Attachment J

CUMULATIVE ENVIRONMENTAL ASSESSMENT

South Fork Solar, LLC

Nicholas County, Kentucky

Cumulative Environmental Assessment

South Fork Solar Project

Nicholas County, Kentucky

Case No. 2026-00256

Prepared for:

HEELSTONE
RENEWABLE ENERGY

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October 2026

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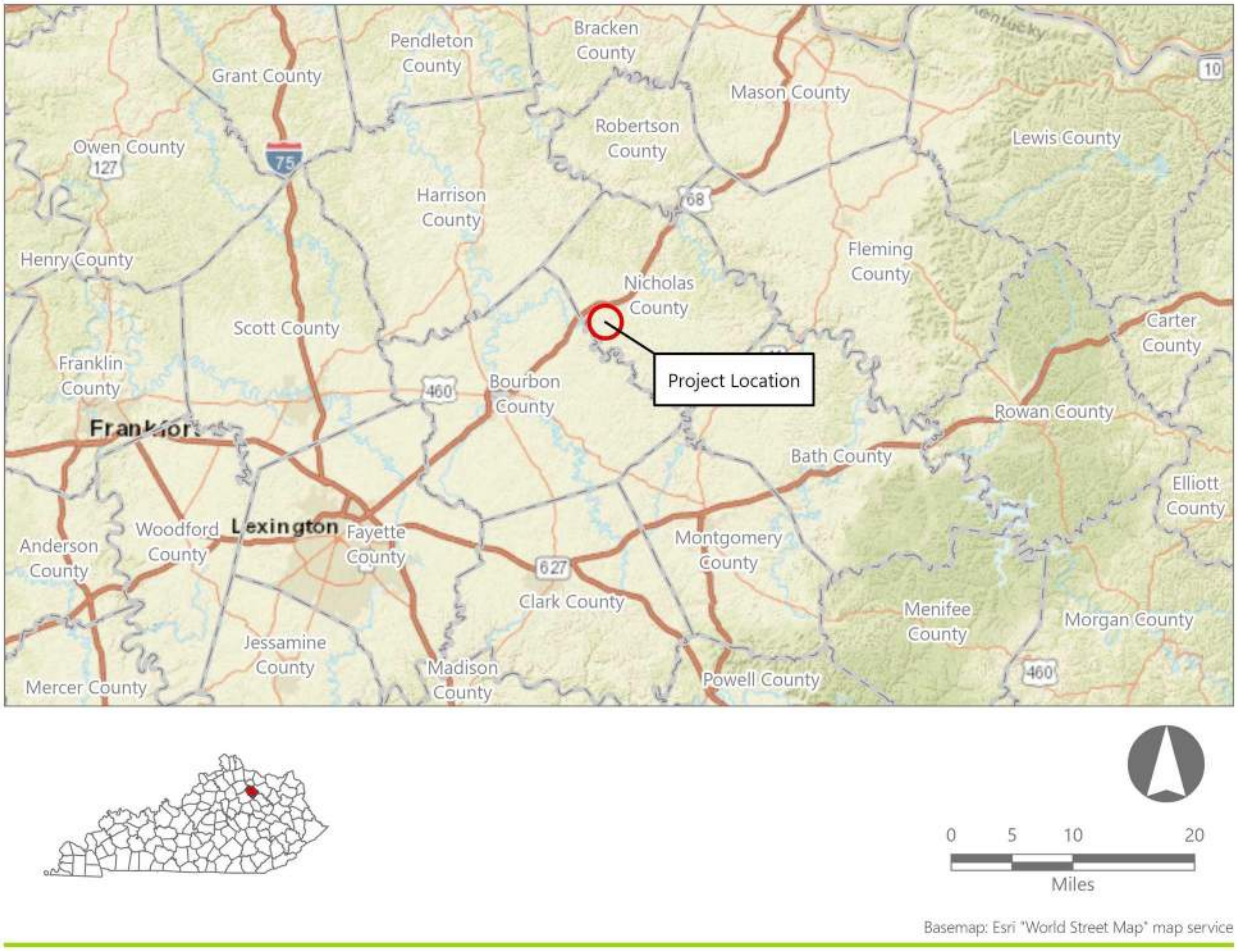
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Appendix A. Water / Wetland Delineation Report

1.0 INTRODUCTION

South Fork Solar, LLC (the Applicant) is proposing to construct the South Fork Solar Project (the Project), an up to 45-megawatt (MW) solar-powered electric generation facility in Nicholas County, Kentucky. As shown in Figure 1, the Project is proposed to be located in the western portion of Nicholas County. The area leased or purchased for the Project includes 498 acres of private land (the Project Area).

Figure 1. Project Location



The facility will consist of the fence line, photovoltaic (PV) panel arrays, electrical collection lines, inverters, transformers, access roads, facility substation, switchyard, a generation interconnection transmission line connecting the substation and switchyard to an existing transmission line, storage area, and temporary laydown yards. The facility will deliver power to a single point of interconnection (POI) on the existing Millersburg Junction-Headquarters 69-kilovolt (kV)

transmission line, owned by the East Kentucky Power Cooperative (EKPC). The total generating capacity of the facility will not exceed 45 MW of alternating current (AC). As required by KRS 278.704(1), the Applicant is submitting an application for a construction certificate for a merchant electric generating facility for the Project to the Kentucky State Board on Electric Generation and Transmission Siting. The case number for the application is 2026-00256.

Pursuant to the requirements of Kentucky Revised Statutes (KRS) 224.10-280, "no person shall commence to construct a facility to be used for the generation of electricity unless the person submits a cumulative environmental assessment to the cabinet with the permit application." On behalf of the Applicant, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) has prepared this *Cumulative Environmental Assessment* (CEA) for submission to the Kentucky Energy and Environment Cabinet (KEEC). Paragraph (3) of KRS 224.10-280 provides that a CEA should contain a description, with analytical support, of the following topics, which are discussed in this report:

(a) Air pollutants
    1. Types and quantities of air pollutants that will be emitted from the facility
    2. A description of the methods to be used to control those emissions
(b) Water Pollutants
    1. Types and quantities of water pollutants that will be discharged from the facility into the waters of the Commonwealth
    2. A description of the methods to be used to control those discharges
(c) Wastes
    1. Types and quantities of wastes that will be generated by the facility
    2. A description of the methods to be used to manage and dispose of such wastes
(d) Water Withdrawal
    1. Identification of the source and volume of anticipated water withdrawal needed to support facility construction and operations
    2. A description of the methods to be used for managing water usage and withdrawal

2.0 AIR POLLUTANTS

Because solar-powered electric generation facilities generate electricity by the direct conversion of sunlight to electricity, there will be no air emissions resulting from the operation of the facility components. As such, operation of the facility will not require any air emission permits.

Air pollutants emitted during construction of the facility will largely be associated with the operation of vehicles and construction equipment, which are typically powered by internal combustion engines. Additional vehicle emissions during construction will be associated with occasional equipment deliveries and maintenance activities. Anticipated emissions will be minimized by maintaining construction and transportation vehicles in good operating condition.

In addition to vehicle and equipment emissions, construction activities and vehicle operation could result in the release of fugitive dust. Fugitive dust consists of small, lightweight particles that remain suspended in the air for a relatively brief period and often originates from areas containing exposed soil (e.g., unpaved roads, cultivated fields). Fugitive dust will be minimized by using best management practices such as requiring reduced vehicle speeds, applying gravel to heavily travelled internal roadways, applying water or a dust suppressant where needed, and conducting seeding and stabilization in areas where construction activities have been completed or suspended. During facility operation, fugitive dust emissions will be minimized by maintaining low-growing vegetation and limiting travel through the site to the graveled access roads to the extent possible. Overall impacts associated with fugitive dust are anticipated to be minimal.

3.0 WATER POLLUTANTS

The facility will not discharge effluent water or waste into streams or waterbodies, nor will facility operation require the use of significant amounts of water. The facility will add only small areas of impervious surface in the form of graveled access roads and gravel pads and/or small concrete foundations to accommodate inverters, the substation, and switchyard. These small areas will have a negligible impact on surface water runoff and groundwater recharge and will be managed through appropriate stormwater controls. Therefore, measurable impacts on the quality of surrounding water resources are not anticipated. Surface water and groundwater resources near the Project Area, potential impacts to these resources, and methods to avoid, minimize, and mitigate these impacts are discussed further below.

3.1 Surface Water

The Project Area is located within the Big Brushy Creek watershed (hydrologic unit code [HUC] 051001020306). A portion of the Project Area is mapped by the Federal Emergency Management Agency as a Special Flood Hazard Area (SFHA) with a 1% annual chance of flooding (100-year floodplain). However, the Applicant will be largely avoiding the SFHA for the construction of the Project.

A wetland and stream delineation was conducted within the Project Area in October 2025 (Appendix A). The delineation documented a total of 35.17 acres of surface water features within the Project Area including 17 streams, nine wetlands, and four ponds.

Delineated streams in the Project Area include two perennial streams totaling 21,110 linear feet, four intermittent streams (2,615 linear feet), and 11 ephemeral streams (2,965 linear feet). Both perennial streams and two of the intermittent streams are anticipated to be waters of the United States (WOTUS) and therefore subject to jurisdiction by the U.S. Army Corps of Engineers (USACE) under section 404 of the Clean Water Act (CWA). One of the perennial streams, Big Brushy Creek, qualifies as a Kentucky Division of Water (KDOW) special-status water, impacts to which would require an Individual Water Quality Certification. The remaining 13 delineated streams are anticipated to be non-jurisdictional, 11 because they are ephemeral (i.e., temporary drainage

features flowing only in direct response to precipitation events) and two because they lacked continuous surface connection to a WOTUS.

Delineated wetlands in the Project Area include eight palustrine emergent wetlands totaling 0.918 acres and one palustrine forested wetland (0.043 acres). The palustrine forested wetland and five of the palustrine emergent wetlands are anticipated to be WOTUS and therefore subject to jurisdiction by the USACE under section 404 of the CWA. The remaining three emergent wetlands are anticipated to be non-jurisdictional because they are hydrologically isolated.

Four ponds were identified within the Project Area. These open water features total 4.619 acres. One pond comprising 1.66 acres was connected to downstream waters through the flow of an intermittent stream in the Project Area and is therefore anticipated to be a WOTUS and subject to USACE jurisdiction. The other three ponds are isolated and are anticipated to be non-jurisdictional.

The preliminary site plan avoids all impacts to waters of the United States, waters of the Commonwealth, and KDOW special-status waters. There will be a 50-foot buffer between Project components and jurisdictional wetlands and streams. Impacts to surface waters during construction will be minimized through coverage under the Kentucky Pollutant Discharge Elimination System (KPDES) general construction permit KYR10, issued by the Kentucky Division of Water (DOW). General construction permit KYR10 authorizes the discharge of stormwater pollutants for construction activities with one or more acres of land disturbance. A Notice of Intent for coverage under KYR10 will be submitted to the DOW at least seven days prior to the commencement of construction activities. Construction-related impacts to surface waters will be minimized through adherence to a Stormwater Pollution Prevention Plan (SWPPP), developed pursuant to the requirements of KYR10. Upon completion of construction activities and achievement of final stabilization, the Applicant will submit a Notice of Termination to the DOW.

Herbicides will be used as needed to control unwanted vegetation during construction and/or operation. Widespread use of herbicide is not anticipated, and herbicide use in proximity to surface waters will be limited to the greatest extent practicable. Herbicide and pesticide use must be performed by qualified, commercially licensed applicators in compliance with state and federal

requirements governing use, distribution, and record-keeping for all phases of vegetation management. This record-keeping will also allow the contractor and/or the Applicant to evaluate the success of treatment and improve the effectiveness of future applications.

