' \* R E D u i'**

Polychlorinated biphenyls (PCBs) are organic compounds that have been used extensively in electrical capacitors and transformers, lighting ballasts, hydraulic fluids, heat exchange fluids, lubricants, inks, sealants, adhesives and surface coatings since development in 1929. PCB production was banned in the U.S. in 1979 due to health and environmental hazards. Under the Toxic Substances Control Act (TSCA), as outlined in Title 40 of the Code of Federal Regulations (CFR) Part C, 761, the owners of PCB containing equipment are responsible for environmental impairment and liabilities caused by leakage of PCBs to the environment.

No equipment with the potential to contain PCBs was observed during the site reconnaissance.

**709 'F t c k p u ' e p f ' U w o r u'**

No evidence of drains or sumps was observed during the site reconnaissance.

**710 'R k u ' R q p f u ' e p f ' N c i q q p u'**

A few small ponds are located on the subject property. Mr. Hamilton and Ms. Medley reported the ponds were not utilized as animal waste storage. No other obvious evidence of pits, ponds or lagoons used for waste treatment or disposal was observed or reported during the site reconnaissance.

**70 'Uwlpqf 'Uqkl'Rcxgo gpv'**

No obvious evidence of stained soil or pavement was during the site reconnaissance.

"

**702'Uw guqf 'Xgi gvc vkqp''**

No obvious areas of stressed vegetation were observed on the site.

**703'Y cuqf'I gpgt cvkqp.'Uqtc i g.'bpf 'Fkur qucn'**

A few areas of historical dumping consisting of discarded metal farm equipment were observed in wooded portions of the Hamilton property. No other obvious evidence of improper waste generation or storage was observed during the site reconnaissance.

**704'Y cuqf'Y cvgt'''**

No obvious evidence of process waste water discharge into a drain, ditch, or stream was observed on the subject property during the site reconnaissance.

**705'Y gmi''**

One water supply well was observed on the subject property during the site reconnaissance on the Hamilton property.

**706'Ugr vq'U{ wqgo u'**

A septic system was reported to be located on the Hamilton property.

**80'RP VGTXKGY U'**

The following interviews were conducted during the assessment in an effort to obtain information indicating potential RECs in connection with the subject property.

**80'Rt qr gt v{ 'Tgr t gupw vkg''**

Interviews by phone were conducted with Ms. Diane Medley and Ms. Ann Doman on November 23, 2020. Ms. Medley and Ms. Doman reported no environmental concerns. Mr. Jeff Hamilton was interviewed during the site reconnaissance. Mr. Hamilton reported no environmental concerns associated with the property. Mr. Karl Gohl was interviewed by phone on March 10, 2021. Mr.

Gohl reported no concerns associated with the property. LFI reached out to Mr. Jerry Phillips; however, call was not returned.

### **801'Qeewrcpu'**

The subject property is utilized for agricultural and residential purposes.

### **805'Nqecnl qxgt po gpv'Qhleknl''**

Based on historical agricultural and residential uses of the site, no local government officials were contacted as part of this assessment.

### **902'PQP/UEQRG'EQPUFGT CVKQP U'**

The following sections address environmental issues or conditions on the subject property that are outside the scope of ASTM E1527-13. Substances or materials may be present on the subject property that may lead to contamination of the subject property but are not defined by CERCLA as hazardous substances.

### **908'Cudguqu'Eqpvclpki 'O cvgtknl'\*CEO u#'**

Asbestos is a general term for a group of fibrous minerals (primarily chrysotile, amosite and crocidolite) that have long been used as fireproof insulation and as a strengthener in pipe insulation, roofing tiles, floor tiles, wall coverings and other materials. Undisturbed asbestos-containing material (ACM) is not dangerous; however, when ACM is broken or torn, as during remodeling or demolition, the fibers can be spread into the air, especially if the material is friable. A friable material, by definition, is one that can be crushed, crumbled, pulverized, or reduced by hand pressure when dry. Due to health hazards, ACM use has been phased out since approximately 1978. The U.S. EPA classifies ACM as any material which contains more than 1% asbestos by Polarized Light Microscopy (PLM) analysis.

An ACM survey was not included in the scope of work for this assessment. The properties are to be leased from the current owners.

**904'Ngcf /Dcugf 'Rclpv'NDR+''**

Use of lead in household paint was banned by the U.S. EPA effective January 1, 1978. The U.S. EPA and the U.S. Department of Housing and Urban Development (HUD) define lead-based paint (LBP) as any paint that contains 1.0 mg/cm<sup>2</sup> or higher of lead by x-ray fluorescence (XRF) analysis or 0.5% (5,000 ppm) lead by weight.

An LBP survey was not included in the scope of work for this assessment. The properties are to be leased from the current owners.

**: 0'WUGT'RTQXIF GF 'RPHQTO CVKQP ''**

In accordance with the ASTM E1527-13 and AAI standards, the user of this ESA, (the Clients), may obtain information through other due diligence activities associated with the pending property transaction that could help identify the possibility of potential environmental conditions in connection with the subject property.

**: 0'Gpxlt qpo gpvcrNlcpu'ht 'Cevskw' 'cpf 'Wig'Nko kcvkqpu'**

The Client has reported no information regarding environmental liens or use limitations.

**: 0'Ego o qpUr gekrlk gf 'Mpqy rnf i g'ht 'Gzr gtlgpeg''**

The Client has reported no information regarding common/specialized knowledge or experience relative to the subject property.

**: 0'Tgcuqpu'ht 'Uli phtecpvf 'Nqy gt 'Rwt ej cug'Rtlcg''**

The Client reported the site will be leased.

"

**; 0'FCVC'I CRU'**

No data gaps as defined by ASTM E1527-13, (i.e. considered to have significantly affected the ability to identify recognized environmental conditions in connection with the subject property) were identified during completion of this assessment. A User Questionnaire had not been returned by the issuance of this report; however, LFI does not consider that to represent a significant data gap.

**320'HPFPI UCPF'QRPKPU'**

The following summarizes known or suspected RECs, HRECs, CRECs, *de minimis* conditions, and non-scope environmental conditions in connection with the subject property based on information collected during the assessment. For each condition, LFI provides an opinion of the impact on the site based on an evaluation of the results of record reviews, site reconnaissance work and interviews performed as part of this assessment. LFI also provides a rationale for concluding that an environmental condition is or is not a REC.

**Tgeqi pk gf 'Gpxk qpo gpvnlE qpf kskpu'\*TGE+''**

This assessment has revealed no evidence of RECs in connection with the subject property.

**J kxqt lecn'Tgeqi pk gf 'Gpxk qpo gpvnlE qpf kskpu'\*J TGE+''**

This assessment has revealed no evidence of HRECs in connection with the subject property.

**Eqvt qngf 'Tgeqi pk gf 'Gpxk qpo gpvnlE qpf kskpu'\*ETGE+''**

This assessment has revealed no evidence of CRECs in connection with the subject property.

**F g'O lplk k'E qpf kskpu**

No *de minimis* conditions were observed in connection with the subject property.

**P qp/Ueqr g'Gpxk qpo gpvnlE qpf kskpu''**

No non-scope environmental conditions were observed in connection with the subject property.

**330'EQPENWUKPU'CPF'TGEQO O GPF CVKQU'**

LFI has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the farm property located in Meade County, Kentucky, the subject property. Any exceptions to, or deletions from, this practice were described in this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the property. Therefore, no further assessment is recommended.

**340'EGTVHHECVKQP'QH'GPXKT'QPO GPVCN'RTQHGUUKQP CN''**

LFI has the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of this part.



April 1, 2021

\_\_\_\_\_  
Environmental Professional

\_\_\_\_\_  
Date

''

**350'TGHGTGPEGU''**

Environmental Data Resources, Inc. *The EDR Radius Map Report Meade County Solar. Big Spring Road Vine Grove, KY 40175. Inquiry Number: 6302981.2s.* December 15, 2020.

Environmental Data Resources, Inc. *EDR Historical Topographic Map Report Meade County Solar. Big Spring Road Vine Grove, KY 40175. Inquiry Number: 6302981.4.* December 15, 2020.

Environmental Data Resources, Inc. *EDR Aerial Photo Decade Package Meade County Solar. Big Spring Road Vine Grove, KY 40175. Inquiry Number: 6302981.9.* December 17, 2020.

Environmental Data Resources, Inc. *Certified Sanborn Map Report Meade County Solar. Big Spring Road Vine Grove, KY 40175. Inquiry Number: 6302981.3.* December 15, 2020.

Environmental Data Resources, Inc. *EDR City Directory Image Report Meade County Solar. Big Spring Road Vine Grove, KY 40175. Inquiry Number: 6302981.5.* December 18, 2020.

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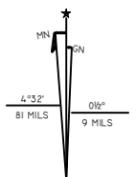
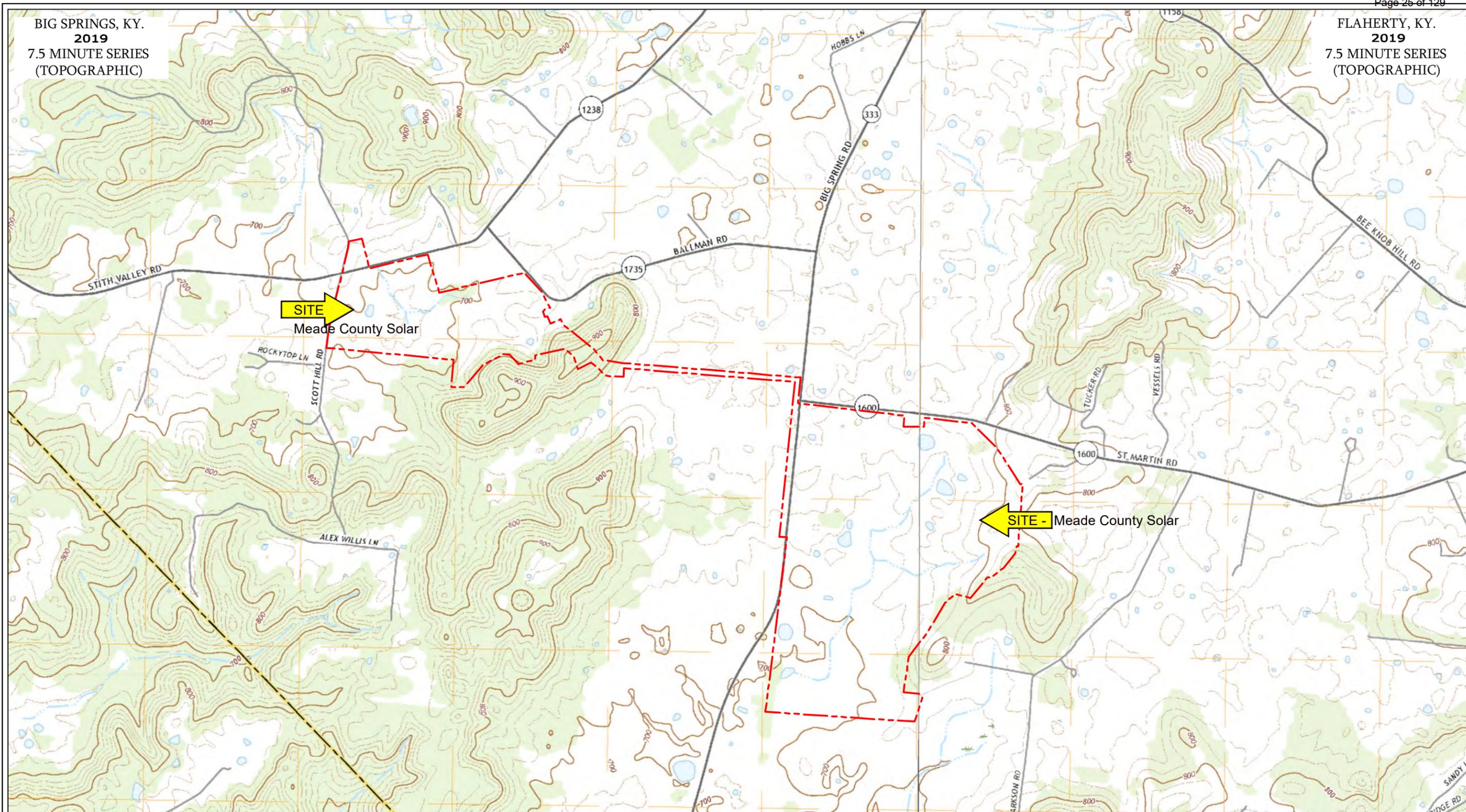
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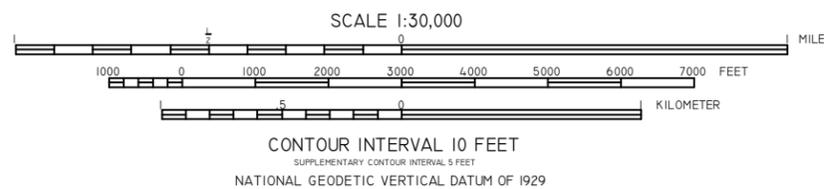
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BIG SPRINGS, KY.  
2019  
7.5 MINUTE SERIES  
(TOPOGRAPHIC)

FLAHERTY, KY.  
2019  
7.5 MINUTE SERIES  
(TOPOGRAPHIC)



UTM GRID AND 2019 MAGNETIC NORTH  
DECLINATION AT CENTER OF SHEET



SITE LOCATION MAP

FARM PROPERTY  
MEADE COUNTY,  
KENTUCKY

SCALE:	1:30,000
DATE:	12/16/20
PROJ#:	320-20
DRAWN BY:	MKA
CHECKED BY:	

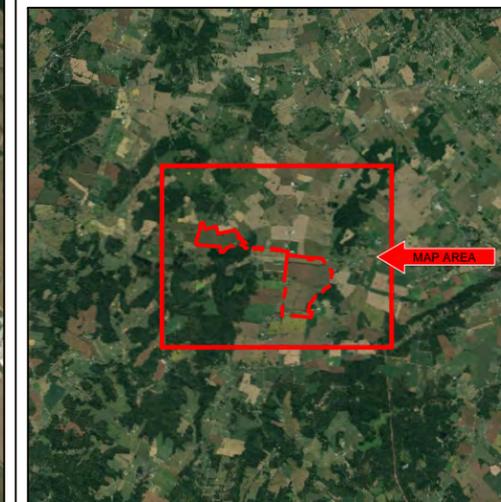
FIGURE  
1



**Linebach Funkhouser, Inc.**  
ENVIRONMENTAL COMPLIANCE & CONSULTING



LEGEND



--- PROPERTY BOUNDARY



SOURCE: Google Earth, Imagery Date: June 6, 2020.

AERIAL PHOTOGRAPH  
SHOWING  
SITE AND VICINITY

SCALE: 1"=2000'

DATE: 12/16/20

PROJ#: 320-20

DRAWN BY: MKA

CHECKED BY:

FIGURE  
**2**



**Linebach Funkhouser, Inc.**  
ENVIRONMENTAL COMPLIANCE & CONSULTING

"

"

"

**Crr gpf k'c"**

"

**Ukg'Rj qvqi tcr j u"**

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Linebach Funkhouser, Inc.  
environmental compliance & consulting

**Photographic Record**

**Client:** Copperhead Environmental

**Site Name:** Meade County Solar

**Project Number:** 320-20

**Site Location:** Big Springs, St. Martins & Stith Valley Roads

**Photo Number:**

1

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

Southwest

**Comments:**

Septic area on Hamilton farm.



**Photo Number:**

2

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

Southeast

**Comments:**

View near ASTs on Hamilton farm.





Linebach Funkhouser, Inc.  
environmental compliance & consulting

**Photographic Record**

**Client:** Copperhead Environmental

**Site Name:** Meade County Solar

**Project Number:** 320-20

**Site Location:** Big Springs, St. Martins & Stith Valley Roads

**Photo Number:**

3

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

South

**Comments:**

View of water well on Hamilton farm.



**Photo Number:**

4

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

East

**Comments:**

View of dump area on Hamilton farm.





Linebach Funkhouser, Inc.  
environmental compliance & consulting

**Photographic Record**

**Client:** Copperhead Environmental

**Site Name:** Meade County Solar

**Project Number:** 320-20

**Site Location:** Big Springs, St. Martins & Stith Valley Roads

**Photo Number:**

5

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

South

**Comments:**

Multiple gas wells are located on the subject property.



**Photo Number:**

6

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

West

**Comments:**

General view of the site.





Linebach Funkhouser, Inc.  
environmental compliance & consulting

**Photographic Record**

**Client:** Copperhead Environmental

**Site Name:** Meade County Solar

**Project Number:** 320-20

**Site Location:** Big Springs, St. Martins & Stith Valley Roads

**Photo Number:**

7

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

Northwest

**Comments:**

View of the Bennett's property.



**Photo Number:**

8

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

Southeast

**Comments:**

View of the Bennett's property.





**Photographic Record**

**Client:** Copperhead Environmental

**Site Name:** Meade County Solar

**Project Number:** 320-20

**Site Location:** Big Springs, St. Martins & Stith Valley Roads

**Photo Number:**

9

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

Northeast

**Comments:**

View of the Bennett's property.



**Photo Number:**

10

**Photographer:**

Jason Boston

**Date:**

December 2, 2020

**Direction:**

Northeast

**Comments:**

View of the Bennett's property.



**Crr gpf k'z'D''**

**"**

**J kwqt kecn'T gugct ej 'F qewo gpvc vkqp**

Meade County Solar  
Big Spring Road  
Vine Grove, KY 40175

Inquiry Number: 6302981.4

December 15, 2020

# EDR Historical Topo Map Report

with QuadMatch™



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

# EDR Historical Topo Map Report

**Site Name:**

Meade County Solar  
Big Spring Road  
Vine Grove, KY 40175  
EDR Inquiry # 6302981.4

**Client Name:**

Linebach Funkhouser Inc.  
114 Fairfax Ave  
Louisville, KY 40207  
Contact: Jason Boston



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Linebach Funkhouser Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

**Search Results:**

**Coordinates:**

<b>P.O.#</b>	NA	<b>Latitude:</b>	37.834656 37° 50' 5" North
<b>Project:</b>	320-20	<b>Longitude:</b>	-86.145761 -86° 8' 45" West
		<b>UTM Zone:</b>	Zone 16 North
		<b>UTM X Meters:</b>	575168.68
		<b>UTM Y Meters:</b>	4187813.75
		<b>Elevation:</b>	739.70' above sea level

**Maps Provided:**

- 2013
- 1991
- 1960, 1961
- 1948
- 1947
- 1941

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**Topo Sheet Key**

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

**2013 Source Sheets**



Big Spring  
2013  
7.5-minute, 24000



Flaherty  
2013  
7.5-minute, 24000

**1991 Source Sheets**



Big Spring  
1991  
7.5-minute, 24000  
Aerial Photo Revised 1987



Flaherty  
1991  
7.5-minute, 24000  
Aerial Photo Revised 1987

**1960, 1961 Source Sheets**



Flaherty  
1960  
7.5-minute, 24000  
Aerial Photo Revised 1947



Big Spring  
1961  
7.5-minute, 24000  
Aerial Photo Revised 1946

**1948 Source Sheets**



Flaherty  
1948  
7.5-minute, 24000  
Aerial Photo Revised 1946



Big Spring  
1948  
7.5-minute, 24000  
Aerial Photo Revised 1946

## **Topo Sheet Key**

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### **1947 Source Sheets**

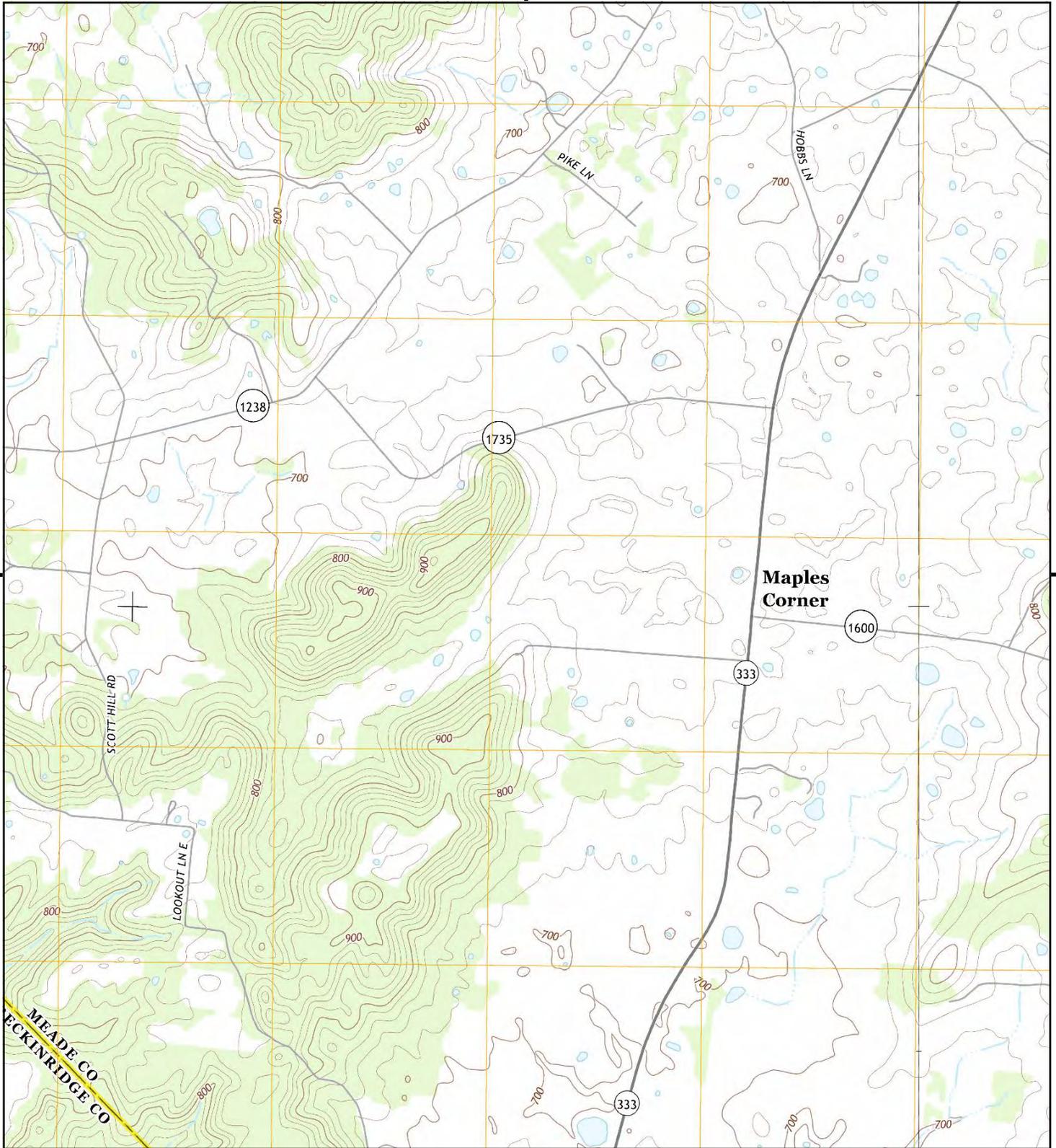


Ekron  
1947  
15-minute, 62500  
Aerial Photo Revised 1946

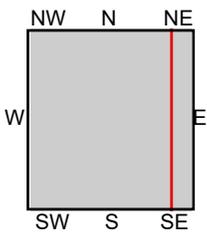
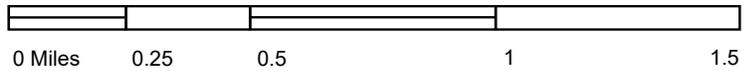
### **1941 Source Sheets**



Ekron  
1941  
15-minute, 62500  
Aerial Photo Revised 1940



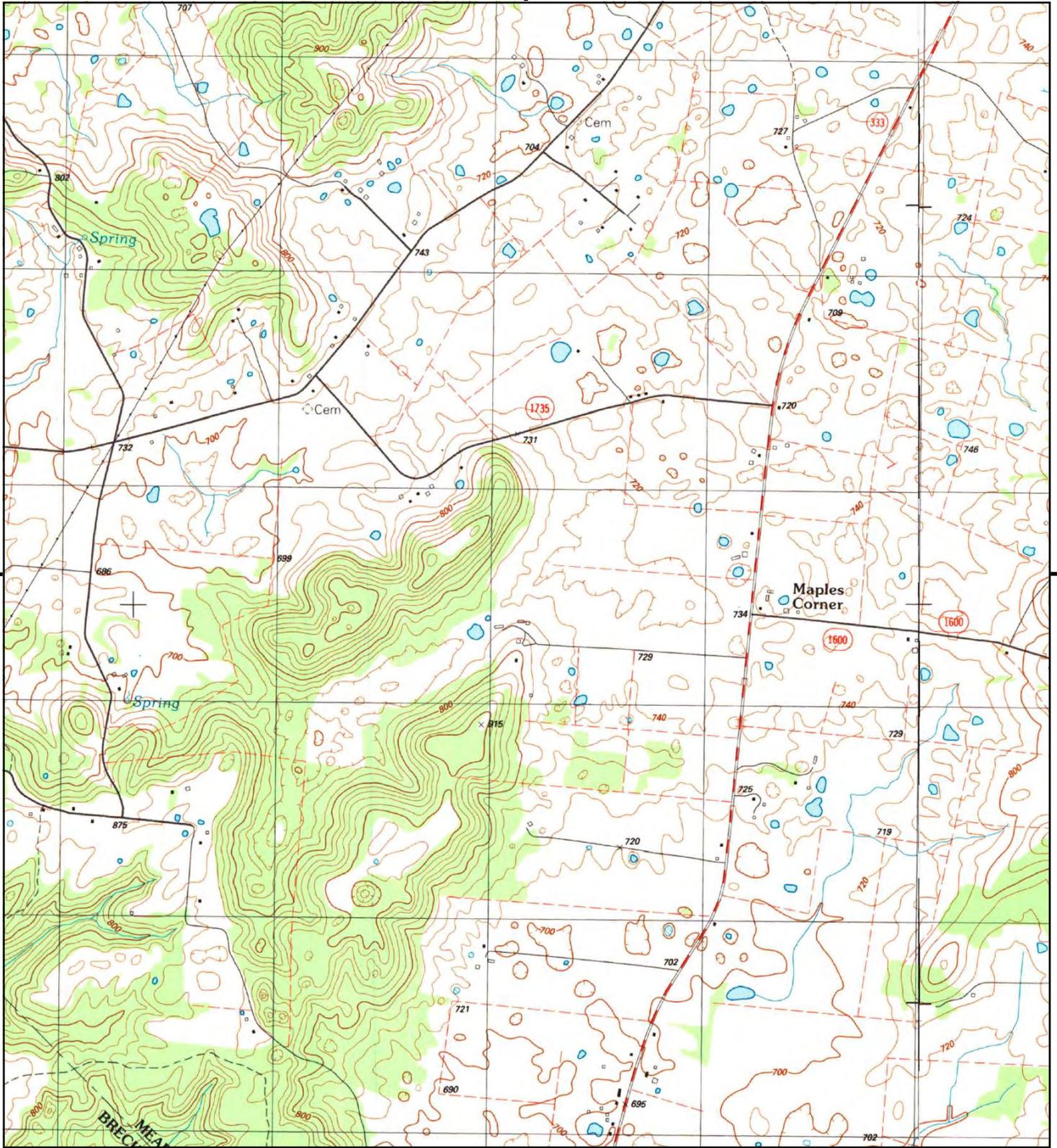
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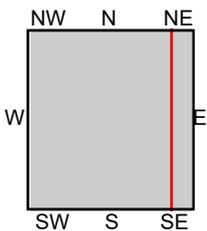
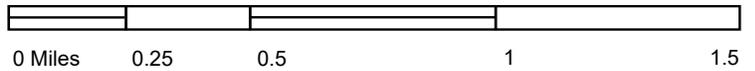
TP, Big Spring, 2013, 7.5-minute  
E, Flaherty, 2013, 7.5-minute

**SITE NAME:** Meade County Solar  
**ADDRESS:** Big Spring Road  
Vine Grove, KY 40175  
**CLIENT:** Linebach Funkhouser Inc.





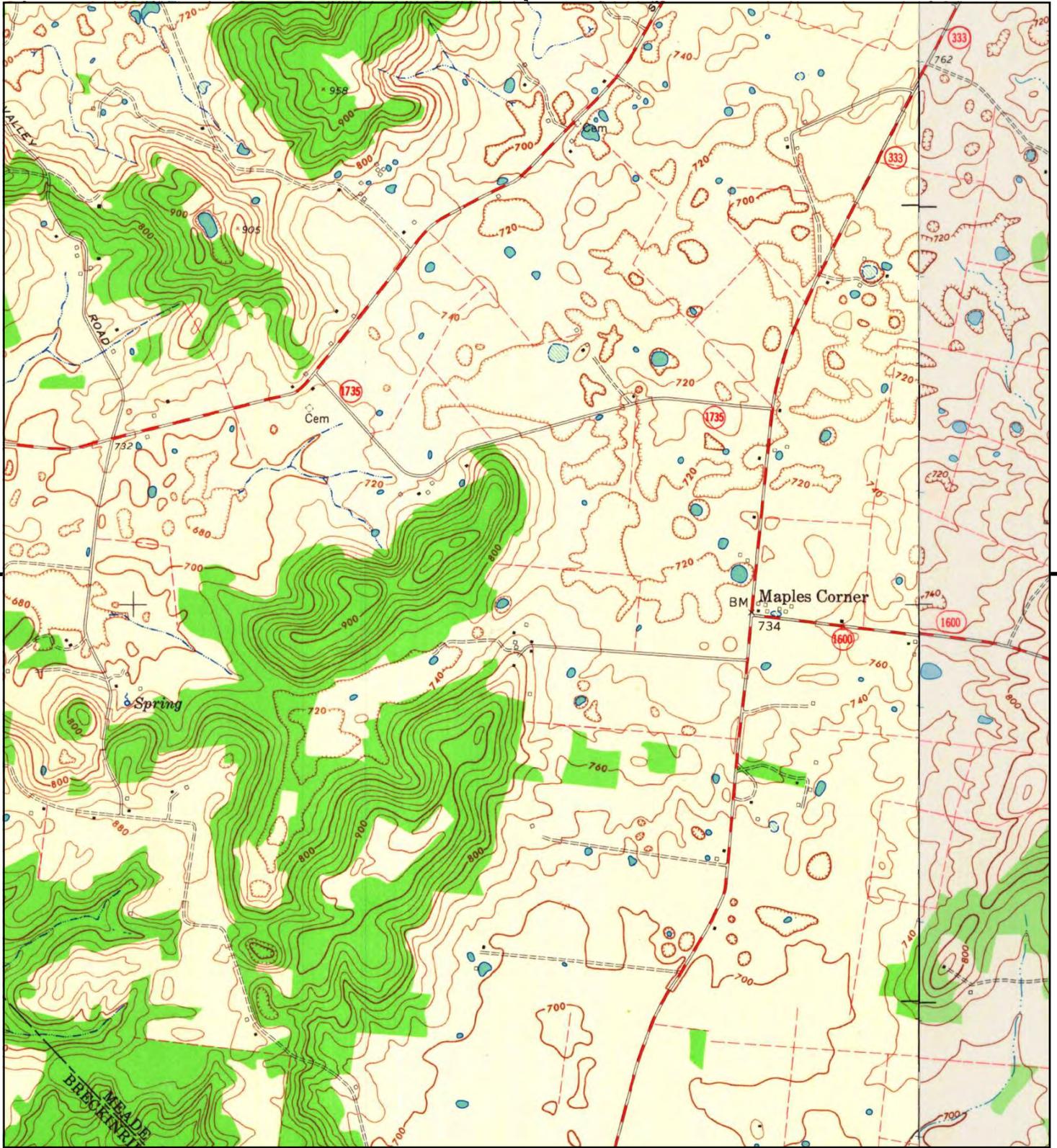
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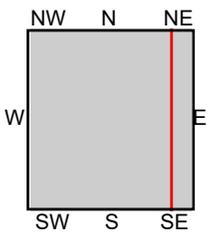
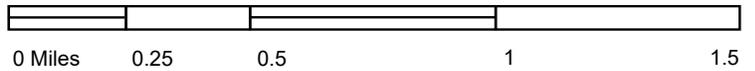
TP, Big Spring, 1991, 7.5-minute  
E, Flaherty, 1991, 7.5-minute

**SITE NAME:** Meade County Solar  
**ADDRESS:** Big Spring Road  
Vine Grove, KY 40175  
**CLIENT:** Linebach Funkhouser Inc.





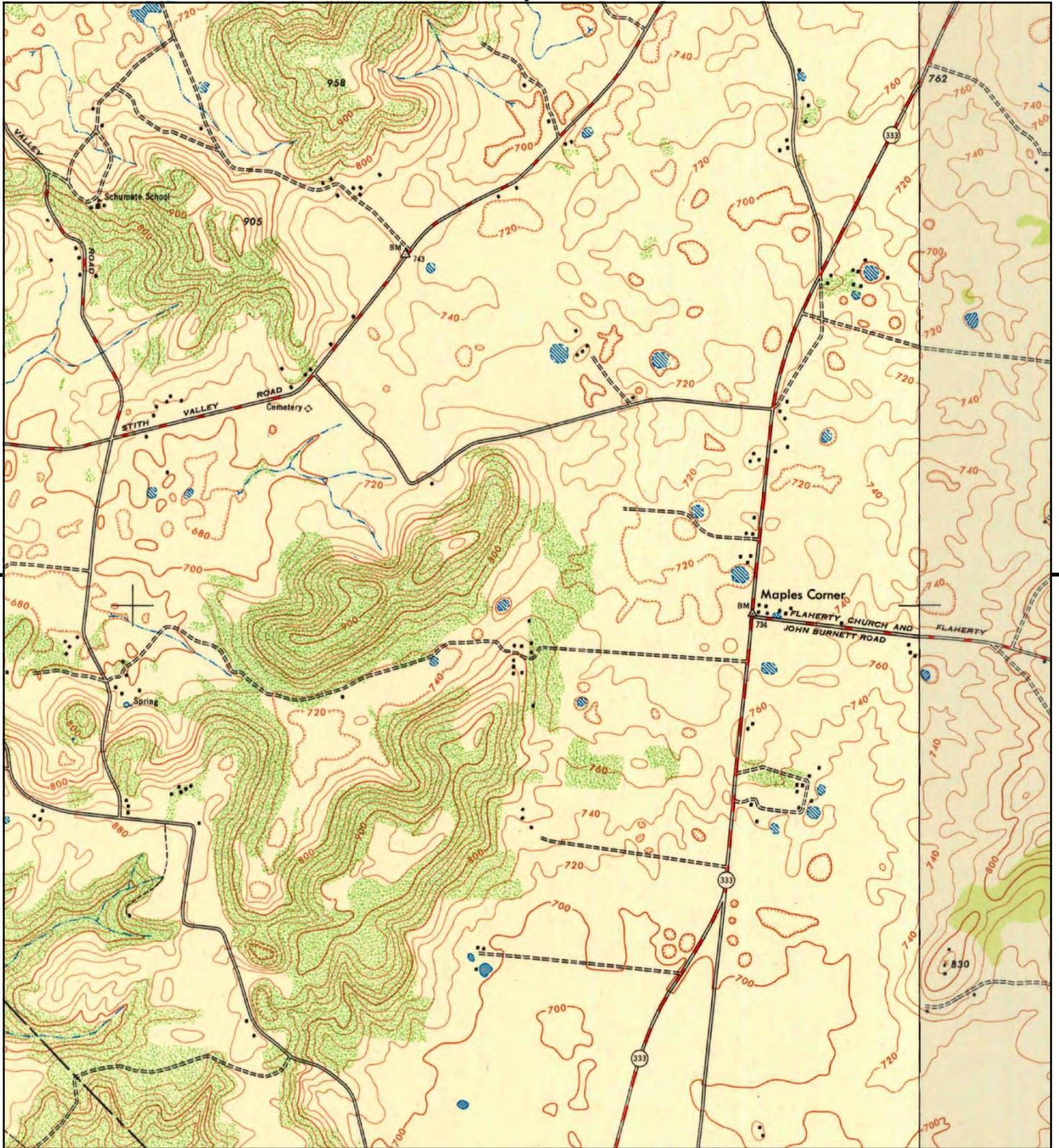
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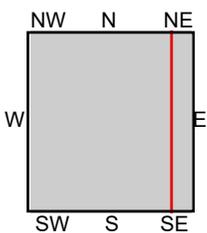
TP, Big Spring, 1961, 7.5-minute  
E, Flaherty, 1960, 7.5-minute

SITE NAME: Meade County Solar  
ADDRESS: Big Spring Road  
Vine Grove, KY 40175  
CLIENT: Linebach Funkhouser Inc.





This report includes information from the following map sheet(s).



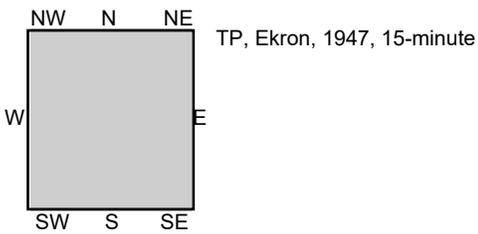
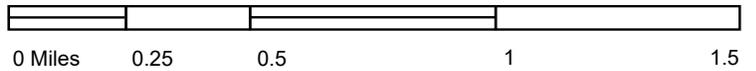
TP, Big Spring, 1948, 7.5-minute  
E, Flaherty, 1948, 7.5-minute

**SITE NAME:** Meade County Solar  
**ADDRESS:** Big Spring Road  
Vine Grove, KY 40175  
**CLIENT:** Linebach Funkhouser Inc.





This report includes information from the following map sheet(s).

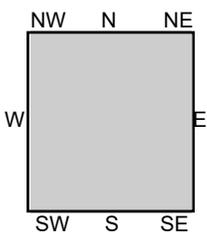


SITE NAME: Meade County Solar  
 ADDRESS: Big Spring Road  
 Vine Grove, KY 40175  
 CLIENT: Linebach Funkhouser Inc.





This report includes information from the following map sheet(s).



TP, Ekron, 1941, 15-minute

SITE NAME: Meade County Solar  
 ADDRESS: Big Spring Road  
 Vine Grove, KY 40175  
 CLIENT: Linebach Funkhouser Inc.





**Meade County Solar**

Big Spring Road

Vine Grove, KY 40175

Inquiry Number: 6302981.8

December 17, 2020

## The EDR Aerial Photo Decade Package



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

# EDR Aerial Photo Decade Package

**Site Name:**

Meade County Solar  
Big Spring Road  
Vine Grove, KY 40175  
EDR Inquiry # 6302981.8

**Client Name:**

Linebach Funkhouser Inc.  
114 Fairfax Ave  
Louisville, KY 40207  
Contact: Jason Boston



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

**Search Results:**

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2008	1"=500'	Flight Year: 2008	USDA/NAIP
1983	1"=1000'	Flight Date: March 25, 1983	USGS
1978	1"=500'	Flight Date: April 01, 1978	USGS

**When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.**

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INQUIRY #: 6302981.8

YEAR: 2016

— = 500'





INQUIRY #: 6302981.8

YEAR: 2012

— = 500'





INQUIRY #: 6302981.8

YEAR: 2008

— = 500'





INQUIRY #: 6302981.8

YEAR: 1983

— = 1000'





INQUIRY #: 6302981.8

YEAR: 1978

— = 500'



Meade County Solar  
Big Spring Road  
Vine Grove, KY 40175

Inquiry Number: 6302981.3

December 15, 2020

## Certified Sanborn® Map Report



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

# Certified Sanborn® Map Report

12/15/20

**Site Name:**

Meade County Solar  
Big Spring Road  
Vine Grove, KY 40175  
EDR Inquiry # 6302981.3

**Client Name:**

Linebach Funkhouser Inc.  
114 Fairfax Ave  
Louisville, KY 40207  
Contact: Jason Boston



The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Linebach Funkhouser Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting [www.edrnet.com/sanborn](http://www.edrnet.com/sanborn).