3.2 Groundwater

Information obtained from the KEEC shows that the aquifers throughout central Kentucky, including those in Nicholas County, generally consist of karst and localized fracture aquifers. Karst aquifers are created when water passes over and dissolves rock material, forming fractures. Over time, these fractures can deepen and develop caves and underground streams. Karst aquifers are often fed by groundwater and can surface as sinkholes, springs, and caves (KEEC 2025). The Project does not anticipate any impacts to groundwater resources.

Based on information derived from the Kentucky Geoportal (Kentucky Geography Network 2026), there are no mapped water wells located within the Project Area. The Kentucky Geoportal showed no mapped springs or sinkholes within the Project Area.

Construction activities will involve equipment that is powered by petroleum-based fuels and that uses petroleum-based lubricants and/or hydraulic fluids. Petroleum products stored on site will be stored in double-wall containment vessels or within a secondary containment system. Refueling will occur at a specified refueling location in the laydown yard area, or within the construction areas for some less portable equipment. Spill response kits will be kept on all refueling vehicles, to be used in the event that refueling or maintenance activities were to result in a spill. The Project will develop a spill prevention, control, and countermeasure (SPCC) plan for construction and operation. The SPCC plan will address the prevention of, preparedness for, and appropriate responses to any discharges of petroleum products. A copy of the SPCC plan will be maintained on site during construction, and construction personnel will be instructed in its use.

Because the facility is not anticipated to generate, store, treat, or dispose of bulk quantities of potential groundwater contaminants, the requirement to develop a groundwater protection plan pursuant to 401 KAR 5:037 is not applicable to the proposed facility. However, many practices for groundwater protection from potential contaminants will be included in the above-mentioned

SPCC plan. As mentioned previously, the occasional use of herbicides will be conducted by qualified, commercially licensed applicators. The use of steel piles to support the solar panels are not anticipated to negatively affect groundwater. Although the solar panels themselves have impermeable surfaces, there will be sufficient vegetated area between panel rows to allow for groundwater infiltration.

4.0 WASTES

According to the Applicant, facility construction is anticipated to generate approximately 1,000 cubic yards of construction waste, consisting primarily of wood pallets, cardboard, miscellaneous other packing materials, construction scrap, and general refuse. Construction waste will be collected from facility work areas and disposed of in dumpsters located at the laydown yards. A private contractor will empty the dumpsters as needed and dispose of the refuse at a licensed solid waste disposal facility. Waste materials will be recycled when possible. If any universal waste is generated during construction activities, it will be handled, managed, and disposed of in accordance with federal, state, and local regulations. Except for cleared woody vegetation, which may be chipped and mulched on site, all waste materials will be disposed of offsite.

Waste fluids from construction equipment maintenance activities and other sources will be stored in appropriate containers, with secondary containment where needed, for disposal by a licensed contractor. Portable toilets used for construction workers will be staked for stability and maintained by the contractor supplying the toilet facilities.

O&M activities will typically generate small amounts of waste materials, which could include wood, cardboard, metal packing/packaging materials, replaced facility components, and general refuse. O&M personnel will process waste materials following industry best management practices. Waste materials generated during facility operation will be removed from site by O&M Personnel for recycling or disposal at a licensed solid waste disposal facility. There will be no onsite dumpsters for waste storage during facility operations. Small volumes of maintenance supplies, such as cleaning fluids, degreasers, herbicides, pesticides, oils, and fuels will be stored for occasional use at the facility. Waste materials generated from these supplies during facility operation will be stored temporarily in appropriate containers and will be recycled or disposed of on a regular basis by a licensed solid waste disposal facility. It is anticipated that the O&M activities will generate approximately 5 cubic yards of solid waste annually during operations.

5.0 WATER WITHDRAWAL

Solar panels generate electricity without the use of water. Therefore, there is no need for industrial-scale water withdrawal or treatment facilities. It is anticipated that normal precipitation in the region will be sufficient to remove dust and debris from the solar panels, so panel washing generally will not be required. Normal precipitation in the region is also expected to be sufficient to maintain vegetation coverage within the Project Area, once vegetation is established.

Construction of the facility will require the use of limited amounts of water, primarily for fugitive dust control, equipment washing, and compaction in areas such as access roads, foundations, and equipment pads. Water will be obtained from existing on-site wells (if functional) or brought in by truck from an off-site location. If necessary, a new on-site water well may be established, following applicable regulations. Water will be used and applied in conformance with the requirements of the SWPPP.

REFERENCES

KEEC. 2025. *Groundwater Basics.* Kentucky Energy and Environment Cabinet. https://eec.ky.gov/Environmental-Protection/Water/GW/Pages/GWBasics.aspx.

Kentucky Geography Network. 2026. *Kentucky Groundwater Data Repository - Water Well and Spring Location Map.* https://kgs.uky.edu/kgsmap/KGSwater.

Appendix A. Water / Wetland Delineation Report

South Fork Site
Nicholas County, Kentucky

Water / Wetland Delineation Report

Submitted to:

Heelstone Development, LLC

c/o: Mr. Anthony Rotar

555 S. Mangum Street, Suite 400

Durham, NC 27701

Submittal Date:

November 8, 2025

November 2025
BFW Ref. #24555

November 8, 2025

Mr. Anthony Rotar
Heelstone Development, LLC
555 S. Mangum Street, Suite 400
Durham, NC 27701

RE: Water / Wetland Delineation Report
South Fork Site
BFW Project No: 25488

Dear Mr. Rotar:

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) is pleased to submit our report documenting the findings of the Water/Wetland Delineation for the South Fork Site. The study area consists of approximately 498 acres and is located approximately 1.5 miles east of Millersburg in western Nicholas County, Kentucky.

The purpose of the delineation was to gather sufficient information to render an independent professional opinion about whether jurisdictional waters and wetlands exist within the study area. The wetland delineation was conducted according to the guidelines set forth by the *1987 Corps of Engineers Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)*.

The United States Army Corps of Engineers (USACE) is the regulating authority of Section 404 of the Clean Water Act (CWA). This regulating entity must make the final decision with regards to the extent and jurisdictional status of any water/wetland features on this site.

We appreciate the opportunity to serve you and look forward to future association with you on this and other projects. If you have questions concerning this report or require further clarification of the findings, please call our office at (502) 526-3613.

Sincerely,

Laura Darnell
Wetland Scientist / Ecologist

Attachment: Water / Wetland Delineation Report

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LIST OF ACRONYMS AND ABBREVIATIONS

APT	Antecedent Precipitation Tool
BFW	Bacon Farmer Workman Engineering & Testing, Inc.
CWA	Clean Water Act
DEM	Digital Elevation Model
EPA	Environmental Protection Agency
FAC	Facultative
FACW	Facultative Wetland
FACU	Facultative Upland
FEMA	Federal Emergency Management Agency
GPS	Global Positioning System
KDFWR	Kentucky Department of Fish and Wildlife Resources
KDOW	Kentucky Division of Water
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
NWP	Nationwide Permit
NWPL	National Wetland Plant List
OBL	Obligate Wetland
OHWM	Ordinary High Water Mark
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PRM	Permittee-Responsible Mitigation
PUB	Palustrine Unconsolidated Bottom (Pond)
RBP	Rapid Bioassessment Protocol
RPW	Relatively Permanent Water
SSURGO	Soil Survey Geographic Database
UPL	Obligate Upland
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USDA	United States Department of Agriculture
WQC	Water Quality Certification

ABSTRACT

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) performed a water/wetland delineation for the South Fork Site. This study area for this project consists of approximately 498 acres and is located along County Road 1215, approximately 1.5 miles east of Millersburg in western Nicholas County, Kentucky. The project coordinates are 38.3068, -84.0994 and the graphic below shows the site location. The delineation was performed to determine the extent of wetlands, ponds, and/or streams within the study area in preparation for future development activities.

Field personnel identified two perennial streams (Big Brushy Creek and Brushy Creek) totaling 21,110 linear feet (29.094 acres), four intermittent streams totaling 2,615 linear feet (0.271 acres), eleven ephemeral streams totaling 2,965 linear feet (0.227 acres), nine wetlands totaling 0.961 acres, and four ponds totaling 4.619 acres on the site. Tentative jurisdictional determinations have been presented based on the most current regulations as of the publication date of this report. It should be noted that the extent and jurisdictional status of water/wetland features on this site are subject to approval by the USACE for final determination. Due to the rapidly changing regulatory environment, re-visiting the tentative jurisdictional determinations is recommended prior to submitting the delineation to regulatory agencies or other outside entities if significant time elapses after the delineation report is received.



1. INTRODUCTION

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) performed a water/wetland delineation for the South Fork Site located in western Nicholas County, Kentucky (**Figures 1** and **2**). The field work was completed on October 20, 21, and 22, 2025. Figures referenced in this text are included in **Appendix A**.

1.1 PURPOSE

The purpose of this study was to investigate the study area to document any areas which met the technical criteria for wetlands, assess other aquatic resources (e.g., streams, open water features), and classify these aquatic resources. This assessment will be the basis upon which regulated impacts to these resources will be determined for future project construction activities.

The water/wetland delineation was conducted according to the guidelines set forth by the 1987 Corps of Engineers Manual and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0*). The United States Army Corps of Engineers (USACE) is the regulating authority of Section 404 of the Clean Water Act (CWA). This regulating entity must make the final decision with regards to the extent, type, and jurisdictional status of any water/wetland features on this site.

Tentative jurisdictional determinations have been presented based on the most current regulations as of the publication date of this report. Due to the rapidly changing regulatory environment, re-visiting the tentative jurisdictional determinations is recommended prior to submitting the delineation to regulatory agencies or other outside entities if significant time elapses after the delineation report is received.

1.2 SITE DESCRIPTION

The study area for this report totals approximately 498 acres and is located along County Road 1215, approximately 1.5 mile east of Millersburg in western Nicholas County, Kentucky (**Figures 1** and **2**). The site coordinates are 38.3068, -84.0994. The study area contains primarily agricultural fields along with some scattered areas of old fields and some wooded fencerows and wooded stream corridors.

The field assessment documented 35.17 acres of water/wetland features on site, including two perennial streams totaling 21,110 linear feet (29.094 acres), four intermittent streams totaling 2,615 linear feet (0.271 acres), eleven ephemeral streams totaling 2,965 linear feet (0.227 acres), nine wetlands totaling 0.961 acres, and four ponds totaling 4.619 acres. These features are depicted on **Figure 3**.

2. TECHNICAL DEFINITIONS

2.1 WETLANDS

Section 404 of the Clean Water Act defines Wetlands as:

> "areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, bogs, and similar areas."

The Environmental Protection Agency (EPA) and the USACE utilize the *1987 Corps of Engineers Wetlands Delineation Manua*l and subsequent Regional Supplements to the manual to define wetlands for the CWA Section 404 permit program. Section 404 requires a permit from the USACE or authorized state for the discharge of dredged or fill material into the waters of the United States, including wetlands.

The *1987 Corps of Engineers Wetlands Delineation Manual* and Regional Supplements organize characteristics of a potential wetland into three (3) categories: soils, vegetation, and hydrology. The manual and supplements contain criteria for each category. With this approach, an area that meets all three (3) criteria is considered a wetland. These criteria are detailed below:

2.1.1 Hydrophytic Vegetation

Hydrophytic vegetation, due to morphological, physiological, and/or reproductive adaptation(s), has the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Individual species have been assigned a wetland indicator status on the National Wetland Plant List provided by the USACE. Determinations of hydrophytic vegetation are based on the wetland indicator status of plant species within the sampling plot.

Table 2-1 – Vegetation Wetland Indicator Codes

Indicator Status	Probability of Occurrence in Wetlands
Obligate Wetland – OBL	> 99%
Facultative Wetland – FACW	67-99%
Facultative – FAC	34-66%
Facultative Upland – FACU	1-33%
Obligate Upland – UPL	< 1%

The relative abundance of plant species in the plots and their wetland indicator statuses are used to determine whether the plant community qualifies as hydrophytic under the Rapid Test, Dominance Test, and/or Prevalence Test.

2.1.2 Hydric Soils

Hydric soils are present if they have been classified as hydric or when they possess characteristics associated with anaerobic soil conditions. Hydric soils are those that are determined to be gleyed or have a low chroma matrix (2 or less) with redoximorphic features, or a matrix chroma of 1 with or without redoximorphic feature in the upper 12 inches. These designations are made utilizing Munsell Soil Color Charts.

2.1.3 Hydrology

Hydrology in wetlands occurs in areas inundated permanently or periodically at mean water depths less than 18.8 feet, or if the soil is saturated to the surface for five percent (5%) of the prevalent vegetation's growing season. Indicators of wetland hydrology could be present above or below the surface.

Primary indicators of hydrology [a minimum of one is required] include, but are not limited to:

- inundation
- saturation in the upper 12 inches
- oxidized rhizospheres
- watermarks on standing structures
- water-stained leaves
- sediment deposits

Secondary indicators of wetland hydrology [a minimum of two is required] include, but are not limited to:

- FAC neutral test
- a sparsely vegetated concave surface
- wetland drainage patterns
- crayfish burrows

2.2 STREAMS AND DRAINAGES

Stream classifications of perennial, intermittent, and ephemeral were applied based on definitions in publications created or endorsed by the Kentucky Energy and Environment Cabinet, Department for Environmental Protection (Kentucky Division of Water 2011 and Tetra Tech, Undated).

Perennial streams were characterized as having flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow.

Intermittent streams were characterized as having flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from precipitation is a supplemental source of water for stream flow.

Ephemeral streams were characterized as typically having flowing water only during rainfall events and for a short time afterward in a typical year. Ephemeral stream beds are located above the water table year-round, so groundwater is not a source of water for the stream. Runoff from precipitation is the primary source of water for stream flow.

Non-jurisdictional ditches were classified according to the definition presented by the EPA within the "Revised Definition of "Waters of the United States" issued on January 18, 2023. These features are defined as being ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water.

2.2.1 Ordinary High Water Mark (OHWM)

The jurisdictional extent of non-tidal waters typically extends to the Ordinary High Water Mark (OHWM). The OHWM was defined following USACE regulatory guidance (USACE 2005):

"The term ordinary high water mark means that 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."

2.3 STATE-DESIGNATED PRIORITY WATER RESOURCES

The Kentucky Division of Water (KDOW) has granted special status to some waters and waterbodies in Kentucky related to their goals for statewide water quality improvement. The KDOW requires Individual Water Quality Certification (WQC) when project activities occur within these designated waters.

KDOW special-status waters include:

- Waters and Waterbodies designated as designated Outstanding State Resource Waters, National Resource Waters, Cold Water Aquatic Habitat, Exceptional Waters, or identified as candidate Outstanding State Resource Waters or candidate Exceptional Waters
- Waters and Waterbodies classified as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat
- Waters and Waterbodies classified as Full Support for warm water or cold water aquatic habitat
- Perpetually-protected mitigation sites (can include streams, ponds, and wetlands)

The presence of KDOW special-status waters and waterbodies was evaluated using the KDOW's online map service (KDOW 2025).

3. DELINEATION METHODS AND GENERAL SITE CHARACTERISTICS

3.1 WETLAND DELINEATION

The wetland delineation was conducted according to the guidelines set forth by the *1987 Corps of Engineers Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)*. An initial in-house review of available maps was used to locate potential streams and wetland areas. Maps consulted included United States Geological Survey (USGS) topographic maps, aerial photography, county soil survey maps and hydric soils lists, National Hydrography Dataset (NHD) maps, National Wetlands Inventory (NWI) maps, Federal Emergency Management Agency (FEMA) floodplain maps, and Digital Elevation Model (DEM) maps. During the field assessment, the locations of water and wetland features were recorded in the field using Global Positioning System (GPS) equipment with sub-meter accuracy.

3.1.1 Soils

Soils were observed to determine if hydric soil characteristics were present. Soils were examined at shallow test pits excavated with a drain spade and were observed at a depth necessary to confirm hydric soil characteristics. Typical soil profile depths are usually within 12-18 inches below ground surface to allow for: (1) observation of an adequate portion of the soil profile to determine presence/absence of hydric soil characteristics; (2) observation of hydrology including depth to the water table and saturated soils; and (3) identification of disturbances (e.g., buried horizon, plow line). Where site conditions preclude observing soil profile depths at the typical 12-18 inches below ground surface or where observed hydric soil indicators are documented above or below 12-18 inches below ground surface, justification is provided. Soil color determinations were assigned using Munsell Soil Color Charts.

Site soil characteristics were compared to those mapped and described in the *Soil Survey Geographic (*SSURGO*) database for Bourbon and Nicholas Counties, Kentucky* (USDA 2025). Hydric soil characteristics were compared to those identified in the Eastern Mountains and Piedmont Region (USACE 2010) and the most recent version of the Natural Resources Conservation Service (NRCS) publication *Field Indicators of Hydric Soils in the United States, Version 9.2* (USDA 2025). Hydric Soil Category ratings (USDA 2025) were also reviewed for soils in the study area. Results were recorded on wetland determination data forms (**Appendix B**). Numerous mapped soils types are present within the study area and include Cynthiana-Faywood Complex, Elk silt loam, Fairmount-Rock outcrop, Faywood silt loam, Faywood silty clay loam, McAfee silt loam, Nolin silt loam, Bluegrass-Maury silt loams, Lowell-Faywood silt loams, Lowell-Sandview silt loams, and Maury-Bluegrass silt loams. Of these soils, Nolin silt loam is classified as having a small percent of hydric inclusions. The other soils are classified as non-hydric.

Mapped soils within the study area are depicted on **Figure 4**. Soils were examined at several locations including 32 data points which are depicted on **Figure 3** and recorded on the data forms included in **Appendix B**. Hydric soil indicators that were observed included Loamy Gleyed Matrix (F2) and Depleted Matrix (F3).

3.1.2 Vegetation

Wetland plant species nomenclature follows the National Wetland Plant List (USACE 2023). Identification was aided, when necessary, with field guides for the region. Vegetation was sampled in plots:

- 30-ft radius for tree stratum
- 15-ft radius for sapling and shrub stratum
- 5-ft radius for herb stratum
- 30-ft radius for woody vines

Vegetation was classified using the USACE 2022 National Wetland Plant list (NWPL). Unless otherwise stated, aerial coverage dominance was determined using the 50/20 rule. Under the 50/20 rule, any plant species that equals or exceeds 20% of the aerial coverage of the plot is a dominant plant. In addition, the cumulative total of all dominant plants (OBL, FACW, or FAC) must be equal to or greater than 50% of the aerial coverage of the plot. If no plant species equals or exceeds 20% of the cumulative total aerial coverage of the plot, then the dominant plants are the plants that when ranked in decreasing order of abundance and summed, immediately exceed 50% of the plots aerial coverage when added together.

The study area contains primarily agricultural fields along with some scattered areas of old fields and some wooded fencerows and wooded stream corridors. Some of the agricultural fields were cultivated in corn (*Zea mays*), soybeans (*Glycine max*), or tobacco (*Nicotiana tabacum*), and one field in the eastern end of the site was left fallow after a failed planting. Other agricultural fields were cultivated for hay production through planting alfalfa (*Medicago sativa*) or grasses such as fescue (*Schedonorus arundinaceus*) and Kentucky bluegrass (*Poa pratensis*). Common volunteer species in the agricultural fields included nodding foxtail (*Setaria faberi*), purple deadnettle (*Lamium purpureum*), curly dock (*Rumex crispus*), chicory (*Cichorium intybus*), and giant ragweed (*Ambrosia trifida*). These species are listed as obligate upland (UPL), facultative upland (FACU), and facultative (FAC) on the 2022 NWPL.

Common species in the old fields included blackberry (*Rubus argutus*), multiflora rose (*Rosa multiflora*), fescue, giant ragweed, Canada goldenrod (*Solidago canadensis*), tall ironweed (*Vernonia gigantea*), asters (*Symphyotrichum* spp.), poison hemlock (*Conium maculatum*), bur cucumber (*Sicyos angulatus*), and Virginia wild-rye (*Elymus virginiana*). These species are listed as FACU, FAC, and facultative wetland (FACW) on the 2022 NWPL.

Common species in the wooded fencerows and wooded stream corridors included hackberry (*Celtis occidentalis*), black walnut (*Juglans nigra*), black cherry (*Prunus serotina*), bur oak (*Quercus macrocarpa*), American elm (*Ulmus americana*), box-elder (*Acer negundo*), bush honeysuckle (*Lonicera maackii*), multiflora rose, Virginia wild-rye, and common blue violet (*Viola sororia*). These species are listed as UPL, FACU, FAC, and FACW on the 2022 NWPL.

Common species in the wetlands included black willow (*Salix nigra*), box-elder, fowl mannagrass (*Glyceria striata*), jewelweed (*Impatiens capensis*), rice cutgrass (*Leersia oryzoides*), green bulrush (*Scirpus atrovirens*), willow-herb (*Epilobium coloratum*), fox sedge (*Carex vulpinoidea*), Frank's sedge (*Carex frankii*), and nodding bur-marigold (*Bidens cernua*). These species are listed as FACW and obligate wetland (OBL) on the 2022 NWPL.

3.1.3 Hydrology

Hydrology within the study area was evaluated using available mapped data and field indicators. Sources of hydrology for the study area included precipitation, surface runoff from adjacent properties, and stream flow through Brushy Creek (Perennial Stream 2) and the offsite stream Brushy Fork. The study area generally slopes downward from the north to the south. Surface water in the study area collects in several drainages which empty into Big

Brushy Creek, which meanders in a westward direction along the southern boundary of the site. Several depressions on the site retain surface water and have formed wetlands.

Several low lying areas of the site along Big Brushy Creek and Brushy Creek are located within the FEMA 100-year floodplain (**Figure 5**). The National Wetlands Inventory (NWI) map (**Figure 6**) maps Big Brushy Creek and Brusky Creek as riverine, perennial streams (R5UBH). It also depicts a riverine, intermittent stream (R4SBC) in the drainage where the delineation documented Intermittent Stream 1. A freshwater pond (PUBHh) is depicted at the location of Pond 2. The NWI map also depicts a freshwater pond (PUBHh) on a hilltop just north of a farm road in the north-central part of the site. This area was investigated and documented at Data Point 13 which found that the area consists of an upland field with no pond present.

Wetland hydrology indicators were observed in wetlands and some transitional zones. These indicators were recorded on the data forms (**Appendix B**). Hydrology indicators observed included surface water (A1), high water table (A2), saturation (A3), oxidized rhizospheres (C3), drainage patterns (B10), and the FAC-neutral test (D5).

The USACE Antecedent Precipitation Tool (USACE-ERDC 2025) was reviewed for the project location at the time of the field assessment to determine if recent precipitation for the area was within normal ranges. The tool rated each day of October 20-22, 2025, as Normal Conditions (12) and Wet Season. The Antecedent Precipitation Tool output for the visit dates is included in **Appendix E** and depicts the 30-day rolling rainfall total in comparison to 30-year normal precipitation ranges. A table generated from APT precipitation data is also included. Precipitation recorded during the site visits and the previous seven days included 0.07 inches of rain on October 19 and 0.68 inches of rain in the late hours of October 20.

3.2 STREAM ASSESSMENT

Onsite streams were delineated based on the presence of indicators of an OHWM, following USACE regulatory guidance (USACE 2005) as defined in **Section 2.2.1** above. Streams and drainages were classified as perennial, intermittent, or ephemeral streams, or as non-jurisdictional ditches based on the definitions in **Section 2.2** above. Field documentation of the on-site streams included photographs and notes of the location, typical dimensions, flow characteristics, and substrate material of the streams. Representative photographs are included in **Appendix D**. The field assessment was supplemented by in-house investigation including review of maps including USGS topographic maps, NHD maps, NWI maps, and DEM maps. Stream lengths, channel location, limits, and flow regime were determined through a combination of field assessment and in-house mapping.