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

### Certified Sanborn Results:

**Certification #** 1519-4B95-A7D5  
**PO #** NA  
**Project** 320-20



Sanborn® Library search results

Certification #: 1519-4B95-A7D5

### UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- Library of Congress
- University Publications of America
- EDR Private Collection

*The Sanborn Library LLC Since 1866™*

### Limited Permission To Make Copies

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## **Appendix C**

# **Regulatory Database Documentation**

**Meade County Solar**

Big Spring Road  
Vine Grove, KY 40175

Inquiry Number: 6302981.2s  
December 15, 2020

**The EDR Radius Map™ Report with GeoCheck®**



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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), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

### TARGET PROPERTY INFORMATION

#### ADDRESS

BIG SPRING ROAD  
VINE GROVE, KY 40175

#### COORDINATES

Latitude (North): 37.8346560 - 37° 50' 4.76"  
Longitude (West): 86.1457610 - 86° 8' 44.73"  
Universal Transverse Mercator: Zone 16  
UTM X (Meters): 575170.6  
UTM Y (Meters): 4187608.5  
Elevation: 740 ft. above sea level

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 5940275 BIG SPRING, KY  
Version Date: 2013

### AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20140705  
Source: USDA

MAPPED SITES SUMMARY

Target Property Address:  
BIG SPRING ROAD  
VINE GROVE, KY 40175

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
--------	-----------	---------	-------------------	--------------------	-------------------------------

NO MAPPED SITES FOUND

## EXECUTIVE SUMMARY

### 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  
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  
SEMS..... Superfund Enterprise Management System

#### ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

#### ***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  
RCRA-VSQG..... RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

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

LUCIS..... Land Use Control Information System

## EXECUTIVE SUMMARY

US ENG CONTROLS..... Engineering Controls Sites List  
US INST CONTROLS..... Institutional Controls Sites List

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

ERNS..... Emergency Response Notification System

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

SHWS..... State Leads List

### ***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  
UST..... Underground Storage Tank Database  
AST..... Above Ground Storage Tanks  
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  
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***

SWRCY..... Recycling Facilities  
HIST LF..... Historical Landfills  
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands  
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

## EXECUTIVE SUMMARY

ODI..... Open Dump Inventory  
IHS OPEN DUMPS..... Open Dumps on Indian Land

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

US HIST CDL..... Delisted National Clandestine Laboratory Register  
CDL..... Clandestine Drug Lab Location Listing  
US CDL..... National Clandestine Laboratory Register

### **Local Land Records**

LIENS 2..... CERCLA Lien Information

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

HMIRS..... Hazardous Materials Information Reporting System  
SPILLS..... State spills

### **Other Ascertainable Records**

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated  
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  
ICIS..... Integrated Compliance Information 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  
INDIAN RESERV..... Indian Reservations  
FUSRAP..... Formerly Utilized Sites Remedial Action Program  
UMTRA..... Uranium Mill Tailings Sites  
LEAD SMELTERS..... Lead Smelter Sites  
US AIRS..... Aerometric Information Retrieval System Facility Subsystem  
US MINES..... Mines Master Index File  
ABANDONED MINES..... Abandoned Mines  
FINDS..... Facility Index System/Facility Registry System  
DOCKET HWC..... Hazardous Waste Compliance Docket Listing

## EXECUTIVE SUMMARY

UXO.....	Unexploded Ordnance Sites
ECHO.....	Enforcement & Compliance History Information
FUELS PROGRAM.....	EPA Fuels Program Registered Listing
AIRS.....	Permitted Airs Facility Listing
ASBESTOS.....	Asbestos Notification Listing
COAL ASH.....	Coal Ash Disposal Sites
DRYCLEANERS.....	Drycleaner Listing
Financial Assurance.....	Financial Assurance Information Listing
LEAD.....	Environmental Lead Program Report Tracking Database
NPDES.....	Permitted Facility Listing
UIC.....	UIC Information
MINES MRDS.....	Mineral Resources Data System

### EDR HIGH RISK HISTORICAL RECORDS

#### *EDR Exclusive Records*

EDR MGP.....	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto.....	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner.....	EDR Exclusive Historical 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

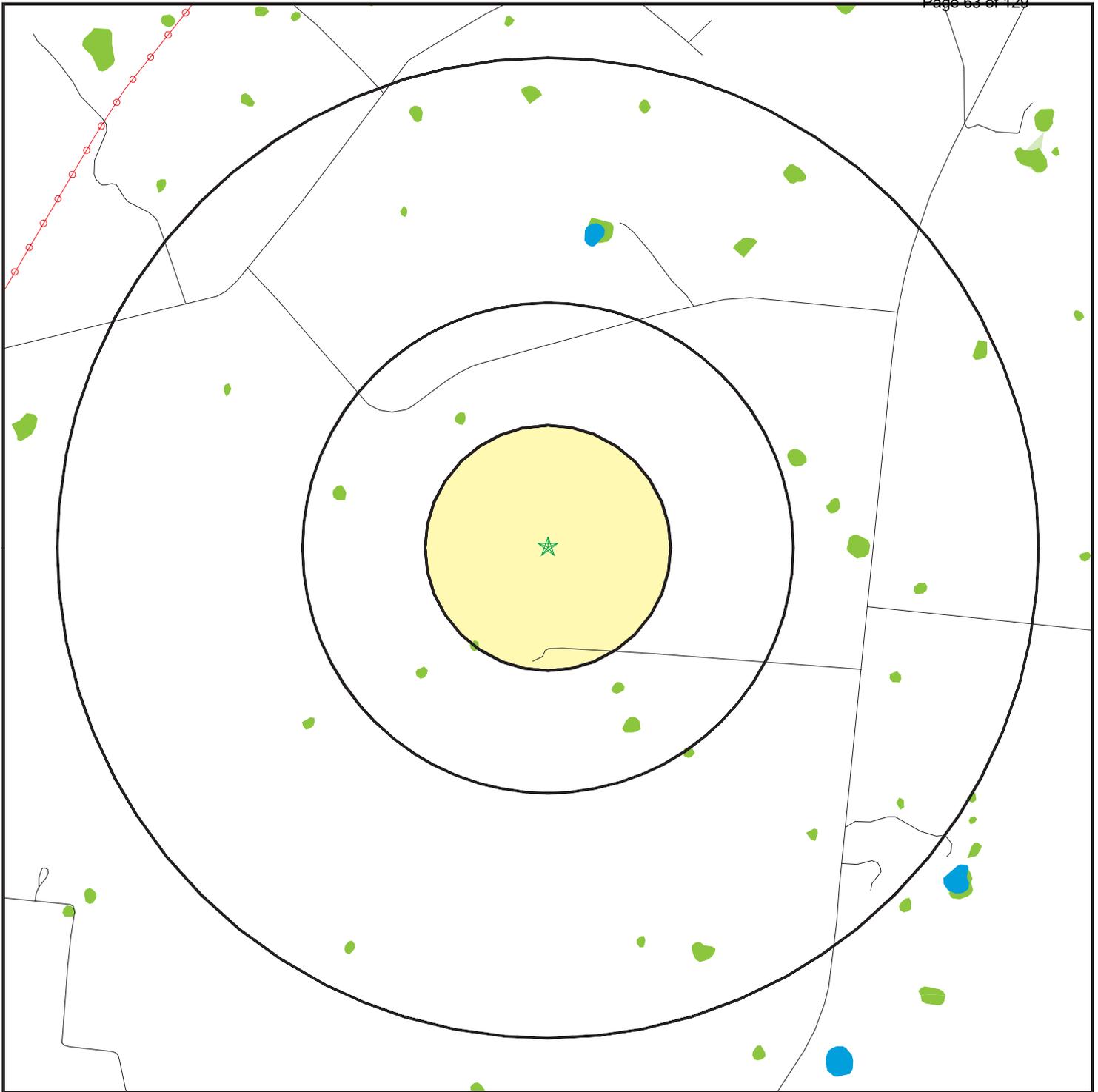
### SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

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

## EXECUTIVE SUMMARY

There were no unmapped sites in this report.



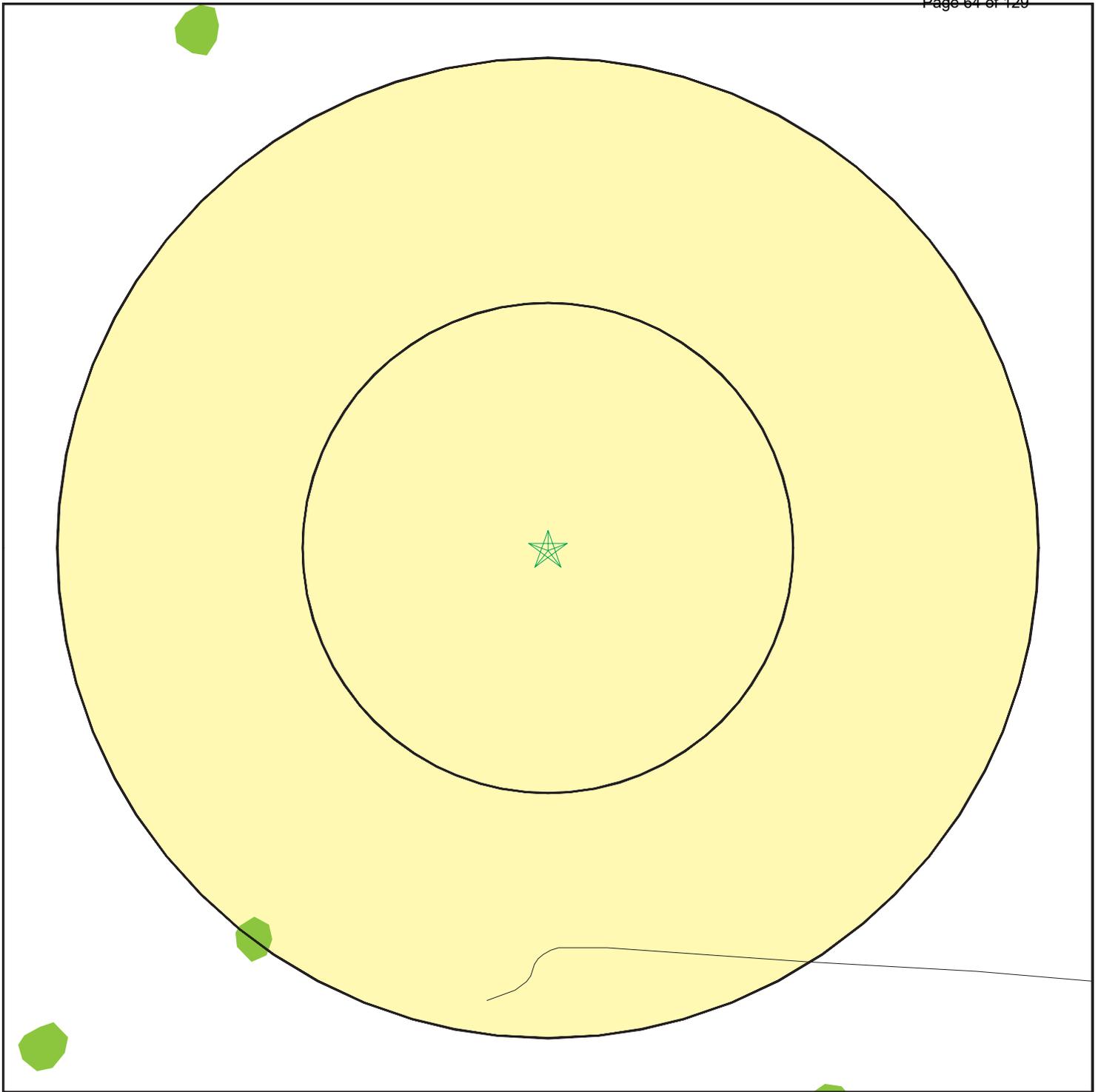
- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

- Indian Reservations BIA
- ▲ Power transmission lines
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Meade County Solar  
 ADDRESS: Big Spring Road  
 Vine Grove KY 40175  
 LAT/LONG: 37.834656 / 86.145761

CLIENT: Linebach Funkhouser Inc.  
 CONTACT: Jason Boston  
 INQUIRY #: 6302981.2s  
 DATE: December 15, 2020 4:44 pm



- ★ 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                      1/16                      1/8                      1/4 Miles

- ▨ Indian Reservations BIA
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Meade County Solar  
 ADDRESS: Big Spring Road  
 Vine Grove KY 40175  
 LAT/LONG: 37.834656 / 86.145761

CLIENT: Linebach Funkhouser Inc.  
 CONTACT: Jason Boston  
 INQUIRY #: 6302981.2s  
 DATE: December 15, 2020 4:45 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	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
<b><i>Federal Delisted NPL site list</i></b>								
Delisted NPL	1.000		0	0	0	0	NR	0
<b><i>Federal CERCLIS list</i></b>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<b><i>Federal CERCLIS NFRAP site list</i></b>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA CORRACTS facilities list</i></b>								
CORRACTS	1.000		0	0	0	0	NR	0
<b><i>Federal RCRA non-CORRACTS TSD facilities list</i></b>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<b><i>Federal RCRA generators list</i></b>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
<b><i>Federal institutional controls / engineering controls registries</i></b>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
<b><i>Federal ERNS list</i></b>								
ERNS	TP		NR	NR	NR	NR	NR	0
<b><i>State- and tribal - equivalent CERCLIS</i></b>								
SHWS	1.000		0	0	0	0	NR	0
<b><i>State and tribal landfill and/or solid waste disposal site lists</i></b>								
SWF/LF	0.500		0	0	0	NR	NR	0
<b><i>State and tribal leaking storage tank lists</i></b>								
PSTEAF	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
SB193	0.500		0	0	0	NR	NR	0
<b><i>State and tribal registered storage tank lists</i></b>								
FEMA UST	0.250		0	0	NR	NR	NR	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	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
<b>State and tribal institutional control / engineering control registries</b>								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
<b>State and tribal voluntary cleanup sites</b>								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
<b>State and tribal Brownfields sites</b>								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>ADDITIONAL ENVIRONMENTAL RECORDS</b>								
<b>Local Brownfield lists</b>								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Landfill / Solid Waste Disposal Sites</b>								
SWRCY	0.500		0	0	0	NR	NR	0
HIST LF	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
<b>Local Lists of Hazardous waste / Contaminated Sites</b>								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
<b>Local Land Records</b>								
LIENS 2	TP		NR	NR	NR	NR	NR	0
<b>Records of Emergency Release Reports</b>								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
<b>Other Ascertainable Records</b>								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	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
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
ASBESTOS	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
MINES MRDS	TP		NR	NR	NR	NR	NR	0

### EDR HIGH RISK HISTORICAL RECORDS

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

EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0

### EDR RECOVERED GOVERNMENT ARCHIVES

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

RGA HWS	TP		NR	NR	NR	NR	NR	0
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## MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>&lt; 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>&gt; 1</u>	<u>Total Plotted</u>
RGA LF	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

**NOTES:**

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID  
Direction  
Distance  
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number  
EPA ID Number

NO SITES FOUND

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
NO SITES FOUND					

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

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

#### NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/28/2020	Source: EPA
Date Data Arrived at EDR: 11/05/2020	Telephone: N/A
Date Made Active in Reports: 11/25/2020	Last EDR Contact: 12/02/2020
Number of Days to Update: 20	Next Scheduled EDR Contact: 01/11/2021
	Data Release Frequency: Quarterly

#### NPL Site Boundaries

##### Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)  
Telephone: 202-564-7333

EPA Region 1  
Telephone 617-918-1143

EPA Region 6  
Telephone: 214-655-6659

EPA Region 3  
Telephone 215-814-5418

EPA Region 7  
Telephone: 913-551-7247

EPA Region 4  
Telephone 404-562-8033

EPA Region 8  
Telephone: 303-312-6774

EPA Region 5  
Telephone 312-886-6686

EPA Region 9  
Telephone: 415-947-4246

EPA Region 10  
Telephone 206-553-8665

#### Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/28/2020	Source: EPA
Date Data Arrived at EDR: 11/05/2020	Telephone: N/A
Date Made Active in Reports: 11/25/2020	Last EDR Contact: 12/02/2020
Number of Days to Update: 20	Next Scheduled EDR Contact: 01/11/2021
	Data Release Frequency: Quarterly

#### NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/1991  
 Date Data Arrived at EDR: 02/02/1994  
 Date Made Active in Reports: 03/30/1994  
 Number of Days to Update: 56

Source: EPA  
 Telephone: 202-564-4267  
 Last EDR Contact: 08/15/2011  
 Next Scheduled EDR Contact: 11/28/2011  
 Data Release Frequency: No Update Planned

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

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/28/2020  
 Date Data Arrived at EDR: 11/05/2020  
 Date Made Active in Reports: 11/25/2020  
 Number of Days to Update: 20

Source: EPA  
 Telephone: N/A  
 Last EDR Contact: 12/02/2020  
 Next Scheduled EDR Contact: 01/11/2021  
 Data Release Frequency: Quarterly

## ***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019  
 Date Data Arrived at EDR: 04/05/2019  
 Date Made Active in Reports: 05/14/2019  
 Number of Days to Update: 39

Source: Environmental Protection Agency  
 Telephone: 703-603-8704  
 Last EDR Contact: 10/02/2020  
 Next Scheduled EDR Contact: 01/11/2021  
 Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/28/2020  
 Date Data Arrived at EDR: 11/05/2020  
 Date Made Active in Reports: 11/25/2020  
 Number of Days to Update: 20

Source: EPA  
 Telephone: 800-424-9346  
 Last EDR Contact: 12/02/2020  
 Next Scheduled EDR Contact: 01/25/2021  
 Data Release Frequency: Quarterly

## ***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 10/28/2020	Source: EPA
Date Data Arrived at EDR: 11/05/2020	Telephone: 800-424-9346
Date Made Active in Reports: 11/25/2020	Last EDR Contact: 12/02/2020
Number of Days to Update: 20	Next Scheduled EDR Contact: 01/25/2021
	Data Release Frequency: Quarterly

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

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/15/2020	Source: EPA
Date Data Arrived at EDR: 06/22/2020	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2020	Last EDR Contact: 09/22/2020
Number of Days to Update: 87	Next Scheduled EDR Contact: 01/04/2021
	Data Release Frequency: Quarterly

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

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

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). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/15/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/22/2020	Telephone: (404) 562-8651
Date Made Active in Reports: 09/18/2020	Last EDR Contact: 09/22/2020
Number of Days to Update: 88	Next Scheduled EDR Contact: 01/04/2021
	Data Release Frequency: Quarterly

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

RCRA-LQG: RCRA - Large Quantity Generators

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). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/22/2020	Telephone: (404) 562-8651
Date Made Active in Reports: 09/18/2020	Last EDR Contact: 09/22/2020
Number of Days to Update: 88	Next Scheduled EDR Contact: 01/04/2021
	Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## RCRA-SQG: RCRA - Small Quantity Generators

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). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/15/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/22/2020	Telephone: (404) 562-8651
Date Made Active in Reports: 09/18/2020	Last EDR Contact: 09/22/2020
Number of Days to Update: 88	Next Scheduled EDR Contact: 01/04/2021
	Data Release Frequency: Quarterly

## RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

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). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/15/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 06/22/2020	Telephone: (404) 562-8651
Date Made Active in Reports: 09/18/2020	Last EDR Contact: 09/22/2020
Number of Days to Update: 88	Next Scheduled EDR Contact: 01/04/2021
	Data Release Frequency: Quarterly

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

### LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/06/2020	Source: Department of the Navy
Date Data Arrived at EDR: 08/21/2020	Telephone: 843-820-7326
Date Made Active in Reports: 11/11/2020	Last EDR Contact: 11/05/2020
Number of Days to Update: 82	Next Scheduled EDR Contact: 02/22/2021
	Data Release Frequency: Varies

### US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/28/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/05/2020	Telephone: 703-603-0695
Date Made Active in Reports: 11/18/2020	Last EDR Contact: 11/05/2020
Number of Days to Update: 13	Next Scheduled EDR Contact: 03/08/2021
	Data Release Frequency: Varies

### US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/28/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/05/2020	Telephone: 703-603-0695
Date Made Active in Reports: 11/18/2020	Last EDR Contact: 11/05/2020
Number of Days to Update: 13	Next Scheduled EDR Contact: 03/08/2021
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ***Federal ERNS list***

### ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/15/2020

Date Data Arrived at EDR: 06/22/2020

Date Made Active in Reports: 09/17/2020

Number of Days to Update: 87

Source: National Response Center, United States Coast Guard

Telephone: 202-267-2180

Last EDR Contact: 09/22/2020

Next Scheduled EDR Contact: 01/04/2021

Data Release Frequency: Quarterly

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

### SHWS: State Leads List

State Hazardous Waste Sites. State hazardous waste site 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. Available information varies by state.

Date of Government Version: 08/24/2020

Date Data Arrived at EDR: 08/26/2020

Date Made Active in Reports: 11/17/2020

Number of Days to Update: 83

Source: Department of Environmental Protection

Telephone: 502-564-6716

Last EDR Contact: 11/16/2020

Next Scheduled EDR Contact: 03/08/2021

Data Release Frequency: Quarterly

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

### SWF/LF: Solid Waste Facilities List

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/21/2020

Date Data Arrived at EDR: 07/24/2020

Date Made Active in Reports: 10/12/2020

Number of Days to Update: 80

Source: Department of Environmental Protection

Telephone: 502-564-6716

Last EDR Contact: 10/14/2020

Next Scheduled EDR Contact: 02/08/2021

Data Release Frequency: Semi-Annually

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

### PSTEAF: Facility Ranking List

The Underground Storage Tank Branch (USTB) has ranked all PSTEAF reimbursable facilities requiring corrective action, in accordance with 401 KAR 42:290. Directive letters will be issued on the basis of facility ranking and available PSTEAF funding in sequential order as ranked. For example, Rank 2 facilities will be issued directives before Rank 3 facilities.

Date of Government Version: 07/01/2020

Date Data Arrived at EDR: 07/07/2020

Date Made Active in Reports: 09/24/2020

Number of Days to Update: 79

Source: Department of Environmental Protection

Telephone: 502-564-5981

Last EDR Contact: 10/06/2020

Next Scheduled EDR Contact: 01/18/2021

Data Release Frequency: Quarterly

### INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/14/2020

Date Data Arrived at EDR: 05/20/2020

Date Made Active in Reports: 08/12/2020

Number of Days to Update: 84

Source: EPA Region 10

Telephone: 206-553-2857

Last EDR Contact: 10/23/2020

Next Scheduled EDR Contact: 02/01/2021

Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/14/2020	Source: EPA Region 8
Date Data Arrived at EDR: 05/20/2020	Telephone: 303-312-6271
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/29/2020	Source: EPA Region 1
Date Data Arrived at EDR: 05/20/2020	Telephone: 617-918-1313
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/14/2020	Source: EPA, Region 5
Date Data Arrived at EDR: 05/20/2020	Telephone: 312-886-7439
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 04/14/2020	Source: EPA Region 4
Date Data Arrived at EDR: 05/26/2020	Telephone: 404-562-8677
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 78	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/08/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/20/2020	Telephone: 415-972-3372
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/08/2020	Source: EPA Region 6
Date Data Arrived at EDR: 05/20/2020	Telephone: 214-665-6597
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/15/2020	Source: EPA Region 7
Date Data Arrived at EDR: 05/20/2020	Telephone: 913-551-7003
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## SB193: SB193 Branch Site Inventory List

The inventory indicates facilities that have performed permanent closure activities at a regulated underground storage tank facility and have known soil and/or groundwater contamination.

Date of Government Version: 09/05/2006	Source: Department of Environmental Protection
Date Data Arrived at EDR: 09/13/2006	Telephone: 502-564-5981
Date Made Active in Reports: 10/18/2006	Last EDR Contact: 04/08/2016
Number of Days to Update: 35	Next Scheduled EDR Contact: 07/25/2016
	Data Release Frequency: No Update Planned

## State and tribal registered storage tank lists

### FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 07/21/2020	Source: FEMA
Date Data Arrived at EDR: 09/03/2020	Telephone: 202-646-5797
Date Made Active in Reports: 11/25/2020	Last EDR Contact: 10/01/2020
Number of Days to Update: 83	Next Scheduled EDR Contact: 01/18/2021
	Data Release Frequency: Varies

### UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 08/05/2020	Source: Department of Environmental Protection
Date Data Arrived at EDR: 08/26/2020	Telephone: 502-564-5981
Date Made Active in Reports: 11/17/2020	Last EDR Contact: 11/19/2020
Number of Days to Update: 83	Next Scheduled EDR Contact: 03/08/2021
	Data Release Frequency: Quarterly

### AST: Above Ground Storage Tanks

A listing of aboveground storage tank site locations.

Date of Government Version: 08/18/2020	Source: Office of State Fire Marshal
Date Data Arrived at EDR: 08/19/2020	Telephone: 502-564-4010
Date Made Active in Reports: 11/06/2020	Last EDR Contact: 11/16/2020
Number of Days to Update: 79	Next Scheduled EDR Contact: 03/08/2021
	Data Release Frequency: Varies

### INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/14/2020	Source: EPA Region 8
Date Data Arrived at EDR: 05/20/2020	Telephone: 303-312-6137
Date Made Active in Reports: 08/13/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 85	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

### INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/03/2020	Source: EPA Region 7
Date Data Arrived at EDR: 05/20/2020	Telephone: 913-551-7003
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/29/2020	Source: EPA, Region 1
Date Data Arrived at EDR: 05/20/2020	Telephone: 617-918-1313
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/14/2020	Source: EPA Region 10
Date Data Arrived at EDR: 05/20/2020	Telephone: 206-553-2857
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/08/2020	Source: EPA Region 9
Date Data Arrived at EDR: 05/20/2020	Telephone: 415-972-3368
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/08/2020	Source: EPA Region 6
Date Data Arrived at EDR: 05/20/2020	Telephone: 214-665-7591
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/14/2020	Source: EPA Region 5
Date Data Arrived at EDR: 05/20/2020	Telephone: 312-886-6136
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 84	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 04/14/2020	Source: EPA Region 4
Date Data Arrived at EDR: 05/26/2020	Telephone: 404-562-9424
Date Made Active in Reports: 08/12/2020	Last EDR Contact: 10/23/2020
Number of Days to Update: 78	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

### ENG CONTROLS: Engineering Controls Site Listing

A listing of sites that use engineering controls.

Date of Government Version: 08/24/2020	Source: Department of Environmental Protection
Date Data Arrived at EDR: 08/26/2020	Telephone: 502-564-6716
Date Made Active in Reports: 11/17/2020	Last EDR Contact: 11/16/2020
Number of Days to Update: 83	Next Scheduled EDR Contact: 03/08/2021
	Data Release Frequency: Varies

### INST CONTROL: State Superfund Database

A list of closed sites in the State Superfund Database. Institutional controls would be in place at any site that uses Contained or Managed as a Closure Option.

Date of Government Version: 08/24/2020	Source: Department of Environmental Protection
Date Data Arrived at EDR: 08/26/2020	Telephone: 502-564-6716
Date Made Active in Reports: 11/17/2020	Last EDR Contact: 11/15/2020
Number of Days to Update: 83	Next Scheduled EDR Contact: 03/08/2021
	Data Release Frequency: Varies

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

### INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

### INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 09/16/2020
Number of Days to Update: 142	Next Scheduled EDR Contact: 01/04/2021
	Data Release Frequency: Varies

### VCP: Voluntary Cleanup Program Sites

Sites that have been accepted into the Voluntary Cleanup Program or have submitted an application.

Date of Government Version: 06/23/2020	Source: Department of Environmental Protection
Date Data Arrived at EDR: 06/25/2020	Telephone: 502-564-6716
Date Made Active in Reports: 09/11/2020	Last EDR Contact: 09/23/2020
Number of Days to Update: 78	Next Scheduled EDR Contact: 01/11/2021
	Data Release Frequency: Varies

## **State and tribal Brownfields sites**

### BROWNFIELDS: Kentucky Brownfield Inventory

The Kentucky Brownfield Program has created an inventory of brownfield sites in order to market the properties to those interested in brownfield redevelopment. The Kentucky Brownfield Program is working to promote the redevelopment of these sites by helping to remove barriers that prevent reuse, providing useful information to communities, developers and the public and encouraging a climate that fosters redevelopment of contaminated sites.

Date of Government Version: 05/06/2020	Source: Division of Compliance Assistance
Date Data Arrived at EDR: 07/09/2020	Telephone: 502-564-0323
Date Made Active in Reports: 09/24/2020	Last EDR Contact: 10/07/2020
Number of Days to Update: 77	Next Scheduled EDR Contact: 01/25/2021
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## ADDITIONAL ENVIRONMENTAL RECORDS

### **Local Brownfield lists**

#### US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/14/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/15/2020	Telephone: 202-566-2777
Date Made Active in Reports: 12/10/2020	Last EDR Contact: 12/11/2020
Number of Days to Update: 86	Next Scheduled EDR Contact: 03/29/2021
	Data Release Frequency: Semi-Annually

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

#### SWRCY: Recycling Facilities

A listing of recycling facilities located in the state of Kentucky.

Date of Government Version: 09/13/2019	Source: Department of Environmental Protection
Date Data Arrived at EDR: 10/23/2019	Telephone: 502-564-6716
Date Made Active in Reports: 01/03/2020	Last EDR Contact: 10/12/2020
Number of Days to Update: 72	Next Scheduled EDR Contact: 01/25/2021
	Data Release Frequency: Varies

#### HIST LF: Historical Landfills

This solid waste facility listing contains detail information that is not included in the landfill listing. A listing with detail information is no longer available by the Department of Environmental Protection.

Date of Government Version: 05/01/2003	Source: Department of Environmental Protection
Date Data Arrived at EDR: 03/30/2006	Telephone: 502-564-6716
Date Made Active in Reports: 05/01/2006	Last EDR Contact: 02/23/2009
Number of Days to Update: 32	Next Scheduled EDR Contact: 05/25/2009
	Data Release Frequency: No Update Planned

#### INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998	Source: Environmental Protection Agency
Date Data Arrived at EDR: 12/03/2007	Telephone: 703-308-8245
Date Made Active in Reports: 01/24/2008	Last EDR Contact: 10/20/2020
Number of Days to Update: 52	Next Scheduled EDR Contact: 02/08/2021
	Data Release Frequency: Varies

#### ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009	Source: EPA, Region 9
Date Data Arrived at EDR: 05/07/2009	Telephone: 415-947-4219
Date Made Active in Reports: 09/21/2009	Last EDR Contact: 10/13/2020
Number of Days to Update: 137	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: No Update Planned

## IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014	Source: Department of Health & Human Services, Indian Health Service
Date Data Arrived at EDR: 08/06/2014	Telephone: 301-443-1452
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 10/30/2020
Number of Days to Update: 176	Next Scheduled EDR Contact: 02/08/2021
	Data Release Frequency: Varies

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

#### US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 03/18/2020	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 03/19/2020	Telephone: 202-307-1000
Date Made Active in Reports: 06/09/2020	Last EDR Contact: 11/16/2020
Number of Days to Update: 82	Next Scheduled EDR Contact: 03/08/2021
	Data Release Frequency: No Update Planned

#### CDL: Clandestine Drug Lab Location Listing

Clandestine drug lab site locations.

Date of Government Version: 08/24/2020	Source: Department of Environmental Protection
Date Data Arrived at EDR: 08/26/2020	Telephone: 502-564-6716
Date Made Active in Reports: 11/16/2020	Last EDR Contact: 11/16/2020
Number of Days to Update: 82	Next Scheduled EDR Contact: 03/08/2021
	Data Release Frequency: Varies

#### US CDL: Clandestine Drug Labs

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.

Date of Government Version: 03/18/2020	Source: Drug Enforcement Administration
Date Data Arrived at EDR: 03/19/2020	Telephone: 202-307-1000
Date Made Active in Reports: 06/09/2020	Last EDR Contact: 11/16/2020
Number of Days to Update: 82	Next Scheduled EDR Contact: 03/08/2021
	Data Release Frequency: Quarterly

### **Local Land Records**

#### LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/28/2020  
 Date Data Arrived at EDR: 11/05/2020  
 Date Made Active in Reports: 11/25/2020  
 Number of Days to Update: 20

Source: Environmental Protection Agency  
 Telephone: 202-564-6023  
 Last EDR Contact: 12/02/2020  
 Next Scheduled EDR Contact: 01/11/2021  
 Data Release Frequency: Semi-Annually

## **Records of Emergency Release Reports**

### **HMIRS: Hazardous Materials Information Reporting System**

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/20/2020  
 Date Data Arrived at EDR: 09/22/2020  
 Date Made Active in Reports: 12/14/2020  
 Number of Days to Update: 83

Source: U.S. Department of Transportation  
 Telephone: 202-366-4555  
 Last EDR Contact: 09/22/2020  
 Next Scheduled EDR Contact: 01/04/2021  
 Data Release Frequency: Quarterly

### **SPILLS: State spills**

A listing of spill and/or release related incidents.

Date of Government Version: 06/25/2020  
 Date Data Arrived at EDR: 07/09/2020  
 Date Made Active in Reports: 09/24/2020  
 Number of Days to Update: 77

Source: DEP, Emergency Response  
 Telephone: 502-564-2380  
 Last EDR Contact: 10/07/2020  
 Next Scheduled EDR Contact: 01/25/2021  
 Data Release Frequency: Varies

## **Other Ascertainable Records**

### **RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated**

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.

Date of Government Version: 06/15/2020  
 Date Data Arrived at EDR: 06/22/2020  
 Date Made Active in Reports: 09/18/2020  
 Number of Days to Update: 88

Source: Environmental Protection Agency  
 Telephone: (404) 562-8651  
 Last EDR Contact: 09/22/2020  
 Next Scheduled EDR Contact: 01/04/2021  
 Data Release Frequency: Quarterly

### **FUDS: Formerly Used Defense Sites**

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 08/05/2020  
 Date Data Arrived at EDR: 08/13/2020  
 Date Made Active in Reports: 10/21/2020  
 Number of Days to Update: 69

Source: U.S. Army Corps of Engineers  
 Telephone: 202-528-4285  
 Last EDR Contact: 11/17/2020  
 Next Scheduled EDR Contact: 03/01/2021  
 Data Release Frequency: Varies

### **DOD: Department of Defense Sites**

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005  
 Date Data Arrived at EDR: 11/10/2006  
 Date Made Active in Reports: 01/11/2007  
 Number of Days to Update: 62

Source: USGS  
 Telephone: 888-275-8747  
 Last EDR Contact: 10/13/2020  
 Next Scheduled EDR Contact: 01/25/2021  
 Data Release Frequency: Semi-Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018	Source: U.S. Geological Survey
Date Data Arrived at EDR: 04/11/2018	Telephone: 888-275-8747
Date Made Active in Reports: 11/06/2019	Last EDR Contact: 10/08/2020
Number of Days to Update: 574	Next Scheduled EDR Contact: 01/18/2021
	Data Release Frequency: N/A

## SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/03/2017	Telephone: 615-532-8599
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 11/09/2020
Number of Days to Update: 63	Next Scheduled EDR Contact: 02/22/2021
	Data Release Frequency: Varies

## US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/21/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/22/2020	Telephone: 202-566-1917
Date Made Active in Reports: 12/14/2020	Last EDR Contact: 09/22/2020
Number of Days to Update: 83	Next Scheduled EDR Contact: 01/04/2021
	Data Release Frequency: Quarterly

## EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/21/2014	Telephone: 617-520-3000
Date Made Active in Reports: 06/17/2014	Last EDR Contact: 11/02/2020
Number of Days to Update: 88	Next Scheduled EDR Contact: 02/15/2021
	Data Release Frequency: Quarterly

## 2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 05/08/2018	Telephone: 703-308-4044
Date Made Active in Reports: 07/20/2018	Last EDR Contact: 11/06/2020
Number of Days to Update: 73	Next Scheduled EDR Contact: 02/15/2021
	Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016	Source: EPA
Date Data Arrived at EDR: 06/17/2020	Telephone: 202-260-5521
Date Made Active in Reports: 09/10/2020	Last EDR Contact: 09/18/2020
Number of Days to Update: 85	Next Scheduled EDR Contact: 12/28/2020
	Data Release Frequency: Every 4 Years

## TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018	Source: EPA
Date Data Arrived at EDR: 08/14/2020	Telephone: 202-566-0250
Date Made Active in Reports: 11/04/2020	Last EDR Contact: 11/17/2020
Number of Days to Update: 82	Next Scheduled EDR Contact: 03/01/2021
	Data Release Frequency: Annually

## SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 07/20/2020	Source: EPA
Date Data Arrived at EDR: 07/21/2020	Telephone: 202-564-4203
Date Made Active in Reports: 10/08/2020	Last EDR Contact: 10/19/2020
Number of Days to Update: 79	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Annually

## ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 10/28/2020	Source: EPA
Date Data Arrived at EDR: 11/05/2020	Telephone: 703-416-0223
Date Made Active in Reports: 11/25/2020	Last EDR Contact: 12/02/2020
Number of Days to Update: 20	Next Scheduled EDR Contact: 03/15/2021
	Data Release Frequency: Annually

## RMP: Risk Management Plans

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 07/24/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/03/2020	Telephone: 202-564-8600
Date Made Active in Reports: 10/21/2020	Last EDR Contact: 10/14/2020
Number of Days to Update: 79	Next Scheduled EDR Contact: 02/01/2021
	Data Release Frequency: Varies

## RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

## PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/27/2020	Source: EPA
Date Data Arrived at EDR: 05/06/2020	Telephone: 202-564-6023
Date Made Active in Reports: 06/09/2020	Last EDR Contact: 12/02/2020
Number of Days to Update: 34	Next Scheduled EDR Contact: 02/15/2021
	Data Release Frequency: Quarterly

## PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/09/2019	Source: EPA
Date Data Arrived at EDR: 10/11/2019	Telephone: 202-566-0500
Date Made Active in Reports: 12/20/2019	Last EDR Contact: 10/02/2020
Number of Days to Update: 70	Next Scheduled EDR Contact: 01/18/2021
	Data Release Frequency: Annually

## ICIS: Integrated Compliance Information System

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.