Rapid Bioassessment Protocol (RBP) low gradient field data sheets were completed for any perennial and intermittent streams within the study area. The RBP method used to assess habitat quality is based on key physical characteristics of the stream and surrounding land. Habitat is defined as the quality of in-stream and riparian habitat that influences the structure and function of the aquatic community in a stream. Habitat parameters evaluated are related to overall aquatic life and are a potential source of limitation to aquatic biota (Barbour, et al. 1999).

No formal RBP assessments were conducted for ephemeral streams because it appears that these features have been classified as non-jurisdictional, non-relatively permanent waters under the new delineation standards established following the recent *Sackett vs. EPA* Supreme Court ruling.

The stream determinations presented in this delineation are tentative, and the final determination of stream type, extent, quality, and jurisdiction will be decided by the USACE.

3.3 STATE-DESIGNATED WATER RESOURCES IN STUDY AREA

A list of types of state-designated special-status waters that trigger a requirement for an Individual WQC is presented above in **Section 2.3**. A review of the KDOW's online map database indicates that the reach of Big Brushy Creek within the study area is listed as an Impaired Water and is included on the 305(b) and 303(d) lists. In 2024, Big Brushy Creek from mile 0.0 to 4.75 was listed as Partial Support for Warm Water Aquatic Habitat, with impaired parameters of Combined Biota/Habitat Bioassessments and Nutrient/Eutrophication Biological Indicators. Suspected sources listed included Agriculture; Habitat Modification - other than Hydromodification; Loss of Riparian Habitat; Non-Point Source; Removal of Riparian Vegetation; Streambank Modifications/destabilization; Crop Production; Rangeland Grazing; and Unrestricted Cattle Access.

Therefore, it appears that Big Brushy Creek qualifies as a KDOW special-status water because it is classified as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat. The KDOW would require Individual WQC if project activities occur within this stream.

4. WATERS / WETLANDS SUMMARY AND DESCRIPTIONS

The delineation documented a total of 35.17 acres of water/wetland features within the study area, including two perennial streams, four intermittent streams, eleven ephemeral streams, nine wetlands, and four ponds (**Figure 3**). Please note that the extent and jurisdictional status of waters and wetlands presented in this report are tentative; the USACE is the regulating authority of Section 404 of the Clean Water Act and must make the final decision with regards to the extent and jurisdictional status of any water/wetland features on this site.

All associated wetland data forms for this delineation can be found in **Appendix B**. Stream data forms are included in **Appendix C**. Photographs of the study area, including the onsite waters and wetlands, can be found in **Appendix D.**

4.1 STREAMS AND DRAINAGES

The assessment documented two perennial streams, four intermittent streams, and eleven ephemeral streams within the study area. These features are depicted on **Figure 3** and summarized in **Table 4-1** below. A description of the streams are provided in this section, although the stream determinations are assigned pending final USACE verifications.

Under the recent interpretations of CWA jurisdiction established by the *Sackett vs. Environmental Protection Agency* Supreme Court decision, it appears that the CWA (and therefore USACE jurisdiction) applies only to waters with a relatively permanent flow (Waters of the United States), referenced as Relatively Permanent Waters (RPWs). The generally accepted standard for RPWs is “tributaries that have flowing or standing water year-round or continuously during certain times of year” (typically three months), noting that “relatively permanent waters do not include tributaries with flowing or standing water for only a short duration in direct response to precipitation” (USACE and EPA 2008 and 2023).

Perennial streams are typically interpreted as RPWs (jurisdictional), while ephemeral streams are typically interpreted as non-RPWs (non-jurisdictional). Intermittent streams may be interpreted as either RPWs or non-RPWs.

Table 4-1 – Streams Within the Study Area

Name	Length (feet)	Average Width (feet)	Acreage	Classification*	Status**
Big Brushy Creek (Perennial 1)	18,115	65	27.031	R5UBH	Jurisdictional
Brushy Creek (Perennial 2)	2,995	30	2.063	R5UBH	Jurisdictional
Perennial Stream Total	**21,110**	**---**	**29.094**	---	---
Jurisdictional Perennial Stream Total	**21,110**	**---**	**29.094**	---	---
Intermittent Stream 1	1,980	5	0.227	R4SB3	Jurisdictional
Intermittent Stream 2	330	2.5	0.019	R4SB5	Non-Jurisdictional
Intermittent Stream 3	70	2	0.003	R4SB5	Non-Jurisdictional
Intermittent Stream 4	235	4	0.022	R4SB5	Jurisdictional
Intermittent Stream Total	**2,615**	**4**	**0.271**		**---**
Jurisdictional Intermittent Stream Total	**2,215**		**0.249**		
Ephemeral Stream 1	200	2	0.009	R6	Non-Jurisdictional
Ephemeral Stream 2	60	4	0.006	R6	Non-Jurisdictional
Ephemeral Stream 3	410	4.5	0.042	R6	Non-Jurisdictional
Ephemeral Stream 4	25	2	0.001	R6	Non-Jurisdictional
Ephemeral Stream 5	265	2	0.012	R6	Non-Jurisdictional
Ephemeral Stream 6	435	4.5	0.045	R6	Non-Jurisdictional
Ephemeral Stream 7	265	3	0.018	R6	Non-Jurisdictional
Ephemeral Stream 8	100	3.5	0.008	R6	Non-Jurisdictional
Ephemeral Stream 9	70	3	0.005	R6	Non-Jurisdictional
Ephemeral Stream 10	880	3	0.061	R6	Non-Jurisdictional
Ephemeral Stream 11	255	3.5	0.020	R6	Non-Jurisdictional
Ephemeral Stream Total	**2,965**	**---**	**0.227**	---	---
Jurisdictional Ephemeral Stream Total	**0**		**0**		

*USFWS habitat classifications from Cowardin, 1979. R5 = Riverine Unknown Perennial; R4 = Riverine Intermittent; R6 = Riverine Ephemeral; UBH = Unconsolidated Bottom, Permanently Flooded; SB3 = Streambed, Cobble-Gravel; SB5 = Streambed, Mud

**Jurisdictional/Isolated determination is provisional and final designations would be assigned by the U.S. Army Corps of Engineers during their project review.

4.1.1 Perennial Streams

Big Brushy Creek (Perennial Stream 1) borders the study area for 18,115 linear feet. It begins at eastern edge of the site at the confluence of Brushy Creek (Perennial Stream 2) and the offsite perennial stream Brushy Fork. Big Brushy Creek meanders in a westward direction along the southern side of the study area. It ranges from 60 to 70 feet wide at the OHWM with an average width of approximately 65 feet. Its banks average eight feet high at the OHWM. The stream substrate consists of silt, sand, gravel, cobble, and boulders. At the time of the field visit, Big Brushy Creek contained flowing water from five inches deep in riffles to four feet deep in pools. A RBP assessment on Big Brushy Creek generated a score of 155, which rates as Good quality for wadeable streams (>5 square mile watershed) in the Bluegrass bioregion. Big Brushy Creek is a RPW and jurisdictional.

As noted in **Section 3.3**, it appears that Big Brushy Creek qualifies as a KDOW special-status water because it is classified as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat. The KDOW would require Individual WQC if project activities occur within this stream.

Brushy Creek (Perennial Stream 2) borders the study area for 2,995 linear feet along the northeastern boundary and flows into Big Brushy Creek. Brushy Creek ranges from 25 to 35 feet wide at the OHWM with an average width of approximately 30 feet. Its banks average six feet high at the OHWM. The stream substrate consists of silt, sand, gravel, cobble, and boulders. At the time of the field visit, Brushy Creek contained flowing water from three inches deep in riffles to two feet deep in pools. An RBP assessment on Brushy Creek generated a score of 128, which rates as Fair quality for wadeable streams in the Bluegrass bioregion. Brushy Creek is a RPW and jurisdictional.

4.1.2 Intermittent Streams

Intermittent Stream 1 measures 1,980 linear feet (0.227 acres) within the study area. It starts at an outlet below Pond 2 and then flows southward through a culvert under a farm road, eventually emptying into Big Brushy Creek. Intermittent Stream 1 ranges from three to eight feet wide at the OHWM with bank heights of six inches to two feet. The stream substrate is dominated by silt with some gravel, and cobble. The stream contained flowing water from less than one inch to three inches deep during the field visits. A RBP assessment on Intermittent Stream 1 generated a score of 108, which rates as Poor quality for headwater streams in the Bluegrass bioregion. This stream is expected to be classified as a RPW and jurisdictional.

Intermittent Stream 2 measures 330 linear feet (0.019 acres) within the study area. It starts at an outlet below Pond 2 and then flows southward until it loses a defined channel and transitions to Wetland 9, which lies within a linear swale. Wetland 9 drains to Ephemeral Stream 4. Intermittent Stream 2 ranges from one to four feet wide at the OHWM with bank heights of six inches to one foot. The stream substrate is dominated by silt. The stream contained a small amount of flowing and pooled water during the field visits. A RBP assessment on Intermittent Stream 2 generated a score of 69, which rates as Poor quality for headwater streams in the Bluegrass bioregion. Based on the lack of a continuous surface connection to downstream RPWs, it does not appear that Intermittent Stream 2 would be under the jurisdiction of the USACE.

Intermittent Stream 3 measures 70 linear feet (0.003 acres) within the study area. It starts where water emerges in the channel of Ephemeral Stream 4 and runs for a short distance before the water drains into a hole. At that point the stream channel transitions to Ephemeral Stream 5. Intermittent Stream 3 ranges from one to three feet wide at the OHWM with bank heights of one to two feet. The stream substrate is dominated by silt with some cobble and boulders. The stream contained a small amount of flowing water during the field visit. A RBP assessment on Intermittent Stream 3 generated a score of 59, which rates as Poor quality for headwater streams in the Bluegrass bioregion. Based on the lack of a continuous surface connection to downstream RPWs, it does not appear that Intermittent Stream 3 would be under the jurisdiction of the USACE.

Intermittent Stream 4 measures 235 linear feet (0.022 acres) within the study area. It starts at a headcut where water emerges below Ephemeral Stream 11 and flows westward to empty into Big Brushy Creek. Intermittent Stream 1 ranges from three to five feet wide at the OHWM with bank heights of one to two feet. The stream substrate is dominated by silt with some boulders. The stream contained a small amount of flowing water during the field visit. A RBP assessment on Intermittent Stream 4 generated a score of 66, which rates as Poor quality for headwater streams in the Bluegrass bioregion. This stream is expected to be classified as a RPW and jurisdictional.

4.1.3 Ephemeral Streams

The delineation documented eleven ephemeral streams within the study area totaling 2,965 linear feet (0.227 acre). These streams are scattered throughout the study area. The ephemeral streams ranged from one to six feet wide at the OHWM with bank heights of one to three feet. During the field visits, the majority of the ephemeral streams were dry although a few reaches had a small amount of flowing or pooled water. The ephemeral stream substrates were dominated by silt with some cobble, boulders, and debris.

The majority of the ephemeral streams have a direct connection to downstream RPWs. However, under the new definitions of Clean Water Act jurisdiction established by the Sackett vs. EPA Supreme Court decision, it appears that the CWA (and therefore USACE jurisdiction) applies only to RPWs. Therefore, because the ephemeral streams generally flow only following rain events, it appears that all of the ephemeral streams within the study area would be interpreted as non-jurisdictional. No RBPs or other stream quality assessments were conducted on the ephemeral streams.

4.2 WETLANDS

The field assessment documented nine wetlands within the study area which are depicted on **Figure 3** and presented in **Table 4-2** below. A description of the wetlands are provided in this section, although the wetland determination is assigned pending final USACE verification.

Under the recent interpretations of CWA jurisdiction established by the *Sackett vs. Environmental Protection Agency* Supreme Court decision, the CWA extends only to wetlands that are “as a practical matter indistinguishable from Waters of the United States.” This requires the party asserting jurisdiction to establish “first, that the adjacent [body of water constitutes] . . . ‘Water[s] of the United States’ (i.e., a relatively permanent body of water connected to traditional interstate navigable waters); and second, that the wetland has a continuous surface connection with that water, making it difficult to determine where the ‘water’ ends, and the ‘wetland’ begins.”

Table 4-2 – Wetlands Within the Study Area

Name	Acreage	Classification*	Status**
Wetland 1	0.028	PEM	Jurisdictional
Wetland 2	0.120	PEM	Jurisdictional
Wetland 3	0.034	PEM	Jurisdictional
Wetland 4	0.018	PEM	Jurisdictional
Wetland 5	0.043	PFO	Jurisdictional
Wetland 6	0.298	PEM	Jurisdictional
Wetland 7	0.342	PEM	Non-Jurisdictional
Wetland 8	0.041	PEM	Non-Jurisdictional
Wetland 9	0.037	PEM	Non-Jurisdictional
Wetland Total	**0.961**	---	---
Jurisdictional Wetland Total**	**0.541**	---	---

*USFWS habitat classifications from Cowardin, 1979. PFO = Palustrine Forested, PEM = Palustrine Emergent
**Jurisdictional/Isolated determination is provisional and final designations would be assigned by the U.S. Army Corps of Engineers during their project review.

Wetland 1 (0.028 acre) and Wetland 2 (0.120 acre) are fringe wetlands on Pond 2. Because Pond 2 drains to Intermittent Stream 1 which is a RPW with a continuous surface connection to downstream waters, it appears that Wetlands 1 and 2 would be interpreted as being under the jurisdiction of the USACE.

Wetland 3 (0.034 acre), Wetland 4 (0.018 acre), Wetland 5 (0.043 acre), and Wetland 6 (0.298 acre) are wetlands adjacent to Intermittent Stream 1. Because Intermittent Stream 1 is a RPW with a continuous surface connection to downstream waters, it appears that Wetlands 3, 4, 5, and 6 would be interpreted as being under the jurisdiction of the USACE.

Wetland 7 (0.342 acre) and Wetland 8 (0.041 acre) are fringe wetlands on Pond 3. Pond 3 drains to stream and wetland features which do not provide a continuous surface connection to downstream waters. Therefore, it appears that Wetlands 7 and 8 would be interpreted as non-jurisdictional.

Wetland 9 measures 0.037 acre and is located in a swale below Intermittent Stream 2. It drains to Ephemeral Stream 4 which does not provide a continuous surface connection to downstream waters. Therefore, it appears that Wetland 9 would be interpreted as non-jurisdictional.

4.3 OPEN WATERS

The assessment documented four open water ponds within the study area. The ponds are depicted on **Figure 3** and summarized in **Table 4-3** below. Descriptions of the ponds are provided below, although the pond determinations are assigned pending final USACE verifications.

Table 4-3 – Open Waters Within the Study Area

Name	Acreage	Classification*	Status**
Pond 1	1.751	PUB	Non-Jurisdictional*
Pond 2	1.662	PUB	Jurisdictional*
Pond 3	1.055	PUB	Non-Jurisdictional*
Pond 4	0.151	PUB	Non-Jurisdictional*
Open Water Total	**4.619**	---	---
Jurisdictional Open Water Total**	**1.662**	---	---

**Jurisdictional/Isolated determination is provisional and final designations would be assigned by the U.S. Army Corps of Engineers during their project review.

**USFWS habitat classifications from Cowardin, 1979. PUB = Palustrine Unconsolidated Bottom

Pond 1 measures 1.751 acres and is located in a basin which appears to have been created through excavation and the construction of a dam on its southwestern side. It does not have a defined outlet. Based on the lack of a continuous surface connection to downstream waters, it appears that Pond 1 would be interpreted as non-jurisdictional.

Pond 2 measures 1.662 acre and is located in a basin which appears to have been created through excavation and the construction of a dam on its southern side. It has a pipe outlet which feeds Intermittent Stream 1 and appears to have relatively permanent flow. Because Intermittent Stream 1 is a RPW with a continuous surface connection to downstream waters, it appears that Pond 2 would be interpreted as being under the jurisdiction of the USACE.

Pond 3 measures 1.055 acres and is located in a basin which appears to have been created through excavation and the construction of a dam on its southern side. It has a pipe outlet which feeds Intermittent Stream 2 which does not appear to have relatively permanent flow. Based on the lack of a continuous surface connection to downstream waters, it appears that Pond 3 would be interpreted as non-jurisdictional.

Pond 4 measures 0.151 acres and is located in a small basin which appears to have been created through excavation and the construction of a dam on its western side. It does not have a defined outlet and no streams or wetlands are present downslope of Pond 4. Based on the lack of a continuous surface connection to downstream waters, it appears that Pond 4 would be interpreted as non-jurisdictional.

5. DISCUSSION

The water/wetland delineation documented a total of 35.17 acres of water/wetland features within the study area, including two perennial streams, four intermittent streams, eleven ephemeral streams, nine wetlands, and four ponds. Of these delineated features, the perennial streams, two intermittent streams, six wetlands, and one pond are expected to be classified as being under the jurisdiction of the USACE.

Tentative jurisdictional determinations have been presented based on the most current regulations as of the publication date of this report. Due to the rapidly changing regulatory environment, re-visiting the tentative jurisdictional determinations is recommended prior to submitting the delineation to regulatory agencies or other outside entities if significant time elapses after the delineation report is received.

The USACE is the regulating authority of Section 404 of the CWA. Therefore, the USACE must make the final decision with regards to the type, extent, and jurisdictional status of any water/wetland features on this site. Section 404 of the CWA requires that all federal, state, public, and private entities obtain a permit from the USACE before placing dredged or fill materials into Waters of the United States.

Impacts to jurisdictional streams, wetlands, and open waters in Kentucky are regulated by the USACE and KDOW. Project impacts totaling over 0.5 acres of jurisdictional waters/wetlands require an application for an Individual Permit from the USACE. Project impacts of up to 0.5 acres of jurisdictional waters/wetlands may be able to be permitted under various Nationwide Permits (NWPs) if the proposed project meets certain conditions.

Project impacts totaling over 0.5 acres of jurisdictional waters/wetlands or over 300 linear feet of perennial and intermittent stream require an application for an Individual WQC from the KDOW. Projects that have impacts under these thresholds may be able to be permitted under a general WQC provided that the project meets certain conditions. It appears that Big Brushy Creek qualifies as a KDOW special-status water because it is classified as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat. Therefore, the KDOW would require Individual WQC if project activities occur within this stream. Projects that involve activities within the FEMA 100-year floodplain or activities within the floodplain of certain streams require an application for a floodplain permit from KDOW.

The USACE and KDOW typically require compensatory mitigation for projects with water/wetland impacts that exceed thresholds of 0.1 acres of wetlands and/or ponds, or 0.03 acres of stream. Required mitigation amounts for wetlands are generally calculated based on the acreage of the impact multiplied by a value ranging from 1 to 4, with an additional 1.2 temporal loss multiplier applied if mitigation credits are obtained from an in-lieu fee program or permittee-responsible mitigation (PRM) project. The rationale for the temporal loss ratio is because it requires several years for habitats funded by the in-lieu fee program or PRM project to be constructed and the streams and wetlands are not generating ecological benefits during that time. This project lies within the Lower Licking River service area, which has a cost of $133,000 per wetland credit from the Kentucky Department of Fish and Wildlife Resources (KDFWR) in-lieu fee program. Mitigation credits may also be available from an established mitigation bank, and these would not incur the temporal loss premium.

Required mitigation amounts for streams are generally calculated based on type of stream (perennial or intermittent), the stream quality (good/excellent, fair/average, or poor), and the geographic location of the project. Stream type and quality determinations are tentative and the USACE would issue the final determinations on the type and quality of the streams within the study area. Required mitigation amounts for streams are generally calculated based on the linear feet of the impact multiplied by a value for stream type/quality ranging from 0.5 to 3.0, with an additional 1.2 temporal loss multiplier applied if mitigation credits are obtained

from an in-lieu fee program or PRM project. This project lies within the Lower Licking River service area, which has a cost of $580 per stream credit from the KDFWR in-lieu fee program. Mitigation credits may also be available from an established mitigation bank and these would not incur the temporal loss premium.

6. REFERENCES

Barbour, M. T.; J. Gerritsen; B. D. Snyder; J. B. Stribling. 1999. *Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers: Periphyton, Benthic Macroinvertebrates, and Fish, Second Edition*. EPA 841-B-99-002. U.S. Environmental Protection Agency; Office of Water, Washington, D.C.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* FWS/OBS-79/31, U.S. Fish and Wildlife Service, Washington, D.C.

Environmental Laboratory. 1987. *Army Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1*. U.S. Army Engineer Waterways Experimentation Station. Vicksburg, MS.

Environmental Protection Agency (EPA). 2023. Revised Definition of ‘‘Waters of the United States.’ Federal Register Vol. 88, No. 11, pages 3004-3144. January 18, 2023.

Environmental Protection Agency (EPA). 2023. Fact Sheet for the Final Rule: Amendments to the Revised Definition of “Waters of the United States.” August 2023. Available online at: https://www.epa.gov/system/files/documents/2023-08/FINAL_WOTUS PublicFactSheet08292023.pdf.

Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers. 2008. *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States.* Memorandum, December 2, 2008. 13 pp.

Federal Emergency Management Agency. Accessed October 2025. Flood Insurance Rate Map, Nicholas County, Kentucky. https://www.fema.gov/flood-maps.

Jones, Ronald L. 2005. *Plant Life of Kentucky: An Illustrated Guide to the Vascular Flora.* University Press of Kentucky. 834 pp.

Kentucky Division of Water (KDOW). 2011. *Methods for Assessing Habitat in Wadeable Waters*. Kentucky Department for Environmental Protection, Division of Water, Frankfort, Kentucky. 27 pp.

Kentucky Division of Water (KDOW). 2024b. 2024 305(b) workbook (Excel spreadsheet). Available online at https://eec.ky.gov/Environmental-Protection/Water/Monitor/Pages/IntegratedReportDownload.aspx

Kentucky Division of Water (KDOW). 2025. Accessed October 2025. 401 Water Quality Certification Map Viewer Tool. Available online at: https://kygis.maps.arcgis.com/apps/webappviewer/index.html?id=074e895497ca4cfaa9d548b496cbc2b6.

Kirkman, L.K., Brown, C.L. 2007. *Native Trees of the Southeast: An Identification Guide*. Timber Press, Incorporated. 370 pp.

Munsell Color. 2009. *Munsell Soil Color Charts*. Revised edition 2019 production. Grand Rapids, Michigan. 68 unnumbered pages.

Supreme Court of the United States. Argued October 23, 2022, and Decided May 25, 2023. *Sackett et. ux. V. Environmental Protection Agency et. al.* 82 pp.

Tetra Tech. Undated publication. *Guide for Working in Kentucky Stream Channels & Wetlands*. 64pp. Available online at: https://eec.ky.gov/Environmental-Protection/ComplianceAssistance/DCA%20Resource%20Document%20Library/StreamChannelsandWetlandsGuide.pdf

U.S. Army Corps of Engineers (USACE). 2005. *Ordinary High Water Mark Identification.* Regulatory Guidance Letter No. 05-05. 4pp. Available online at https://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-05.pdf

U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*, ERDC/EL TR-10-20. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Army Corps of Engineers (USACE). 2023. *National Wetland Plant List* | 2022 NWPL v3.6. Accessed March 2025.