Date of Government Version: 11/18/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/23/2016	Telephone: 202-564-2501
Date Made Active in Reports: 02/10/2017	Last EDR Contact: 10/01/2020
Number of Days to Update: 79	Next Scheduled EDR Contact: 01/18/2021
	Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

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

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 08/18/2017
Number of Days to Update: 25	Next Scheduled EDR Contact: 12/04/2017
	Data Release Frequency: No Update Planned

## MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/05/2020	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 08/10/2020	Telephone: 301-415-7169
Date Made Active in Reports: 10/08/2020	Last EDR Contact: 10/12/2020
Number of Days to Update: 59	Next Scheduled EDR Contact: 01/31/2021
	Data Release Frequency: Quarterly

## COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2018	Source: Department of Energy
Date Data Arrived at EDR: 12/04/2019	Telephone: 202-586-8719
Date Made Active in Reports: 01/15/2020	Last EDR Contact: 12/01/2020
Number of Days to Update: 42	Next Scheduled EDR Contact: 03/15/2021
	Data Release Frequency: Varies

## COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/05/2019	Telephone: N/A
Date Made Active in Reports: 11/11/2019	Last EDR Contact: 11/30/2020
Number of Days to Update: 251	Next Scheduled EDR Contact: 03/15/2021
	Data Release Frequency: Varies

## PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/06/2019	Telephone: 202-566-0517
Date Made Active in Reports: 02/10/2020	Last EDR Contact: 11/06/2021
Number of Days to Update: 96	Next Scheduled EDR Contact: 02/15/2021
	Data Release Frequency: Varies

## RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/01/2019  
 Date Data Arrived at EDR: 07/01/2019  
 Date Made Active in Reports: 09/23/2019  
 Number of Days to Update: 84

Source: Environmental Protection Agency  
 Telephone: 202-343-9775  
 Last EDR Contact: 09/24/2020  
 Next Scheduled EDR Contact: 01/11/2021  
 Data Release Frequency: Quarterly

## HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
 Date Data Arrived at EDR: 03/01/2007  
 Date Made Active in Reports: 04/10/2007  
 Number of Days to Update: 40

Source: Environmental Protection Agency  
 Telephone: 202-564-2501  
 Last EDR Contact: 12/17/2007  
 Next Scheduled EDR Contact: 03/17/2008  
 Data Release Frequency: No Update Planned

## HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006  
 Date Data Arrived at EDR: 03/01/2007  
 Date Made Active in Reports: 04/10/2007  
 Number of Days to Update: 40

Source: Environmental Protection Agency  
 Telephone: 202-564-2501  
 Last EDR Contact: 12/17/2008  
 Next Scheduled EDR Contact: 03/17/2008  
 Data Release Frequency: No Update Planned

## DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020  
 Date Data Arrived at EDR: 01/28/2020  
 Date Made Active in Reports: 04/17/2020  
 Number of Days to Update: 80

Source: Department of Transportation, Office of Pipeline Safety  
 Telephone: 202-366-4595  
 Last EDR Contact: 10/27/2020  
 Next Scheduled EDR Contact: 02/08/2021  
 Data Release Frequency: Quarterly

## CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2020  
 Date Data Arrived at EDR: 07/15/2020  
 Date Made Active in Reports: 07/21/2020  
 Number of Days to Update: 6

Source: Department of Justice, Consent Decree Library  
 Telephone: Varies  
 Last EDR Contact: 10/01/2020  
 Next Scheduled EDR Contact: 01/18/2021  
 Data Release Frequency: Varies

## BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2017  
 Date Data Arrived at EDR: 06/22/2020  
 Date Made Active in Reports: 11/20/2020  
 Number of Days to Update: 151

Source: EPA/NTIS  
 Telephone: 800-424-9346  
 Last EDR Contact: 09/22/2020  
 Next Scheduled EDR Contact: 01/04/2021  
 Data Release Frequency: Biennially

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014	Source: USGS
Date Data Arrived at EDR: 07/14/2015	Telephone: 202-208-3710
Date Made Active in Reports: 01/10/2017	Last EDR Contact: 10/06/2020
Number of Days to Update: 546	Next Scheduled EDR Contact: 01/18/2021
	Data Release Frequency: Semi-Annually

## FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017	Source: Department of Energy
Date Data Arrived at EDR: 09/11/2018	Telephone: 202-586-3559
Date Made Active in Reports: 09/14/2018	Last EDR Contact: 11/06/2020
Number of Days to Update: 3	Next Scheduled EDR Contact: 02/15/2021
	Data Release Frequency: Varies

## UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019	Source: Department of Energy
Date Data Arrived at EDR: 11/15/2019	Telephone: 505-845-0011
Date Made Active in Reports: 01/28/2020	Last EDR Contact: 11/20/2020
Number of Days to Update: 74	Next Scheduled EDR Contact: 03/01/2021
	Data Release Frequency: Varies

## LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 10/28/2020	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/05/2020	Telephone: 703-603-8787
Date Made Active in Reports: 11/25/2020	Last EDR Contact: 12/02/2020
Number of Days to Update: 20	Next Scheduled EDR Contact: 01/11/2021
	Data Release Frequency: Varies

## LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust.

Date of Government Version: 04/05/2001	Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010	Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/02/2009
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

## US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/12/2016  
 Date Data Arrived at EDR: 10/26/2016  
 Date Made Active in Reports: 02/03/2017  
 Number of Days to Update: 100

Source: EPA  
 Telephone: 202-564-2496  
 Last EDR Contact: 09/26/2017  
 Next Scheduled EDR Contact: 01/08/2018  
 Data Release Frequency: Annually

## US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016  
 Date Data Arrived at EDR: 10/26/2016  
 Date Made Active in Reports: 02/03/2017  
 Number of Days to Update: 100

Source: EPA  
 Telephone: 202-564-2496  
 Last EDR Contact: 09/26/2017  
 Next Scheduled EDR Contact: 01/08/2018  
 Data Release Frequency: Annually

## MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 09/10/2020  
 Date Data Arrived at EDR: 09/15/2020  
 Date Made Active in Reports: 11/20/2020  
 Number of Days to Update: 66

Source: DOL, Mine Safety & Health Admi  
 Telephone: 202-693-9424  
 Last EDR Contact: 11/24/2020  
 Next Scheduled EDR Contact: 03/15/2021  
 Data Release Frequency: Quarterly

## US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/04/2020  
 Date Data Arrived at EDR: 08/25/2020  
 Date Made Active in Reports: 11/18/2020  
 Number of Days to Update: 85

Source: Department of Labor, Mine Safety and Health Administration  
 Telephone: 303-231-5959  
 Last EDR Contact: 11/23/2020  
 Next Scheduled EDR Contact: 03/08/2021  
 Data Release Frequency: Semi-Annually

## US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020  
 Date Data Arrived at EDR: 05/27/2020  
 Date Made Active in Reports: 08/13/2020  
 Number of Days to Update: 78

Source: USGS  
 Telephone: 703-648-7709  
 Last EDR Contact: 11/25/2020  
 Next Scheduled EDR Contact: 03/08/2021  
 Data Release Frequency: Varies

## US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011  
 Date Data Arrived at EDR: 06/08/2011  
 Date Made Active in Reports: 09/13/2011  
 Number of Days to Update: 97

Source: USGS  
 Telephone: 703-648-7709  
 Last EDR Contact: 11/25/2020  
 Next Scheduled EDR Contact: 03/08/2021  
 Data Release Frequency: Varies

## ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 09/16/2020  
 Date Data Arrived at EDR: 09/17/2020  
 Date Made Active in Reports: 12/10/2020  
 Number of Days to Update: 84

Source: Department of Interior  
 Telephone: 202-208-2609  
 Last EDR Contact: 12/10/2020  
 Next Scheduled EDR Contact: 03/22/2021  
 Data Release Frequency: Quarterly

## FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/04/2020  
 Date Data Arrived at EDR: 09/15/2020  
 Date Made Active in Reports: 11/20/2020  
 Number of Days to Update: 66

Source: EPA  
 Telephone: (404) 562-9900  
 Last EDR Contact: 12/01/2020  
 Next Scheduled EDR Contact: 03/15/2021  
 Data Release Frequency: Quarterly

## UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018  
 Date Data Arrived at EDR: 07/02/2020  
 Date Made Active in Reports: 09/17/2020  
 Number of Days to Update: 77

Source: Department of Defense  
 Telephone: 703-704-1564  
 Last EDR Contact: 10/08/2020  
 Next Scheduled EDR Contact: 01/25/2021  
 Data Release Frequency: Varies

## DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018  
 Date Data Arrived at EDR: 07/26/2018  
 Date Made Active in Reports: 10/05/2018  
 Number of Days to Update: 71

Source: Environmental Protection Agency  
 Telephone: 202-564-0527  
 Last EDR Contact: 11/17/2020  
 Next Scheduled EDR Contact: 03/08/2021  
 Data Release Frequency: Varies

## ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 06/27/2020  
 Date Data Arrived at EDR: 07/02/2020  
 Date Made Active in Reports: 09/28/2020  
 Number of Days to Update: 88

Source: Environmental Protection Agency  
 Telephone: 202-564-2280  
 Last EDR Contact: 10/06/2020  
 Next Scheduled EDR Contact: 01/18/2021  
 Data Release Frequency: Quarterly

## FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/17/2020  
 Date Data Arrived at EDR: 08/17/2020  
 Date Made Active in Reports: 10/21/2020  
 Number of Days to Update: 65

Source: EPA  
 Telephone: 800-385-6164  
 Last EDR Contact: 11/13/2020  
 Next Scheduled EDR Contact: 03/01/2021  
 Data Release Frequency: Quarterly

## AIRS: Permitted Airs Facility Listing

A listing of permitted Airs facilities.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/14/2020  
 Date Data Arrived at EDR: 07/15/2020  
 Date Made Active in Reports: 07/22/2020  
 Number of Days to Update: 7

Source: Department of Environmental Protection  
 Telephone: 502-573-3382  
 Last EDR Contact: 10/20/2020  
 Next Scheduled EDR Contact: 02/08/2021  
 Data Release Frequency: Semi-Annually

## ASBESTOS: Asbestos Notification Listing Asbestos sites

Date of Government Version: 08/26/2020  
 Date Data Arrived at EDR: 08/26/2020  
 Date Made Active in Reports: 11/18/2020  
 Number of Days to Update: 84

Source: Department of Environmental Protection  
 Telephone: 502-782-6780  
 Last EDR Contact: 12/04/2020  
 Next Scheduled EDR Contact: 03/15/2021  
 Data Release Frequency: Varies

## COAL ASH: Coal Ash Disposal Sites A listing of coal ash pond site locations.

Date of Government Version: 04/17/2020  
 Date Data Arrived at EDR: 04/20/2020  
 Date Made Active in Reports: 05/06/2020  
 Number of Days to Update: 16

Source: Department of Environmental Protection  
 Telephone: 502-564-6716  
 Last EDR Contact: 10/09/2020  
 Next Scheduled EDR Contact: 02/08/2021  
 Data Release Frequency: No Update Planned

## DRYCLEANERS: Drycleaner Listing A listing of drycleaner facility locations.

Date of Government Version: 07/14/2020  
 Date Data Arrived at EDR: 07/15/2020  
 Date Made Active in Reports: 07/22/2020  
 Number of Days to Update: 7

Source: Department of Environmental Protection  
 Telephone: 502-573-3382  
 Last EDR Contact: 10/20/2020  
 Next Scheduled EDR Contact: 02/08/2021  
 Data Release Frequency: Semi-Annually

## Financial Assurance 1: Financial Assurance Information Listing A listing of financial assurance information.

Date of Government Version: 07/23/2020  
 Date Data Arrived at EDR: 07/24/2020  
 Date Made Active in Reports: 10/12/2020  
 Number of Days to Update: 80

Source: Department of Environmental Protection  
 Telephone: 502-564-6716  
 Last EDR Contact: 07/21/2020  
 Next Scheduled EDR Contact: 02/08/2021  
 Data Release Frequency: Varies

## Financial Assurance 2: Financial Assurance Information Listing Financial Assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/14/2014  
 Date Data Arrived at EDR: 06/06/2014  
 Date Made Active in Reports: 06/24/2014  
 Number of Days to Update: 18

Source: Department of Environmental Protection  
 Telephone: 502-564-5981  
 Last EDR Contact: 10/20/2020  
 Next Scheduled EDR Contact: 02/08/2021  
 Data Release Frequency: Varies

## Financial Assurance 3: Financial Assurance Information Listing A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 07/23/2020  
 Date Data Arrived at EDR: 07/24/2020  
 Date Made Active in Reports: 10/12/2020  
 Number of Days to Update: 80

Source: Department of Environmental Protection  
 Telephone: 502-564-6716  
 Last EDR Contact: 10/20/2020  
 Next Scheduled EDR Contact: 02/08/2021  
 Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## LEAD: Environmental Lead Program Report Tracking Database

Lead Report Tracking Database

Date of Government Version: 01/27/2017  
 Date Data Arrived at EDR: 02/02/2017  
 Date Made Active in Reports: 08/21/2017  
 Number of Days to Update: 200

Source: Department of Public Health  
 Telephone: 502-564-4537  
 Last EDR Contact: 10/28/2020  
 Next Scheduled EDR Contact: 02/15/2021  
 Data Release Frequency: Varies

## NPDES: Permitted Facility Listing

A listing of permitted wastewater facilities.

Date of Government Version: 04/27/2020  
 Date Data Arrived at EDR: 04/29/2020  
 Date Made Active in Reports: 07/16/2020  
 Number of Days to Update: 78

Source: Department of Environmental Protection  
 Telephone: 502-564-3410  
 Last EDR Contact: 10/20/2020  
 Next Scheduled EDR Contact: 02/15/2021  
 Data Release Frequency: Semi-Annually

## UIC: UIC Information

A listing of wells identified as underground injection wells, in the Kentucky Oil & Gas Wells data base.

Date of Government Version: 07/01/2020  
 Date Data Arrived at EDR: 07/14/2020  
 Date Made Active in Reports: 09/30/2020  
 Number of Days to Update: 78

Source: Kentucky Geological Survey  
 Telephone: 859-323-0544  
 Last EDR Contact: 10/13/2020  
 Next Scheduled EDR Contact: 01/25/2021  
 Data Release Frequency: Quarterly

## PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011  
 Date Data Arrived at EDR: 08/05/2011  
 Date Made Active in Reports: 09/29/2011  
 Number of Days to Update: 55

Source: EPA, Office of Water  
 Telephone: 202-564-2496  
 Last EDR Contact: 10/02/2020  
 Next Scheduled EDR Contact: 01/18/2021  
 Data Release Frequency: Semi-Annually

## PCS INACTIVE: Listing of Inactive PCS Permits

An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014  
 Date Data Arrived at EDR: 01/06/2015  
 Date Made Active in Reports: 05/06/2015  
 Number of Days to Update: 120

Source: EPA  
 Telephone: 202-564-2496  
 Last EDR Contact: 10/02/2020  
 Next Scheduled EDR Contact: 01/18/2021  
 Data Release Frequency: Semi-Annually

## PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014  
 Date Data Arrived at EDR: 02/05/2015  
 Date Made Active in Reports: 03/06/2015  
 Number of Days to Update: 29

Source: EPA  
 Telephone: 202-564-2497  
 Last EDR Contact: 10/02/2020  
 Next Scheduled EDR Contact: 01/18/2021  
 Data Release Frequency: Varies

## MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

Date of Government Version: 04/06/2018  
 Date Data Arrived at EDR: 10/21/2019  
 Date Made Active in Reports: 10/24/2019  
 Number of Days to Update: 3

Source: USGS  
 Telephone: 703-648-6533  
 Last EDR Contact: 11/25/2020  
 Next Scheduled EDR Contact: 03/08/2021  
 Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## EDR HIGH RISK HISTORICAL RECORDS

### *EDR Exclusive Records*

#### EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: No Update Planned

#### EDR Hist Auto: EDR Exclusive Historical Auto Stations

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.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

#### EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry 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.

Date of Government Version: N/A  
Date Data Arrived at EDR: N/A  
Date Made Active in Reports: N/A  
Number of Days to Update: N/A

Source: EDR, Inc.  
Telephone: N/A  
Last EDR Contact: N/A  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

## EDR RECOVERED GOVERNMENT ARCHIVES

### *Exclusive Recovered Govt. Archives*

#### RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists.

Date of Government Version: N/A  
Date Data Arrived at EDR: 07/01/2013  
Date Made Active in Reports: 01/03/2014  
Number of Days to Update: 186

Source: Department of Environmental Protection  
Telephone: N/A  
Last EDR Contact: 06/01/2012  
Next Scheduled EDR Contact: N/A  
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

## RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists.

Date of Government Version: N/A	Source: Department of Environmental Protection
Date Data Arrived at EDR: 07/01/2013	Telephone: N/A
Date Made Active in Reports: 01/15/2014	Last EDR Contact: 06/01/2012
Number of Days to Update: 198	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

## OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

### CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 08/10/2020	Source: Department of Energy & Environmental Protection
Date Data Arrived at EDR: 10/20/2020	Telephone: 860-424-3375
Date Made Active in Reports: 11/02/2020	Last EDR Contact: 11/09/2020
Number of Days to Update: 13	Next Scheduled EDR Contact: 02/22/2021
	Data Release Frequency: No Update Planned

### NJ MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2018	Source: Department of Environmental Protection
Date Data Arrived at EDR: 04/10/2019	Telephone: N/A
Date Made Active in Reports: 05/16/2019	Last EDR Contact: 10/09/2020
Number of Days to Update: 36	Next Scheduled EDR Contact: 01/18/2021
	Data Release Frequency: Annually

### NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 04/29/2020	Telephone: 518-402-8651
Date Made Active in Reports: 07/10/2020	Last EDR Contact: 10/30/2020
Number of Days to Update: 72	Next Scheduled EDR Contact: 02/08/2021
	Data Release Frequency: Quarterly

### PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 06/30/2018	Source: Department of Environmental Protection
Date Data Arrived at EDR: 07/19/2019	Telephone: 717-783-8990
Date Made Active in Reports: 09/10/2019	Last EDR Contact: 10/07/2020
Number of Days to Update: 53	Next Scheduled EDR Contact: 01/25/2021
	Data Release Frequency: Annually

### RI MANIFEST: Manifest information

Hazardous waste manifest information

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2018  
 Date Data Arrived at EDR: 10/02/2019  
 Date Made Active in Reports: 12/10/2019  
 Number of Days to Update: 69

Source: Department of Environmental Management  
 Telephone: 401-222-2797  
 Last EDR Contact: 11/11/2020  
 Next Scheduled EDR Contact: 03/01/2021  
 Data Release Frequency: Annually

## WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 05/31/2018  
 Date Data Arrived at EDR: 06/19/2019  
 Date Made Active in Reports: 09/03/2019  
 Number of Days to Update: 76

Source: Department of Natural Resources  
 Telephone: N/A  
 Last EDR Contact: 12/03/2020  
 Next Scheduled EDR Contact: 03/22/2021  
 Data Release Frequency: Annually

## Oil/Gas Pipelines

Source: Endeavor Business Media

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

## Electric Power Transmission Line Data

Source: Endeavor Business Media

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**Sensitive Receptors:** There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

## AHA Hospitals:

Source: American Hospital Association, Inc.  
 Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

## Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services  
 Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

## Nursing Homes

Source: National Institutes of Health  
 Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

## Public Schools

Source: National Center for Education Statistics  
 Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

## Private Schools

Source: National Center for Education Statistics  
 Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

## Daycare Centers: Certified Child Care Homes

Source: Cabinet for Families & Children  
 Telephone: 502-564-7130

**GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING**

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory

Source: Environmental & Public Protection Cabinet

Telephone: 502-564-6736

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

**STREET AND ADDRESS INFORMATION**

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**GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM****TARGET PROPERTY ADDRESS**

MEADE CO.  
BIG SPRING ROAD  
VINE GROVE, KY 40175

**TARGET PROPERTY COORDINATES**

Latitude (North):	37.834656 - 37° 50' 4.76"
Longitude (West):	86.145761 - 86° 8' 44.74"
Universal Transverse Mercator:	Zone 16
UTM X (Meters):	575170.6
UTM Y (Meters):	4187608.5
Elevation:	740 ft. above sea level

**USGS TOPOGRAPHIC MAP**

Target Property Map:	5940275 BIG SPRING, KY
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**GROUNDWATER FLOW DIRECTION INFORMATION**

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

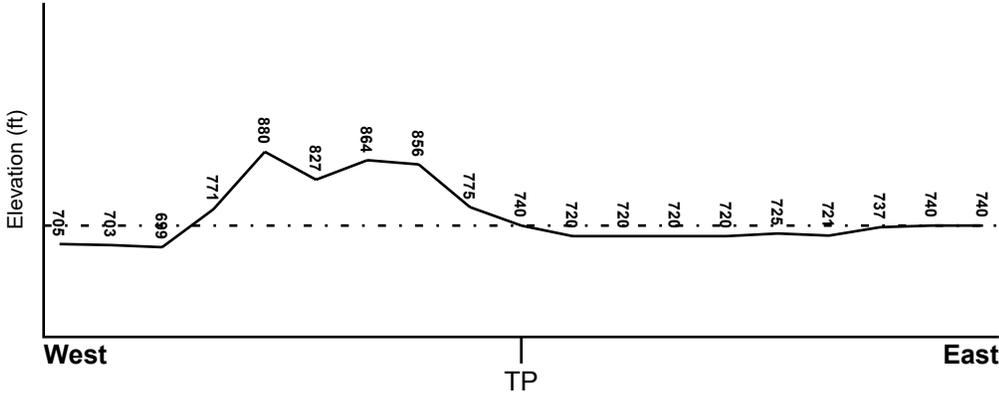
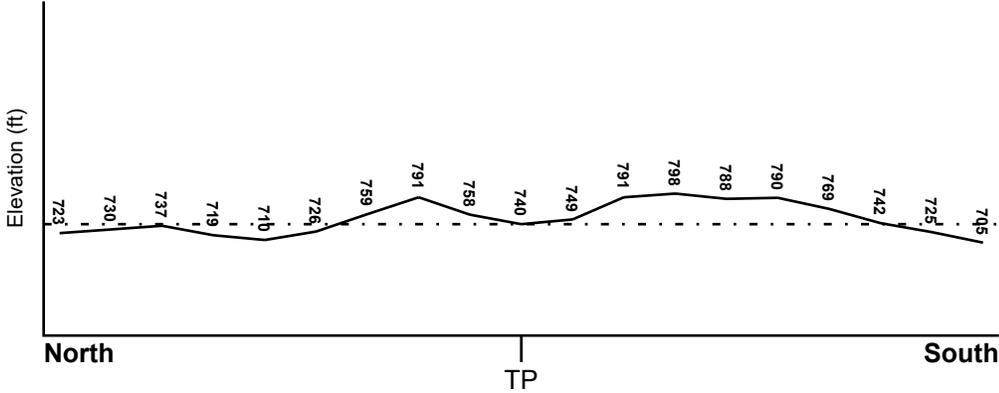
**TOPOGRAPHIC INFORMATION**

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

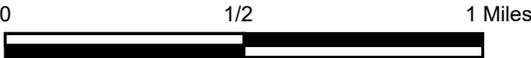
**TARGET PROPERTY TOPOGRAPHY**

General Topographic Gradient: General East

**SURROUNDING TOPOGRAPHY: ELEVATION PROFILES**



Target Property Elevation: 740 ft.



Source: Topography has been determined from the USGS 7.5' 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.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### **FEMA FLOOD ZONE**

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
21027C0275C	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
Not Reported	

### **NATIONAL WETLAND INVENTORY**

<u>NWI Quad at Target Property</u> BIG SPRING	<u>NWI Electronic Data Coverage</u> YES - refer to the Overview Map and Detail Map
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### HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

### **AQUIFLOW®**

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

## **GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY**

### **GROUNDWATER FLOW VELOCITY INFORMATION**

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### **GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY**

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

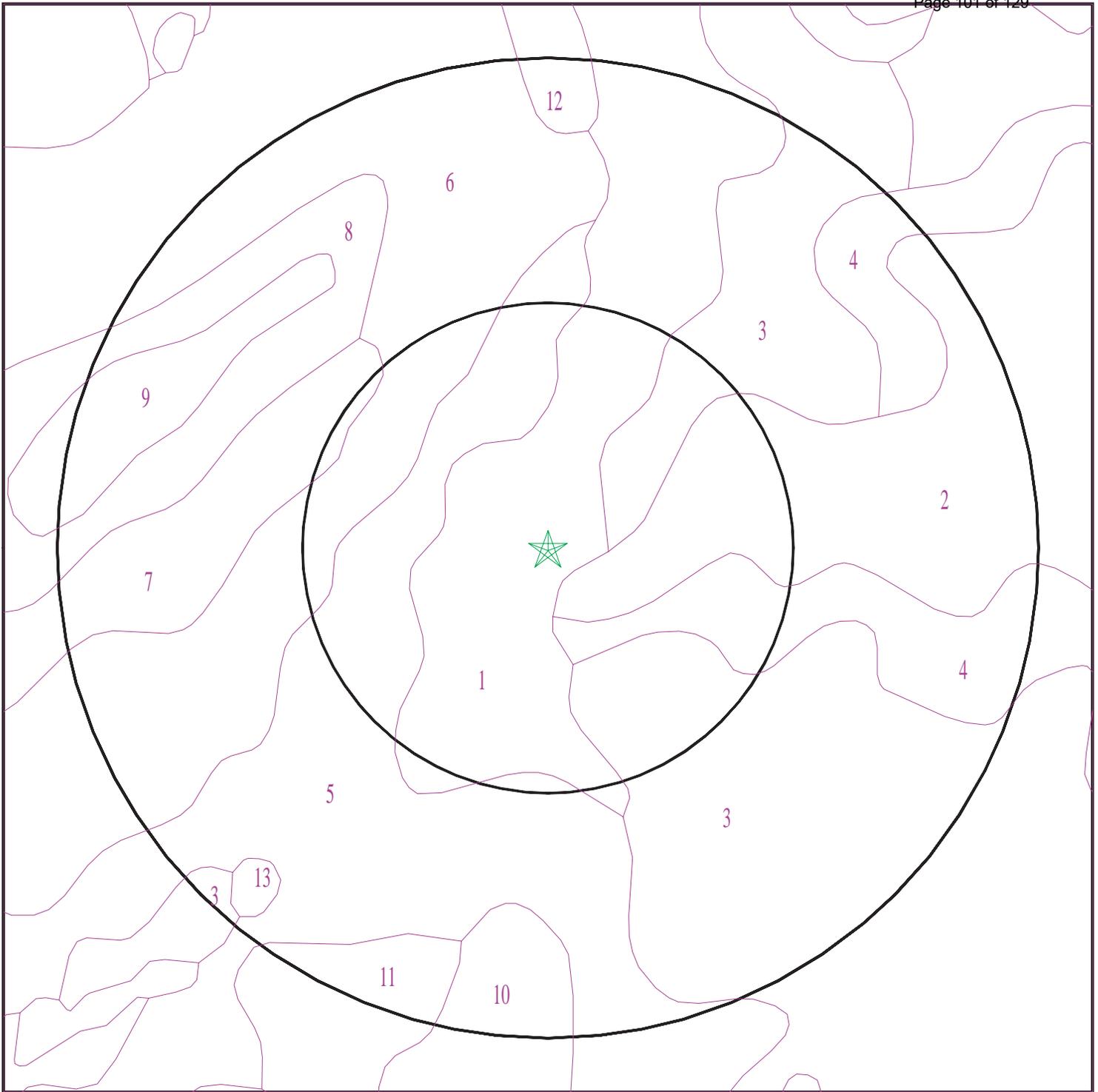
#### **ROCK STRATIGRAPHIC UNIT**

Era:	Paleozoic
System:	Mississippian
Series:	Meramecian Series
Code:	M2 <i>(decoded above as Era, System &amp; Series)</i>

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).



- ★ Target Property
- SSURGO Soil
- Water



SITE NAME: Meade County Solar  
ADDRESS: Big Spring Road  
Vine Grove KY 40175  
LAT/LONG: 37.834656 / 86.145761

CLIENT: Linebach Funkhouser Inc.  
CONTACT: Jason Boston  
INQUIRY #: 6302981.2s  
DATE: December 15, 2020 4:45 pm

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

#### Soil Map ID: 1

Soil Component Name: Crider

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
2	7 inches	31 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
3	31 inches	79 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### Soil Map ID: 2

Soil Component Name: Nolin

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 137 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 42.34 Min: 4.23	Max: 8.4 Min: 5.1
2	7 inches	61 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 42.34 Min: 4.23	Max: 8.4 Min: 5.1
3	61 inches	72 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay Soils.	Max: 42.34 Min: 4.23	Max: 8.4 Min: 5.1

### Soil Map ID: 3

Soil Component Name: Crider

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

## GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
2	7 inches	31 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
3	31 inches	79 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5

**Soil Map ID: 4**

Soil Component Name: Baxter

Soil Surface Texture: very gravelly silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	very gravelly silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
2	5 inches	29 inches	gravelly clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5
3	29 inches	89 inches	gravelly clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 5.5 Min: 4.5

**Soil Map ID: 5**

Soil Component Name: Fredonia

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 76 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	3 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:
2	3 inches	29 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:
3	29 inches	33 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:

**Soil Map ID: 6**

Soil Component Name: Caneyville

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 61 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	5 inches	9 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
3	9 inches	24 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
4	24 inches	27 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

**Soil Map ID: 7**

Soil Component Name: Rock outcrop

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class:  
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 48 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**Soil Map ID: 8**

Soil Component Name: Rosine

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	7 inches	20 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
3	20 inches	53 inches	channery silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
4	53 inches	63 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
5	63 inches	68 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**Soil Map ID: 9**

Soil Component Name: Zanesville

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 150 inches

Depth to Watertable Min: > 51 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	9 inches	22 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
3	22 inches	55 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
4	55 inches	59 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
5	59 inches	62 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**Soil Map ID: 10**

Soil Component Name: Crider

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	5 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
2	5 inches	25 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1
3	25 inches	74 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 5.1

**Soil Map ID: 11**

Soil Component Name: Fredonia

Soil Surface Texture: silty clay loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

## GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 68 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	3 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:
2	3 inches	26 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:
3	26 inches	31 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	Not reported	Max: Min:	Max: Min:

**Soil Map ID: 12**

Soil Component Name: Crider

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
2	7 inches	31 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5
3	31 inches	79 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 14.11 Min: 4.23	Max: 6 Min: 4.5

**Soil Map ID: 13**

Soil Component Name: Water

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class:  
Hydric Status: Unknown

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

### WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

### FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS40000384387	1/4 - 1/2 Mile NW
2	USGS40000384396	1/4 - 1/2 Mile NNW
5	USGS40000384409	1/2 - 1 Mile NE
A7	USGS40000384351	1/2 - 1 Mile East
10	USGS40000384393	1/2 - 1 Mile ENE

### FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

### STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
3	KY6000000030662	1/2 - 1 Mile WNW
4	KY6000000057665	1/2 - 1 Mile East
A6	KY6000000036327	1/2 - 1 Mile East
8	KY6000000017160	1/2 - 1 Mile NE
A9	KY6000000020133	1/2 - 1 Mile East
11	KY6000000025326	1/2 - 1 Mile NNW
12	KY6000000057667	1/2 - 1 Mile East
13	KY6000000018277	1/2 - 1 Mile NW
14	KY6000000031673	1/2 - 1 Mile NW
15	KY6000000041266	1/2 - 1 Mile SE
16	KY6000000017403	1/2 - 1 Mile ENE

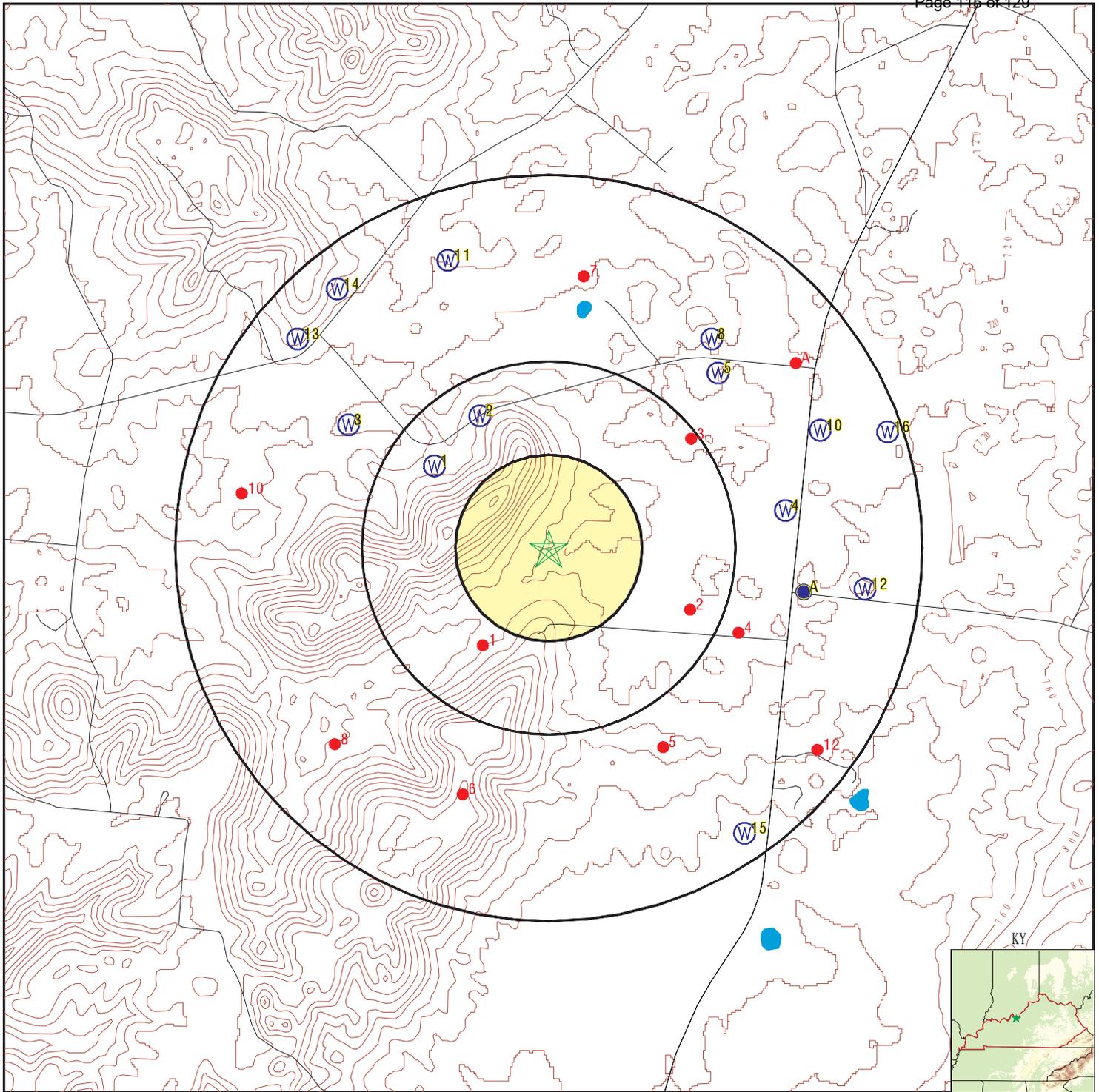
### OTHER STATE DATABASE INFORMATION

#### STATE OIL/GAS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	KYOG12000102977	1/4 - 1/2 Mile SW

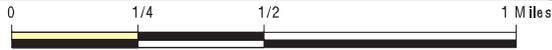
**GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY****STATE OIL/GAS WELL INFORMATION**

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
2	KYOG12000104774	1/4 - 1/2 Mile ESE
3	KYOG12000104811	1/4 - 1/2 Mile NE
4	KYOG12000104708	1/2 - 1 Mile ESE
5	KYOG12000104804	1/2 - 1 Mile SSE
6	KYOG12000102976	1/2 - 1 Mile SSW
7	KYOG12000104807	1/2 - 1 Mile North
8	KYOG12000104822	1/2 - 1 Mile SW
A9	KYOG12000102994	1/2 - 1 Mile NE
10	KYOG12000105643	1/2 - 1 Mile West
A11	KYOG12000102978	1/2 - 1 Mile NE
12	KYOG12000102927	1/2 - 1 Mile SE



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Oil, gas or related wells



SITE NAME: Meade County Solar  
 ADDRESS: Big Spring Road  
 Vine Grove KY 40175  
 LAT/LONG: 37.834656 / 86.145761

CLIENT: Linebach Funkhouser Inc.  
 CONTACT: Jason Boston  
 INQUIRY #: 6302981.2s  
 DATE: December 15, 2020 4:45 pm

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database      EDR ID Number

**1**  
**NW**  
**1/4 - 1/2 Mile**  
**Higher**

**FED USGS      USGS40000384387**

Organization ID:	USGS-KY	Organization Name:	USGS Kentucky Water Science Center
Monitor Location:	F15C0021	Type:	Well
Description:	Not Reported	HUC:	05140104
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	19550201
Well Depth:	172	Well Depth Units:	ft
Well Hole Depth:	172	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	1	Level reading date:	1955-02
Feet below surface:	112.00	Feet to sea level:	Not Reported
Note:	Not Reported		

**2**  
**NNW**  
**1/4 - 1/2 Mile**  
**Higher**

**FED USGS      USGS40000384396**

Organization ID:	USGS-KY	Organization Name:	USGS Kentucky Water Science Center
Monitor Location:	F15C0001	Type:	Well
Description:	Not Reported	HUC:	05140104
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Units:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	19750510
Well Depth:	181	Well Depth Units:	ft
Well Hole Depth:	181	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	1	Level reading date:	1975-05-13
Feet below surface:	90.10	Feet to sea level:	Not Reported
Note:	Not Reported		

**3**  
**WNW**  
**1/2 - 1 Mile**  
**Lower**

**KY WELLS      KY6000000030662**

Fid:	30661	Akgwa:	52258
Altid:	Not Reported	Latdecimal:	37.83944444
Longdecima:	-86.15555556	County:	Meade
Quadname:	Big Spring	Physiograp:	Mississippian Plateau
Type:	W	Surfaceele:	710
Usage:	Domestic - Single Household	Enddate:	01-JUL-99
Site id:	KY6000000030662		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database      EDR ID Number

**4**  
**East**  
**1/2 - 1 Mile**  
**Lower**

**KY WELLS      KY6000000057665**

Fid:	57664	Akgwa:	60002908
Altid:	Not Reported	Latdecimal:	37.836111
Longdecima:	-86.134167	County:	Meade
Quadname:	Big Spring	Physiograp:	Not Reported
Type:	W	Surfaceele:	0
Usage:	Domestic - Single Household	Enddate:	01-JAN-44
Site id:	KY6000000057665		

**5**  
**NE**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000384409**

Organization ID:	USGS-KY	Organization Name:	USGS Kentucky Water Science Center
Monitor Location:	F15C0039	Type:	Well
Description:	Not Reported	HUC:	05140104
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	19730315
Well Depth:	130	Well Depth Units:	ft
Well Hole Depth:	130	Well Hole Depth Units:	ft

**A6**  
**East**  
**1/2 - 1 Mile**  
**Lower**

**KY WELLS      KY6000000036327**

Fid:	36326	Akgwa:	61737
Altid:	Not Reported	Latdecimal:	37.832944
Longdecima:	-86.13375	County:	Meade
Quadname:	Big Spring	Physiograp:	Mississippian Plateau
Type:	W	Surfaceele:	896
Usage:	Domestic - Single Household	Enddate:	13-OCT-05
Site id:	KY6000000036327		

**A7**  
**East**  
**1/2 - 1 Mile**  
**Lower**

**FED USGS      USGS40000384351**

Organization ID:	USGS-KY	Organization Name:	USGS Kentucky Water Science Center
Monitor Location:	F15C0036	Type:	Well
Description:	Not Reported	HUC:	05140104
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

**GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS**

Ground water levels,Number of Measurements: 1 Level reading date: 1975-07-02  
 Feet below surface: 51.90 Feet to sea level: Not Reported  
 Note: Not Reported

**8  
NE  
1/2 - 1 Mile  
Lower**

**KY WELLS KY6000000017160**

Fid:	17159	Akgwa:	28560
Altid:	Not Reported	Latdecimal:	37.84277778
Longdecima:	-86.13777778	County:	Meade
Quadname:	Big Spring	Physiograp:	Mississippian Plateau
Type:	W	Surfaceele:	725
Usage:	Domestic - Single Household	Enddate:	25-SEP-92
Site id:	KY6000000017160		

**A9  
East  
1/2 - 1 Mile  
Higher**

**KY WELLS KY6000000020133**

Fid:	20132	Akgwa:	33614
Altid:	Not Reported	Latdecimal:	37.83305556
Longdecima:	-86.1325	County:	Meade
Quadname:	Big Spring	Physiograp:	Mississippian Plateau
Type:	W	Surfaceele:	740
Usage:	Agriculture - Livestock Watering	Enddate:	13-APR-94
Site id:	KY6000000020133		

**10  
ENE  
1/2 - 1 Mile  
Lower**

**FED USGS USGS40000384393**

Organization ID:	USGS-KY	Organization Name:	USGS Kentucky Water Science Center
Monitor Location:	F15C0002	Type:	Well
Description:	Not Reported	HUC:	05140104
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	19750215
Well Depth:	154	Well Depth Units:	ft
Well Hole Depth:	154	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements: 1 Level reading date: 1975-02-15  
 Feet below surface: 25.00 Feet to sea level: Not Reported  
 Note: Not Reported

**11  
NNW  
1/2 - 1 Mile  
Higher**

**KY WELLS KY6000000025326**

Fid:	25325	Akgwa:	45181
Altid:	Not Reported	Latdecimal:	37.84583333
Longdecima:	-86.15069444	County:	Breckinridge

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Quadname:	Big Spring	Physiograp:	Mississippian Plateau
Type:	W	Surfaceele:	740
Usage:	Domestic - Single Household	Enddate:	06-NOV-97
Site id:	KY6000000025326		

**12  
East  
1/2 - 1 Mile  
Higher**

**KY WELLS      KY6000000057667**

Fid:	57666	Akgwa:	60002910
Altid:	Not Reported	Latdecimal:	37.833056
Longdecima:	-86.130278	County:	Meade
Quadname:	Big Spring	Physiograp:	Not Reported
Type:	W	Surfaceele:	0
Usage:	Domestic - Single Household	Enddate:	01-JAN-30
Site id:	KY6000000057667		

**13  
NW  
1/2 - 1 Mile  
Higher**

**KY WELLS      KY6000000018277**

Fid:	18276	Akgwa:	30274
Altid:	Not Reported	Latdecimal:	37.84277778
Longdecima:	-86.15805556	County:	Meade
Quadname:	Big Spring	Physiograp:	Mississippian Plateau
Type:	W	Surfaceele:	720
Usage:	Domestic - Single Household	Enddate:	20-NOV-92
Site id:	KY6000000018277		

**14  
NW  
1/2 - 1 Mile  
Higher**

**KY WELLS      KY6000000031673**

Fid:	31672	Akgwa:	53691
Altid:	Not Reported	Latdecimal:	37.84472222
Longdecima:	-86.15611111	County:	Meade
Quadname:	Big Spring	Physiograp:	Mississippian Plateau
Type:	W	Surfaceele:	745
Usage:	Agriculture - Livestock Watering	Enddate:	31-DEC-99
Site id:	KY6000000031673		

**15  
SE  
1/2 - 1 Mile  
Lower**

**KY WELLS      KY6000000041266**

Fid:	41265	Akgwa:	30001806
Altid:	Not Reported	Latdecimal:	37.823566
Longdecima:	-86.136169	County:	Meade
Quadname:	Big Spring	Physiograp:	Western Pennyroyal
Type:	W	Surfaceele:	0
Usage:	Domestic - Single Household	Enddate:	Not Reported
Site id:	KY6000000041266		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
 Direction  
 Distance  
 Elevation

Database      EDR ID Number

**16**  
**ENE**  
**1/2 - 1 Mile**  
**Lower**

**KY WELLS      KY6000000017403**

Fid:	17402
Altid:	Not Reported
Longdecima:	-86.12916667
Quadname:	Big Spring
Type:	W
Usage:	Domestic - Single Household
Site id:	KY6000000017403

Akgwa:	28869
Latdecimal:	37.83916667
County:	Meade
Physiograp:	Mississippian Plateau
Surfaceele:	710
Enddate:	27-JUL-92

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance

Database      EDR ID Number

**1**

**SW**

1/4 - 1/2 Mile

**OIL\_GAS**

**KYOG12000102977**

API #:	16163001870000	KGS #:	116075
Well Elevation:	754	Original Farm/Lease Name:	GOHL, HERMAN G & GOHL, JOHN G
Original Operator:	NORTHLAND OPERATING CO	Original Well #:	4
Total Well Depth (ft):	1178	Formation:	355BRPT
Deepest Formation:	341NALB	Init Open or Potential Flow:	45 MCFGPD
Original API Classification:	Extension (outpost) Well	Bore Type:	Conventional Vertical
How Completed:	Gas producer	Completion Date:	30-NOV-98
Plug Date:	Not Reported	Documentation on Plug:	Not Reported
Core Call #:	Not Reported	Cuttings Call #:	0
Log on File:	GR	Permit #:	89775
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116075/R00116075.pdf">http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116075/R00116075.pdf</a>		

**2**

**ESE**

1/4 - 1/2 Mile

**OIL\_GAS**

**KYOG12000104774**

API #:	16163002090000	KGS #:	121628
Well Elevation:	730	Original Farm/Lease Name:	GOHL, JOHN
Original Operator:	QUEEN SAND OPERATING COMPANY	Total Well Depth (ft):	980
Original Well #:	7	Deepest Formation:	341NALB
Formation:	341NALB	Original API Classification:	Development Well
Init Open or Potential Flow:	43 MCFGPD	How Completed:	Gas producer
Bore Type:	Conventional Vertical	Plug Date:	Not Reported
Completion Date:	13-JAN-01	Core Call #:	Not Reported
Documentation on Plug:	Not Reported	Log on File:	BC
Cuttings Call #:	0		
Permit #:	91563		
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121628/R00121628.pdf">http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121628/R00121628.pdf</a>		

**3**

**NE**

1/4 - 1/2 Mile

**OIL\_GAS**

**KYOG12000104811**

API #:	16163002180000	KGS #:	121665
Well Elevation:	714	Original Farm/Lease Name:	HAGER, JOE
Original Operator:	QUEEN SAND OPERATING COMPANY	Total Well Depth (ft):	955
Original Well #:	1	Deepest Formation:	341NALB
Formation:	344SLBG	Original API Classification:	Development Well
Init Open or Potential Flow:	70 MCFGPD	How Completed:	Gas producer
Bore Type:	Conventional Vertical	Plug Date:	Not Reported
Completion Date:	07-MAR-01	Core Call #:	Not Reported
Documentation on Plug:	Not Reported	Log on File:	CCL
Cuttings Call #:	0		
Permit #:	91590		
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121665/R00121665.pdf">http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121665/R00121665.pdf</a>		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance

Database EDR ID Number

**4**

**ESE**

**1/2 - 1 Mile**

**OIL\_GAS**

**KYOG12000104708**

API #:	16163002230000	KGS #:	121562
Well Elevation:	729	Original Farm/Lease Name:	GOHL, JOHN
Original Operator:	QUEEN SAND OPERATING COMPANY		
Original Well #:	1 SWD	Total Well Depth (ft):	1330
Formation:	361GRLK	Deepest Formation:	355LAUR
Init Open or Potential Flow:	Not Reported		
Original API Classification:	Service Well, EPA Class II Injection		
Bore Type:	Conventional Vertical	How Completed:	Salt water disposal
Completion Date:	13-NOV-00	Plug Date:	Not Reported
Documentation on Plug:	Not Reported	Core Call #:	Not Reported
Cuttings Call #:	0	Log on File:	BC
Permit #:	91615		
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121562/R00121562.pdf">http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121562/R00121562.pdf</a>		

**5**

**SSE**

**1/2 - 1 Mile**

**OIL\_GAS**

**KYOG12000104804**

API #:	16163002140000	KGS #:	121658
Well Elevation:	772	Original Farm/Lease Name:	GOHL, JOHN
Original Operator:	QUEEN SAND OPERATING COMPANY		
Original Well #:	8	Total Well Depth (ft):	1035
Formation:	341NALB	Deepest Formation:	341NALB
Init Open or Potential Flow:	Not Reported	Original API Classification:	Development Well
Bore Type:	Conventional Vertical	How Completed:	Gas producer
Completion Date:	02-MAR-01	Plug Date:	Not Reported
Documentation on Plug:	Not Reported	Core Call #:	Not Reported
Cuttings Call #:	0	Log on File:	CCL
Permit #:	91591		
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121658/R00121658.pdf">http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121658/R00121658.pdf</a>		

**6**

**SSW**

**1/2 - 1 Mile**

**OIL\_GAS**

**KYOG12000102976**

API #:	16163001850000	KGS #:	116074
Well Elevation:	904	Original Farm/Lease Name:	GOHL, HERMAN & GOHL, JOHN G
Original Operator:	NORTHLAND OPERATING CO		
Total Well Depth (ft):	1307	Original Well #:	3
Deepest Formation:	341NALB	Formation:	355BRPT
Original API Classification:	Development Well	Init Open or Potential Flow:	40 MCFGPD
How Completed:	Gas producer	Bore Type:	Conventional Vertical
Plug Date:	Not Reported	Completion Date:	30-AUG-98
Core Call #:	Not Reported	Documentation on Plug:	Not Reported
Log on File:	DIL	Cuttings Call #:	0
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116074/R00116074.pdf">http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116074/R00116074.pdf</a>		
		Permit #:	89774

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance

Database EDR ID Number

**7**

**North**  
**1/2 - 1 Mile**

**OIL\_GAS**

**KYOG12000104807**

API #:	16163002170000	KGS #:	121661
Well Elevation:	728	Original Farm/Lease Name:	BALLMAN, BERTHA
Original Operator:	QUEEN SAND OPERATING COMPANY		
Original Well #:	2	Total Well Depth (ft):	1000
Formation:	344SLBG	Deepest Formation:	341NALB
Init Open or Potential Flow:	42 MCFGPD	Original API Classification:	Development Well
Bore Type:	Conventional Vertical	How Completed:	Gas producer
Completion Date:	05-MAR-01	Plug Date:	Not Reported
Documentation on Plug:	Not Reported	Core Call #:	Not Reported
Cuttings Call #:	0	Log on File:	CCL
Permit #:	91597		
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121661/R00121661.pdf">http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121661/R00121661.pdf</a>		

**8**

**SW**  
**1/2 - 1 Mile**

**OIL\_GAS**

**KYOG12000104822**

API #:	16163002240000	KGS #:	121677
Well Elevation:	720	Original Farm/Lease Name:	GOHL, JOHN
Original Operator:	QUEEN SAND OPERATING COMPANY		
Original Well #:	5	Total Well Depth (ft):	1030
Formation:	000	Deepest Formation:	341NALB
Init Open or Potential Flow:	Not Reported	Original API Classification:	Development Well
Bore Type:	Conventional Vertical	How Completed:	Gas producer
Completion Date:	07-JAN-03	Plug Date:	Not Reported
Documentation on Plug:	Not Reported	Core Call #:	Not Reported
Cuttings Call #:	0	Log on File:	Not Reported
Permit #:	91638		
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121677/R00121677.pdf">http://kgs.uky.edu/OG_images/0/0/1/2/1/R00121677/R00121677.pdf</a>		

**A9**

**NE**  
**1/2 - 1 Mile**

**OIL\_GAS**

**KYOG12000102994**

API #:	16163001950000	KGS #:	116091
Well Elevation:	721	Original Farm/Lease Name:	BALLMAN, BERTHA M
Original Operator:	NORTHLAND OPERATING CO	Original Well #:	1
Total Well Depth (ft):	1078	Formation:	351BILY
Deepest Formation:	341NALB	Init Open or Potential Flow:	27 MCFGPD
Original API Classification:	Extension (outpost) Well	Bore Type:	Conventional Vertical
How Completed:	Gas producer	Completion Date:	03-DEC-98
Plug Date:	Not Reported	Documentation on Plug:	Not Reported
Core Call #:	Not Reported	Cuttings Call #:	0
Log on File:	DIL	Permit #:	89853
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116091/R00116091.pdf">http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116091/R00116091.pdf</a>		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance

Database EDR ID Number

**10**  
**West**  
**1/2 - 1 Mile**

**OIL\_GAS KYOG12000105643**

API #:	16163002630000	KGS #:	123201
Well Elevation:	690	Original Farm/Lease Name:	BENNETT, MARION W
Original Operator:	DEVX OPERATING COMPANY	Original Well #:	1
Total Well Depth (ft):	1002	Formation:	344JFVL
Deepest Formation:	341NALB	Init Open or Potential Flow:	8 MCFGPD
Original API Classification:	Development Well	Bore Type:	Conventional Vertical
How Completed:	Gas producer	Completion Date:	01-NOV-01
Plug Date:	Not Reported	Documentation on Plug:	Not Reported
Core Call #:	Not Reported	Cuttings Call #:	0
Log on File:	Not Reported	Permit #:	92461
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/2/3/R00123201/R00123201.pdf">http://kgs.uky.edu/OG_images/0/0/1/2/3/R00123201/R00123201.pdf</a>		

**A11**  
**NE**  
**1/2 - 1 Mile**

**OIL\_GAS KYOG12000102978**

API #:	16163001900000	KGS #:	116076
Well Elevation:	720	Original Farm/Lease Name:	BALLMAN, BERTHA M
Original Operator:	Northland Operating Co	Original Well #:	1
Total Well Depth (ft):	0	Formation:	000
Deepest Formation:	000	Init Open or Potential Flow:	Not Reported
Original API Classification:	Unclassified	Bore Type:	Conventional Vertical
How Completed:	Terminated (permit expired or cancelled)	Plug Date:	Not Reported
Completion Date:	Not Reported	Core Call #:	Not Reported
Documentation on Plug:	Not Reported	Log on File:	Not Reported
Cuttings Call #:	0		
Permit #:	89776		
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116076/R00116076.pdf">http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116076/R00116076.pdf</a>		

**12**  
**SE**  
**1/2 - 1 Mile**

**OIL\_GAS KYOG12000102927**

API #:	16163001910000	KGS #:	116026
Well Elevation:	743	Original Farm/Lease Name:	HAMILTON, ROBERT F
Original Operator:	NORTHLAND OPERATING CO	Original Well #:	1
Total Well Depth (ft):	1130	Formation:	355BRPT
Deepest Formation:	341NALB	Init Open or Potential Flow:	0 MCFGPD
Original API Classification:	Extension (outpost) Well	Bore Type:	Conventional Vertical
How Completed:	Gas producer	Completion Date:	31-OCT-98
Plug Date:	Not Reported	Documentation on Plug:	Not Reported
Core Call #:	Not Reported	Cuttings Call #:	0
Log on File:	DIL	Permit #:	89795
URL:	<a href="http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116026/R00116026.pdf">http://kgs.uky.edu/OG_images/0/0/1/1/6/R00116026/R00116026.pdf</a>		

## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

### AREA RADON INFORMATION

State Database: KY Radon

#### Radon Test Results

Zip	Test Date	Test Result
40175	4/15/2005	6.80
40175	10/1/2002	16.30
40175	11/11/2002	20.40
40175	3/10/2003	6.70
40175	3/10/2003	6.70

Federal EPA Radon Zone for MEADE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.  
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.  
 : Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 40175

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.700 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.950 pCi/L	100%	0%	0%

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

### USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

### Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

## HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.

Source: FEMA

Telephone: 877-336-2627

Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

### State Wetlands Data: Wetland Inventory

Source: Environmental & Public Protection Cabinet

Telephone: 502-564-6736

## HYDROGEOLOGIC INFORMATION

### AQUIFLOW<sup>R</sup> Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

### Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

### STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

### SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

### FEDERAL WATER WELLS

#### PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

#### PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

#### USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

### STATE RECORDS

#### Kentucky Water Well Records Database

Source: Kentucky Geological Survey

Telephone: 859-257-5500

Water Wells in Kentucky. Data from the Kentucky Ground Water Data Repository.

## OTHER STATE DATABASE INFORMATION

#### Oil and Gas Well Locations

Source: Kentucky Geological Survey

Telephone: 859-257-5500

Oil and gas well locations in the state of Kentucky

### RADON

#### State Database: KY Radon

Source: Department of Public Health

Telephone: 502-564-4856

Radon Test Results

#### Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

#### EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

### OTHER

#### Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

#### Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## STREET AND ADDRESS INFORMATION

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**Jason P. Boston**  
**Staff Scientist**

*Mr. Boston has over 5 years of professional experience in environmental consulting managing field operations associated with site investigations and remedial action projects. In addition, Mr. Boston provides on-site supervision of Linebach Funkhouser projects. He has been involved with projects such as acquisition/divestiture property assessments, environmental site investigations, monitoring well installations, asbestos abatements, and air quality management. He has collected air, soil, and groundwater samples, conducted environmental reviews and investigations, and performed oversight activities for various environmental management and compliance activities.*

**Professional Experience:**

- \* **Linebach Funkhouser, Inc.**  
*Staff Geologist, February 2015 to present.*
- \* **Lexington Legends Baseball Club**  
*Sports Turf Manager, 2014*
- \* **Louisville Bats Baseball Club**  
*Assistant Sports Turf Manager, 2011-2013*
- \* **Bowling Green Hot Rods**  
*Assistant Sports Turf Manager, 2009-2010*

**Education & Certifications:**

- \* *Western Kentucky University, Bachelor of Science, Agriculture, 2010*
- \* *OSHA 40-hour HAZWOPER Training, 2015*

**Specialized Experience:**

- \* *Phase I Environmental Site Assessments*
- \* *Phase II Environmental Site Assessments*
- \* *Environmental Site Investigations*

**Representative Project Experience:**

**\* Phase I Environmental Site Assessments:**

*Mr. Boston has conducted Phase I Environmental Site Assessments for due diligence and transactional screening processes. His experience includes site research, investigations, and assessments in accordance with ASTM and AAI standards.*

**\* Phase II Environmental Site Assessments:**

*Mr. Boston has provided project management support for various sites, including oversight of UST remediation activities, installation and removal of monitoring wells, soil, and groundwater sampling, injection remediation, asbestos abatements, and supplemental reporting.*

EXHIBIT 14  
ATTACHMENT 14.3



March 8, 2021

Marty Marchaterre  
Senior Environmental Planner  
Copperhead Environmental Consulting, Inc.  
151 Walton Avenue  
Lexington, Kentucky 40508

RE: Cultural Historic Overview Study for the Meade County Solar Project in Meade County,  
Kentucky  
CRA Project Number: K200008  
CRA Publication Series: 20-504

Dear Mr. Marchaterre,

During December 2020 and March 2021, Cultural Resource Analysts, Inc. (CRA), personnel completed a cultural historic due diligence overview study for the proposed Meade County Solar project in Meade County, Kentucky. The cultural historic overview study examined the project area and a 1,000 ft buffer (study area) surrounding the project area west of Flaherty in Meade County, Kentucky (Figures 1–2). The study area includes land in the vicinity of the intersection of St. Martin’s Road (KY 1600) and Big Spring Road (KY 333), a portion of KY 1600 east of that intersection, portions of KY 333 north and south of that intersection, and the land southeast of that intersection. The study area also encompasses land between KY 333 and Stith Valley Road (KY 1238), where it intersects a portion of Ballman Road (KY 1735), as well as land adjacent to the intersection of KY 1238 and Hillgrove Road. The objective of the cultural historic overview study was to verify, to the extent possible from the existing public roadways and on those properties leased for the proposed project, the location and condition of any previously recorded cultural historic resources and note the locations of any additional potentially significant properties that should be taken into consideration in project planning. These potentially significant properties may be eligible for listing in the National Register of Historic Places (NRHP) and were identified so that they may be taken into consideration as project plans develop. This letter report was prepared by architectural historian Tim Condo, MHP, of CRA. An archaeological study is being conducted by CRA in conjunction with the cultural historic component.

CRA personnel completed a records review at the Kentucky Heritage Council (KHC) on December 4, 2020. Geographic information system (GIS) data provided by the KHC (FY21-4147) identified no previously surveyed resources within or adjacent to the study area. The KHC GIS data indicated that one previously surveyed resource, the Clarkson House (National Register Information System ID: 83002825), is listed in the NRHP but is located approximately 0.81 mi east-southeast of the study area. A review of surveys and reports on file at KHC revealed no previous surveys overlapping the current study area.

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151 Walton Avenue  
Lexington, KY 40508  
office 859.252.4737  
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www.crai-ky.com

The study area was subject to a windshield survey from the public right-of-way (ROW). Trent Spurlock and Tim Condo of CRA completed the windshield survey on December 9, 2020. Tommy McAlpine of CRA examined two cultural historic sites (CRA 1 and CRA 5) on the leased parcels for the proposed project on December 2, 2020. To the extent possible, the fieldwork noted the locations of any potentially significant properties that should be taken into consideration during project planning. No additional potentially significant properties or potential historic districts other than those mentioned in this report were identified during the windshield survey from the ROW. All surveyed resources are identified on a topographic quadrangle and aerial image (see Figures 1 and 2). Photographs of the surveyed resources are located in Appendix A. In general, the resources are set back substantial distances from the ROW, and those that are visible from the ROW exhibit conditions ranging from good to highly-deteriorated (see Appendix A).

Six newly identified resources were surveyed within or adjacent to the study area (CRA 1–CRA 6) (Table 1). Of the properties CRA identified, those with an “undetermined NRHP eligibility status” were those whose potential NRHP status could not be ascertained due to the resource’s distance from the ROW. Therefore, the “undetermined NRHP eligibility status” indicates that the resource could not be recommended as eligible, potentially eligible, or not eligible for listing in the NRHP at the time of the windshield survey and without further investigation.

CRA 1 is a two-story, T-Plan residence located at Hidden Spring Farm on the east side of KY 333, approximately 0.43 mi south-southwest of the intersection of KY 333 and KY 1600, within the project boundary. The residence is in poor condition and in need of major repairs. According to a website created by the owner of the property, the house began as a two-story, single-pile log house with V-notch joinery and was later enlarged with frame additions to its current form (Hamilton 2015). The website does not provide dates for the construction or expansion of the residence. Multiple outbuildings are located adjacent to the residence. The residence exhibits compromised integrity due to general deterioration and missing elements, such as the front porch, substantial portions of wood weatherboard siding, and certain window sashes. In addition, a portion of the residence’s rear addition is collapsing. Given the extent to which the building is open to the elements, there is likely significant interior damage as well. As a farmstead, the site lacks integrity because two barns, multiple outbuildings, and an orchard historically comprising the farm are no longer extant. Thus, CRA recommends that CRA 1 is not eligible for listing in the NRHP. If a Section 106 review is initiated as the project proceeds, the Kentucky Heritage Council may disagree with CRA’s recommendation and/or require more research and in-depth documentation of the property before making an official determination.

According to a website created by the owner of the property encompassing CRA 1, a gravesite (CRA 2) is located on a wooded hill near the eastern edge of the same property as CRA 1, approximately 0.94 mi east of KY 333 and approximately 0.25 mi northwest of Clarkson Road, within the buffer of the study area but outside of the project area (Hamilton 2015). CRA 2 is not visible from the ROW. Further investigation and research would be required to confirm whether the grave is associated with events or a person of transcendent importance. Therefore, CRA recommends that CRA 2 has an undetermined NRHP eligibility status.

CRA 3 consists of a two-story, T-Plan residence with a large rear ell, as well as multiple barns and agricultural outbuildings. CRA 3 is located on the west side of KY 333, approximately 0.12 mi south-southwest of the intersection of KY 333 and KY 1600. The study area and a portion of the project overlap the property on which CRA 3 is located. The residence appears in fair condition. Based on its form and materials, CRA 3 appears potentially eligible for listing in the NRHP; however, the resource is set back approximately 0.65 mi from the ROW and would require additional investigation to confirm both the residence’s and farmstead’s potential NRHP eligibility. Therefore, CRA recommends that CRA 3 has an undetermined NRHP eligibility status.

CRA 4 consists of a two-story, gable-roof residence, which appears to be constructed of logs. Various domestic and agricultural outbuildings are associated with the residence. CRA 4 is located at 4955 KY 333, approximately 1.06 mi south-southwest of the intersection of KY 333 and KY 1600. The study area overlaps a portion of the property on which CRA 4 is located. The residence associated with CRA 4 appears to be in need of major repairs. Based on its form and materials, CRA 4 appears potentially eligible for listing in the NRHP; however, the resource is set back approximately 0.58 mi from the ROW and would require additional investigation to confirm its potential NRHP eligibility. Therefore, CRA recommends that CRA 4 has an undetermined NRHP eligibility status.

The Stith Family Cemetery (CRA 5) is located south of Ballman Road (KY 1735), approximately 0.44 mi southeast of the intersection of KY 1735 and Stith Valley Road (KY 1238), within the project boundary. CRA is situated on a ridge approximately 0.22 mi from the ROW and is bounded by a fence composed of wood posts and wire mesh. The cemetery likely contains 10 to 20 burials, the majority of which are unmarked. Those that are marked exhibit fieldstones, or, as with a recent burial, a lawn-style granite block. Multiple headstones that previously marked burials have been removed from their original locations and gathered near a tree in the cemetery. The moved headstones include those belonging to the burials of Nancy Stith, William Stith, and Alonzo R. Stith, which date to the mid-nineteenth century. The cemetery displays diminished integrity of design, materials, feeling, and association due to the modern fencing and several of the original headstones having been removed from their original locations. Therefore, CRA recommends that CRA 5 is not eligible for listing in the NRHP.

CRA 6 is a cemetery, known as the Wright Family Cemetery, which is located on the south side of KY 1238, approximately 450 ft southwest of the intersection of KY 1238 and KY 1735, situated outside of the project area but within the study area buffer. The cemetery is depicted on the 1948 Big Springs, Kentucky, 7.5-minute series topographic quadrangle (USGS 1948). The cemetery is situated toward the rear of a deep rectangular lot lined by a chain-link fence. A cluster of trees sits at the front of the property between the ROW and the cemetery. Because the cemetery is set back approximately 275 ft from the ROW, further investigation and research would be required to confirm whether the cemetery has significant architectural or artistic features or if it is associated with events or persons of transcendent importance. Therefore, CRA recommends that CRA 6 has an undetermined NRHP eligibility status.

In summary, GIS data provided by the KHC identified no previously surveyed resources within or adjacent to the study area. A review of surveys and reports on file at KHC revealed no previous surveys overlapping the current study area. Six newly identified resources were surveyed within or adjacent to the study area (CRA 1–CRA 6) that may have significance for potential listing in the NRHP. CRA's initial recommendation is that CRA 2–CRA 4 and CRA 6 have an undetermined NRHP eligibility status and should be further investigated for eligibility for listing in the NRHP. CRA 1 and CRA 5 are recommended not eligible for listing in NRHP. Other resources 50 years of age and over are located in the study area but those viewed from the ROW by CRA staff do not appear to have significance for potential listing in the NRHP. Additionally, further investigation may be required to ascertain the NRHP eligibility of any resources that may be located within the study area but are not visible from the ROW and were not identified in this survey.

If you have any questions, please do not hesitate to contact me at your convenience.

Sincerely,



Trent Spurlock, MHP  
Architectural Historian, Principal Investigator

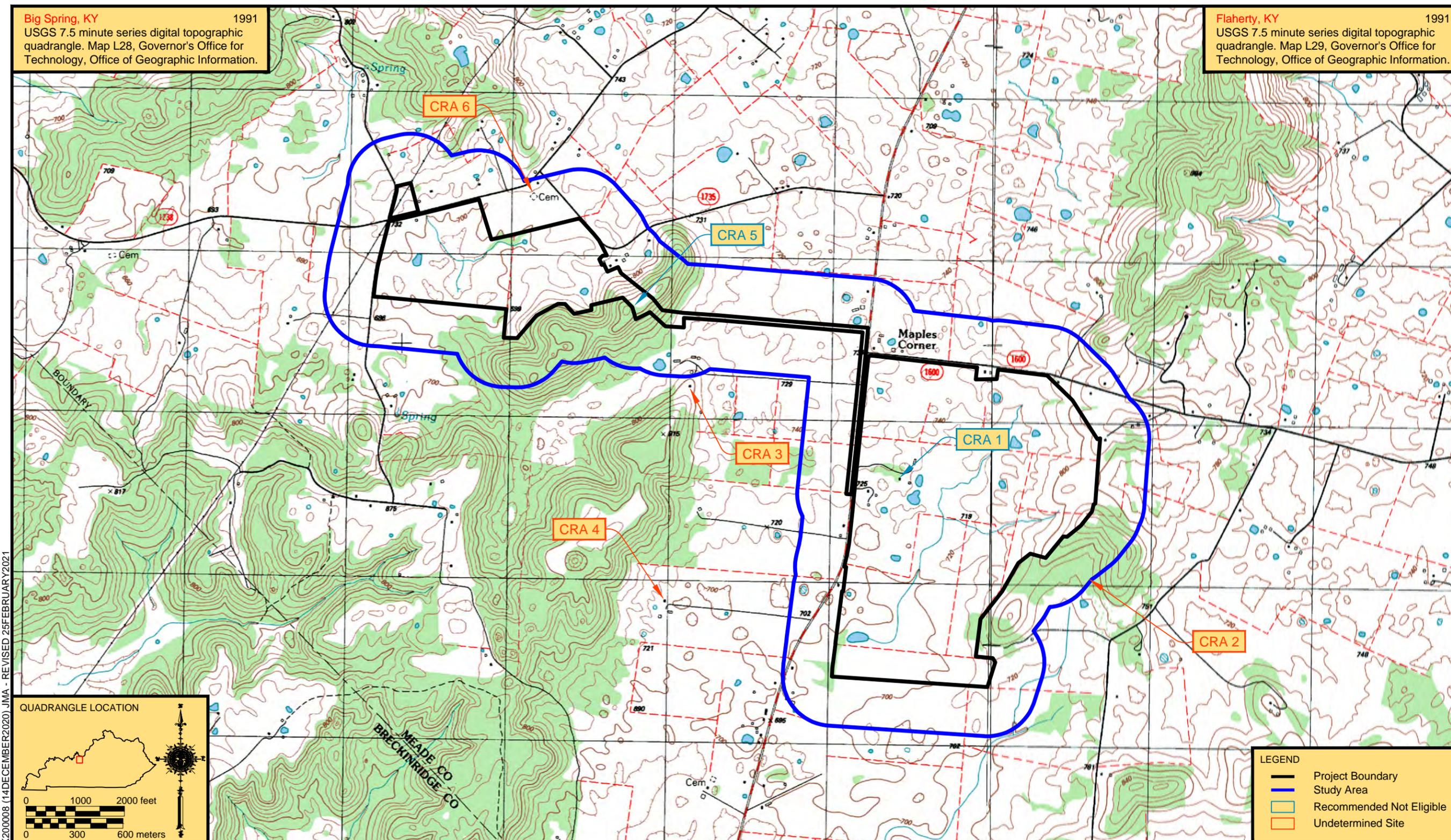
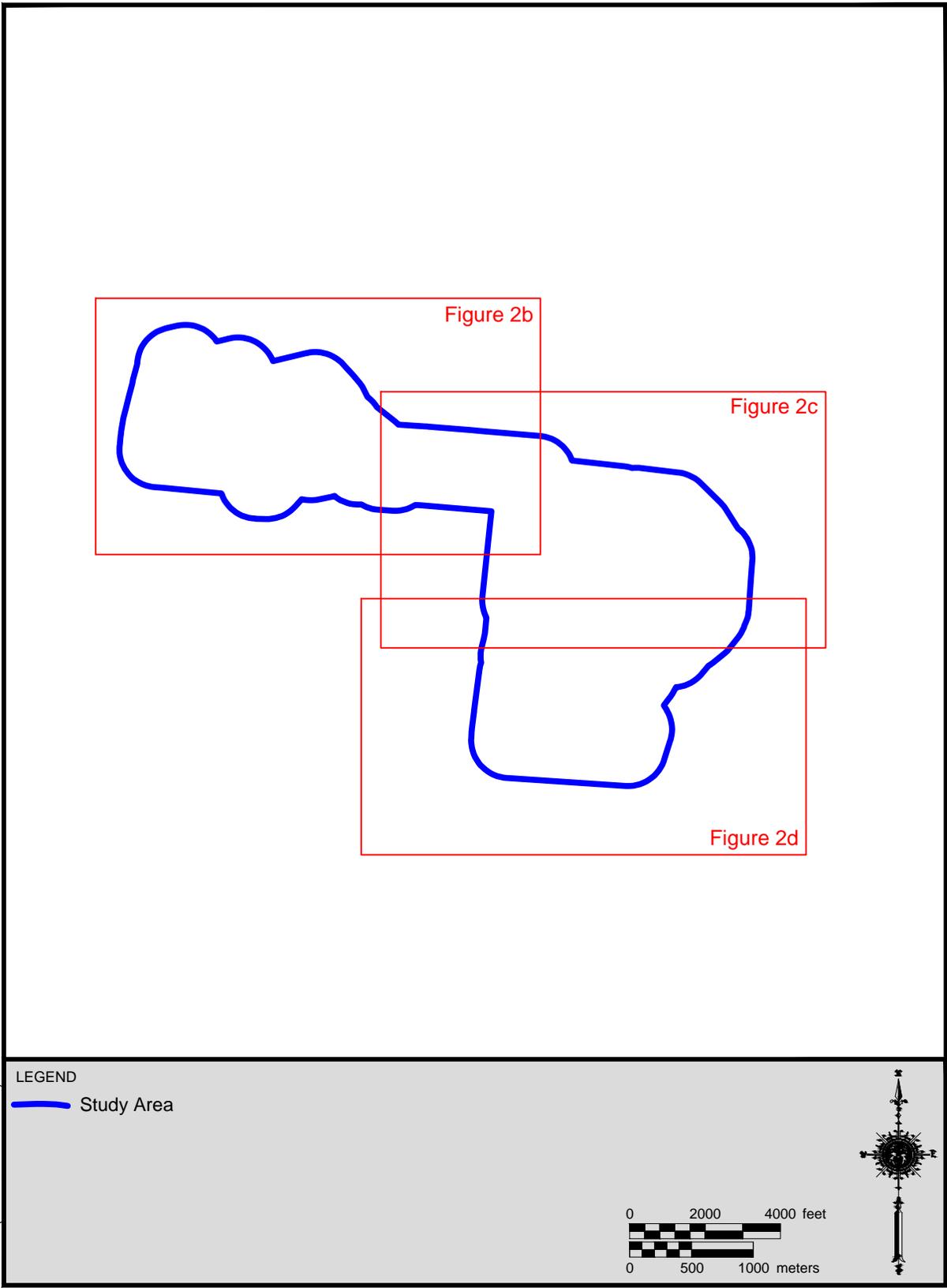


Figure 1. Topographic map depicting the study area, project boundary, and locations of resources within and adjacent to study area.



K200008 (14DECEMBER2020).JMA

Figure 2a. Aerial photograph depicting the study area, project boundary, and locations of resources within and adjacent to the study area [KEY].

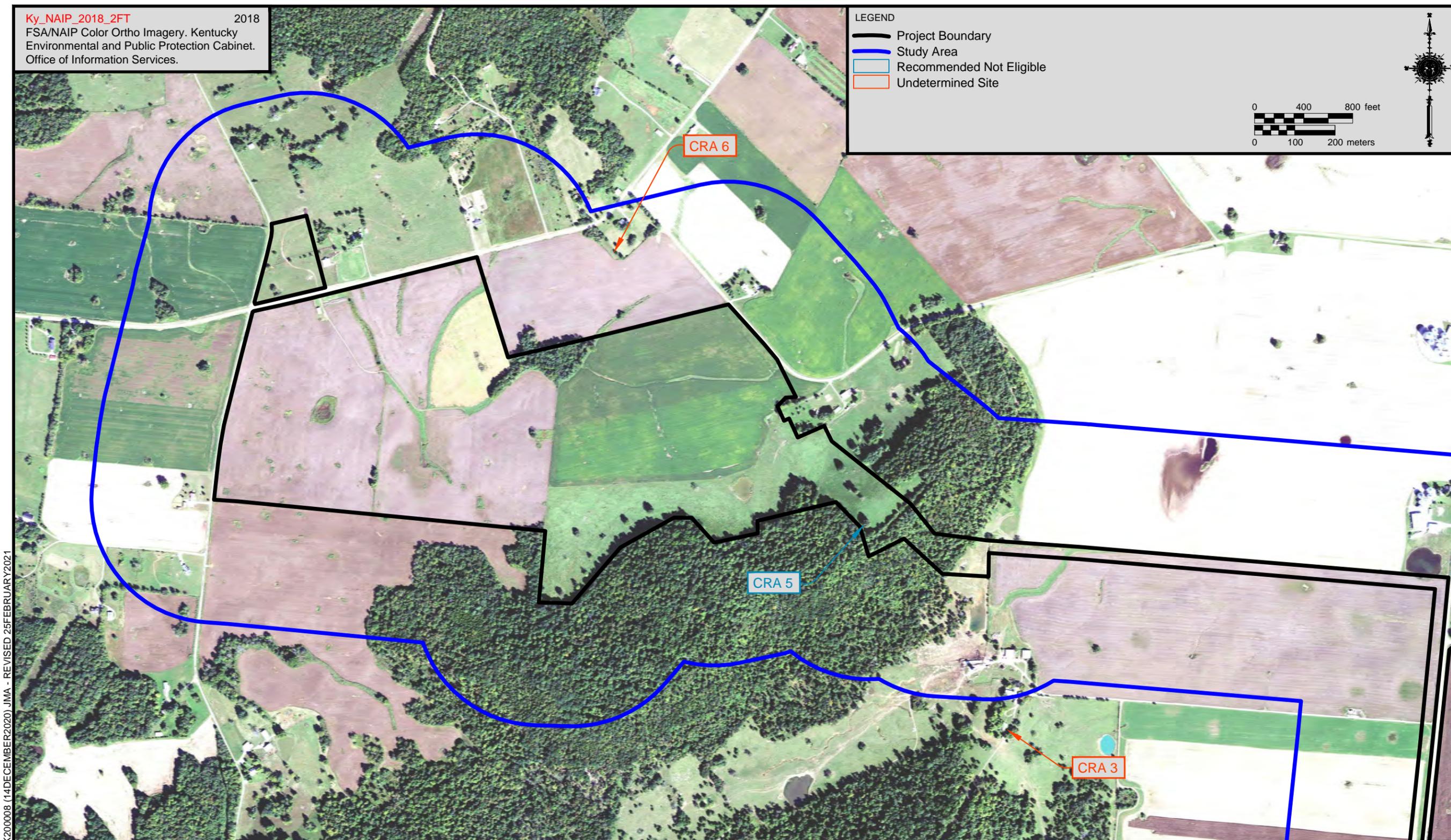


Figure 2b. Aerial photograph depicting the study area, project boundary, and locations of resources within and adjacent to the study area.

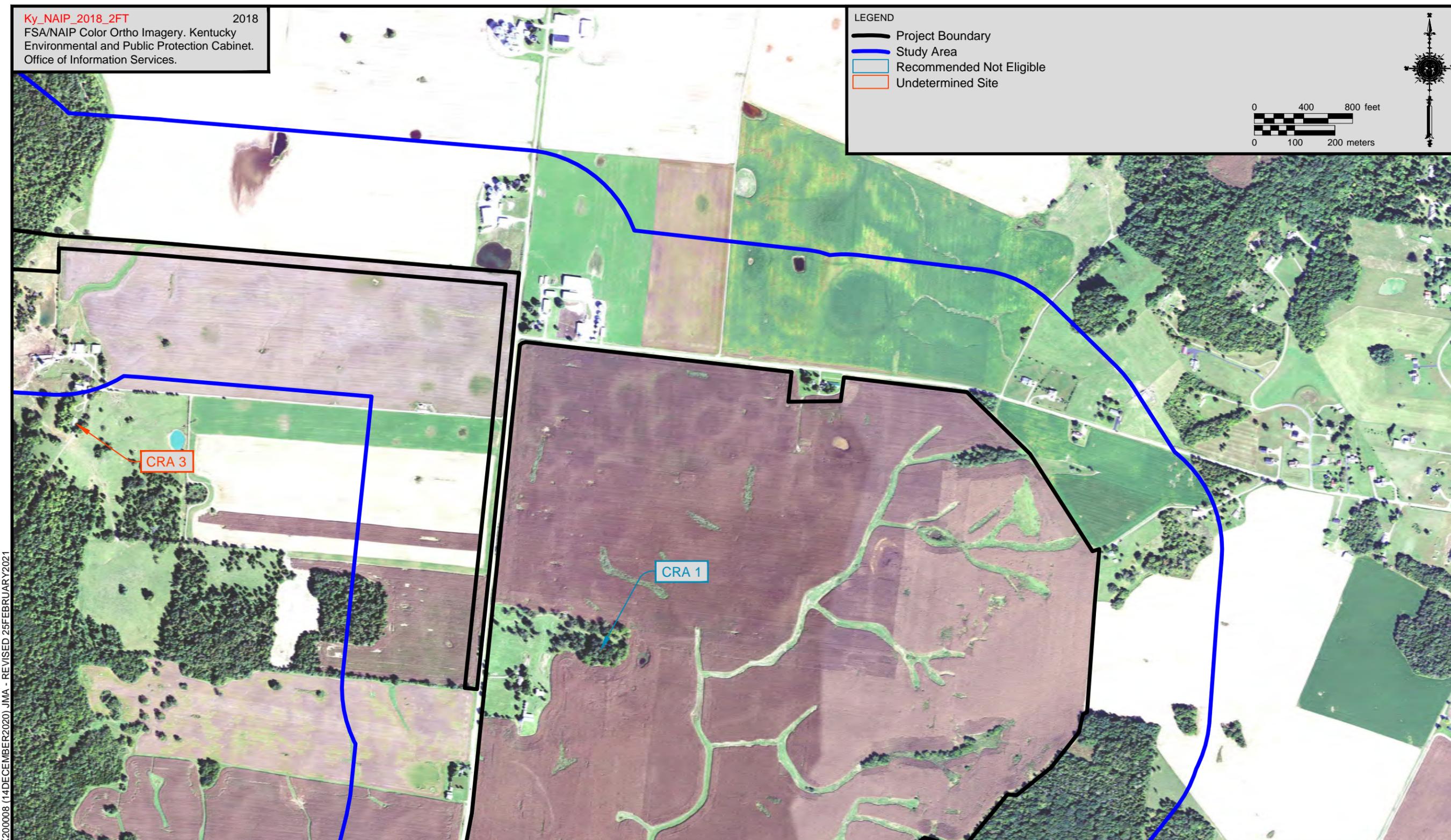


Figure 2c. Aerial photograph depicting the study area, project boundary, and locations of resources within and adjacent to the study area.

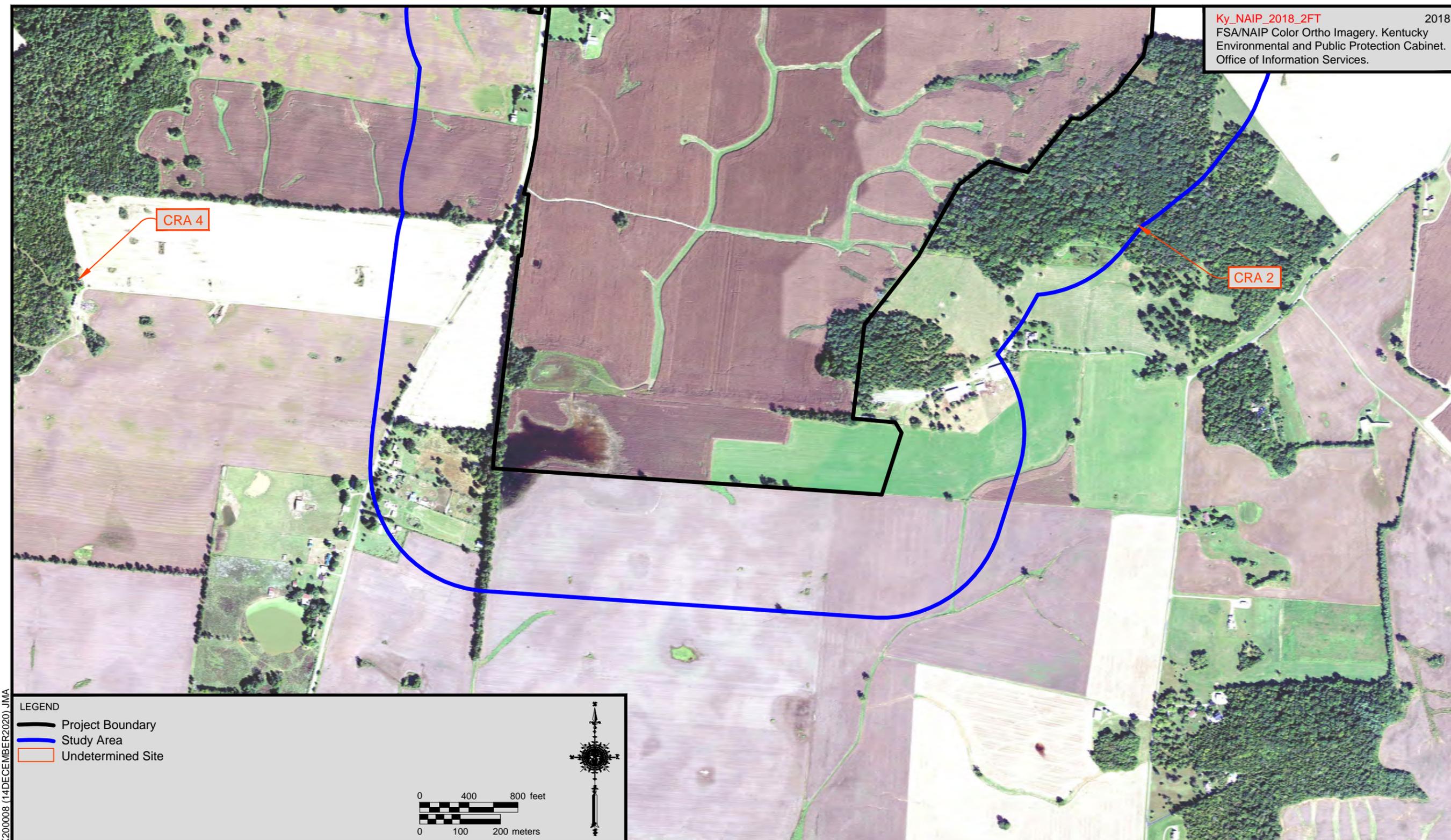


Figure 2d. Aerial photograph depicting the study area, project boundary, and locations of resources within and adjacent to the study area.

Table 1. Resources in and adjacent to study area.

Site/Survey No.	Resource Name/Function	Address/Location	NRHP Status	Condition	Figure No.
CRA 1	T-Plan residence and outbuildings	East side of KY 333, approximately 0.43 mi south-southwest of its intersection with KY 1600	Recommended Not Eligible based on field observations by CRA	Poor	A1–A4
CRA 2	Gravesite	37.820435, -86.118172	Undetermined based on field observations by CRA	Undetermined	A5
CRA 3	Farmstead	West side of KY 333, approximately 0.12 mi south-southwest of its intersection with KY 1600	Undetermined based on field observations by CRA	Fair	A6–A9
CRA 4	Residence and outbuildings	4955 KY 333	Undetermined based on field observations by CRA	Poor	A10-A11
CRA 5	Stith Family Cemetery	37.835526, -86.150273	Recommended Not Eligible based on field observations by CRA	Undetermined	A12-A17
CRA 6	Wright Family Cemetery	37.841518, -86.157420	Undetermined based on field observations by CRA	Undetermined	N/A

## References Cited

Hamilton, Jr., Robert F.

2015 History of Hidden Spring Farm Part 1. Electronic document, <https://hamiltonontheweb.weebly.com/hsf-history-part-1---pre1950.html>, accessed December 8, 2020.

United States Geological Survey

1948 Big Springs, Kentucky, 7.5-minute series topographical quadrangle. United States Department of the Interior, Washington, D.C.

## APPENDIX A. PHOTOGRAPHS OF SURVEYED RESOURCES



Figure A1. Resource CRA 1. Façade of the residence, looking east-southeast.



Figure A2. Resource CRA 1. South elevation of the residence, looking northeast.



Figure A3. Resource CRA 1. East (rear) elevation of the residence, looking west-northwest.



Figure A4. Resource CRA 1. East (rear) elevation of the residence, looking southwest.



Figure A5. Resource CRA 2. View toward the location of the gravesite from KY 333, looking east.



Figure A6. Resource CRA 3. Overview of the site, looking west-northwest.



Figure A7. Resource CRA 3. Façade and southeast elevation of the residence, looking west.



Figure A8. Resource CRA 3. Agricultural outbuildings, looking west-northwest.



Figure A9. Resource CRA 3. Agricultural outbuildings, looking west-northwest.



Figure A10. Resource CRA 4. Overview of the site, looking west-northwest.



Figure A11. Resource CRA 4. The residence from KY 333, looking west-northwest.



Figure A12. Resource CRA 5. View toward the cemetery from KY 1735, looking south-southeast.



Figure A13. Resource CRA 5. Overview of the cemetery, looking southeast.



Figure A14. Resource CRA 5. Overview of the cemetery, looking south-southeast.



Figure A15. Resource CRA 5. Detail of fieldstones.



Figure A16. Resource CRA 5. Detail of recent burial marker.



Figure A17. Resource CRA 5. Detail of headstones removed from their respective burial locations.

W. Trent Spurlock, MHP		Architectural Historian
<p><b>National Park Service Professional Qualification:</b></p> <ul style="list-style-type: none"> <li>Architectural Historian</li> <li>Historian</li> </ul> <p><b>Email:</b> wtspurlock@crai-ky.com</p>	<p><b>Specific Duties:</b></p> <ul style="list-style-type: none"> <li>Architectural historian</li> <li>Archival research and field documentation</li> <li>Report preparation</li> </ul>	<p><b>Education and Training:</b></p> <ul style="list-style-type: none"> <li>MHP, University of Kentucky, Lexington, Kentucky</li> <li>B.S., accounting, Western Kentucky University, Bowling Green, Kentucky</li> </ul>

<b>Experience Summary Information</b>
---------------------------------------

<p><b>Architectural Historian</b></p> <p>Cultural Resource Analysts, Inc. May 2002 – present</p>	<p><b>Historic Preservation R.A.</b></p> <p>Center for Historic Architectural Preservation, University of Kentucky, August 2002 – May 2003</p>	<p><b>Loan Officer/Assistant Vice-President</b></p> <p>Southern Deposit Bank/AREA Bank Russellville Branch September 1987 – August 2001</p>
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**W. Trent Spurlock, MHP.** Mr. Spurlock has a Masters in Historic Preservation and over ten years of experience as an architectural historian and field supervisor at Cultural Resource Analysts, Inc. Trent’s responsibilities at CRA include researching and documenting historic properties by conducting archival research and field surveys, evaluating the significance of historic properties, and preparing written reports that provide summary findings and recommendations for various types of cultural historic projects. Mr. Spurlock has experience surveying various types of projects for Section 106 compliance including cellular telecommunication towers, highway improvement/reconstruction projects, electric transmission corridors, and United States Army Corps of Engineers jurisdictional boundary projects. He also has experience evaluating the potential effects such projects have on sites listed in or determined eligible for listing in the National Register of Historic Places. Mr. Spurlock has the training to conduct professional archival research on historic properties and to compile written reports synthesizing various types of information.

**Professional Affiliations:**

- Vernacular Architecture Forum
- National Trust for Historic Preservation
- Pioneer America Society: Association for the Preservation of Artifacts and Landscapes

**Additional Training:**

- Innovative Approaches to Section 106 Mitigation Training, Advisory Council on Historic Preservation, web based training, 2013
- Introduction to NEPA and Transportation Decisionmaking Training, National Highway Institute, web based training, 2012
- Revisions to the National Register Form and Redacting Information Webinar, National Park Service, web based training, 2012
- Section 106 Training, Ohio Department of Transportation, Columbus, OH, 2012
- Identifying and Evaluating Properties of the Recent Past Workshop, Ohio State Historic Preservation Office, 2011
- Bloodborne Pathogens/Adult First Aid, CPR, and AED, December 2012
- OSHA 10-hour Construction Industry Outreach Training Program, 2010
- Department of Defense, Anti-terrorism Level 1 Awareness Training, 2010
- Vernacular Architecture Forum Annual Conference, Washington D.C., 2010
- The Advisory Council on Historic Preservation’s Section 106 Advanced Seminar, Kansas City, MO, 2008
- Department of Defense Historic Buildings Conference, Kansas City, MO, 2008
- The National Park Service’s American Battlefield Protection Program Battlefield Preservation Seminar, Charleston, WV, 2006
- Section 106 and National Register Eligibility Training, Ohio Department of Transportation, Columbus, OH, 2003

### Sample Projects:

- **Cultural Resource Survey for the Proposed HealthFirst Bluegrass, Inc., Construction Project on Southland Drive in Lexington, Fayette County, Kentucky (HRSA Grant C8ACS21362).** Architectural Historian/Historian tasked with identifying historic properties within the project's visual APE, evaluating eligibility and effect, and co-authoring the final report. Prepared for HealthFirst Bluegrass, Inc. and Department of Health and Human Services. 2013.
- **Cultural Historic Resource Survey for the Proposed Wewoka/West Park Hazard Mitigation Grant Program Grant Application Project in West Louisville, Jefferson County, Kentucky.** Architectural Historian/Historian tasked with identifying historic properties within the project APE, evaluating eligibility and effect, and co-authoring the final report. Prepared for Louisville and Jefferson County Metropolitan Sewer District. 2012.
- **Historic Documentation of Site JF-2384 Residence Located at 2111 South Park Road, Louisville, Jefferson County, Kentucky (12-301).** Architectural Historian/Historian tasked with conducting a documentation of the historic bridge and coauthoring the final report. Prepared for Redwing Ecological Services, Inc. 2012.
- **Cultural Historic Resource Survey for the Proposed Mercer County Industrial Park-Van Arsdell 69 KV Transmission Line Project in Mercer County, Kentucky (12-174).** Architectural Historian/Historian tasked with identifying historic properties within the project APE, evaluating eligibility and effect, and co-authoring the final report. Prepared for East Kentucky Power Cooperative. 2012.
- **Cultural Historic Determination of Eligibility Study for the Proposed New Circle Road (KY 4) Re-hab and Widening from Versailles Road Interchange to Near the Georgetown Road Interchange in Fayette County, Kentucky (Item Number 7-113.00).** Architectural Historian/Historian tasked with identifying historic properties within the project APE, evaluating eligibility, and co-authoring the final report. Prepared for HDR Engineering, Inc. 2012.
- **Cultural Historic Baseline Survey for the Proposed Replacement of the KY 152 Kennedy Bridge Over Herrington Lake in Mercer and Garrard Counties, Kentucky (Item Number 7-1116.00).** Architectural Historian/Historian tasked with identifying historic properties within the project APE, evaluating eligibility and effect, and co-authoring the final report. Prepared for WMB, Inc. 2012.
- **A Cultural Resource Survey for the Proposed Construction of the New Southside Elementary School in Shelby County, Kentucky (12-105).** Architectural Historian/Historian tasked with identifying historic properties within the project APE, evaluating eligibility and effect, and co-authoring the final report. Prepared for Redwing Ecological Services, Inc. 2012.
- **Montrose Veterans Administration Hospital National Register of Historic Places Nomination (Montrose, Westchester County, New York).** Architectural Historian/Historian co-author tasked with writing and editing individual NRHP nomination. Prepared for the United States Department of Veterans Affairs. 2011 (status pending).
- **Bath Veterans Administration Hospital National Register of Historic Places Nomination (Bath, Steuben County, New York).** Architectural Historian/Historian co-author tasked with writing and editing individual NRHP nomination. Prepared for the United States Department of Veterans Affairs. Listed 2013.
- **Edward Hines, Jr., Veterans Administration Hospital National Register of Historic Places Nomination (Hines, Cook County, Illinois).** Architectural Historian/Historian co-author tasked with writing and editing individual NRHP nomination. Prepared for the United States Department of Veterans Affairs. 2011 (status pending).
- **Lebanon Veterans Administration Hospital National Register of Historic Places Nomination (Lebanon, Lebanon County, Pennsylvania).** Architectural Historian/Historian co-author tasked with writing and editing individual NRHP nomination. Prepared for the United States Department of Veterans Affairs. 2011 (status pending).
- **Alexandria Veterans Administration Hospital Additional Documentation (and Boundary Increase) National Register of Historic Places Nomination (Pineville, Rapides County, Louisiana).** Architectural Historian/Historian co-author tasked with writing and editing individual NRHP nomination. Prepared for the United States Department of Veterans Affairs. Listed 2012.

EXHIBIT 14  
ATTACHMENT 14.4



March 8, 2021

Marty Marchaterre, Senior Environmental Planner  
Copperhead Environmental Consulting, Inc.  
151 Walton Avenue  
Lexington, Kentucky 40508

RE: An Archaeological Records Review and  
Site Reconnaissance to Evaluate  
Archaeological Resource Potential for  
Meade County Solar, Meade County, Kentucky  
CRA Project No.: K200009  
Contract Publication Series: 20-505

Dear Mr. Marchaterre,

On December 2, 2020, Cultural Resource Analysts, Inc. (CRA), personnel conducted a reconnaissance of the proposed Meade County Solar LLC Project in Meade County, Kentucky. The purpose of the reconnaissance was to identify locations of high probability for archaeological materials, including areas with mapped structures on historic maps and areas with the potential to have prehistoric sites (high landform locations and areas near natural springs). These areas were subjected to limited pedestrian survey. While formal shovel testing was beyond the scope of the current investigation, soil caps were occasionally opened up to observe general soil conditions. Prior to the pedestrian survey, Office of State Archaeology (OSA) Geographic Information Systems (GIS) data were requested to review previous archaeological surveys and sites directly adjacent to or within the current proposed project area. The proposed Meade County Solar LLC Project consists of approximately 328 ha (811 acres) of grass-covered fields, agricultural fields, and wooded slope approximately 6.03 km west of Flaherty, Kentucky. The proposed project area runs along Big Spring Road (KY 333) and along Stith Valley Road (KY 1238) and extends between the two roads (Figures 1 and 2).

In the current study, eight historic maps were inspected for any mapped structures present within the proposed project area. Thirty-four mapped structure locations were noted and visited during the pedestrian survey to assess whether there was potential for associated historic archaeological sites. The following sections discuss previously recorded archaeological sites and surveys documented near the proposed project area, a basic description of soils in the project area, and the results of the limited pedestrian survey.

## Previous Archaeological Surveys

A search of records maintained by the National Register of Historic Places (NRHP) and the OSA (FY21-11098) 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 located within the study area. The NRHP records indicated that no archaeological sites listed in the NRHP were situated within the current study area (United States Department of the Interior, National Park Service 2020).

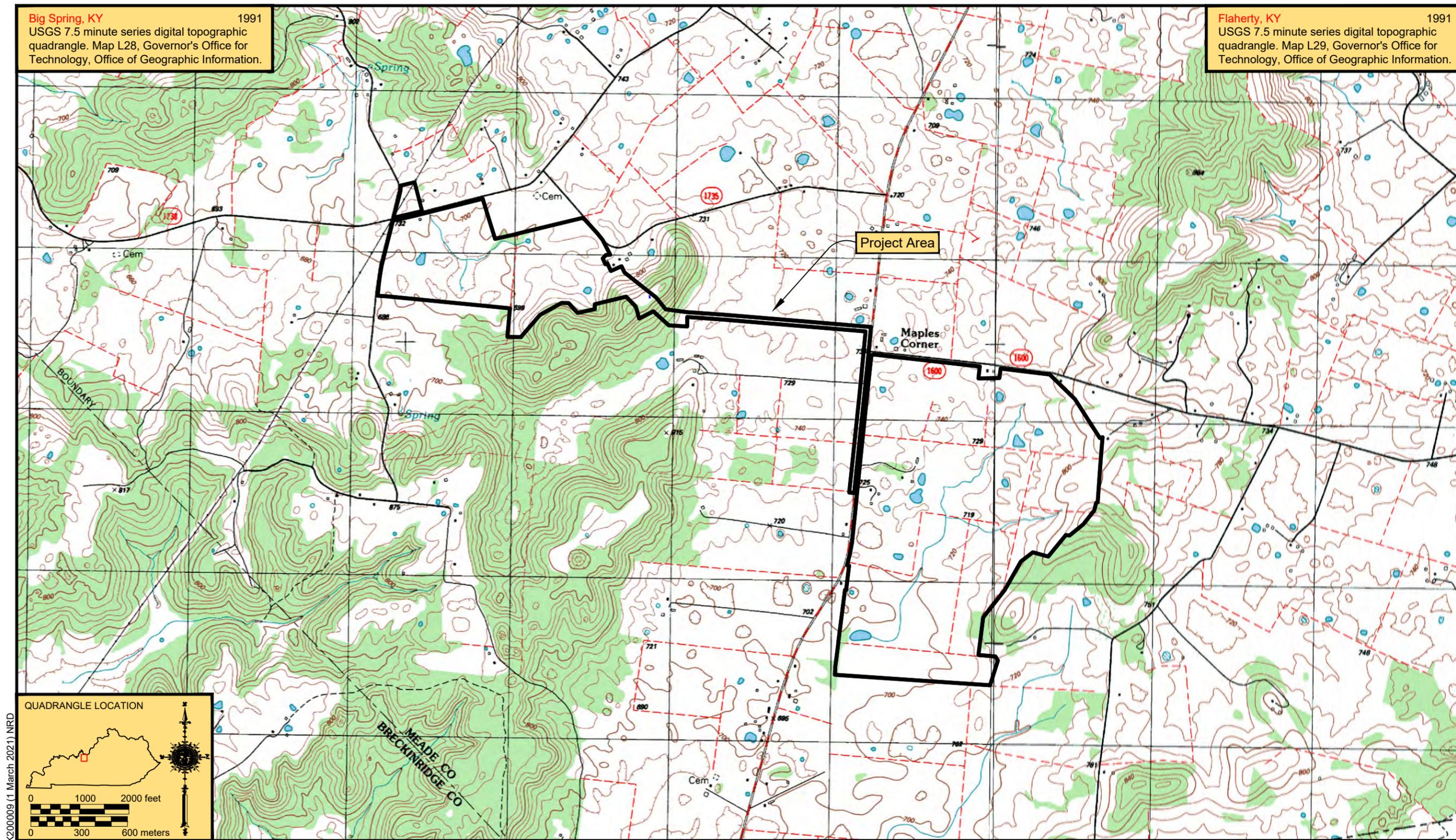


Figure 1. Topographic map depicting the project area.

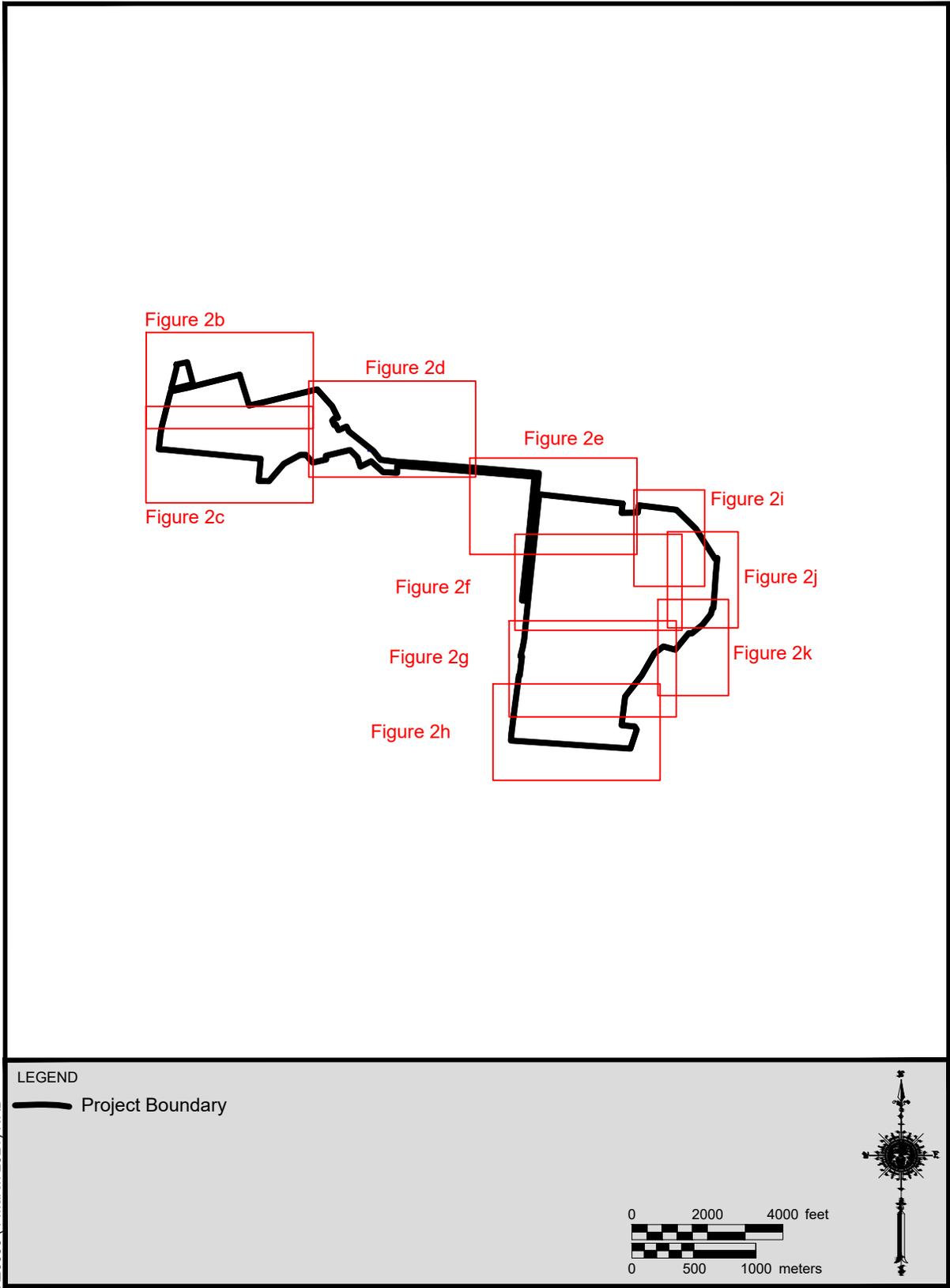
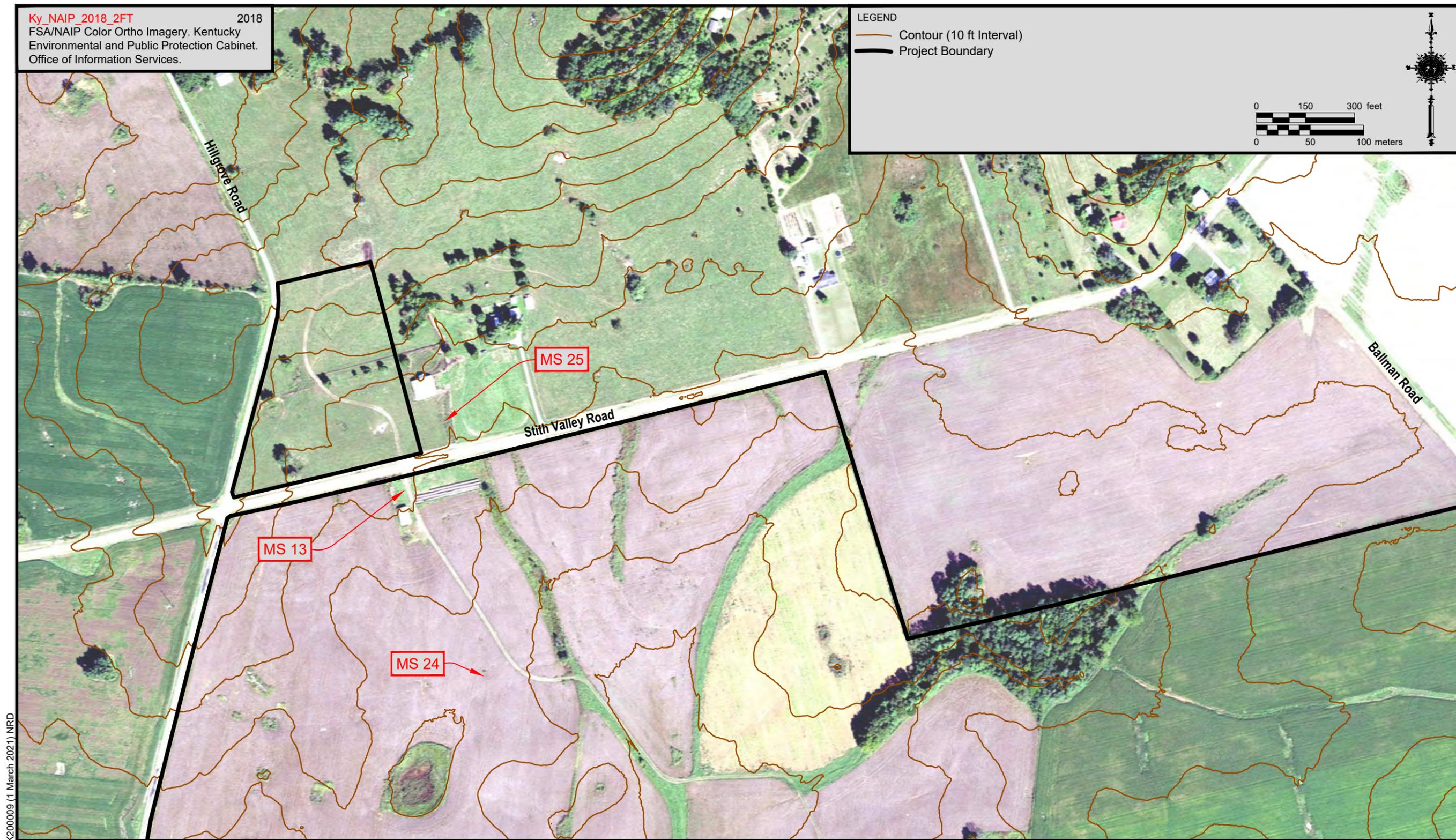
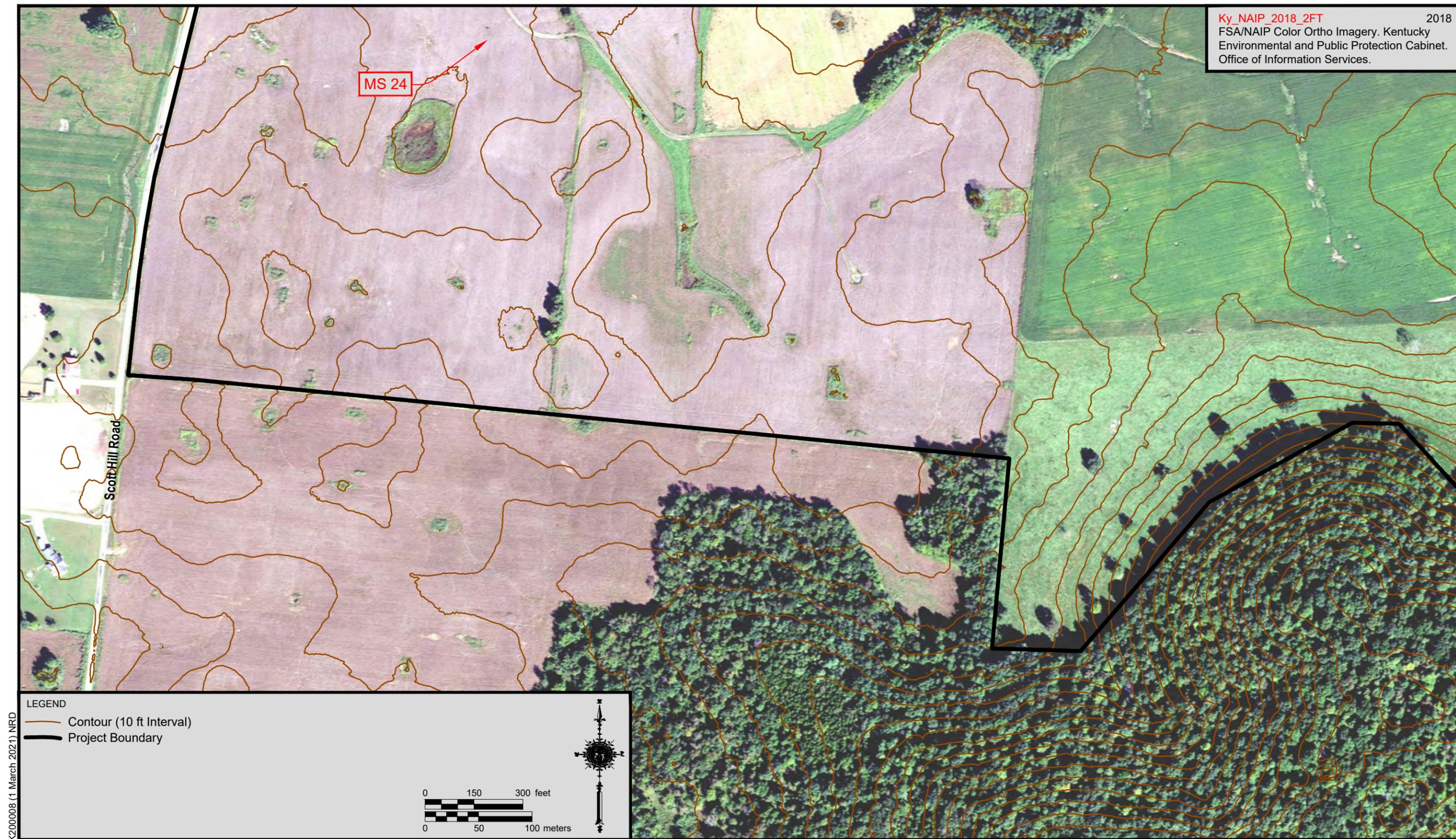


Figure 2a. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery [KEY].



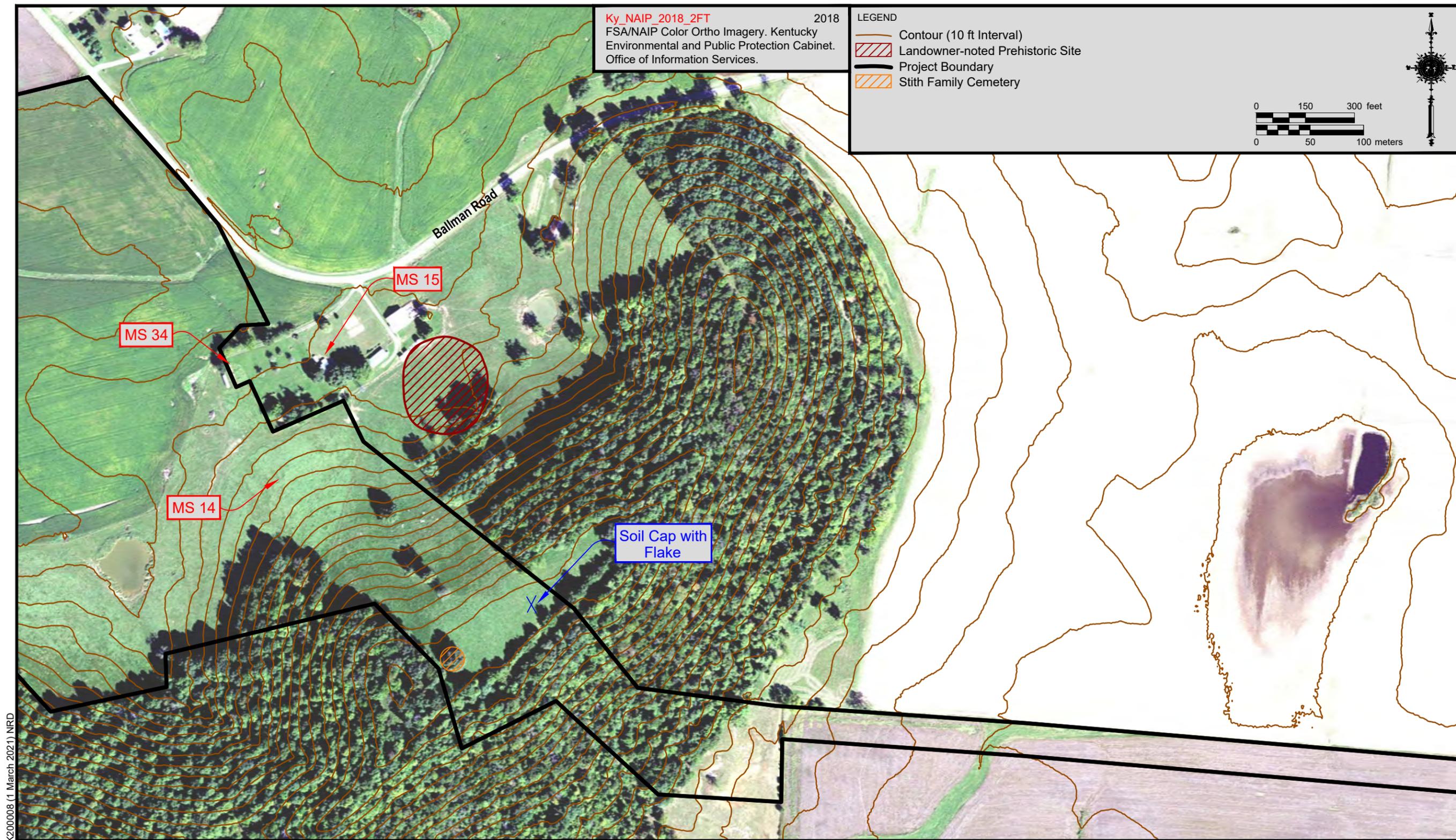
K200009 (1 March 2021) NRD

Figure 2b. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.



K200008 (1 March 2021) NRD

Figure 2c. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.



K200008 (1 March 2021) NRD

Figure 2d. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.



Figure 2e. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.

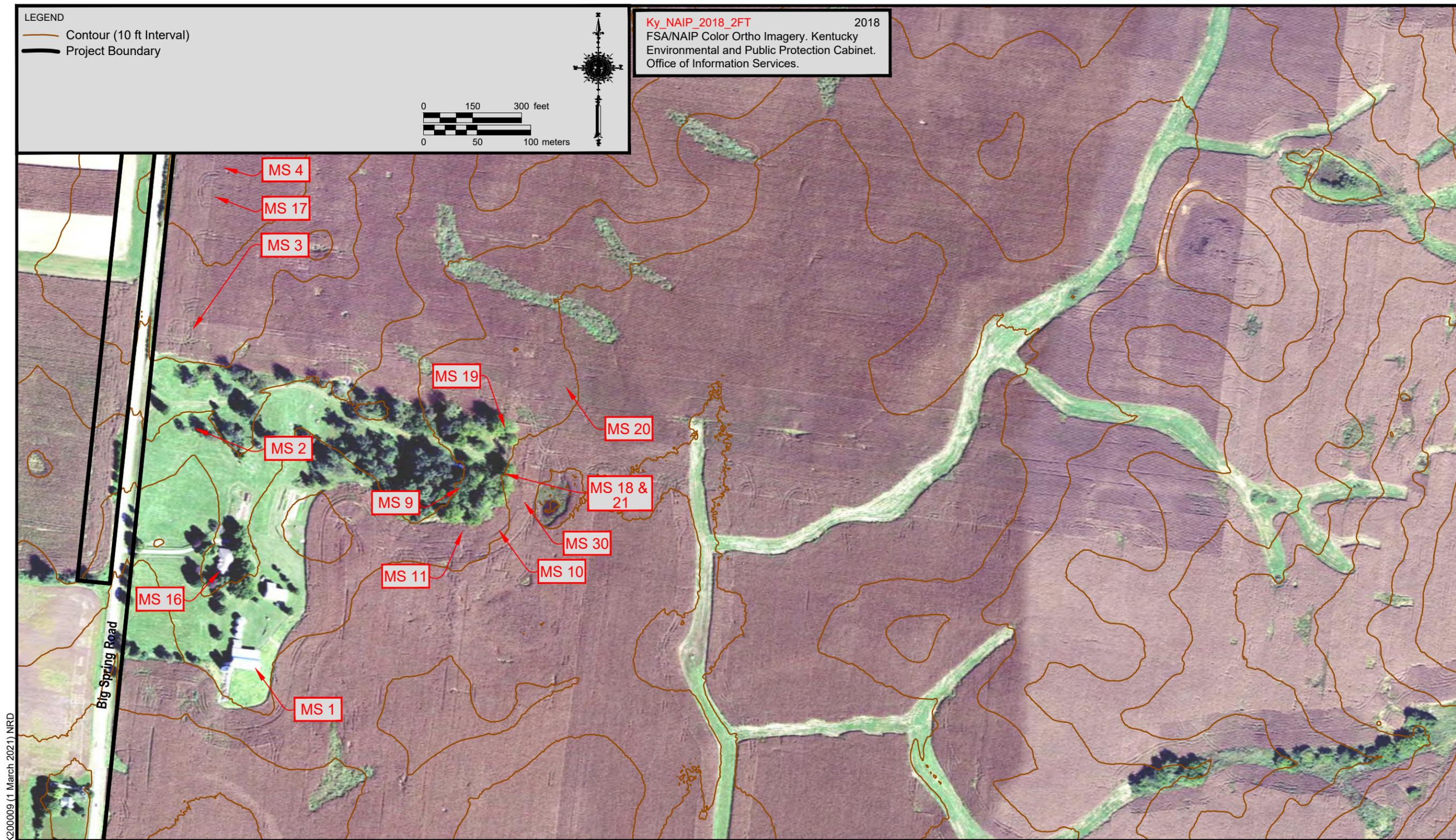


Figure 2f. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.



Figure 2g. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.



Figure 2h. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.

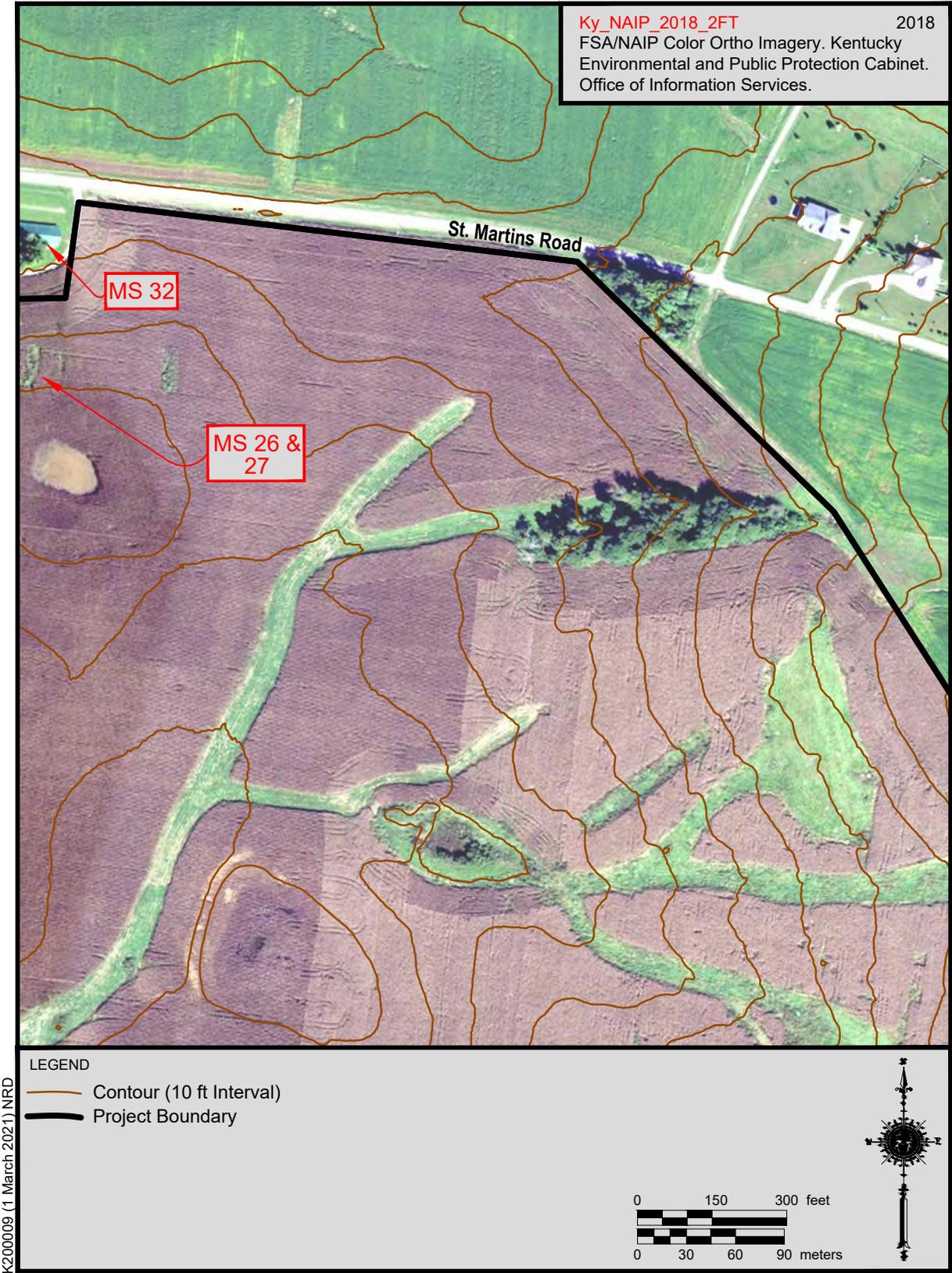


Figure 2i. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.

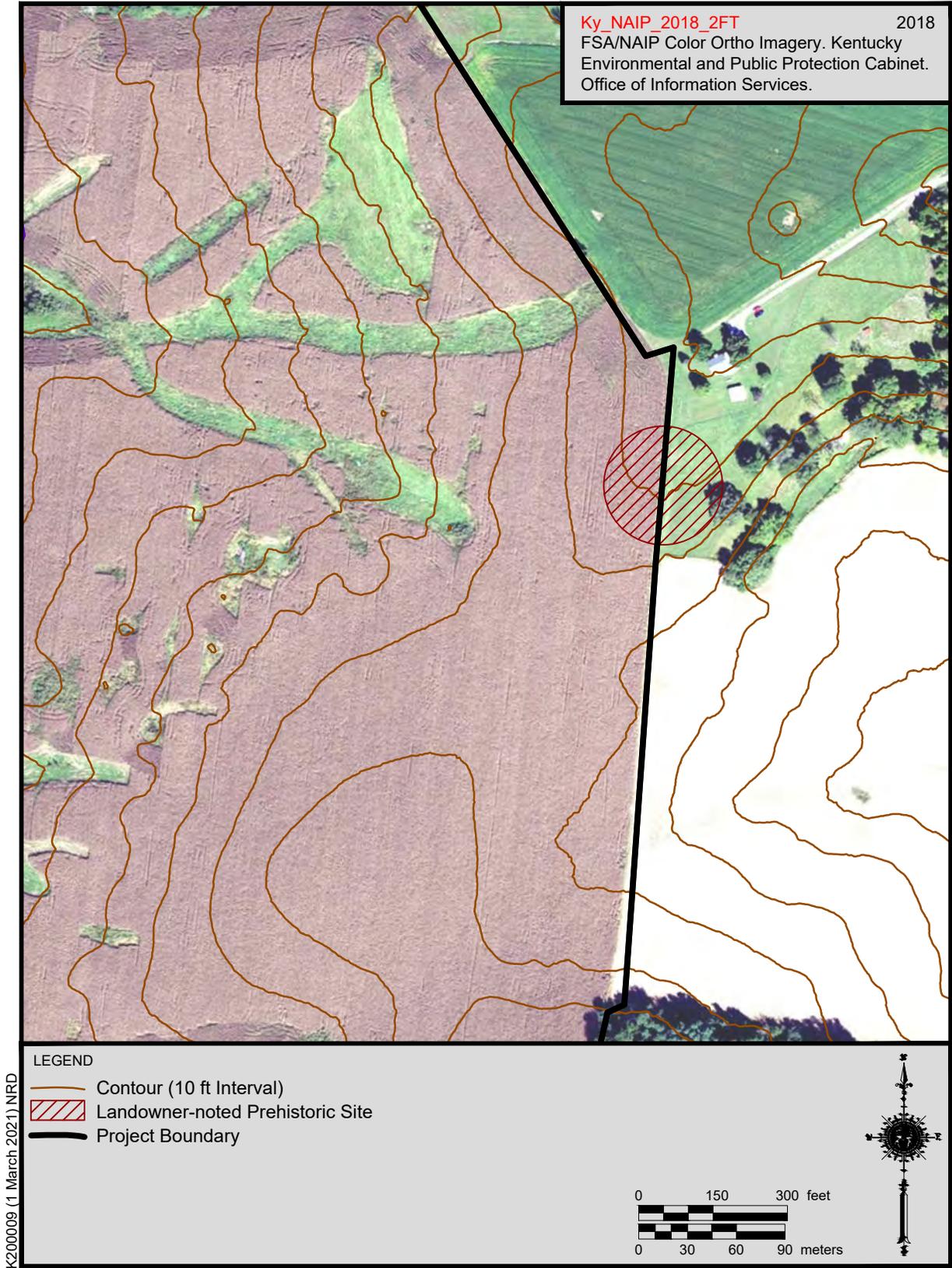


Figure 2j. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.