U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC). 2025. Accessed September 15, 2025. Antecedent Precipitation Tool, Version 3.0. Available online at: https://www.epa.gov/wotus/antecedent-precipitation-tool-apt

U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (EPA). 2023. "Revised Definition of 'Waters of the United States.'" Tribal and State Webinars: Webinar 2: Relatively Permanent Standard. March 30, 2023.

U.S. Department of Agriculture (USDA). 2025. Accessed October 2025. Web Soil Survey database. Available online at: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

U.S. Environmental Protection Agency (EPA). 2023a. Revised Definition of ''Waters of the United States.' Federal Register Vol. 88, No. 11, pages 3004-3144. January 18, 2023.

U.S. Environmental Protection Agency (EPA). 2023b. Fact Sheet for the Final Rule: Amendments to the Revised Definition of "Waters of the United States." August 2023. Available online at: https://www.epa.gov/system/files/documents/2023-08/FINAL_WOTUS PublicFactSheet08292023.pdf.

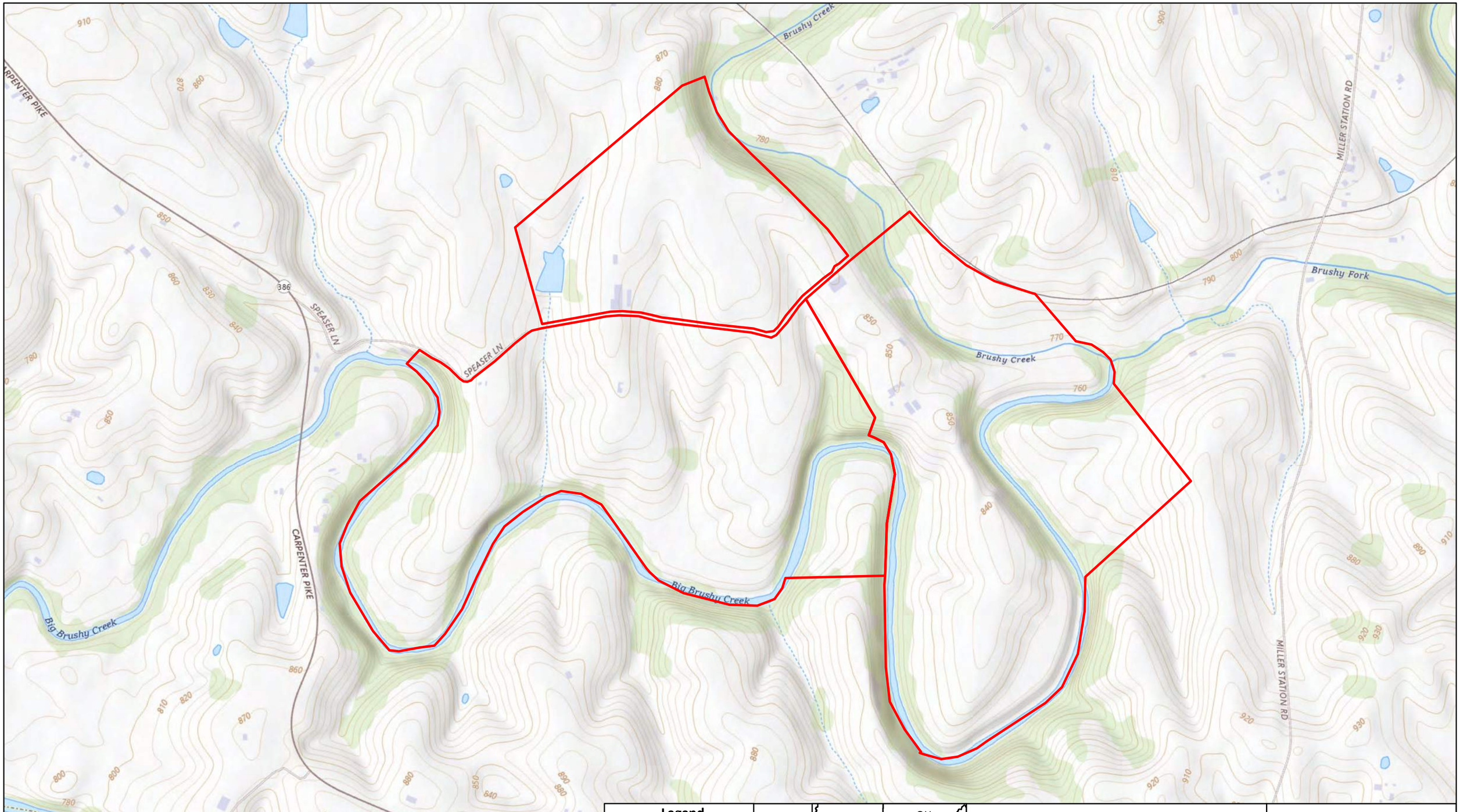
U.S. Environmental Protection Agency (EPA). 2025. WOTUS Notice: The Final Response to SCOTUS. Federal Register Vol. 90, No. 55, pages 13428-13431. March 24, 2025.

U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE). National Wetland Inventory. Accessed October 2025. http://www.fws.gov/wetlands/Data/Mapper.html

U.S. Geological Survey (USGS). 2025. Accessed October 2025. StreamStats web application. Available online at: https://streamstats.usgs.gov/ss/.

Appendix A

Figures



Legend

Study Boundary

N

IN OH KY WV

0 1,000 2,000 ft

1 inch : 1,000 feet

Figure 1 - USGS Topographic Map

South Fork Site
Nicholas County, Kentucky

Project Number:	Drafted/Checked:	Date:
25488	CS/LD	11/7/2025

BFW®

Legend

Study Boundary

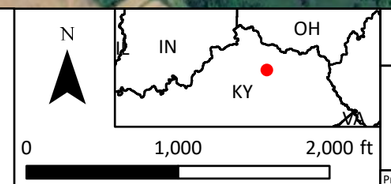
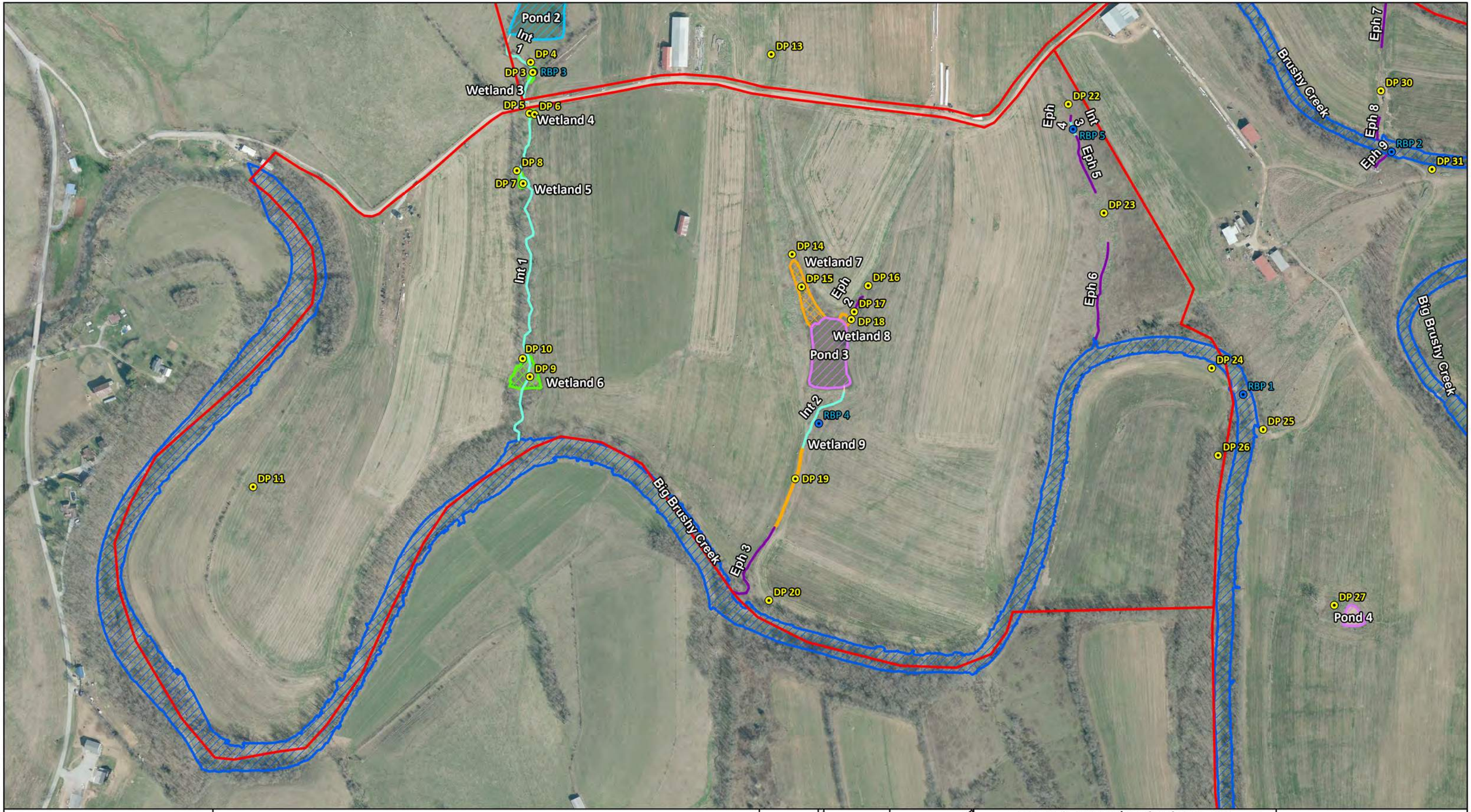


Figure 2 - Aerial Imagery

South Fork Site
Nicholas County, Kentucky

Project Number:	Drafted/Checked:	Date:
25488	CS/LD	11/7/2025

BFW®

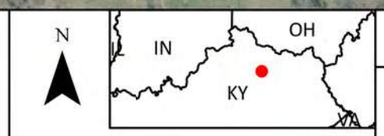


*Tentative determination from this delineation. Final determinations of the type, extent, and jurisdictional status of water/wetland features must be made by the U.S Army Corps of Engineers Regulatory Program

Legend

Project Data
- Study Boundary

Delineation Data
- Datapoint
- RBP Point
- Perennial Streams*
- Intermittent Streams*
- Ephemeral Streams*
- Culvert
- Jurisdictional Wetland*
- Non-Jurisdictional Wetland*
- Jurisdictional Pond*
- Non-Jurisdictional Pond*



1 inch : 500 feet

Figure 3 - Water/Wetland Features
Sheet 1 of 4

South Fork Site
Nicholas County, Kentucky

Project Number:	Drafted/Checked:	Date:
25488	CS/LD	11/8/2025

BFW®



*Tentative determination from this delineation. Final determinations of the type, extent, and jurisdictional status of water/wetland features must be made by the U.S Army Corps of Engineers Regulatory Program

Legend

Project Data
- Study Boundary

Delineation Data
- Datapoint
- RBP Point
- Perennial Streams*
- Intermittent Streams*
- Ephemeral Streams*
- Culvert
- Jurisdictional Wetland*
- Non-Jurisdictional Wetland*
- Jurisdictional Pond*
- Non-Jurisdictional Pond*

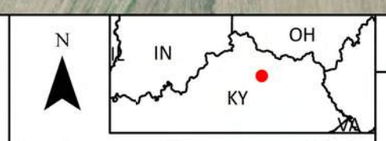


Figure 3 - Water/Wetland Features
Sheet 2 of 4

South Fork Site
Nicholas County, Kentucky

Project Number:	Drafted/Checked:	Date:
25488	CS/LD	11/8/2025

BFW®



*Tentative determination from this delineation. Final determinations of the type, extent, and jurisdictional status of water/wetland features must be made by the U.S Army Corps of Engineers Regulatory Program