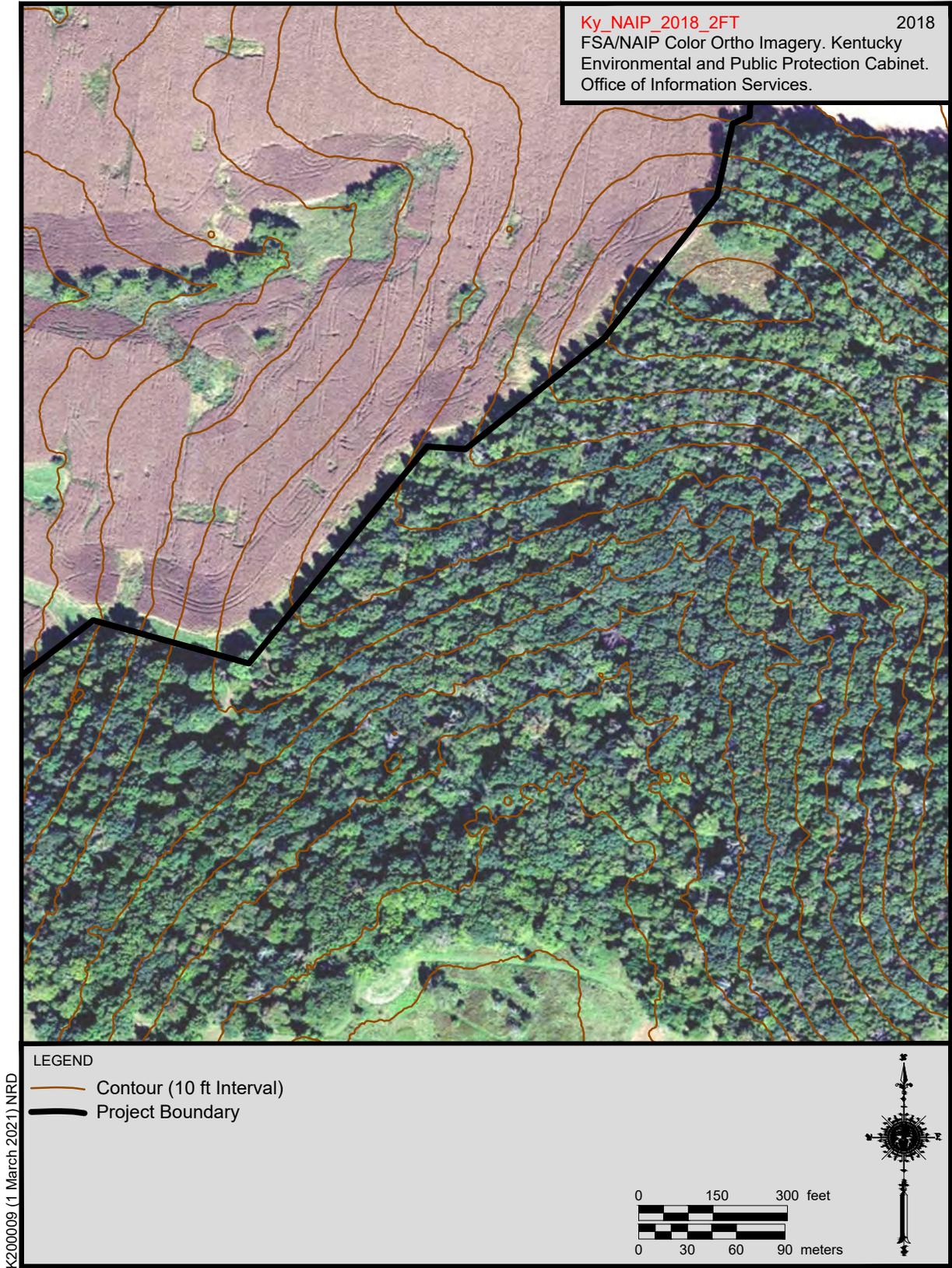


Figure 2k. Aerial photograph depicting the location of the study area, showing the locations of mapped structures, a landowner-noted prehistoric site area, and the unmapped cemetery.

OSA GIS data were requested by CRA on November 15, 2020, and were returned on November 19, 2020. The work at the OSA consisted of a review of professional survey reports and records of archaeological sites located within 2.0 km of the review area.

The OSA GIS data indicate that no previous professional archaeological surveys or archaeological site investigations have been conducted within a 2 km radius of the study area. The OSA GIS data also indicate that no archaeological sites have been recorded within the same 2 km radius. It should be noted that the GIS records returned from the OSA database may include discrepancies, and these discrepancies are often identified and documented during research visits to the OSA library. The 2 km radius included areas within the Big Springs and Flaherty, Kentucky, 7.5-minute series quadrangles (United States Geological Survey [USGS] 1991a, 1991b).

## Map Data

Prior to the site visit, CRA conducted a review of historic maps to determine if any of the maps showed historic structures within or adjacent to the proposed project area. The following maps were reviewed.

- 1937 General Highway Map, Meade County, Kentucky (Kentucky Department of Highways [KDOH])
- 1941 Ekron, Kentucky-Indiana, 15-minute series topographic quadrangle (USGS)
- 1947 Ekron, Kentucky-Indiana, 15-minute series topographic quadrangle (USGS 1947a)
- 1947 Flaherty, Kentucky, 7.5-minute series topographic quadrangle (USGS 1947b)
- 1948 Big Springs, Kentucky, 7.5-minute series topographic quadrangle (USGS)
- 1949 General Highway Map, Meade County, Kentucky (Kentucky State Highway Department [KSHD])
- 1958 General Highway Map, Meade County, Kentucky (KSHD)
- 1961 Big Springs, Kentucky, 7.5-minute series topographic quadrangle (USGS)

The historic maps show a total of 34 map structures (MS 1–34) within or adjacent to the project area. Because of their small scale, the general highway maps dating to the 1930s, 1940s, and 1950s (KDOH 1937, KSHD 1949 and 1958) are difficult to correlate to generally more accurate USGS topographic quadrangles. As such, these maps were only briefly consulted and are not illustrated in this overview.

MS 1–15 were first depicted on the 1941 map (Figure 3; USGS 1941). MS 9 is the historic Bunger House (Figure 4) that is still standing within the project area. It is surrounded by several extant outbuildings (MS 11, 18, and 21). The landowner has plans to remove the house and outbuildings and build modern structures in the area (Jeff Hamilton, personal communication, December 2, 2020). MS 6, 12, and 15 are also extant houses; however, they are outside the project area. MS 1 is a barn within the project area, while MS 7 is a barn outside the project area. The structures at the locations for MS 2–5, 8, 10, 13, and 14 are no longer present. These areas consist of agricultural fields or grass-covered fields/lawns with no ground surface visibility.

MS 16–28 were first depicted on the 1947 map (Figure 5; USGS 1947a). MS 16 is a house within the project area. MS 17, 19, 20, and 22–28 are no longer present. These areas consist of agricultural fields or grass-covered fields/lawns with no ground surface visibility, a branch or brush pile (MS 19), and a gravel driveway (MS 23).

MS 29–34 were depicted on the 1961 map (Figure 6; USGS 1961). MS 30 and 32 are barns outside of the project area. MS 29, 31, 33, and 34 are no longer present. These areas consist of agricultural fields or grass-covered lawns with no ground surface visibility and a gravel driveway (MS 34).

In summary, the 34 recorded historic map structures are divided into three groups: present and inside the project area; present and outside of the project area; and no longer present. The six existing structures within the project area consist of MS 1, 9, 11, 16, 18, and 21. The six existing structures outside of the project area consist of MS 6, 7, 12, 15, 30, and 32. The 22 structures that are no longer present consist of MS 2–5, 8, 10, 13, 14, 17, 19, 20, 22–29, 31, 33, and 34.

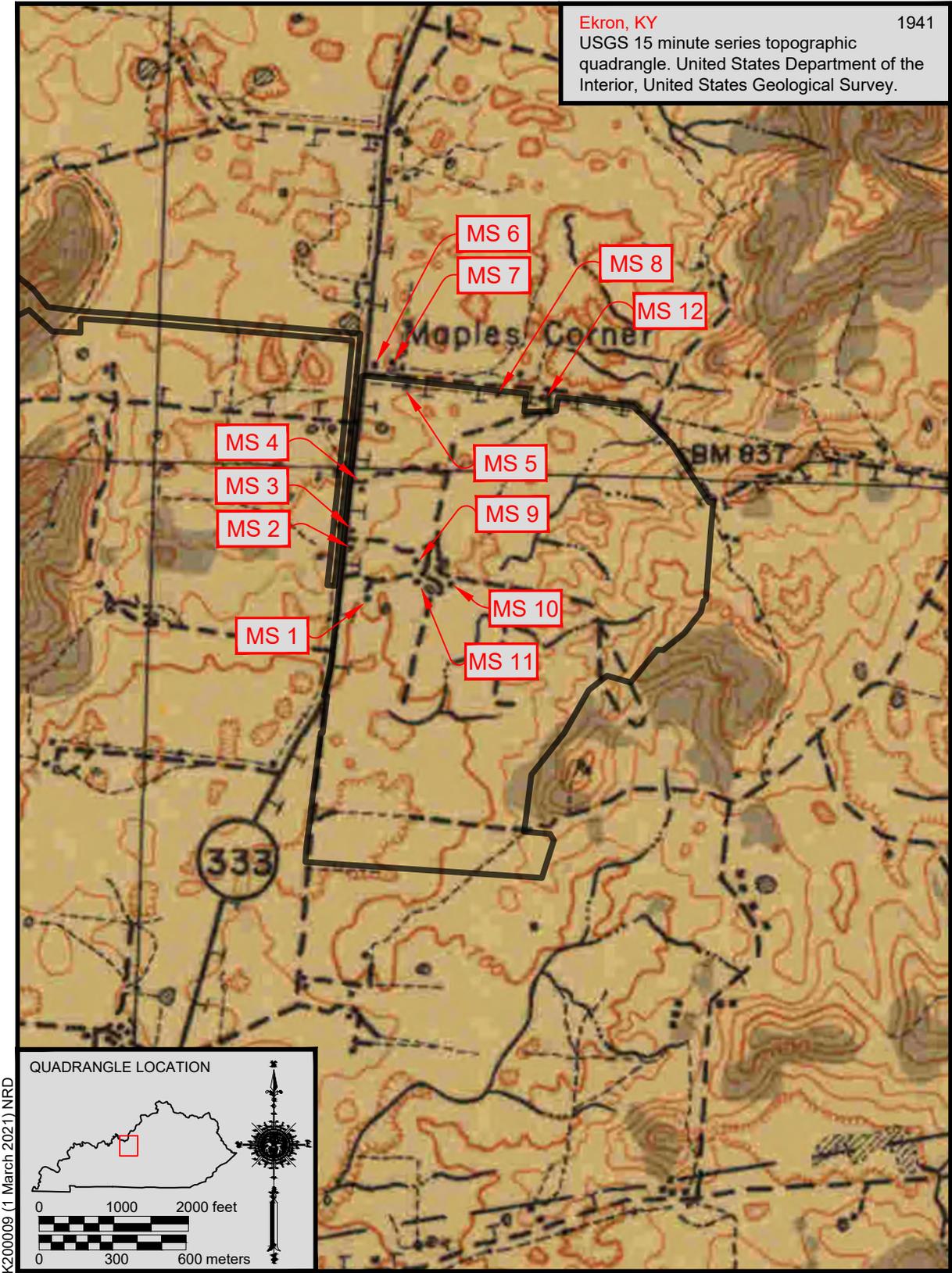


Figure 3a. 1941 map depicting MS 1–15 (USGS).

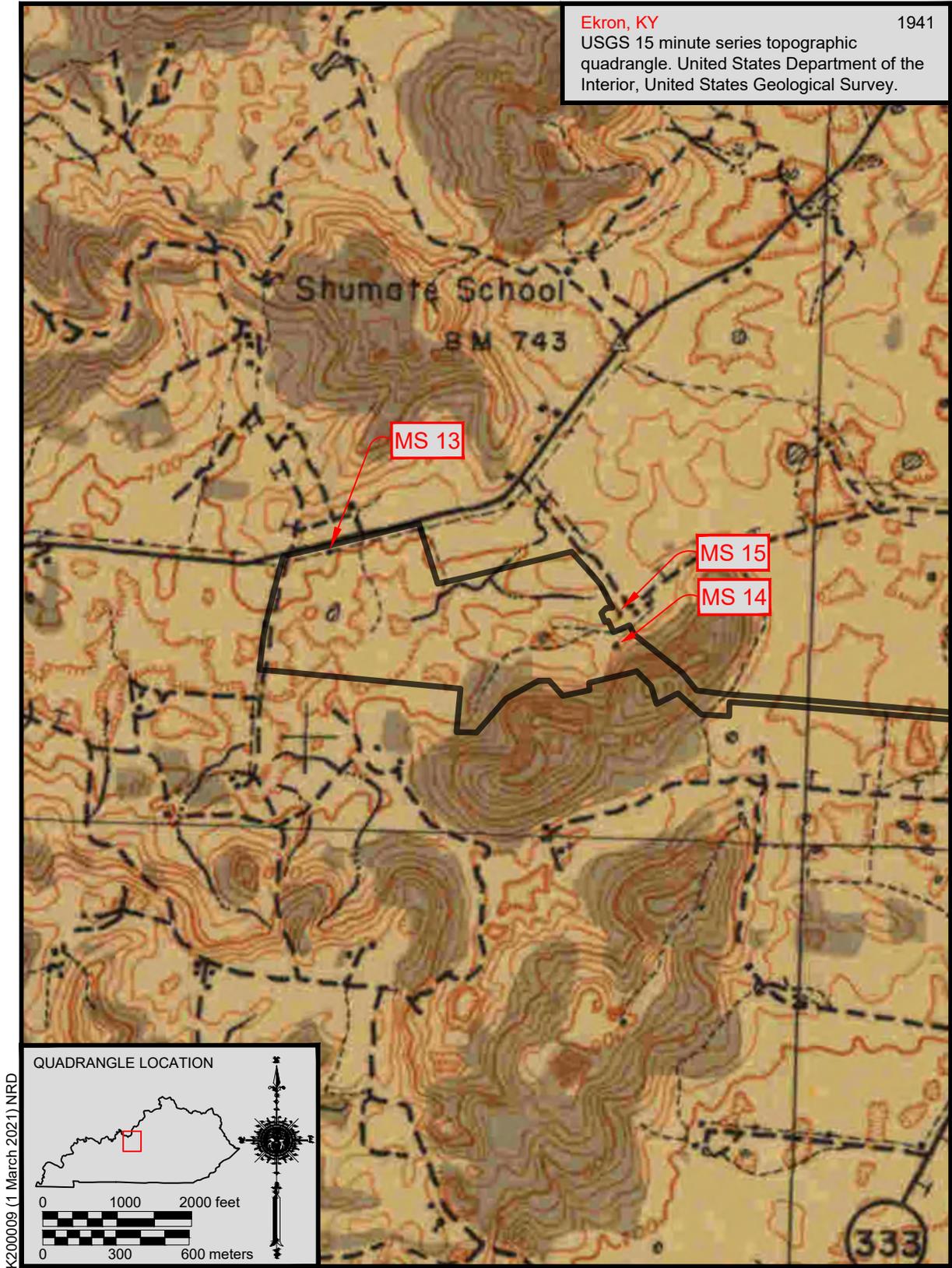


Figure 3b. 1941 map depicting MS 1–15 (USGS).



Figure 4. Bunger House, facing east.

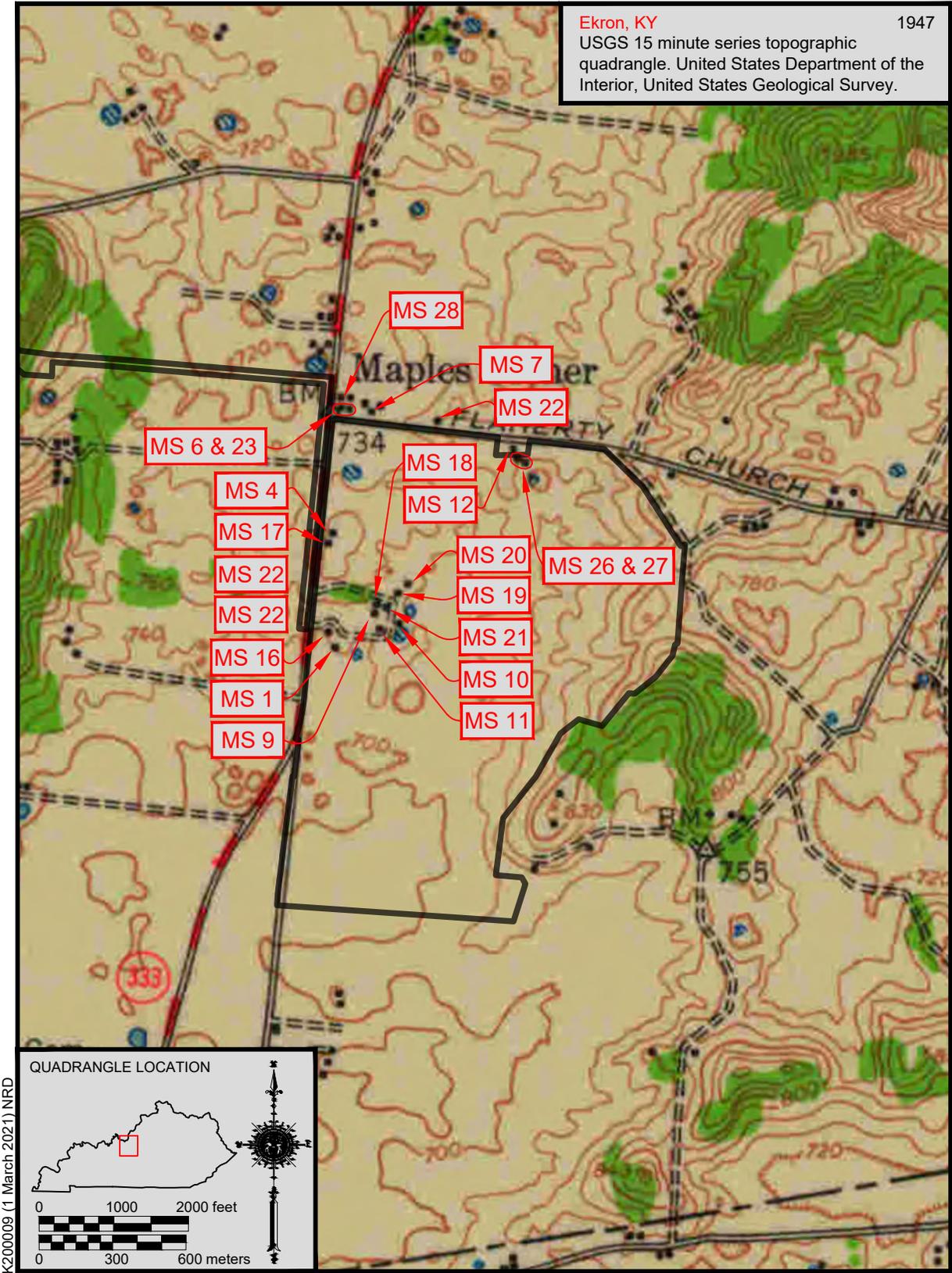


Figure 5a. 1947 map depicting MS 1, 4-7, 9-13, and 16-28 (USGS 1947a).

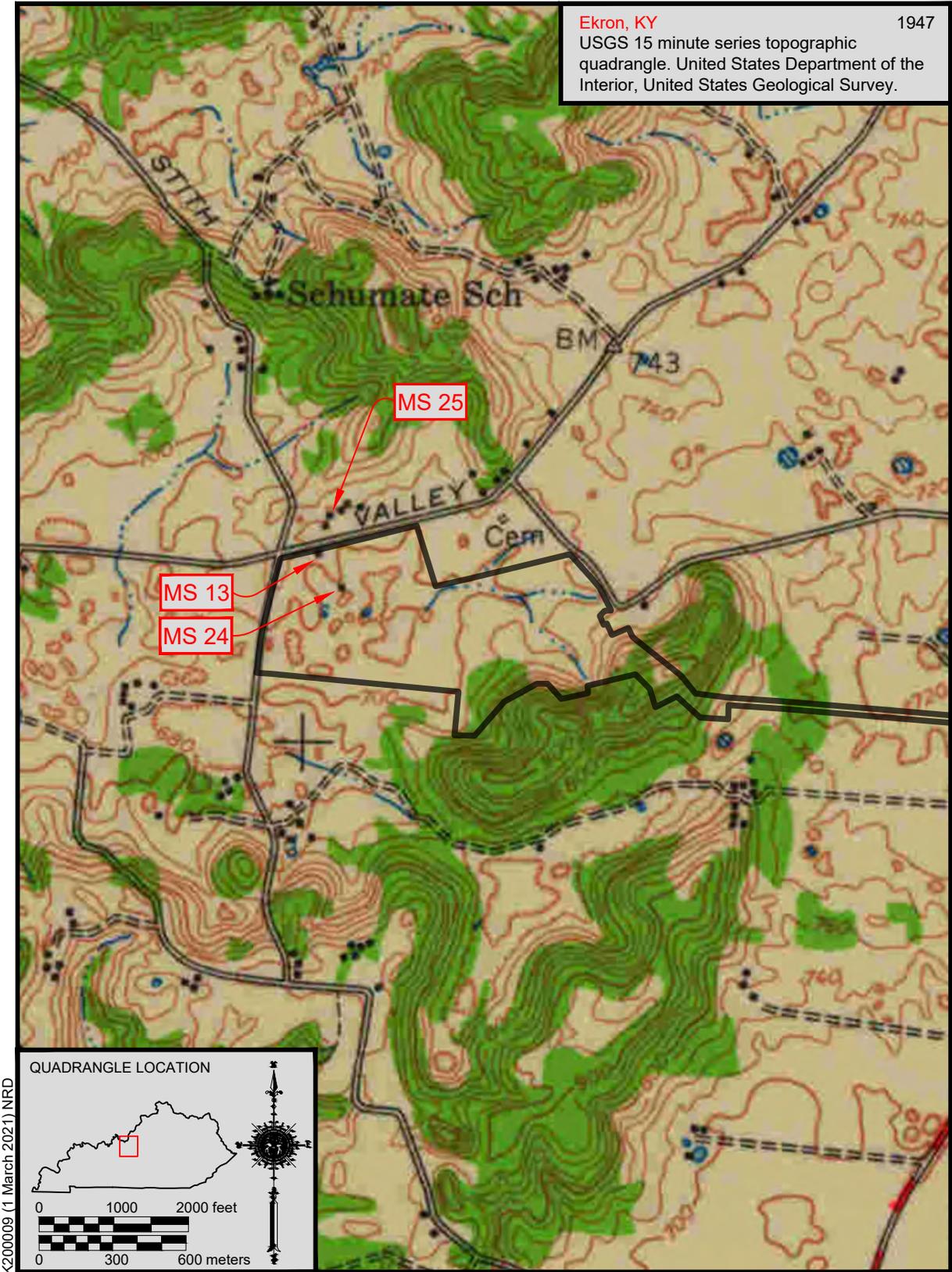


Figure 5b. 1947 map depicting MS 1, 4-7, 9-13, and 16-28 (USGS 1947a).

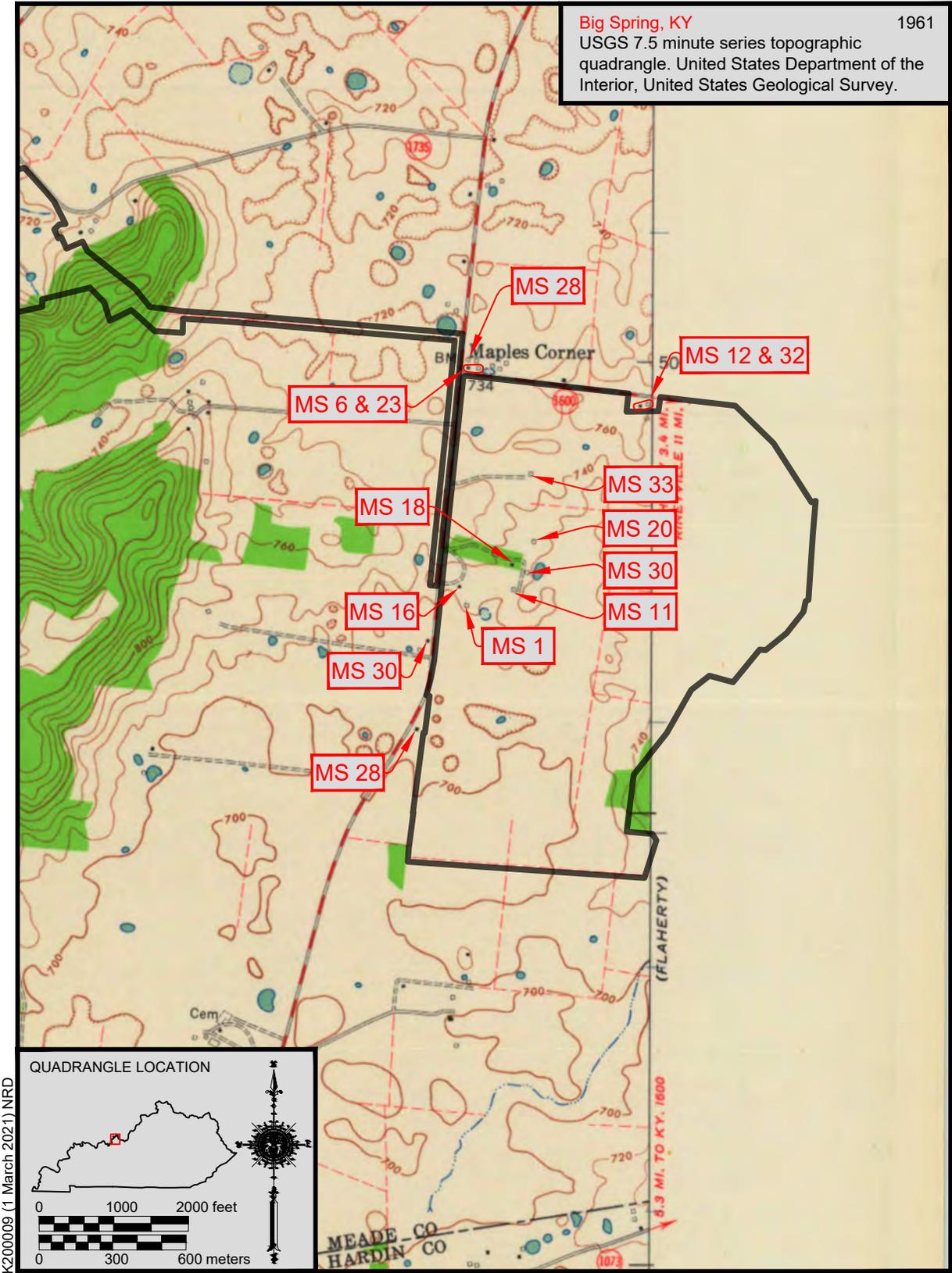


Figure 6a. 1961 map depicting MS 1, 6, 7, 11-13, 16, 18, 20, 23, 25, and 29-34 (USGS 1961).

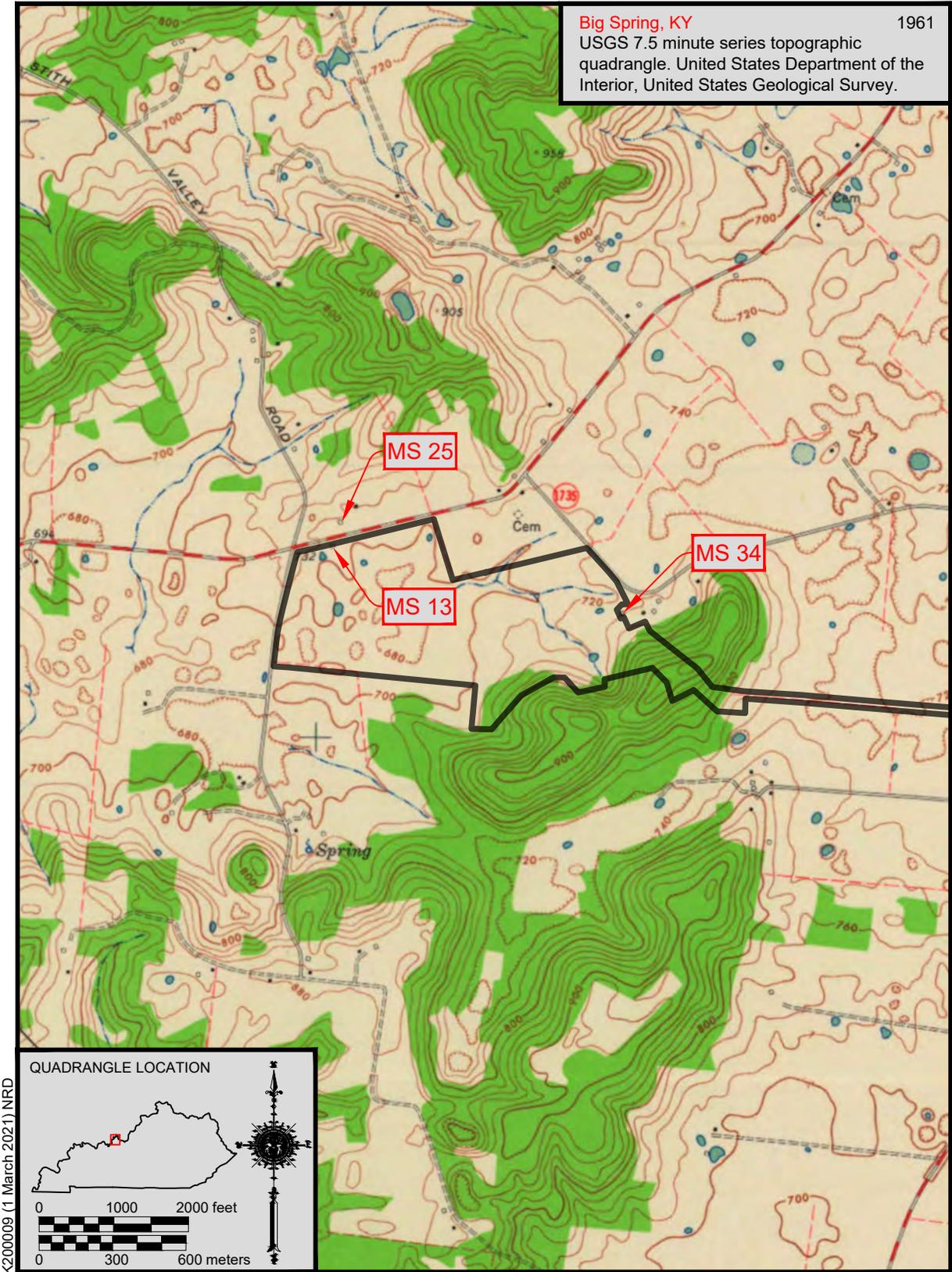


Figure 6b. 1961 map depicting MS 1, 6, 7, 11-13, 16, 18, 20, 23, 25, and 29-34 (USGS 1961).

## Soils Data

The soils mapped within the study area were also reviewed in order to define areas that may contain intact cultural deposits. Seven soil series (Baxter, Crider, Hammack, Lindside, Newark, Nolin, and Zanesville) and five soil complexes (Caneyville-Rock outcrop, Fredonia-Crider, Hammack-Baxter, Rock outcrop-Corydon, and Rosine-Gilpin-Lenberg) were mapped for the study area (Soil Survey Staff 2020). The Baxter, Caneyville, Crider, Fredonia, Hammack, Lenberg, Rosine, and Zanesville series soils are Alfisols, which are generally found on landforms that formed during the late Pleistocene or earlier (Soil Survey Staff 1999:163–165). Archaeological deposits would only be found on or very near the ground surface on landforms mapped with Alfisols. Gilpin series soils are Ultisols, which are generally 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 Ultisols.

Lindside, Newark, and Nolin series soils are Inceptisols, which are generally found on landforms that formed during the late Pleistocene or Holocene time periods (Soil Survey Staff 1999:489–493). Inceptisols have the potential to contain deeply buried, intact cultural deposits, depending upon the landform on which they formed (e.g. sideslope vs. alluvial terrace) (Soil Survey Staff 1999). Corydon series soils are Mollisols, which are generally 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. Lindside soils, mapped in the northwestern portion of the study area, represent approximately 0.5 percent of the total study area, while Newark soils, mapped in the southern portion of the study area, represent approximately 1.1 percent of the total study area (Figure 7). Nolin soils, mapped for numerous areas across the study area, represent approximately 18.8 percent of the study area, while Corydon soils, mapped as Rock outcrop-Corydon soils complex in two small areas, represent approximately 0.2 percent of the study area. As noted, areas mapped as Inceptisols or Mollisols have high potential to contain significant intact prehistoric cultural deposits.

## Observations and Results

Locations within the project area that were considered high probability areas for archaeological materials were investigated. These included areas that had mapped structures, areas with an increased potential to contain prehistoric sites, and a previously unmapped cemetery. While no official shovel testing was conducted, soil caps were occasionally opened up to observe general soil conditions.

While most of the 34 historic map structure locations no longer have extant structures, there was no ground surface visibility in their locations; therefore, there could potentially be historic artifacts below the ground surface in these areas. Six historic map structure locations (MS 1, 9, 11, 16, 18, and 21; see Figure 2f on page 8) do have extant structures and may have associated historic artifacts beneath the ground surface surrounding them. A few soil caps were opened up near MS 9, and while no artifacts were visible, an apparently undisturbed dark topsoil extending to an unknown depth was noted, suggesting a potential for the presence of midden deposits that may contain artifacts from the early occupation of the house.

The project area was walked over and visually inspected. It is characterized mostly by level or gently sloping agricultural and grass-covered fields with no ground surface visibility (Figure 8). One section at the southwest corner of the large portion west of Big Spring Road did have good ground surface visibility, but no artifacts were identified. Soil caps across the project area occasionally were opened up and exhibited a decent amount (10–30 cm) of top soil. The only artifact identified during the survey was a prehistoric flake found in a soil cap on a ridge top (see Figure 2d on page 6).

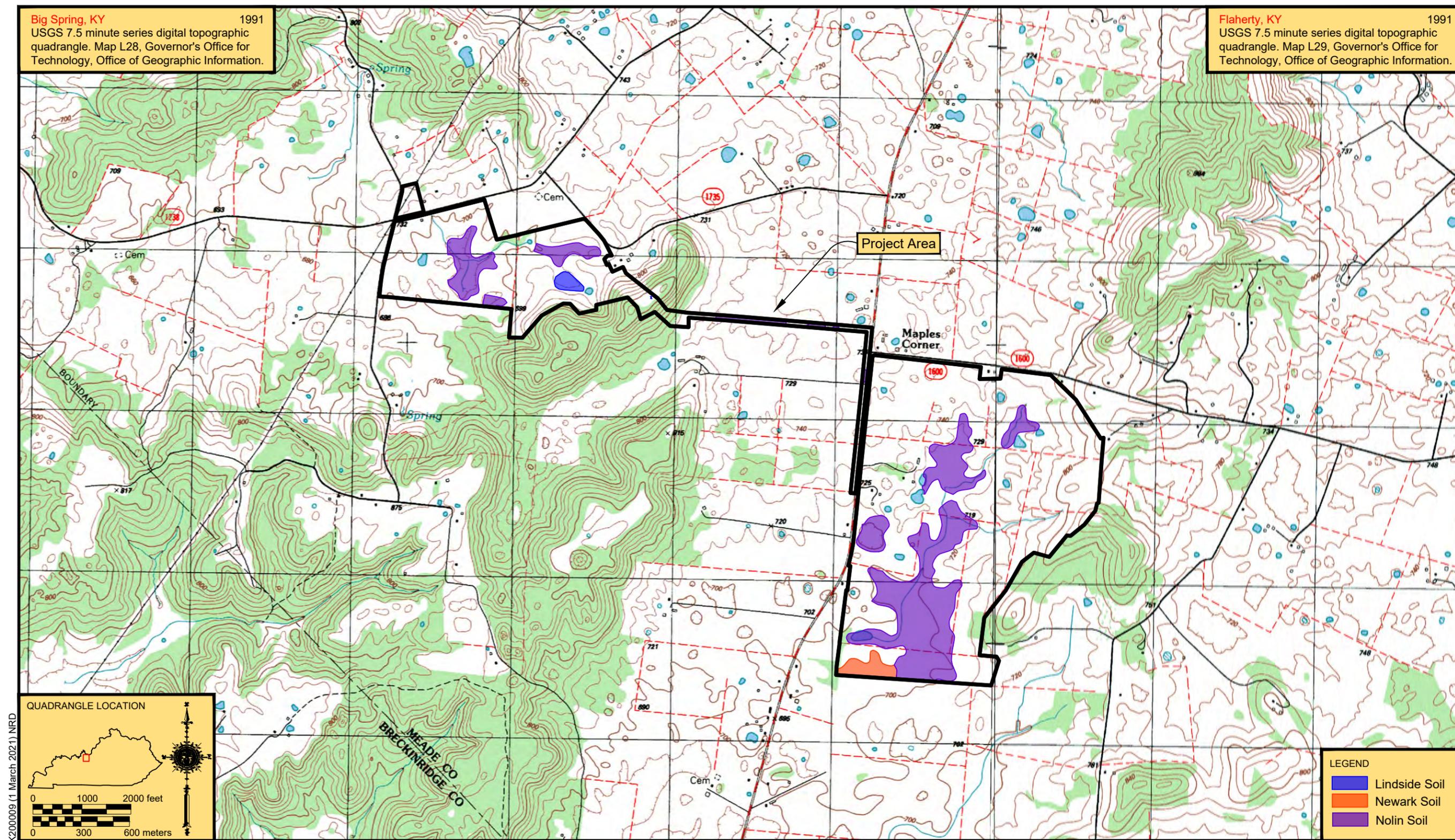


Figure 7. Location of Corydon, Lindsie, Newark, and Nolin series soils in the study area.



**Figure 8. Grass-covered field and agricultural field in project area, facing northwest.**

One landowner pointed out a location adjacent to the project area where prehistoric artifacts had been found (see Figure 2d on page 6; Ann Doman, personal communication, December 2, 2020), and a second pointed out a location partially within the project area where prehistoric artifacts had been found (see Figure 2j on page 12; Figure 9; Jeff Hamilton, personal communication, December 2, 2020). The second landowner had collected two biface fragments from the area (Figure 10). Both locations were near natural springs.

A small portion of the project consisted of wooded slope (see Figure 2d on page 6). While rock outcrop was common in this area (Figure 11 on page 26), no geologic overhangs were identified. Very little rock outcrop was identified on the opposite slope, and no pictographs/petroglyphs or mortars were identified.

One unrecorded historic and modern cemetery was identified during the survey (see Figure 2d on page 6; Figure 12). The cemetery was identified on top of a ridge and was enclosed by a modern steel-mesh fence with wood posts. Originally used by the Stith family, nine headstones were identified, though most of them were not in-situ (Figure 13). Death dates were from the late nineteenth century and from 2019.

## **Implications**

Because there was no ground surface visibility over most of the project area, it is unknown whether any of the high probability areas contain subsurface archaeological materials. However, prehistoric material has reportedly been identified from two areas within the project boundary, and there are six structures present at historic map structure locations within the project area. There are also several places within the project area with the potential to contain deeply buried archeological deposits (alluvial landforms). Because of this, it is likely that several archaeological sites are present within the project area. A historic and modern cemetery was also identified within the project area. If the cemetery cannot be avoided through use of a greenspace that includes an appropriate buffer around the cemetery, additional documentation, which may include mechanical stripping to identify the cemetery boundaries, is recommended.



**Figure 9. Location of prehistoric artifacts, as identified by Jeff Hamilton, facing north.**



**Figure 10. Biface fragments recovered from prehistoric artifact area.**



**Figure 11. Rock outcrop within project area.**



**Figure 12. Unrecorded cemetery used by Stith Family, facing southwest.**



**Figure 13. Displaced grave markers, facing north.**

At this time, it is understood that an archaeological survey of the study area is not required. However, a survey may be required at a later date if this project becomes federally funded or requires any type of federal permit and is therefore considered an undertaking subject to Section 106 of the National Historic Preservation Act.

Sincerely,

A handwritten signature in cursive script that reads "Charles M. Niquette".

Charles M. Niquette, RPA 10710  
President

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### Soil Survey Staff

1999 *Soil Taxonomy, A Basic System of Soil Classification for Making and Interpreting Soil Surveys*. 2nd ed. Agricultural Handbook Number 436. United States Department of Agriculture, Natural Resource Conservation Service, Soil Survey Division, Washington, DC.

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1991a Big Spring, Kentucky, 7.5-minute series topographical quadrangle. United States Department of the Interior, Washington, DC.

1991b Flaherty, Kentucky, 7.5-minute series topographical quadrangle. United States Department of the Interior, Washington, DC.