Legend

Project Data
- Study Boundary

Delineation Data
- Datapoint
- RBP Point
- Perennial Streams*
- Intermittent Streams*
- Ephemeral Streams*
- Culvert
- Jurisdictional Wetland*
- Non-Jurisdictional Wetland*
- Non-Jurisdictional Pond*

N



0 400 800 ft

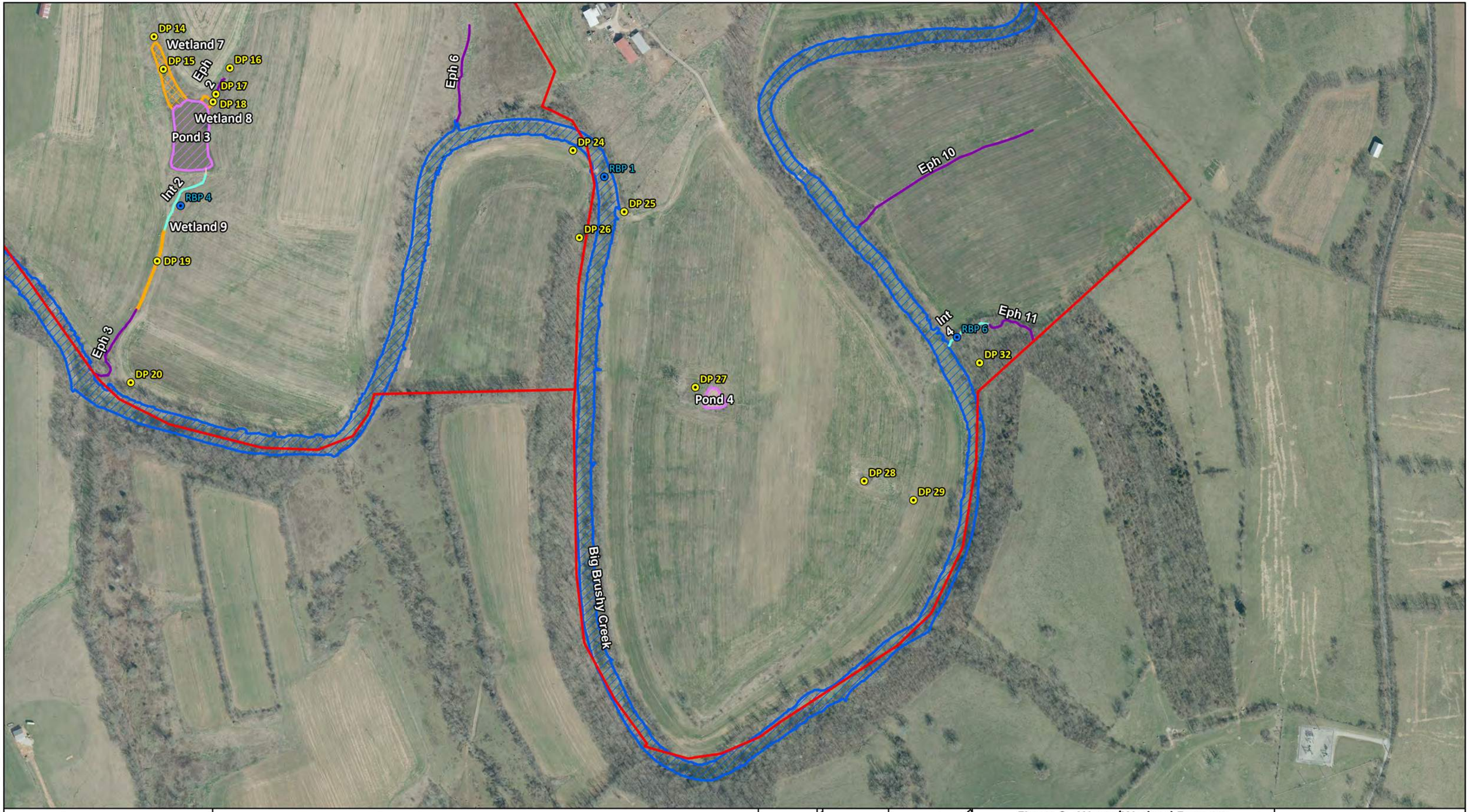
1 inch : 400 feet

Figure 3 - Water/Wetland Features
Sheet 3 of 4

South Fork Site
Nicholas County, Kentucky

Project Number:	Drafted/Checked:	Date:
25488	CS/LD	11/8/2025

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*Tentative determination from this delineation. Final determinations of the type, extent, and jurisdictional status of water/wetland features must be made by the U.S Army Corps of Engineers Regulatory Program

Legend

Project Data
- Study Boundary

Delineation Data
- Datapoint
- RBP Point
- Perennial Streams*
- Intermittent Streams*
- Ephemeral Streams*
- Culvert
- Jurisdictional Wetland*
- Non-Jurisdictional Wetland*
- Non-Jurisdictional Pond*

N

IN OH KY WV

0 500 1,000 ft

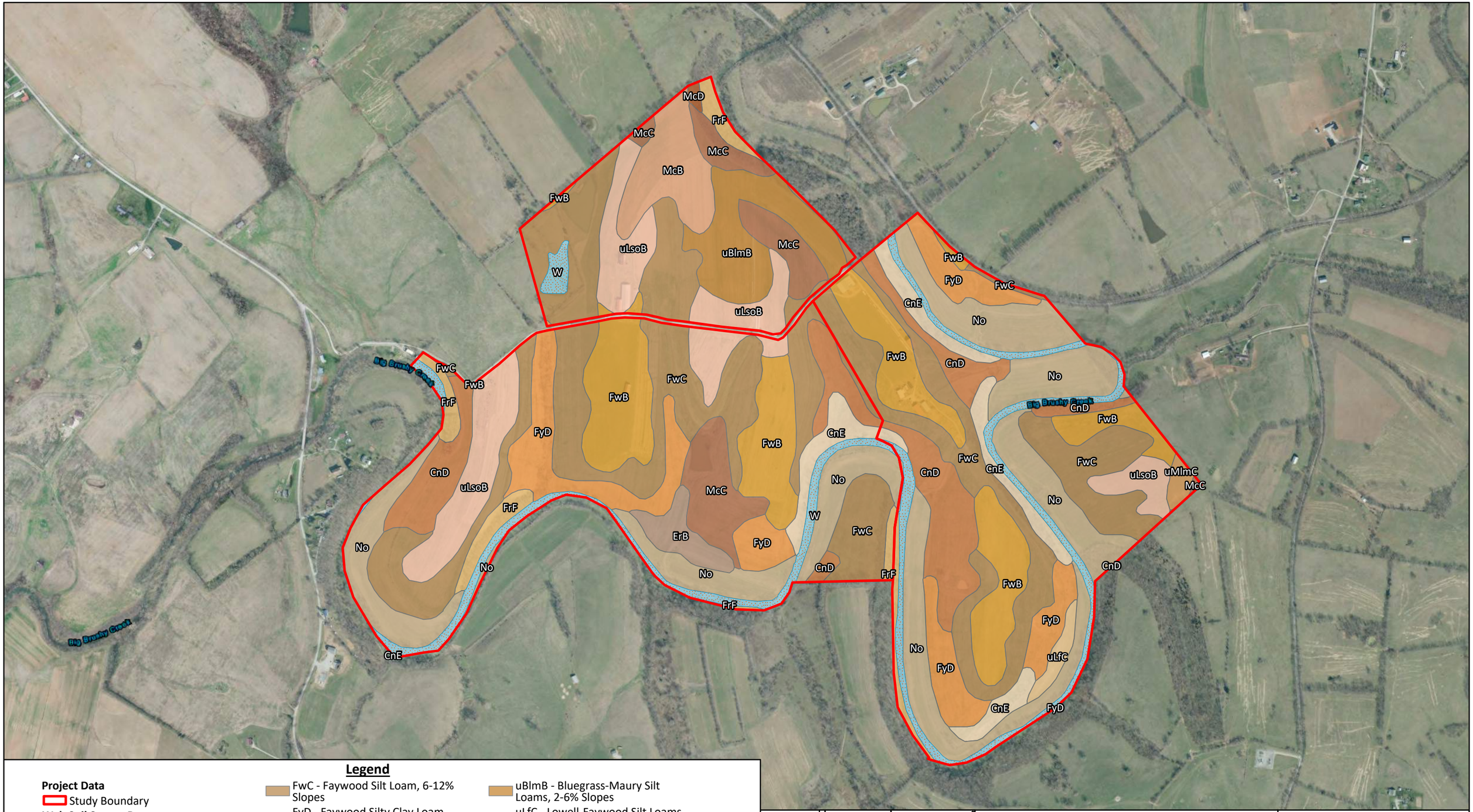
1 inch : 500 feet

Figure 3 - Water/Wetland Features
Sheet 4 of 4

South Fork Site
Nicholas County, Kentucky

Project Number:	Drafted/Checked:	Date:
25488	CS/LD	11/8/2025

BFW®



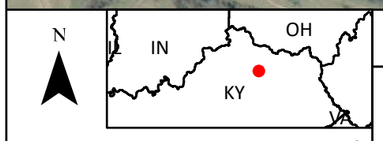
Legend

Project Data

- Study Boundary

Web Soil Survey Data

- CnD - Cynthiana-Faywood Complex, 6-20% Slopes
- CnE - Cynthiana-Faywood Complex, 20-35% Slopes
- ErB - Elk Silt Loam, 2-6% Slopes
- FrF - Fairmount-Rock Outcrop
- FwB - Faywood Silt Loam, 2-6% Slopes
- FwC - Faywood Silt Loam, 6-12% Slopes
- FyD - Faywood Silty Clay Loam, 12-20% Slopes
- McB - McAfee Silt Loam, 2-6% Slopes
- McC - McAfee Silt Loam, 6-12% Slopes
- McD - McAfee Silt Loam, 12-20% Slopes
- No - Nolin Silt Loam, 0-2% Slopes
- uBlmB - Bluegrass-Maury Silt Loams, 2-6% Slopes
- uLfC - Lowell-Faywood Silt Loams, 6-12% Slopes
- uLsoB - Lowell-Sandview Silt Loams, 2-6% Slopes
- uMlmC - Maury-Bluegrass Silt Loams, 6-12% Slopes
- W - Water



0 1,000 2,000 ft

1 inch : 1,000 feet

Figure 4 - Soil Survey Map

South Fork Site
Nicholas County, Kentucky

Project Number:	Drafted/Checked:	Date:
25488	HK/LD	11/07/2025

BFW SM



Legend

Project Data

Study Boundary

FEMA Flood Hazards

Zone A (100-year flood)

N

IN OH KY VA

0 1,000 2,000 ft

1 inch : 1,000 feet

Figure 5 - FEMA Floodplain Map

South Fork Site
Nicholas County, Kentucky

Project Number:	Drafted/Checked:	Date:
25488	HK/LD	11/07/2025

BFW SM

Legend

Project Data

Study Boundary

National Wetland Inventory Data

Freshwater Pond

Riverine

N

IN

OH

KY

WV

0 1,000 2,000 ft

1 inch : 1,000 feet

Figure 6 - National Wetland Inventory Map

South Fork Site
Nicholas County, Kentucky

Project Number:	Drafted/Checked:	Date:
25488	HK/LD	11/07/2025

BFW SM

Appendix B

Wetland Determination Data Forms

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/20/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 1

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.31141651 Long: -84.10450578 Datum:

Soil Map Unit Name: FwC - Faywood Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No X**
Wetland Hydrology Present?	Yes	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No X**