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<b>Charles M. Niquette, MA, RPA</b>		<b>President, Chief Executive Officer, Principal Investigator</b>	
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		<ul style="list-style-type: none"> <li>Oversee and administer contract</li> <li>Overall quality control</li> <li>Coordination with client and consulting parties</li> </ul>	<b>Education and Training:</b>
		<ul style="list-style-type: none"> <li>M.A. anthropology, University of Arkansas, Fayetteville, Arkansas</li> <li>B.A. history and anthropology, Catawba College, Salisbury, North Carolina</li> </ul>	
<b>Experience Summary Information</b>			
<b>President/CEO, Principal Investigator</b>	<b>Staff Archeologist</b>	<b>Archaeological Intern</b>	
Cultural Resource Analysts, Inc. 1983 – present	Advisory Council on Historic Preservation 1980 - 1981.	National Park Service 1979 – 1980	
<p><b>Mr. Niquette (RPA #10710)</b> is the President and Chief Executive Officer of Cultural Resource Analysts, Inc. He has served as Principal Investigator, Project Manager, or Contract Administrator for thousands of projects undertaken by Cultural Resource Analysts. Between 1977 and the present, Mr. Niquette has conducted archeological field work in Kentucky, Tennessee, North Carolina, West Virginia, Ohio, Missouri, Indiana, Virginia, Arkansas, and Colorado. This experience included inventory surveys, National Register evaluations, and major excavations. His experience is not limited to prehistoric archeology, but also includes standing structure evaluations, historic archeological studies, and archival research on historic sites. Mr. Niquette's prior experience as an employee of the <b>National Park Service</b> and the <b>Advisory Council on Historic Preservation</b> affords him a unique and valuable perspective regarding federally mandated historic preservation studies. This perspective remains an invaluable asset to his clients because he thoroughly understands the legal requirements to be met as well as the needs of state and federal reviewers and project managers.</p> <p><b>Professional Awards and Achievements:</b></p> <p><b>2017:</b> McGimsey Davis Award. Register of Professional Archaeologists.</p> <p><b>2008:</b> Presidential Recognition Award. Register of Professional Archaeologists.</p> <p><b>2003:</b> <i>Henry Brainerd McClellan Award</i> presented by the Sayre School, Lexington, Kentucky, for a significant service contribution to the student body. Award made in recognition of the long-term and significant contribution to the students and the school's educational program represented by the Waterwild archaeological investigation.</p> <p><b>2002:</b> Chosen as a 2002 <i>Distinguished Alumnus of the J. William Fulbright College of Arts and Sciences</i> at the University of Arkansas. Mr. Niquette was nominated by the Department of Anthropology for his achievements in the field of archeology and outstanding contribution to the profession.</p> <p><b>1994:</b> Recipient of the <i>Sigfus Olafson Award of Merit</i> for outstanding contributions to West Virginia archaeology by the West Virginia Archaeological Society</p> <p><b>1993:</b> <i>Service to Preservation Award</i>. Presented by the Ida Lee Willis Memorial Foundation in</p>			

recognition of the significant contribution toward the preservation of Kentucky's resources.  
**1992:** *Special Achievement Award*. Presented by the Society of Professional Archaeologists  
**1990:** Commissioned a Kentucky Colonel. Wallace G. Wilkinson, Governor of Kentucky.  
**1987:** Governor's appointee as a Member of the *Task Force on Permitting of Surface Coal Mining Operations*. Issued by Martha Layne Collins, Governor, Commonwealth of Kentucky.

**Professional Activities:**

**2018-2020.** Board Member, Leaders in Energy and Preservation.  
**2018-2019.** Nomination Committee Member, Register of Professional Archaeologists.  
**2017 – Present.** Member of the Advisor Council on Historic Preservation's "Infrastructure and Section 106 Reviews Working Group."  
**2017-2018:** Secretary Treasurer. Register of Professional Archeologists  
**2017-2020:** Member. Society for American Archaeology's Government Affairs Committee.  
**2015:** Governor Wolf's Pennsylvania Pipeline Infrastructure Taskforce. Member of the "historical, cultural, tribal" workgroup.  
**2014:** Nominating Committee Member, Society for American Archaeology.  
**2013-2018:** Chairman, Gas and Preservation Partnership (GAPP), later renamed Leaders in Energy and Preservation (LEAP).  
**2013-2014:** Secretary Treasurer. Register of Professional Archeologists  
**2010-Present.** President, C&M Realty.  
**2009–2016:** Board of Directors, SRI Foundation. Rio Rancho, New Mexico.  
**2007–Present:** Editorial Board, Heritage Management (Journal), Left Coast Press.  
**2007–Present:** Advisory Director, Bank of Lexington, Lexington, Kentucky.  
**2005–2008:** Member of the Editorial Board, Society for American Archaeology Press.  
**2007:** Member, Nominations Committee. Society for American Archaeology.  
**2006:** National Science Foundation grant reviewer.  
**2006:** Member-Practicing Advisory Work Group. American Anthropological Association.  
**2006-Present.** President, Niquette Real Estate Management.  
**2004-Present.** Manager, Niquette Farms LLC.  
**2004–2005:** President, Register of Professional Archaeologists  
**2003–2004:** Member, Society for American Archaeology's Government Affairs Committee  
**2002–2003:** President-elect, Register of Professional Archeologists  
**1999–2000:** Secretary Treasurer. Register of Professional Archeologists  
**1995–1998:** Member, Society for American Archeology's Cultural Resource Management Committee  
**1995–1997:** President. American Cultural Resources Association  
**1987–1989:** Board Member. Society of Professional Archeologists.  
**1984–1997:** Member of the Society for American Archeology's Governmental Affairs Committee.

**Affiliations:**

Member of the American Cultural Resources Association  
Member of the Register of Professional Archeologists (1999-present)  
Certified as a Professional Archeologist by the Society of Professional Archeologists (1984-1999)  
Member of the Society for American Archeology  
Member of the Council for West Virginia Archeology  
Member of the West Virginia Archeological Society  
Member of the Kentucky Organization of Professional Archeologists  
Member of the Tennessee Anthropological Society

**Publications:**

Niquette, Charles M.:  
2002 Reviewer: *Dangerous Places: Health, Safety, and Archaeology*. David A. Poirier and Kenneth L. Feder, editors. *Journal of Middle Atlantic Archaeology*, Volume 18.  
2001 "Evaluating Archaeologists - The Business of Archaeology." Co-organizer of half-day session with Dr. Jerry Wait (U.K.) followed by another half-day roundtable discussion on same topic. *7th Annual Meeting of the European Association of Archaeologists*, Essingen am Neckar, Germany.

- 2000a EAA Conference Review *SAA Bulletin Volume 17 (5)*.
- 2000b Europe, Archaeology and Professionalism: A Transatlantic View. *The Archaeologist (Journal of the Institute of Field Archaeologists)*.
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- 1996b Occupational Health & Safety and Archeology. *ACRA Edition* 2(1):1-2.
- 1996c ACRA plans regional OSHA workshops. *ACRA Edition* 2(10):5.
- 1996d Class Dimensions of Contemporary Archaeology. Paper presented at the Annual Meeting of the Society for American Archeology, New Orleans, Louisiana.
- 1996e New Perspectives on Political Activism in Archeology. Paper included in a symposium, "The Politics of Archeology: How its works and how to influence it," Annual Meeting of the Society for American Archeology, New Orleans, Louisiana.
- 1995a Cultural Resources Firms Meet to Consider Forming Industry Trade Organization. *Society of Professional Archaeologists Newsletter* 19(1):3.
- 1995b Current Issues and Concerns with the Federal Government. Paper presented in a symposium entitled "The Preservation Partners" (with the Executive Directors of the National Conference of State Historic Preservation Officers and the Advisory Council on Historic Preservation, and Roland Bowers of the National Park Service). First Annual Meeting of the American Cultural Resources Association, Washington, D.C., October 7-8, 1995.
- 1995c Opening address from Charles M. Niquette, President - ACRA First Annual Conference. *ACRA News* 1(1):2.
- 1995d Archeology in the New Century: Business, Politics and the Public. Paper presented in a symposium entitled "Archaeology and its Publics," organized by Mark Leone. American Anthropological Association, Washington, D.C.
- 1995d Open letter to the Advisory Council on Historic Preservation: Comments on the proposed revisions to regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act. *ACRA News* 1(2):1-2.
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#### **Additional Training:**

**Annually:** Adult CPR, First Aid and Blood borne Pathogen

**2014:** Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Training provided by Lesley T. Cusick, Restoration Services, Inc. April 15, 2014.

**2013:** Debriefings in Federal Procurement: Key Rules and Strategies. January 31, 2013 webinar.L2 Federal Resources.

**2012:** USACOE Permits and Associated water quality certifications: Regulatory changes pursuant to Sections 401 and 404 of the federal Clean Water Act. NAEP Webinar September 19, 2012

**2012:** Using Avoidance Strategies to Facilitate Review of Renewable Energy Development Projects on Public Lands. NAEP Webinar.

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**2012:** "Working Effectively with Tribal Governments." [www.tribal.golearnportal.com](http://www.tribal.golearnportal.com).

**2010:** Antiterrorism Level I Training, Department for Homeland Security.

**2009:** Historic Preservation Compliance for Energy Projects - Denver, Colorado. CLE International.

**2009:** Southern Gas Association – Environmental/Safety & Health/HR Training, Dallas, Texas.

**2009:** Southern Gas Association – Environmental Permitting and Construction Compliance Workshop, San Antonio, Texas..

**2007:** Section 106: Principles & Practice. A continuing professional education in cultural resource management, workshop on NEPA/106/4(f) from the SRI Foundation in conjunction with Indiana Department of Transportation, Indianapolis, Indiana.

**2003:** Thinking Beyond the Pavement: A Workshop on Context Sensitive Design. Presented by the Kentucky Transportation Center in cooperation with the Kentucky Transportation Cabinet and the Federal Highway Administration, May 12-13, 2003.

**2003:** "Section 106/National Register Eligibility Training." Ohio Department of Transportation, Columbus. January 29th, 2003.

**2002:** OSHA Health and Safety Compliance Training (20 hrs)

**2002:** OSHA Competent Person: Excavation, Trenching and Shoring (8 hrs)

**2002:** Section 106: Principles & Practice. A continuing professional education in cultural resource management, workshop on NEPA/106/4(f) from the SRI Foundation in conjunction with

Cultural Resource Analysts, Inc. Lexington, Kentucky.

- 1998:** Occupational Health and Safety Meeting. Course offered by Woodward-Clyde, in conjunction with the American Cultural Resource Association, May 19-21, 1998.
- 1999:** Section 106 in the New Millennium. Instructed by Thomas F. King in conjunction with Cultural Resource Analysts, Inc., Lexington, Kentucky.
- 1996:** Consulting with Native Americans about Traditional Cultural Places: A training Course. Instructed by Thomas F. King and Reba Fuller. Sacramento, California. Course offered by CEHP, Inc., in conjunction with the American Cultural Resource Association.

EXHIBIT 14  
ATTACHMENT 14.5



# Threatened and Endangered Species Assessment for Proposed Meade County Solar LLC Project Meade County, Kentucky



Prepared for:

Meade County Solar LLC

24 February 2021

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Appendix A: Representative Photographic Record

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## INTRODUCTION

Meade County Solar LLC, (Meade County Solar) contracted Copperhead Environmental Consulting, Inc. (Copperhead) to conduct a record search and site reconnaissance focused on threatened and endangered species and a cultural resource overview for the Meade County Solar Project (Project near Big Spring in Meade County, Kentucky). The Project Study Area (PSA) consists of approximately 811 acres, and has reference coordinates of 37.83462° N, 86.13962° W. The PSA is within the Doe Run and Otter Creek watersheds, which drain to the Ohio River.

The Meade County Solar Project is a proposed solar farm that will generate electricity through the use of photovoltaic solar panels. Current land use in the PSA consists of farmland, agricultural fields, and residential properties. Historically, the PSA has been primarily used for agricultural and residential land use. The primary landcover types are undeveloped agricultural fields, grassed fields, residential property, and wooded land. Narrow strips of trees exist along some fence rows and streams. According to the Stream and Wetland Delineation Report, the PSA contains 10 wetlands, 1 pond, and 3 streams all considered to be isolated and non-jurisdictional. The PSA contains approximately 11 structures, including residences, barns, and structures associated with cattle and agriculture. Land uses on adjacent properties include agricultural lands, scattered wood lots, and rural residences. Photographs of the habitat encountered within the PSA are included in Appendix A.

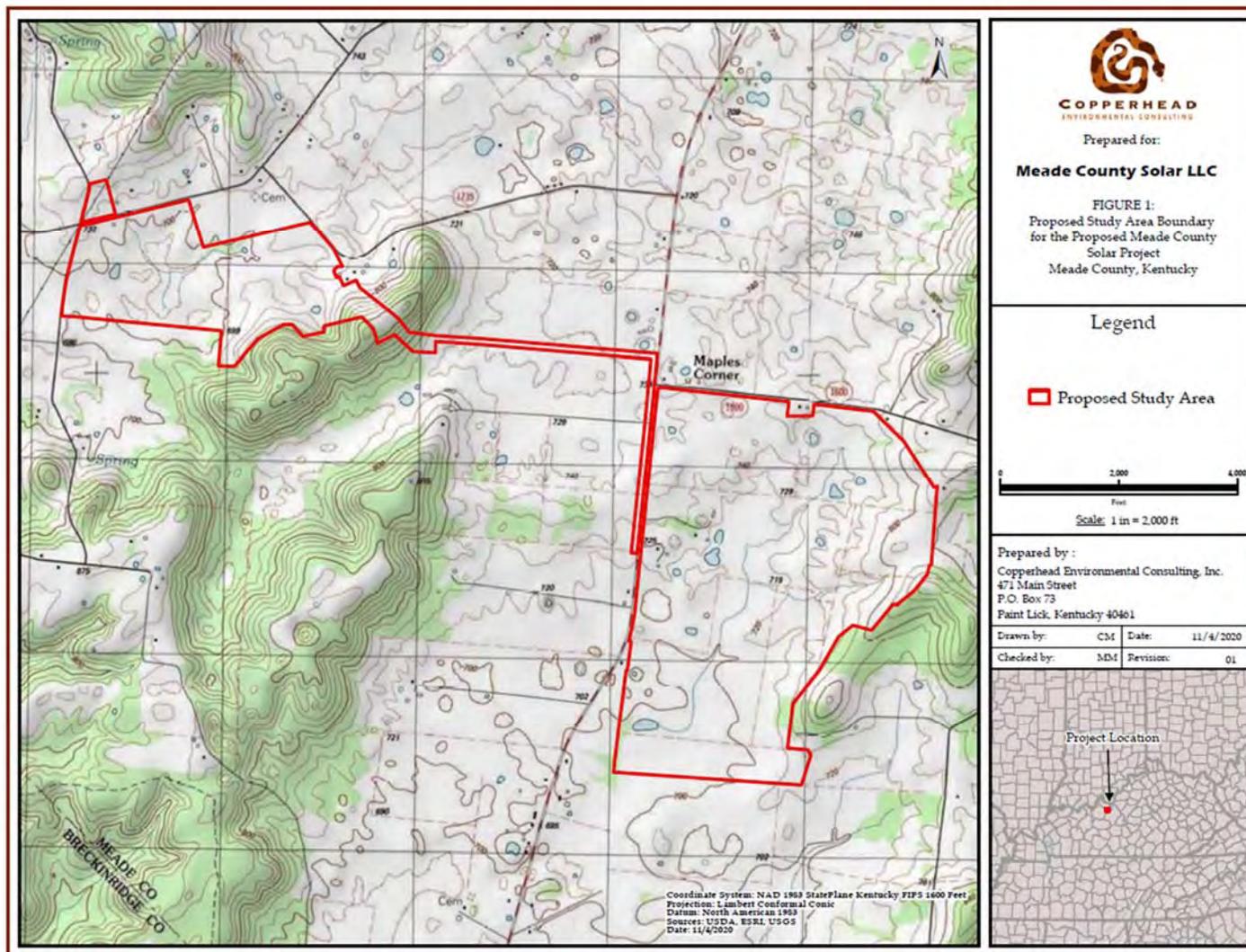


Figure 1. Project Location

## FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES

Copperhead’s review of the United States Fish and Wildlife Service’s (USFWS) online Information for Planning and Consultation (IPaC) tool identified four threatened or endangered species that could potentially occur within the PSA (Table 1 and Appendix B). The Kentucky Speleological Society (KSS) was contacted to determine if there were any known caves within the PSA (Appendix C) Occurrence records were obtained from the Office of Kentucky Nature Preserves (KNP) Natural Heritage Program Database using the Kentucky Biological Assessment Tool (KYBAT). No federally listed species occurrence records were identified within 1 mile of the PSA (Appendix D).

**Table 1. Federally listed species with potential to occur within the Project Study Area.**

Common Name	Scientific Name	Federal Status
<b>Class Mammalia (Mammals)</b>		
Gray Bat	<i>Myotis grisescens</i>	Endangered
Indiana Bat	<i>Myotis sodalis</i>	Endangered
Northern Long-Eared Bat	<i>Myotis septentrionalis</i>	Threatened

Source: USFWS 2020

The following sections provide a brief overview of each species.

### **Class Mammalia (Mammals)**

#### *Gray Bat*

The gray bat (*Myotis grisescens*) is listed as endangered under the Endangered Species Act (ESA). In Kentucky, the gray bat is considered to occur statewide, with higher concentrations in the western and central portions of the state and fewer occurrences in eastern counties (USFWS 2019b). No critical habitat has been designated or is currently proposed for this species.

The gray bat typically roosts in caves year-round and is often found in large numbers, with colonies in excess of one million individuals reported (Brady et al. 1982). Habitat requirements for roosts are highly specific, with fewer than 5 percent of caves representing suitable habitat (Tuttle 1979). The gray bat utilizes varying types of caves during different times of the year, including caves with deep vertical shafts that provide a cold air trap during winter (hibernacula) and caves with domed ceilings that trap warm air during summer for maternity colonies. Other caves, known as dispersal caves, are used as roosting sites during migration from maternity caves to hibernacula. Gray bats are also known to use bridges as roosting habitat during the spring, summer, and fall.

Gray bats usually forage for insects in riparian areas or over open water bodies such as rivers, streams, lakes, or reservoirs. Commuting habitat for the gray bat primarily consists of wooded corridors used to travel between roosting and foraging habitat.

Copperhead's desktop analysis, record search, and field reconnaissance did not identify any caves or mine openings in the PSA. However, there is one cave less than a quarter mile to the north of the PSA and one cave a half mile south from the PSA (Appendix C). In addition, karst topography and several sinkholes were present on the PSA at the time of the site reconnaissance but did not appear to be suitable habitat for gray bats.

#### *Indiana Bat*

The Indiana bat (*Myotis sodalis*) was listed as an endangered species on March 11, 1967 under the Endangered Species Preservation Act of 1966. Critical habitat was designated for the species on September 24, 1976 and includes 11 caves and three mines in six states. In Kentucky, the Indiana bat may occur statewide (USFWS 2019c). The majority of occurrence records are associated with maternity colonies scattered throughout central and eastern Kentucky and along the Ohio River in the western part of the state.

During the winter months, Indiana bats are restricted to suitable underground hibernacula typically consisting of caves located in karst areas of the east-central United States; however, this species also hibernates in cave-like locations, including abandoned mines (USFWS 2007a). Hibernacula are concentrated in the karst areas of the state. Indiana bats have been documented in over 100 caves in Kentucky, and extant winter populations are currently known in 96 of these caves (USFWS 2016).

During the spring, summer, and fall, the Indiana bat uses a variety of forested habitats used for roosting, foraging, and commuting. These habitats include forest blocks and woodlots, as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Isolated trees may provide suitable roosting habitat if they exhibit the characteristics of a suitable roost tree and are located within 1,000 feet of other suitable habitat. Suitable roosting habitat consists of live or dead trees and snags with a diameter at breast height (dbh) of five inches or greater that possess any or all of the following characteristics: exfoliating bark; cavities, crevices, or cracks; or dead or dying trunk/branches. Roost trees are typically located within canopy gaps, along a fencerow, or along a wooded edge.

Maternity colonies are typically found in dead or dying trees with larger dbh (at least nine inches) that receive direct sunlight for more than half the day (USFWS 2016). Maternity roosts have been documented in riparian zones, bottomland and floodplain habitats, wooded wetlands, and upland communities (USFWS 2007a).

Foraging habitat for the Indiana bat includes closed to semi-open forested habitats, where bats forage along forest edges and above the tree canopy (Humphrey et al. 1977, LaVal et al. 1977, Brack

1983). Commuting habitat includes forested blocks and corridors that connect roosting and foraging areas.

Copperhead's desktop analysis identified approximately 21.5 acres of wooded land as well as stream corridors that could potentially provide suitable Indiana bat roosting and foraging habitat (see Figure 2). The PSA is within a USFWS Indiana bat swarming buffer and within a USFWS designated Indiana bat critical habitat (Appendix B). Effects to Indiana bat swarming habitat and critical habitat are expected to be minimal or discountable as no significant vibration impacts such as from blasting are anticipated for the Project.

#### *Northern Long-Eared Bat*

The northern long-eared bat (*Myotis septentrionalis*) was listed as threatened under the ESA on April 2, 2015, with a rule under authority of Section 4(d) of the ESA finalized on January 14, 2016 (USFWS 2016b). No critical habitat is currently designated or proposed by the USFWS for this species.

In Kentucky, the northern long-eared bat has been recorded throughout most of the state and likely occurs statewide. Summer occurrences have been recorded in approximately three-quarters of the counties in the state, with reproductive records (i.e., captures of juveniles or pregnant, lactating, or post-lactating females) in approximately half of the counties. This species has been found in the majority of Kentucky hibernacula known to harbor bats (USFWS 2015). The northern long-eared bat utilizes different habitats during the summer and winter months. Hibernacula, used in winter, vary from large caves and abandoned mines with large entrances and passages to smaller features. Preferred features have relatively constant, cool temperatures (0 to 9° C), high humidity, and minimal air currents (Raesly and Gates 1987, Caceres and Pybus 1997). This species typically roosts in small crevices and cracks in walls and ceilings; however, individuals have also been observed roosting in the open, although less frequently (Barbour and Davis 1969, Caceres and Pybus 1997, Whitaker and Mumford 2009). In addition to mines, northern long-eared bats have been found hibernating in other cave-like, man-made structures (USFWS 2015).

During the spring, summer, and fall, the northern long-eared bat uses a variety of forested habitats for roosting, foraging, and commuting, including forest blocks and woodlots, as well as linear features such as fencerows, riparian forests, and other wooded corridors. These forested areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Suitable roosting habitat consists of live or dead trees and snags with a dbh of three inches or greater that exhibit any of the following characteristics: exfoliating bark, crevices, cavities, or cracks (USFWS 2016). This species is more likely to roost in crevices, cracks, and cavities than other *Myotis* species (Carter and Feldhamer 2005, Lacki et al. 2009) and is more opportunistic when selecting a roost tree, often utilizing shorter trees with smaller dbh and tree stumps.

Foraging habitat includes mature upland forests along hillsides and ridges (LaVal et al. 1977, Brack and Whitaker 2001). This species may also forage in more open areas, such as forest clearings, over open water, and along roads (van Zyll de Jong 1985); however, it is less likely to

forage in riparian areas (LaVal et al. 1977, Brack and Whitaker 2001). Commuting habitat is used to travel between roosting and foraging areas and typically includes forest edges and linear features, such as riparian corridors and fencerows (USFWS 2015).

Copperhead's desktop analysis identified approximately 21.5 acres of wooded land as well as stream corridors that could potentially provide suitable northern long-eared bat roosting and foraging habitat (see Figure 2). Northern long-eared bats could also use farm structures including barns, sheds, and silos as roosting habitat. The PSA is within swarming habitat for northern long-eared bat; however, the proposed project is located greater than 0.25 mile from any known northern long-eared bat hibernacula and greater than 150 feet from any known northern long-eared bat maternity roost tree.

### **Potential Considerations**

Currently no federal nexus (e.g., federal funding, permit, approvals, land, etc.) is associated with the project. As such, consultation with USFWS under Section 7(a)(2) of the ESA would not be required. Should a federal nexus emerge, it would trigger Section 7(a)(2) consultation with USFWS and a determination of effects for each species would be made.

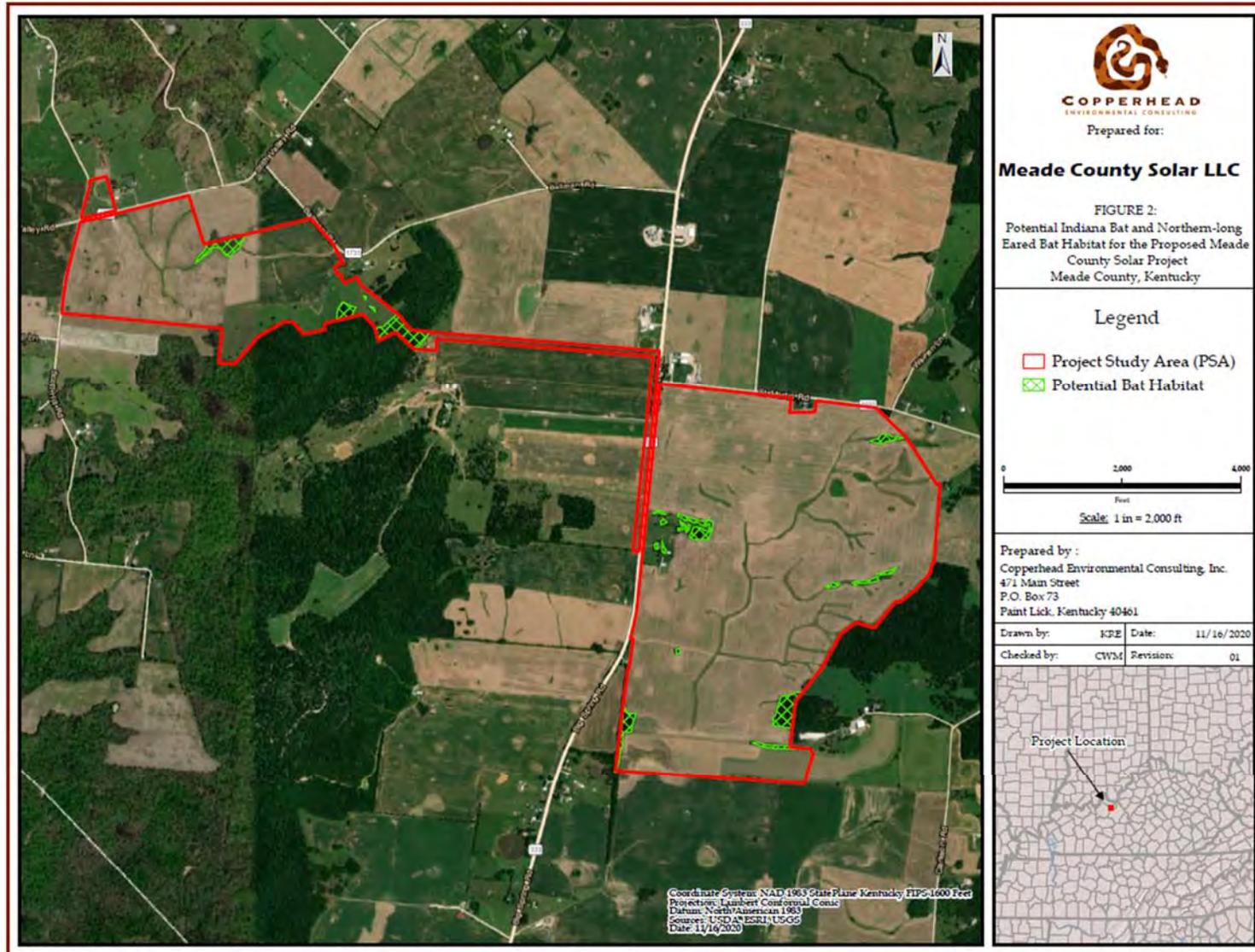


Figure 2. Potential Indiana Bat and Northern-long Eared Bat Habitat

## STATE LISTED THREATENED AND ENDANGERED SPECIES

Forty-one state-listed species have been identified through the state Wildlife Action Plan (SWAP; Kentucky’s Comprehensive Wildlife Conservation Strategy, 2013) as sensitive or at-risk species of greatest conservation need. The following list identifies the relevant species identified by the Kentucky Department of Fish and Wildlife Resources (KDFWR) (Table 2).

**Table 2. State listed species with potential to occur within the Project Study Area.**

Common Name	Scientific Name	State Status
<b>Class Actinopterygii (Fish)</b>		
Northern Cavefish	<i>Amblyopsis spelaea</i>	Sensitive
<b>Class Amphibia (Amphibians)</b>		
Gray Treefrog	<i>Hyla versicolor</i>	Sensitive
<b>Class Aves (Birds)</b>		
Bachman’s Sparrow	<i>Peucaea aestivalis</i>	Endangered
Blue-winged Teal	<i>Spatula discors</i>	Threatened
Dark-eyed Junco	<i>Junco hyemalis</i>	Sensitive
Henslow’s Sparrow	<i>Centronyx henslowii</i>	Sensitive
Lark Sparrow	<i>Chondestes grammacus</i>	Threatened
Northern Harrier	<i>Circus hudsonius</i>	Threatened
Sedge Wren	<i>Cistothorus platensis</i>	Sensitive
Short-eared Owl	<i>Asio flammeus</i>	Endangered
<b>Class Diplopoda (Millipeds)</b>		
A Cave Obligate Milliped	<i>Pseudotremia amphiorax</i>	Threatened
<b>Class Gastropoda (Snails and Slugs)</b>		
Shaggy Cavesnail	<i>Antroselates spiralis</i>	Sensitive
<b>Class Malacostraca (Crayfish)</b>		
Ghost Crayfish	<i>Orconectes inermis inermis</i>	Sensitive

Common Name	Scientific Name	State Status
<b>Class Malacostraca (Crayfish)</b>		
Bottlebrush Crayfish	<i>Barbicambarus cornutus</i>	Sensitive
<b>Class Mammalia (Mammals)</b>		
Eastern Small-footed Bat	<i>Myotis leibii</i>	Threatened
Gray Bat	<i>Myotis grisescens</i>	Threatened
Indiana Bat	<i>Myotis sodalis</i>	Endangered
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Endangered

Source: KDFWR, Big Spring and Flaherty Quadrangles, 2020.

The following sections provide a brief overview of each state-listed species and the potential risk associated with the Project.

Although state-listed species in Kentucky are not protected by legislation or regulation, the project is not likely to significantly effect these state-listed species.

### **Class Actinopterygii (Fish)**

#### *Northern Cavefish*

The Northern Cavefish (*Amblyopsis spelaea*) is considered a sensitive species in Kentucky. Also known as the northern blindfish, these fish are a small fish that can grow up to 5 inches in length and have no eyes or skin pigments due to the darkness of the caves they inhabit (IDFW 2012, Lovis 1999). These fish can be found in limestone caves throughout Central Kentucky and there are multiple records in caves Meade county (KYDFWR 2020).

Based on a record search and site reconnaissance, no caves are located within the project boundary; however, there is one cave (Sig Shacklett's) less than a quarter mile to the north of the PSA and one other cave about a half mile south from the PSA (Appendix C). In addition, karst topography and several sink holes were present on the PSA at the time of the site reconnaissance. Due to the lack of known caves with free-flowing water on the PSA, it is unlikely the project is unlikely to impact the northern cavefish.

### **Class Amphibia (Amphibians)**

#### *Gray Treefrog*

The gray treefrog (*Hyla versicolor*) is a frog that inhabits forested habitats where they can be found in trees, tree holes, under bark, in deteriorating logs, and under leaves. They breed in ponds,

marshes, puddles, and other stagnant bodies of water. The gray treefrog is a small frog that can vary from gray, brown, and green. The green color can be prominent during breeding season. They have a white belly along with an orange/yellow rump with black spots. This project is unlikely to impact the gray treefrog. Occurrence records for the gray treefrog exist within 1 mile of the PSA (Appendix D).

## **Class Aves (Birds)**

### *Bachman's Sparrow*

Bachman's Sparrow (*Peucaea aetivalis*) is considered endangered in Kentucky. It historically inhabited early successional habitats, such as fallow fields and pastures, young pine plantations, and clear cuts that are regenerating (Palmer-Ball 1996). They also prefer habitats that contain hillsides with bare ground, native grasses and forbs, blackberry patches and smaller trees, such as red cedars and evergreens. (Mengel 1965). The Bachman's Sparrow is a large sized sparrow. It is a brown/grey bird with hints of olive and yellow. It has streaks of reddish-brown throughout its back feathers and a rusty colored crown. It has a buffy colored throat, and a streak going back behind the eye. Juvenile birds look like the adults except for streaks on their underside and a tan outline on the wing feathers. The nearest sighting of a Bachman's sparrow was approximately 8 miles north of the project area in 1964 (Sullivan et al. 2009). This project is unlikely to impact this species.

### *Blue-winged Teal*

The Blue-winged Teal (*Spatula discors*) is considered a threatened species in Kentucky. It is a small duck with chalky-blue patches on the upper wing. Breeding males have a white crescent in front of eye. Females are patterned, cold brown, and show a hint of the male's white crescent on face and black bill. Forages by dabbling and tipping-up in shallow wetlands. Forages in shallow water by dabbling, reaching underwater to grab aquatic vegetation, seeds, and midge larvae. There have been multiple reports of blue-winged teal within 20 miles of the project boundary (Sullivan et al. 2009). However, due to a lack of habitat on the PSA, this project is unlikely to impact this species.

### *Dark-eyed Junco*

The Dark-eyed Junco (*Junco hyemalis*) is a medium-sized sparrow with round head, long tail, and small pale bill. All juncos have prominent white outer tail feathers. Dark-eyed juncos are birds of the ground. They hop around the bases of trees and shrubs in forests or venture out onto lawns looking for fallen seeds. They generate high chip notes while foraging or intensifying as they take short, low flights through cover. Dark-eyed juncos breed in coniferous or mixed-coniferous forests in the Appalachians. During winter, they can be found in open woodlands, fields, parks, roadsides, and backyards. In Kentucky, the dark-eyed junco is listed as sensitive. There have been multiple reports of the dark-eyed junco within 20 miles of the project boundary (Sullivan et al.

2009). Based on record searches and a site reconnaissance, the site does appear to contain suitable habitat for the dark-eyed junco.

#### *Henslow's Sparrow*

The Henslow's Sparrow (*Centronyx henslowii*) is a migratory bird that prefers open habitats that contain thick vegetation, such as fallow fields and pastures, during breeding season. During migration and non-breeding, they prefer grassy areas near pines and second-growth woods. The Henslow's Sparrow is a small bird covered in an olive-brown color, with a dark spot behind the eyes. They also have dark striped going along their crown and rusty colored wing tips. The Henslow's sparrow is listed as sensitive in Kentucky. Based on a record search and site reconnaissance, the PSA does appear to contain suitable habitat. Though there is an occurrence record of this species within 1 mile of the PSA, this project is unlikely to impact the Henslow's Sparrow (Appendix D).

#### *Lark Sparrow*

The Lark Sparrow (*Chondestes grammacus*) is considered a threatened species in Kentucky. This species habitat includes semi open habitats with scattered bushes, shrubs, and trees as well as farmland and grazed pasture. It is a larger sized sparrow with a longer tail. Adult lark sparrows have a chestnut colored crown along with a cheek patch. It had a dark line running from its beak through its eye to the back, and dark under chin stripes, on a white chest that had a dark spot in the center. Juveniles have the same color patterns except for the chestnut color on the crown and cheek are lighter. Based on a record search and site reconnaissance, the PSA does appear to contain suitable habitat for the lark sparrow. Though there is an occurrence record within 1 mile of the PSA, this project is unlikely to impact the Lark Sparrow (Appendix D).

#### *Northern Harrier*

The Northern Harrier (*Circus hudsonius*) is a Kentucky state threatened species. They tend to inhabit undisturbed wetlands, grasslands with thick, low lying vegetation, and fields. They breed in a variety of habitats such as freshwater and brackish marshes, grazed meadows, upland prairies, and riverbank habitat. Adult males have a grayish dorsal side with a dark edge on the wings. Along with pale underside and black tipped wingtips and secondary feathers. Adult females have a darker brown back with a light underside along with brown streaking. Both male and female adults have a noticeable white rump patch and dark banding on the underside of the tail. Immature birds have a darker head along with a reddish-brown wash on their bodies. Then wings and tail are banded as well. There have multiple reports of the Northern Harrier within 20 miles of the project boundary (Sullivan et al. 2009). Based on record searches and a site reconnaissance, the site does appear to contain suitable habitat for the Northern harrier. Along with suitable habitat there has been a sighting of a Northern harrier just outside of the project boundary, as well as multiple other sightings within 10 miles of the project.

### *Sedge Wren*

The Sedge Wren (*Cistothorus platensis*) is considered a sensitive species in Kentucky. The sedge wren is a buffy colored bird, with smaller streaks on its crown and larger streaks on its back. It also has a shorter tail that it often holds in an upright position. This species is typically found in moist grasslands and savannahs. Though nesting areas may change between years as habitat conditions change, sedge wrens are presumed to overwinter in similar breeding habitat but may also migrate to brushy grasslands (AOU 1983). Based on a record search and site reconnaissance, the PSA does appear to contain suitable habitat. Though there is an occurrence record of this species within 1 mile of the PSA, this project is unlikely to impact the Sedge Wren (Appendix D).

### *Short-eared Owl*

The Short-eared Owl (*Asio flammeus*) is a species of special concern in Kentucky. The Short-eared Owl is a brown spotted, medium sized owl, with short “ear” tufts, that may not always be visible. They generally can be found in open farmland or fields where they can nest in low vegetation, however in the winter they may nest in trees due to an increase of snow. Nesting typically begins mid-March with juvenile owls typically fledged by mid-September. Based on a record search and site reconnaissance, the PSA does appear to contain suitable habitat for the short-eared owl. Along with suitable habitat there have been two sightings of the short-eared owl just outside of the project boundary.

## **Class Diplopoda (Millipeds)**

### *A Cave Obligate Milliped*

*Pseudotremia amphiorax* is a small cave obligate millipede that has only been observed in Sig Shacklett’s cave in Meade county, Kentucky (Shear 1972). It is considered a threatened species in Kentucky. According to the KSS, Sig Shacklett’s cave is located approximately a quarter mile north from the PSA (Appendix C).

While the record search yielded no caves located within the project boundary, there was karst topography and several sink holes observed during the site reconnaissance. Based on the results of the record search and the site reconnaissance there does appear to contain suitable habitat for the cave obligate milliped.

## **Class Gastropoda (Snails and Slugs)**

### *Shaggy Cavesnail*

The Shaggy Cavesnail (*Antroselates spiralis*) is a sensitive species of snail that lives in caves within four counties throughout Kentucky. It has a shell that’s 4-5 mm tall, and is white/translucent, with an amber periostracum. They tend to be found on the underside of rocks in running water.

While the record search yielded no caves located within the project boundary, there was karst topography and several sink holes observed during the site reconnaissance. Based on the results of the record search and the site reconnaissance there does appear to contain suitable habitat for the shaggy cavesnail.

### **Class Malacostraca (Crayfish)**

#### *Ghost Crayfish*

The Ghost Crayfish (*Orconectes inermis inermis*) is considered a sensitive species in Kentucky. It is a cave dwelling crayfish that is a pale almost translucent color due to the lack of sunlight. This crayfish has been recorded in Meade county multiple times.

Based on a record search and site reconnaissance, no caves are located within the project boundary; however, there is one cave (Sig Shacklett's) less than a quarter mile to the north of the PSA and one other cave about a half mile south from the PSA (Appendix C). In addition, karst topography and several sink holes were present on the PSA at the time of the site reconnaissance. Due to the lack of known caves with free-flowing water on the PSA, it is unlikely the project is unlikely to impact the ghost crayfish.

### **Class Mammalia (Mammals)**

#### *Eastern Small-footed Bat*

The eastern small-footed bat (*Myotis lebeii*) a threatened bat species in Kentucky. It is a small glossy-brown bat with a dark "mask" over the face and keeled calcars. They can weigh anywhere between 3-6 grams (Morgan 2019). Their habitat includes hilly or mountainous areas near ponds or streams where they can forage. In the summer they roost in areas such as talus fields, outcrops, rocky ridges, boulders, spoil piles, strip mines, and other various rocky areas. They also have been found to roost in manmade structures. These structures include but are not limited to buildings, bridges, dams, mines, transmission, and pipeline clearings (USFWS 2013). In the winter they will migrate short distances to caves mines, rock outcrops, and road culverts, where they will hibernate. This project is unlikely to impact the small-footed bat.

Copperhead's desktop analysis identified approximately 21.5 acres of wooded land as well as stream corridors that could potentially provide suitable Eastern small-footed bat roosting and foraging habitat (see Figure 2). Eastern small-footed bats could also use farm structures including barns, sheds, and silos as roosting habitat as well as caves, rock outcrops, and mines.

#### *Gray Bat*

The Gray bat is state-listed as threatened and was previously discussed in the federally listed species section.

### *Indiana Bat*

The Indiana bat is state-listed as endangered and was previously discussed in the federally listed species section.

### *Northern Long-Eared Bat*

The northern long-eared bat is state-listed as endangered and was previously discussed in the federally listed species section.

## **CONCLUSIONS**

Copperhead conducted a threatened and endangered species evaluation for the PSA. The PSA consists of agricultural land and residential use. Surrounding properties are primarily agricultural in nature as well.

Should USFWS consultation be required, the federally listed gray bat, Indiana bat, and northern long-eared bat would likely need further evaluation and consideration. Potential effects to these species can be mitigated for through project-specific conservation and mitigation methods (i.e., tree cutting avoidance or time of year cutting restrictions). Additionally, surveys can be conducted to determine the potential presence/probable absence of the bat species within the PSA. Although state-listed species in Kentucky are not protected by legislation or regulation, the project is not likely to significantly affect these species.

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# Appendix A

## Representative Photographic Record



**COPPERHEAD**  
ENVIRONMENTAL CONSULTING

# Meade County Solar Project Representative Photographic Record

**Project No.:**  
1012

**County, State:**  
Meade County, KY

**Client:**  
Meade County Solar LLC





**COPPERHEAD**  
ENVIRONMENTAL CONSULTING

# Meade County Solar Project Representative Photographic Record

**Project No.:**  
1012

**County, State:**  
Meade County, KY

**Client:**  
Meade County Solar LLC





**COPPERHEAD**  
ENVIRONMENTAL CONSULTING

# Meade County Solar Project Representative Photographic Record

**Project No.:**  
1012

**County, State:**  
Meade County, KY

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Meade County Solar LLC





**COPPERHEAD**  
ENVIRONMENTAL CONSULTING

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**COPPERHEAD**  
ENVIRONMENTAL CONSULTING

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**COPPERHEAD**  
ENVIRONMENTAL CONSULTING

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**COPPERHEAD**  
ENVIRONMENTAL CONSULTING

# Meade County Solar Project Representative Photographic Record

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Meade County Solar LLC





**COPPERHEAD**  
ENVIRONMENTAL CONSULTING

# Meade County Solar Project Representative Photographic Record

**Project No.:**  
1012

**County, State:**  
Meade County, KY

**Client:**  
Meade County Solar LLC



# Appendix B:

## USFWS Official IPaC Species List



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Kentucky Ecological Services Field Office  
J C Watts Federal Building, Room 265  
330 West Broadway  
Frankfort, KY 40601-8670  
Phone: (502) 695-0468 Fax: (502) 695-1024  
<http://www.fws.gov/frankfort/>

In Reply Refer To:

November 16, 2020

Consultation Code: 04EK1000-2021-SLI-0169

Event Code: 04EK1000-2021-E-00573

Project Name: 1012 Meade County Solar, LLC

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

Your concern for the protection of endangered and threatened species is greatly appreciated. The purpose of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) (ESA) is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. The species list attached to this letter fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the ESA to provide information as to whether any proposed or listed species may be present in the area of a proposed action. This is not a concurrence letter; additional consultation with the Service may be required.

### **The Information in Your Species List:**

The enclosed species list identifies federal trust species and critical habitat that may occur within the boundary that you entered into IPaC. For your species list to most accurately represent the species that may potentially be affected by the proposed project, the boundary that you input into IPaC should represent the entire “action area” of the proposed project by considering all the potential “effects of the action,” including potential direct, indirect, and cumulative effects, to federally-listed species or their critical habitat as defined in 50 CFR 402.02. This includes effects of any “interrelated actions” that are part of a larger action and depend on the larger action for their justification and “interdependent actions” that have no independent utility apart from the action under consideration (e.g.; utilities, access roads, etc.) and future actions that are reasonably certain to occur as a result of the proposed project (e.g.; development in response to a new road). If your project is likely to have significant indirect effects that extend well beyond the project footprint (e.g., long-term impacts to water quality), we highly recommend that you

coordinate with the Service early to appropriately define your action area and ensure that you are evaluating all the species that could potentially be affected.

We must advise you that our database is a compilation of collection records made available by various individuals and resource agencies available to the Service and may not be all-inclusive. This information is seldom based on comprehensive surveys of all potential habitats and, thus, does not necessarily provide conclusive evidence that species are present or absent at a specific locality. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please note that “critical habitat” refers to specific areas identified as essential for the conservation of a species that have been designated by regulation. Critical habitat usually does not include all the habitat that the species is known to occupy or all the habitat that may be important to the species. Thus, even if your project area does not include critical habitat, the species on the list may still be present.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and associated information. To re-access your project in IPaC, go to the IPaC web site (<https://ecos.fws.gov/ipac/>), select “Need an updated species list?”, and enter the consultation code on this letter.

### **ESA Obligations for Federal Projects:**

Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

If a Federal project (a project authorized, funded, or carried out by a federal agency) may affect federally-listed species or critical habitat, the Federal agency is required to consult with the Service under section 7 of the ESA, pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). Recommended contents of a Biological Assessment are described at 50 CFR 402.12. For projects other than major construction activities, the Service suggests that a biological evaluation

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similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat.

### **ESA Obligations for Non-federal Projects:**

Proposed projects that do not have a federal nexus (non-federal projects) are not subject to the obligation to consult under section 7 of the ESA. However, section 9 of the ESA prohibits certain activities that directly or indirectly affect federally-listed species. These prohibitions apply to all individuals subject to the jurisdiction of the United States. Non-federal project proponents can request technical assistance from the Service regarding recommendations on how to avoid and/or minimize impacts to listed species. The project proponent can choose to implement avoidance, minimization, and mitigation measures in a proposed project design to avoid ESA violations.

### **Additional Species-specific Information:**

In addition to the species list, IPaC also provides general species-specific technical assistance that may be helpful when designing a project and evaluating potential impacts to species. To access this information from the IPaC site (<https://ecos.fws.gov/ipac/>), click on the text “My Projects” on the left of the black bar at the top of the screen (you will need to be logged into your account to do this). Click on the project name in the list of projects; then, click on the “Project Home” button that appears. Next, click on the “See Resources” button under the “Resources” heading. A list of species will appear on the screen. Directly above this list, on the right side, is a link that will take you to pdfs of the “Species Guidelines” available for species in your list. Alternatively, these documents and a link to the “ECOS species profile” can be accessed by clicking on an individual species in the online resource list.

### **Next Steps:**

Requests for additional technical assistance or consultation from the Kentucky Field Office should be submitted following guidance on the following page <http://www.fws.gov/frankfort/PreDevelopment.html> and the document retrieved by clicking the “outline” link at that page. When submitting correspondence about your project to our office, please include the Consultation Tracking Number in the header of this letter. (There is no need to provide us with a copy of the IPaC-generated letter and species list.)

### **Attachment(s):**

- Official Species List
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Kentucky Ecological Services Field Office**

J C Watts Federal Building, Room 265

330 West Broadway

Frankfort, KY 40601-8670

(502) 695-0468

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## Project Summary

Consultation Code: 04EK1000-2021-SLI-0169

Event Code: 04EK1000-2021-E-00573

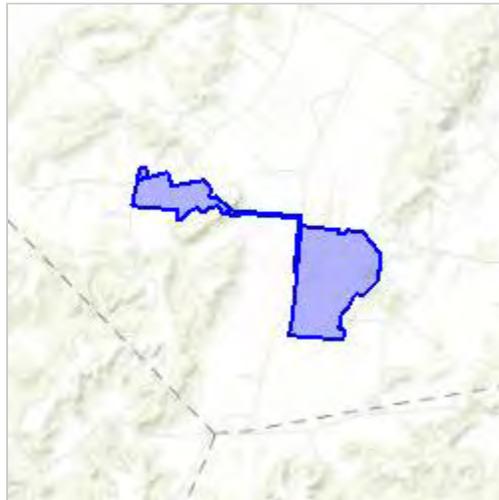
Project Name: 1012 Meade County Solar, LLC

Project Type: DEVELOPMENT

Project Description: proposed solar

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.823574918999846N86.12671101297448W>



Counties: Meade, KY

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## Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 3 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.
-

## Mammals

NAME	STATUS
<p>Gray Bat <i>Myotis grisescens</i></p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>▪ The project area includes potential gray bat habitat.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/6329">https://ecos.fws.gov/ecp/species/6329</a> General project design guidelines: <a href="https://ecos.fws.gov/ipac/guideline/design/population/21/office/42431.pdf">https://ecos.fws.gov/ipac/guideline/design/population/21/office/42431.pdf</a></p>	Endangered
<p>Indiana Bat <i>Myotis sodalis</i></p> <p>There is <b>final</b> critical habitat for this species. Your location overlaps the critical habitat. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>▪ The project area includes known 'swarming 1' habitat.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/5949">https://ecos.fws.gov/ecp/species/5949</a> General project design guidelines: <a href="https://ecos.fws.gov/ipac/guideline/design/population/1/office/42431.pdf">https://ecos.fws.gov/ipac/guideline/design/population/1/office/42431.pdf</a></p>	Endangered
<p>Northern Long-eared Bat <i>Myotis septentrionalis</i></p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>▪ The specified area includes areas in which incidental take would not be prohibited under the 4(d) rule. For reporting purposes, please use the "streamlined consultation form," linked to in the "general project design guidelines" for the species.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a> General project design guidelines: <a href="https://ecos.fws.gov/ipac/guideline/design/population/10043/office/42431.pdf">https://ecos.fws.gov/ipac/guideline/design/population/10043/office/42431.pdf</a></p>	Threatened

## Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
<p>Indiana Bat <i>Myotis sodalis</i></p> <p><a href="https://ecos.fws.gov/ecp/species/5949#crithab">https://ecos.fws.gov/ecp/species/5949#crithab</a></p>	Final

# Appendix C:

## Kentucky Speleological Society Report

**From:** [Sarah Arpin](#)  
**To:** [Kelsie Eshler](#)  
**Cc:** [John Cassidy](#)  
**Subject:** Re: New KSS Data Request from Kelsie Eshler  
**Date:** Monday, November 23, 2020 9:54:19 AM  
**Attachments:** [Eshler\\_11.17.2020.pdf](#)

---

Good morning Kelsie!

A search of our records returned no known caves located within the boundary of your project area. There are a few caves less than a quarter mile to the north and around a half mile to the south of the project boundary. Please let us know if you would also like information on caves located within a specific radius of the project boundary.

If the information provided is all you were looking for, the fee for this search is \$50 + \$10 per cave record, for a total of \$50. You will be invoiced by our treasurer, John Cassidy (CC'd).

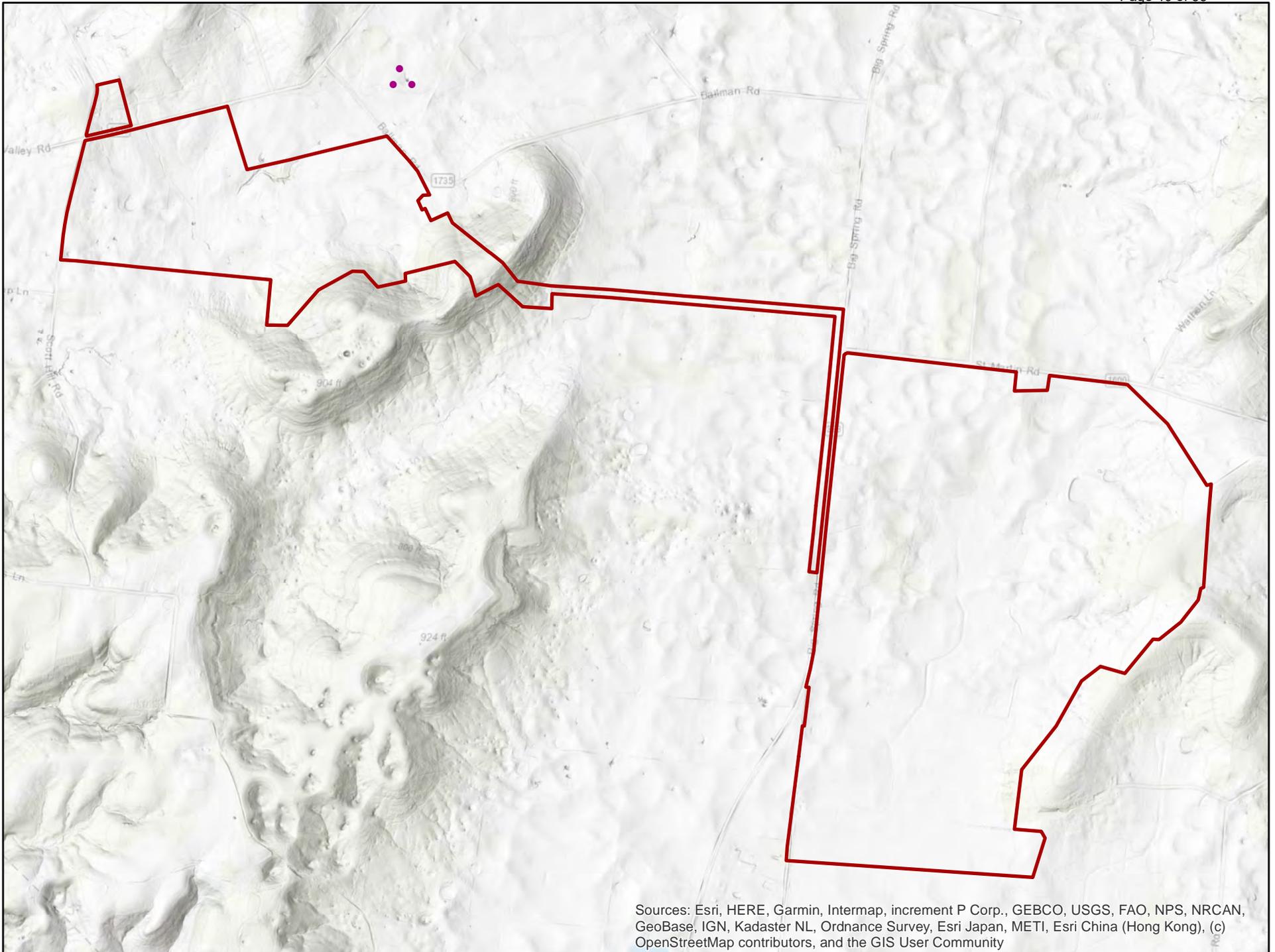
Please remember that data reported by KSS is as has been reported to us, but not guaranteed nor warranted to be complete or correct. There may be unknown caves or other unreported or unknown karst features. Additionally unreported or filled in cave entrances can open or subside at any time. Use caution when using this data.

Kind regards,

**Sarah Arpin**

**Member-at-Large, Board of Directors**  
**Chair, Data Access Committee**  
**[Kentucky Speleological Survey](#)**  
**(785) 643 0898**

---



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Accession	Declat	Declong	Quad	CaveName	CountyName	EntQuant	EntID
082-0055	37.84222	-86.15389	Big Spring	Shacklett Cave	Meade	1	1
082-0057	37.84278	-86.15361	Big Spring	Sig Shacklett	Meade	1	1
082-0057	37.84222	-86.15306	Big Spring	Sig Shacklett Cave	Meade	1	1

# **Appendix D:**

## **Office of Kentucky Nature Preserves Occurrence Records Report**



ANDY BESHEAR  
GOVERNOR

REBECCA W. GOODMAN  
SECRETARY

**ENERGY AND ENVIRONMENT CABINET**  
**OFFICE OF KENTUCKY NATURE PRESERVES**

ZEB WEESE  
EXECUTIVE DIRECTOR

300 SOWER BOULEVARD  
FRANKFORT, KENTUCKY 40601  
TELEPHONE: 502-573-2886  
TELEFAX: 502-564-7484

November 29, 2020

Kelsie Eshler  
Copperhead Consulting  
471 Main Street  
Paint Lick, KY 40461

Project: Meade County Solar LLC Project; 1012  
Project ID: 21-0071  
Project Type: Standard (\*customers will be invoiced), 1 mile buffer  
(\$120 fee)  
Site Acreage: 805.52  
Site Lat/Lon: 37.824102 / -86.127784  
County: Meade  
USGS Quad: BIG SPRING; FLAHERTY  
Watershed HUC12: Lower Otter Creek; Pilot Ridge-Sinking Creek

Dear Kelsie Eshler,

This letter is in response to your data request for the project referenced above. 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 Office of Kentucky Nature Preserves occur within your general project area. Your project does pose a concern at this time, therefore please see the attached reports and [report key](#) for more detailed information.

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 Office of Kentucky Nature Preserves, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Office of Kentucky Nature Preserves." The exact location of plants, animals, and natural communities, if released by the Office of Kentucky Nature Preserves, 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 Biological Assessment Branch (300 Sower Blvd - 4th Floor, Frankfort, KY, 40601. Phone: 502-782-7828).

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

Project ID: 21-0071  
November 29, 2020  
Page 2

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,

Elizabeth Mason  
Geoprocessing Specialist

**Standard Occurrence Report**  
**KNP monitored species within 1 Miles of Project Area**

EO ID	Scientific Name	Common Name	GRank	SRank	SPROT	USESA	STWG	Last Obs Date	Precision	EO Rank	Lat / Lon	Directions	Habitat
9231	<i>Amblyopsis spelaea</i>	Northern Cavefish	G2G3	S3	S	SOMC	Y	1961-12-02	M	H		Sensitive Element - Contact OKNP at naturepreserves@ky.gov	Subterranean streams with consolidated mud-rock substrates in shoals and silt-sand substrates in pools (Kuehne 1962, Poulson 1963, Clay 1975, Cooper 1980).
19575	Cave		GU	SNR	N			No Date	S	E		Sensitive Element - Contact KSS at ksscaves.com	
19593	Cave		GU	SNR	N			No Date	S	E		Sensitive Element - Contact KSS at ksscaves.com	
19600	Cave		GU	SNR	N			No Date	S	E		Sensitive Element - Contact KSS at ksscaves.com	
19602	Cave		GU	SNR	N			No Date	S	E		Sensitive Element - Contact KSS at ksscaves.com	
6740	<i>Centronyx henslowii</i>	Henslow's Sparrow	G4	S3B	S	SOMC	Y	1963-07-04	M	H	37.8298 / -86.1334	Along KY 333, just S of Maples Corner.	Open fields & meadows with relatively thick/dense grass interspersed with weeds or shrubby vegetation.
9918	<i>Chondestes grammacus</i>	Lark Sparrow	G5	S2S3B	S		Y	1939-06-12	G	H	37.8605 / -86.0901	On Lafe Newton Farm nr Fort Knox, Meade Co.	Open situations with scattered bushes and trees, prairie, forest edge, cultivated areas, orchards, fields with bushy borders, and savanna (B83COM01NA).
10290	<i>Cistothorus platensis</i>	Sedge Wren	G5	S3B	S		Y	1963-07-04	M	H	37.8283 / -86.1344	Along KY 333 just S of Maples Corner.	Grasslands and savanna, especially where wet or boggy, sedge marshes, locally in dry cultivated grainfields. In migration and winter also in brushy grasslands. (B83COM01NA)
6137	<i>Dryobius sexnotatus</i>	Six-banded Longhorn Beetle	GNR	S2	T	SOMC		1940-	C	U	37.9695 / -86.2168	Meade County.	Appears to be dependent on climax hardwood forest habitat, where it principally lives on sugar maple and, to a lesser extent, beech and elm (Perry et al. 1974, Schweitzer 1989). Mid June to mid July is when adults are typically found (Mike Bratton, pers c

**Standard Occurrence Report**  
**KNP monitored species within 1 Miles of Project Area**

EO ID	Scientific Name	Common Name	GRank	SRank	SPROT	USESA	STWG	Last Obs Date	Precision	EO Rank	Lat / Lon	Directions	Habitat
429	<i>Hyla versicolor</i>	Gray Treefrog	G5	S2S3	S		Y	1998-06-25	S	D	37.798 / -86.161	Big Spring, E side KY 333 ca 0.5 rd mi N of jct KY 220 (022A), S side KY 333, ca. 0.5 rd mi W of jct KY 2199 (022B), and N side KY 333, 1.1 rd mi W of jct KY 2199 (022C).	Permanent and temporary ponds in semi-open habitats. Native habitat is unknown.
10879	<i>Hyla versicolor</i>	Gray Treefrog	G5	S2S3	S		Y	1998-06-25	S	C	37.8134 / -86.1363	Maples Corner, S side (well out in field) of KY 1600, 0.6 rd mi E of jct KY 333 (040A), just W jct KY 333 and KY 1600 (040B), E side KY 333, 0.75 rd mi S (040C) and 1.4 rd mi S (040D) of jct KY 1600, and W side KY 333, 0.75 rd mi S of jct KY 1600 (040E).	Permanent and temporary ponds in semi-open habitats. Native habitat is unknown.
15858	<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4	S3S4B,S 4N	S	SOMC	Y	1990-05-19	Q	NR	37.8125 / -86.0625	Somewhere on quadrangle outside of CW block	
15859	<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4	S3S4B,S 4N	S	SOMC	Y	1988-06-06	Q	NR	37.8125 / -86.1875	CW block of quadrangle	
10371	<i>Liatris cylindracea</i>	Slender Blazingstar	G5	S2S3	T			No Date	C	H	37.7226 / -85.9773	Hardin County.	Dry calcareous or siliceous soil, hillside glades, prairie openings.
8422	<i>Nannothemis bella</i>	Elfin Skimmer	G4G5	S1	E			1948-06-08	C	H	37.7226 / -85.9773	Radcliffe, Hardin County.	Bogs, sometimes calcareous fens with some sedge meadows and marl deposits (Dunkle 2000). Adults are often found near the margin of the pond or bog in small pockets of sunshine. Larvae seem to prefer shallow holes near the edge of the water, and have been
915	<i>Orconectes inermis inermis</i>	Ghost Crayfish	G5T4	S3	S		Y	1961-12-02	M	H		Sensitive Element - Contact OKNP at naturepreserves@ky.gov	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).
16447	<i>Panax quinquefolius</i>	American Ginseng	G3G4	S3S4	CE			2015	S	B		Sensitive Element - Contact OKNP at naturepreserves@ky.gov	
21932	<i>Panax quinquefolius</i>	American Ginseng	G3G4	S3S4	CE			1987	C	H		Sensitive Element -	

**Standard Occurrence Report**  
**KNP monitored species within 1 Miles of Project Area**

EO ID	Scientific Name	Common Name	GRank	SRank	SPROT	USESA	STWG	Last Obs Date	Precision	EO Rank	Lat / Lon	Directions	Habitat
21933	<i>Panax quinquefolius</i>	American Ginseng	G3G4	S3S4	CE			1987	C	H		Contact OKNP at naturepreserves@ky.gov	
5212	<i>Pseudotremia amphiorax</i>	A Cave Obligate Milliped	G1G2	SH	H			1957-07-13	M	H		Sensitive Element - Contact OKNP at naturepreserves@ky.gov	Cave obligate species.
7950	<i>Silene regia</i>	Royal Catchfly	G3	S1	E			1982-07-18	C	H	37.7226 / -85.9773	US 62 NEAR SONORA.	Dry woods, barrens and prairies, and on KY roadsides.

**Critical Habitats within 1 Miles of Project Area**

Critical Habitat Name	Unit Name	Subunit Name	Federal Register
			42FR47840

**Bat Habitats within 1 Miles of Project Area**

Habitat	Species	USFWS
SWARMING 1	<i>M. sodalis</i>	Contact USFWS at (502) 695-0468 or KentuckyES@fws.gov
SWARMING 2	<i>M. septentrionalis</i>	Contact USFWS at (502) 695-0468 or KentuckyES@fws.gov

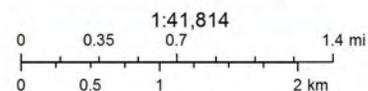
THESE DATA ARE VALID ONLY ON THE DATE ON WHICH THE REPORT WAS GENERATED.  
THESE DATA MAY ONLY BE USED FOR THE PROJECT NAMED ABOVE.

# Meade County Solar



November 29, 2020

-  Project Boundary
-  Buffered Project Boundary
-  Element Occurrences
-  USFWS Critical Habitats



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri



# KELSIE R. ESHLER

## BIOLOGIST

### Survey Experience

- Bat presence/absence surveys
- Bat habitat assessments
- Radio telemetry
- White-nose Syndrome assessments
- Acoustic monitoring
- NEPA Analysis
- GIS Mapping and Spatial Analysis
- Environmental Site Assessments
- Air Quality Assessments

### Professional Experience

**Copperhead Environmental Consulting, Inc.**,  
Biological Technician/Biologist, May 2017 - Present

**Intertek - PSI: Professional Service Industries**,  
Project Scientist, January 2016 - May 2017

### Education

**B.A. Environmental Earth Science and Sustainability**, 2015, Miami University, Oxford OH

### Certifications/Trainings

- Federally permitted under TE 94849B-0
- OSHA 30 hour, 2018
- OSHA 10 hour, 2020
- First Aid CPR / AED, 2020

### Affiliations

- Ohio Bat Working Group
- Alabama Bat Working Group

### Selected Project Experience

**QK4 Portal Trapping. Whitely County, Kentucky. 2020.** Working with permitted biologists; deployed harp traps, applied exclusion netting, removed bats from nets, obtained morphometric measurements from bats, and deployed AnaBat Swift acoustic detectors. Supervised by S. Nikki Davis and Ray Eaton.

**KYDFWR White-nose Syndrome and Hibernacula Trapping. Pulaski and Estill Counties, Kentucky. 2020.** Working with permitted biologists; deployed harp traps, applied exclusion netting, removed bats from nets, obtained morphometric measurements from bats, and deployed AnaBat Swift acoustic detectors. Species identified and handled: Indiana bat (*Myotis sodalis*), Little brown bat (*Myotis sodalis*), Tri-colored bat (*Perimyotis subflavus*), and Virginia Big-Eared bat (*Corynorhinus townsendii virginianus*). Supervised by Gregg Janos and Price Sewell.



### Qualifications and Background

Miss Eshler is a wildlife biologist with multiple years in the consulting business completing wildlife surveys, habitat assessments, NEPA analyses, and environmental site assessments. She has over five years of consulting experience, with four years of survey experience dealing with eastern bat species. Her field experience has given her the opportunity to handle and identify sixteen different species of bats, including the federally endangered Indiana bat, Gray bat, and Virginia Big-Eared bat as well as the federally threatened Northern Long-Eared bat. Additionally, Miss Eshler has tracked to and identified roost trees and rock features for six different species of bats in nine different states. She is permitted under federal permit number TE 94849B-0.

**Mountain Valley Pipeline SEIS. 2020.** Public Comment analysis team lead, resource author for Socioeconomics and Environmental Justice.

**Davy Crockett National Forest EA. 2020.** Resource author for Fuels and Vegetation.

**Radio telemetry study of an Indiana bat maternity colony on Fort Knox, KY. 2020.** Captured Indiana bats, tracked bats to diurnal roosts, and conducted emergence counts. Species handled and identified: Indiana bat.

**BrandenBark™ Structure Monitoring. Lawrence County, PA. 2020.** Worked as a team lead, used a telescoping endoscope to check previously installed bat boxes for signs of occupancy.

**Bat Box Occupancy Checks. Brooke and Ohio Counties, WV. 2020.** Worked as team lead, used a telescoping endoscope to check previously installed bat boxes for signs of occupancy. Species identified: Big brown bat (*Eptesicus fuscus*).

**Indiana bat monitoring of a maternity colony on Fort Knox, KY. 2020.** Deployed nets around BrandenBark™ structures, removed bats, and obtained morphometric measurements from bats. Banded and applied radio transmitters to Indiana bats. Species handled, radio-tagged, and identified: Indiana bat, Little brown bat.

**Indiana bat monitoring of a maternity colony on Fort Knox, KY. 2020.** Deployed nets around BrandenBark™ structures, removed bats, and obtained morphometric measurements from bats. Banded and applied radio transmitters to Indiana bats. Species handled, radio-tagged, and identified: Indiana bat.

**Indiana bat and Guano Collection on Fort Knox, KY. 2020.** Weekly monitored the usage of BrandenBark™ structures of two Indiana bat maternity colonies located on Ft. Knox and took guano pellet samples from BrandenBark™ structures for further laboratory dietary analysis.

**Indiana and Northern Myotis Acoustic presence/absence survey, Lucas County, OH. 2020.** Worked as a team leader, chose acoustic monitoring sites, set up AnaBat Swift acoustic devices, and downloaded data.

**Indiana and Northern Myotis Acoustic presence/absence survey, Brown County, OH. 2020.** Worked as a team leader, chose acoustic monitoring sites, set up AnaBat Swift acoustic devices, and downloaded data.

**Indiana and Northern Myotis Acoustic presence/absence survey, Warren County, OH. 2020.** Worked as a team leader, chose acoustic monitoring sites, set up AnaBat Swift acoustic devices, and downloaded data.

**Mark Twain Disturbance EA. 2020.** Resource author for transportation.

**NEPA Administrative Record. 2020.** Filed and maintained database for a Forest Service EIS and updated plan.

**Migration study of an Indiana bat starting near Mountain View, AR. 2020.** Captured Indiana bats from cave, tracked bats to diurnal roosts, and conducted emergence counts. Species handled and identified: Indiana bat.

**Aerial raptor survey in Ohio and Minnesota. 2020.** Using binoculars flew transects searching for eagle and raptor nests, photographed, and documented any usage of nests.

**Shortleaf Pine Initiative EA, Tennessee Valley Authority. Alabama and Tennessee. 2019.** Resource author for Public Health and Safety for an EA analyzing restoration of more than 6,000 acres of shortleaf pine ecosystem in Alabama and Tennessee.

**Kingston Wastewater Treatment EA, Tennessee Valley Authority. Tennessee. 2019.** Resource author for Solid and Hazardous Waste and Public Health and Safety for an EA analyzing construction and operation of a new wastewater treatment facility at TVA's Kingston Fossil Plant in Roane County, Tennessee.

**Kingston Borrow Site No. 3 Environmental Assessment, Tennessee Valley Authority. Tennessee. 2019.** Helped out with an EA analyzing construction and operation of a borrow site at TVA's Kingston Fossil Plant in Roane County, Tennessee.

**KYDFWR Cave Surveys. 2020.** Worked with permitted biologist; identified bats and recorded any signs of white nose syndrome. Species identified: Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), Indiana bat, Little brown bat, big brown bat, tri-colored bat. Supervised by Gregg Janos.

**KYDFWR White-nose Syndrome and Hibernacula Trapping. Estill County, Kentucky. 2019.** Working with permitted biologists; deployed harp traps, applied exclusion netting, removed bats from nets, obtained morphometric measurements from bats, and deployed AnaBat Swift acoustic detectors. Species identified and handled: Indiana bat, little brown bat, small-footed bat (*Myotis leibii*), and Virginia Big-Eared bat. Supervised by HMB biologist Todd McDaniel and Zack Couch.

**Kentucky Bat Working Group Bat Blitz. 2019.** Worked as a permitted biologist; Choose mist net site locations, deployed nets, removed bats, and obtained morphometric measurements from bats. Species handled and identified: Small-footed bat, eastern red bat (*Lasiurus borealis*), big brown bat, tricolored bat.

**Migration study of Northern Myotis and Indiana bat throughout south-west Iowa. 2019.** Worked as permitted biologist; Choose mist net site locations, deployed nets, removed bats, and obtained morphometric measurements from bats. Tracked Indiana bat to diurnal roosts and at night to their hibernacula.

**NCDOT Bats in Bridges. 2019.** Performed 25+ bridge habitat assessments for bats and potential bat roosting habitat. Worked with license drone operators for bridge assessments deemed too high or difficult for researchers access to determine UAV capabilities on bridge surveys for bats.

**Indiana bat and Northern Myotis presence/absence survey. Lawrence County, OH. 2019.** Worked as a permitted biologist and site leader; chose mist-net site locations, set up nets, removed bats from nets, and obtained morphometric measurements from bats. Species identified: big brown bat.

**Radio telemetry study of an Indiana bat maternity colony on Fort Knox, KY. 2019.** Captured Indiana bats, tracked bats to diurnal roosts, and conducted emergence counts. Species handled and identified: Indiana bats, little brown bats, evening bats (*Nycticeius humeralis*).

**Indiana bat and Northern Myotis presence/absence on Redstone Arsenal, AL. 2019.** Worked as a permitted biologist and site leader; chose mist-net site locations, set up nets, removed bats from nets, obtained morphometric measurements from bats, and banded *Myotis* species bats. Species identified: gray bat (*Myotis grisescens*), eastern red bat, seminole bat (*Lasiurus seminolus*), evening bat, and big brown bat

**Indiana bat and Northern Myotis presence/absence survey. Cheatham County, TN. 2019.** Worked as a permitted biologist and site leader; chose mist-net site locations, set up nets, removed bats from nets, obtained morphometric measurements from bats, and banded *Myotis* species bats. Species identified: gray bat, eastern red bat and big brown bat.

**Indiana bat Spring Migration Mist-Netting and Tracking at Shirey Bay Rainey Brake, Arkansas. 2019.** Worked as a permitted biologist and tracking lead. Tracked bats to diurnal roosts and performed emergence counts.

**Indiana bat and Northern long-eared bat Presence/Absence Survey. Delaware County, OH. 2019.** Worked as a permitted biologist and site leader; chose mist-net site locations, set up nets, removed bats from nets, and obtained morphometric measurements from bats. Species identified: Eastern red bat and big brown bat.

**Indiana bat and Northern long-eared bat Presence/Absence Survey. Fairfield County, OH. 2019.** Worked as a permitted biologist and site leader; chose mist-net site locations, set up nets, removed bats from nets, and obtained morphometric measurements from bats. Species identified: Eastern red bat and big brown bat.

**Indiana bat Spring Migration Mist-Netting at the Oakmulgee Ranger District, AL. 2019.** Worked as a permitted biologist and site leader; choose mist-net site locations, set up nets, removed bats from nets, obtained morphometric measurements from bats, banded and radio-tagged *Myotis* species. Species identified and handled: Southeastern *Myotis* (*Myotis austroriparius*), silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*), red bat, seminole bat, tri-colored bat, evening bat, and big brown bat.

**Indiana bat, Northern Myotis, and Eastern Massasauga rattlesnake (*Sistrurus catenatus*) habitat assessment in Pratt County, IL. 2018.** Performed desktop analysis and a field habitat assessment of Pratt County to identify and later determine potential bat or Massasauga habitat suitability.

**Kentucky Endangered Species Bridge Program. 2019-2020.** Performed 25+ bridge and water quality habitat assessments, for the potential of listed species including but not limited to the Kentucky Arrow Darter, Snuffbox mussel, Virginia Big-Eared Bats, and Big Sandy Crayfish underneath bridges throughout Kentucky. Supervised by Marty Marchaterre, Price Sewell, and Theresa Wetzel.

**Fall Portal/Cave Surveys near Charleston, WV. 2018.** Working with permitted biologists; deployed harp traps, applied exclusion netting, removed bats from nets, obtained morphometric measurements from bats, and deployed AnaBat Swift acoustic detectors for a project in Boone and Kanawha Counties in West Virginia. Species identified and handled: Tri-colored bat. Supervised by Taylor Culbertson and Rob Stinson.

**Kentucky Bat Working Group Bat Blitz. 2018.** Working with permitted biologist; Choose mist net site locations, deployed nets, removed bats, and obtained morphometric measurements from bats. Species handled and identified: Gray bat, little Brown bat, big brown bat, and red bat. Supervised by Rob Stinson.

**Timber Stand Improvement near Fort Knox, KY. 2018.** Working with foresters, improved the quality and species of multiple tree stands on base at Fort Knox. Supervised by Matt Hinds.

**Indiana bat and Northern Myotis presence/absence and Acoustic survey on Fort McClellan, AL. 2018.** Working with permitted biologists; Chose mist net sites, deployed nets, removed bats from nets, obtained morphometric measurements from bats, and deployed AnaBat Swift acoustic detectors for a project on

Fort McClellan in AL. Species identified and handled: Gray bat, big Brown bat, red bat, evening bat, tri-colored bat, seminole bat, and Mexican Free-tailed bat (*Tadarida brasiliensis*). Supervised by Mark Gumbert and Piper Roby.

**Radio telemetry study of an Indiana bat bridge bachelor colony near Fort Knox, KY. 2018.** Tracked Indiana bats from a bridge colony to other diurnal roosts, conducted bridge bat survey counts, and conducted emergence counts. Supervised by Piper Roby.

**Kentucky Endangered Species Bridge Program. 2018.** Performed 200+ preliminary desktop habitat assessments, including the use of GIS, for the potential of listed species including but not limited to the Kentucky Arrow Darter, Snuffbox mussel, Virginia Big-Eared Bats, and Big Sandy Crayfish underneath bridges throughout Kentucky. Supervised by Marty Marchaterre.

**Non-native Invasive Species (NNIS) Removal near Hoosier National Forest, IN. 2018.** Working with foresters, improved the quality and species of approximately 40 acres of land using backpack sprayers. Supervised by Matt Hinds.

**Indiana bat and Guano Collection on Fort Knox, KY. 2018.** Biweekly monitored the usage of BrandenBark™ structures by an Indiana bat maternity colony located on Ft. Knox and took guano pellet samples from seven of the BrandenBark™ structures per visit for further laboratory dietary analysis.

**Radio telemetry study of an Indiana bat maternity colony on Fort Knox, KY. 2018.** Captured Indiana bats, tracked bats to diurnal roosts, and conducted emergence counts. Species handled and identified: Indiana bats, Little Brown bats. Supervised by Piper Roby.

**Indiana bat monitoring of a maternity colony on Fort Knox, KY. 2018.** Deployed nets around BrandenBark™ structures, removed bats, and obtained morphometric measurements from bats. Banded and applied radio transmitters to Indiana bats. Species handled and identified: Indiana bat. Supervised by Piper Roby.

**Indiana bat monitoring of a maternity colony on Fort Knox, KY. 2018.** Deployed nets around BrandenBark™ structures, removed bats, and obtained morphometric measurements from bats. Banded and applied radio transmitters to Indiana bats. Species handled and identified: Indiana bat, Little Brown bat, Evening bat. Supervised by Piper Roby.

**Gray Bat roost and foraging telemetry study on Arnold Air Force Base, TN. 2018.** Working with permitted biologist; Choose mist net site locations, deployed nets, removed bats, and obtained morphometric measurements from bats on Arnold Air Force Base in TN. Actively applied radio transmitters to Gray bats, and tracked them to their diurnal roosts and conducted emergence counts. Species handled and identified: Gray bat, Red bat, Evening bat, Little Brown bat, and Hoary bat. Supervised by Steve Samoray.

**Indiana bat and Northern Myotis presence/absence survey near Pikeville, TN. 2018.** Working with permitted biologists; Choose mist net sites, deployed nets, removed bats from nets and obtained morphometric measurements from bats for a project near Pikeville, TN. Species identified and handled: Gray bat, Big Brown bat, Red bat, Evening bat. Supervised by Steve Samoray.

**Migration study of a Tri-Colored Bat starting near Dechard, TN. 2018.** Captured Tri-Colored bats, tracked bats to diurnal roosts, and conducted emergence counts. Species handled and identified: Tri-Colored bats, Gray Bats. Supervised by Piper Roby.

**Migration study of an Indiana bat starting near Mountain View, AR. 2018.** Captured Indiana bats from cave, tracked bats to diurnal roosts, and conducted emergence counts. Species handled and identified: Indiana bats. Supervised by Piper Roby.

**Winter behavior of Northern Myotis at Alligator River National Wildlife Refuge, NC. Fall 2017 through Winter 2018.**

Working with permitted biologist; Choose mist net site locations, deployed nets, removed bats, and obtained morphometric measurements from bats. Actively applied radio transmitters to Northern Myotis bats and tracked them to their diurnal roosts and conducted emergence counts. Also conducted wing punch biopsy sampling, WNS swabbing, hair sampling, and guano collection on all Myotis species. Species handled and identified: Northern Myotis (*Myotis septentrionalis*), Rafinesque's Big-Eared bat, Seminole bat, Evening bat, Big Brown bat, Red bat, Tri-colored bat. Supervised by Theresa Wetzel.

**Migration study of Northern Myotis throughout central-northern Iowa. 2017.** Working with permitted biologist; Choose mist net site locations, deployed nets, removed bats, and obtained morphometric measurements from bats. Deployed acoustic lures at net sites to attract Northern Myotis. Applied radio transmitters to Northern Myotis bats and Little Brown bats and tracked them to their diurnal roosts and conducted emergence counts. Additionally, conducted WNS swabbing, dog scent swabbing, hair sampling, and guano collection on all Myotis species. Species handled and identified: Northern Myotis, Little Brown bat, Big Brown bat, Red bat, Hoary bat, Silver-haired bat, and Evening bats. Supervised by Piper Roby.

**Kentucky Bat Working Group Bat Blitz. 2017.** Working with permitted biologist; Choose mist net site locations, deployed nets, removed bats, and obtained morphometric measurements from bats. Species handled and identified: Indiana bats, Evening bats, Big Brown bats, and Red bats. Supervised by Theresa Wetzel.

**Indiana bat and Northern Myotis presence/absence survey on Fort Knox, KY. 2017.** Working with permitted biologists; Deployed nets, removed bats from nets and obtained morphometric measurements from bats for a project on Fort Knox, KY. Also tracked a radio tagged Indiana bat to a new bridge colony. Species handled: Red bat, and Tri-colored bat. Supervised by Piper Roby.

**Non-native Invasive Species (NNIS) Removal near Terrapin Barrens, KY. 2017.** Working with foresters, improved the quality and species of a power line right of way using backpack sprayers. Supervised by Matt Hinds.

**Indiana bat presence/absence and acoustic survey near Hot Springs, AR. 2017.** Working with permitted biologists; Deployed nets, removed bats from nets, obtained morphometric measurements from bats, and deployed SD2 AnaBat units for a project in Hot Springs, AR. Species handled: Big Brown bat, Red bat, Evening bat, Little Brown bat. Supervised by Theresa Wetzel.

**Indiana bat and Northern Myotis presence/absence survey in northwest Ohio. 2017.** Working with permitted biologists; Deployed nets, removed bats from nets and obtained morphometric measurements from bats for a project in NW Ohio. Also gained experience tracking Indiana bats the ground. Species handled: Big Brown bat, Red bat, and Hoary bat. Supervised by Zack Baer.

## Selected Technical Reports and Presentations

- Eshler, K., P. Roby. 2020. Statewide Mitigation and Monitoring for Indiana Bats: Arkansas DOT Job 001799. Report prepared for Kayti Ewing Arkansas Department of Transportation, Little Rock, AR.
- Eshler, K., G. Janos. 2020. Diet Analysis of an Indiana Bat (*Myotis sodalis*) Maternity Colony at Fort Knox, Kentucky. Presentation for the Ohio Bat Working Group 2020.
- Eshler, K., P. Roby. 2019. Spring Migration of Female Indiana Bats (*Myotis sodalis*) from Sauta Cave in Sauta Cave National Wildlife Refuge, Alabama AND Spring Maternity Colony Monitoring of the Oakmulgee Ranger District of the Talladega National Forest, Alabama. Report prepared for Nicholas Sharp (ADCNR) and Shannon Holbrook (USFWS).
- Eshler, K., P. Roby, W. Seiter. 2018. Threatened and Endangered Bat Monitoring Cundiff Lake and the South End, Fort Knox, KY. Report prepared for Lee Andrews and Mike Armstrong USFWS, Frankfort, KY.