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 1

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya ovata*	8	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	8	=Total Cover	
50% of total cover: 4		20% of total cover: 2	
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Herb Stratum (Plot size: 5 ft rad)			
1. *Agrostis hyemalis*	40	Yes	FAC
2. *Xanthium strumarium*	25	Yes	FAC
3. *Calystegia sepium*	20	Yes	FAC
4. *Leersia oryzoides*	15	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	=Total Cover	
50% of total cover: 50		20% of total cover: 20	
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	8	x 4 =	32
UPL species	0	x 5 =	0
Column Totals:	108 (A)		302 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/6	77	10YR 3/6	20	C	M	Loamy/Clayey	Faint redox concentrations
			7.5YR 4/6	3	C	M		Faint redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/20/25
Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 2
Investigator(s): L. Darnell, C. Slone Section, Township, Range:
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30939455 Long: -84.1058933 Datum:
Soil Map Unit Name: FwC - Faywood Silt Loam, 6-12% Slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Point within Wetland #1

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes X	No	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 2

Wetland Hydrology Present? **Yes** X **No**

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 2

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Leersia oryzoides*	35	Yes	OBL
2. *Carex vulpinoidea*	20	Yes	OBL
3. *Bidens cernua*	15	Yes	OBL
4. *Scirpus atrovirens*	15	Yes	OBL
5. *Epilobium coloratum*	10	No	FACW
6. *Agrostis gigantea*	10	No	FACW
7. *Polygonum hydropiper*	10	No	OBL
8. *Lemna minor*	5	No	OBL
9.			
10.			
11.			
	120 =Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		140 (B)

Prevalence Index = B/A = 1.17

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y 4/3	100					Loamy/Clayey	
5-14	10Y 2.5/1	93	2.5Y 4/2	7	C	M	Loamy/Clayey	Organic material present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- X Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas County Sampling Date: 10/20/25
Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 3
Investigator(s): L. Darnell, C. Slone Section, Township, Range:
Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): <1
Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30798914 Long: -84.10575128 Datum:
Soil Map Unit Name: FwC - Faywood Silt Loam, 6-12% Slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Point within Wetland #3

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 1
Water Table Present?	Yes X	No	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No**

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 3

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	20	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	20 =Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Salix nigra*	15	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 =Total Cover		
50% of total cover: 8	20% of total cover: 3		
Herb Stratum (Plot size: 5 ft rad)			
1. *Agrostis stolonifera*	60	Yes	FACW
2. *Leersia oryzoides*	15	No	OBL
3. *Polygonum hydropiper*	10	No	OBL
4. *Glyceria striata*	5	No	OBL
5. *Scirpus atrovirens*	3	No	OBL
6. *Solidago canadensis*	3	No	FACU
7. *Carex vulpinoidea*	3	No	OBL
8.			
9.			
10.			
11.			
	99 =Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	71	x 1 =	71
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals:	134 (A)		203 (B)

Prevalence Index = B/A = 1.51

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	2.5Y 4/3	70	5Y 4/2	30	D	M	Loamy/Clayey	
4-14	5YR 4/1	78	5YR 4/3	7	C	M	Loamy/Clayey	Distinct redox concentrations
			5YR 2.5/1	15	C	M		Faint redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/20/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 4

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-2

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30811109 Long: -84.10578471 Datum:

Soil Map Unit Name: FwC - Faywood Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Upland point to Wetland #3

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- ____ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 9

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 4

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Rosa multiflora*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 =Total Cover		
50% of total cover: 3	20% of total cover: 1		
Herb Stratum (Plot size: 5 ft rad)			
1. *Vernonia gigantea*	40	Yes	FAC
2. *Schedonorus arundinaceus*	35	Yes	FACU
3. *Poa pratensis*	25	Yes	FACU
4. *Solidago canadensis*	15	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115 =Total Cover		
50% of total cover: 58	20% of total cover: 23		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	120 (A)		440 (B)

Prevalence Index = B/A = 3.67

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/3	90	10YR 4/4	10	C	M	Loamy/Clayey	Faint redox concentrations
3-8	10YR 4/3	90	10YR 4/2	5	D	M	Loamy/Clayey	
			10YR 4/6	5	C	M		Distinct redox concentrations
8-14	2.5Y 4/2	90	10YR 4/6	10	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 5

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30749378 Long: -84.10580191 Datum:

Soil Map Unit Name: FyD - Faywood Silty Clay Loam, 12-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Point within Wetland #4

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No X	Depth (inches): 10

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 5

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Salix nigra*	10	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Herb Stratum (Plot size: 5 ft rad)			
1. *Leersia oryzoides*	70	Yes	OBL
2. *Symphyotrichum lanceolatum*	5	No	FACW
3. *Solidago canadensis*	5	No	FACU
4. *Dipsacus fullonum*	3	No	FACU
5. *Scirpus atrovirens*	3	No	OBL
6. *Rumex crispus*	2	No	FAC
7. *Verbena urticifolia*	1	No	FAC
8.			
9.			
10.			
11.			
	89	=Total Cover	
50% of total cover: 45		20% of total cover:	18
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	83	x 1 =	83
FACW species	15	x 2 =	30
FAC species	3	x 3 =	9
FACU species	8	x 4 =	32
UPL species	0	x 5 =	0
Column Totals:	109 (A)		154 (B)

Prevalence Index = B/A = 1.41

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	87	10YR 5/8	10	C	PL/M	Loamy/Clayey	Prominent redox concentrations
			10YR 2/1	3	C	M		Faint redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/29/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 6

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.3074796 Long: -84.10572296 Datum:

Soil Map Unit Name: FyD - Faywood Silty Clay Loam, 12-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point to Wetland # 4

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 6

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Solidago canadensis*	30	Yes	FACU
2. *Schedonorus arundinaceus*	25	Yes	FACU
3. *Setaria faberi*	15	No	UPL
4. *Conium maculatum*	10	No	FACW
5. *Persicaria maculosa*	8	No	FACW
6. *Sorghum halepense*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
	93 =Total Cover		
50% of total cover: 47	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of 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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	18	x 2 =	36
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	15	x 5 =	75
Column Totals:	93 (A)		351 (B)

Prevalence Index = B/A = 3.77

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	90	10YR 3/6	10	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 7

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30664258 Long: -84.1058999 Datum:

Soil Map Unit Name: FyD - Faywood Silty Clay Loam, 12-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Point within Wetland #5

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 10

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 7

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Glyceria striata*	25	Yes	OBL
2. *Impatiens capensis*	20	Yes	FACW
3. *Carex frankii*	15	Yes	OBL
4. *Elymus virginicus*	15	Yes	FACW
5. *Persicaria maculosa*	10	No	FACW
6. *Pilea pumila*	10	No	FACW
7.			
8.			
9.			
10.			
11.			
	95 =Total Cover		
50% of total cover: 48	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	55	x 2 =	110
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		150 (B)

Prevalence Index = B/A = 1.58

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/3	88	7.5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 2/1	2	C	M		Distinct redox concentrations
8-14	10YR 4/1	60	7.5YR 4/6	15	C	PL/M	Loamy/Clayey	Prominent redox concentrations
			10YR 4/3	25	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 8

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30679853 Long: -84.10599633 Datum:

Soil Map Unit Name: FyD - Faywood Silty Clay Loam, 12-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Upland point to Wetland #5

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 8

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juglans nigra*	60	Yes	FACU
2. *Acer negundo*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	80	=Total Cover	
50% of total cover: 40		20% of total cover:	16
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Acer negundo*	10	Yes	FAC
2. *Rosa multiflora*	3	No	FACU
3. *Celtis occidentalis*	3	No	FACU
4. *Lonicera maackii*	2	No	UPL
5.			
6.			
7.			
8.			
9.			
	18	=Total Cover	
50% of total cover: 9		20% of total cover:	4
Herb Stratum (Plot size: 5 ft rad)			
1. *Viola sororia*	40	Yes	FAC
2. *Verbesina alternifolia*	5	No	FAC
3. *Symphyotrichum ontarionis*	5	No	FAC
4. *Geum canadense*	5	No	FACU
5. *Lamium purpureum*	3	No	UPL
6. *Pilea pumila*	2	No	FACW
7. *Allium vineale*	2	No	FACU
8.			
9.			
10.			
11.			
	62	=Total Cover	
50% of total cover: 31		20% of total cover:	13
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	80	x 3 =	240
FACU species	73	x 4 =	292
UPL species	5	x 5 =	25
Column Totals:	160 (A)		561 (B)

Prevalence Index = B/A = 3.51

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 8

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/3	100					Loamy/Clayey	
8-12	10YR 4/4	85	10YR 4/3	15	D	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 9

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30430168 Long: -84.10579623 Datum:

Soil Map Unit Name: FyD - Faywood Silty Clay Loam, 12-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Point within Wetland # 6

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 11
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 9

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Impatiens capensis*	30	Yes	FACW
2. *Leersia oryzoides*	25	Yes	OBL
3. *Epilobium coloratum*	15	No	FACW
4. *Carex frankii*	15	No	OBL
5. *Carex vulpinoidea*	10	No	OBL
6. *Persicaria maculosa*	8	No	FACW
7. *Asclepias incarnata*	2	No	OBL
8.			
9.			
10.			
11.			
	105 =Total Cover		
50% of total cover: 53	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	52	x 1 =	52
FACW species	53	x 2 =	106
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		158 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 9

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	85	7.5YR 4/6	15	C	PL	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/20/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 10

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.3045201 Long: -84.10590718 Datum:

Soil Map Unit Name: FyD - Faywood Silty Clay Loam, 12-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:
Upland point to Wetland #6

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 10

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Rosa multiflora*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 =Total Cover		
50% of total cover: 3	20% of total cover: 1		
Herb Stratum (Plot size: 5 ft rad)			
1. *Ambrosia trifida*	25	Yes	FAC
2. *Agrostis stolonifera*	20	Yes	FACW
3. *Clematis virginiana*	15	Yes	FAC
4. *Schedonorus arundinaceus*	10	No	FACU
5. *Persicaria maculosa*	10	No	FACW
6. *Impatiens capensis*	10	No	FACW
7. *Calystegia sepium*	5	No	FAC
8. *Daucus carota*	2	No	UPL
9. *Galium pilosum*	2	No	UPL
10.			
11.			
	99 =Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft rad)			
1. *Campsis radicans*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5 =Total Cover		
50% of total cover: 3	20% of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	50	x 3 =	150
FACU species	15	x 4 =	60
UPL species	4	x 5 =	20
Column Totals:	109 (A)		310 (B)

Prevalence Index = B/A = 2.84

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 10

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	85	10YR 4/1	7	D	M	Loamy/Clayey	
			7.5YR 4/6	8	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 11

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30296619 Long: -84.11006809 Datum:

Soil Map Unit Name: CnD - Cynthiana-Faywood Complex, 6-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 11

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Setaria faberi*	15	Yes	UPL
2. *Carex blanda*	5	Yes	FAC
3. *Persicaria posumbu*	3	No	FACU
4. *Viola sororia*	1	No	FAC
5. *Lamium purpureum*	1	No	UPL
6.			
7.			
8.			
9.			
10.			
11.			
	25 =Total Cover		
50% of total cover: 13	20% of total cover: 5		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of 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: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	6	x 3 =	18
FACU species	3	x 4 =	12
UPL species	16	x 5 =	80
Column Totals:	25 (A)		110 (B)

Prevalence Index = B/A = 4.40

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

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 Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 12

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.31192642 Long: -84.10076591 Datum:

Soil Map Unit Name: McC - McAfee Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 12

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	10	Yes	FAC
2. *Juglans nigra*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover: 3	

Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Lonicera maackii*	10	Yes	UPL
2. *Acer negundo*	3	No	FAC
3. *Prunus serotina*	3	No	FACU
4. *Juglans nigra*	3	No	FACU
5.			
6.			
7.			
8.			
9.			
	19	=Total Cover	
50% of total cover: 10		20% of total cover: 4	

Herb Stratum (Plot size: 5 ft rad)			
1. *Medicago sativa*	50	Yes	UPL
2. *Lamium purpureum*	15	No	UPL
3. *Sorghum halepense*	10	No	FACU
4. *Viola sororia*	10	No	FAC
5. *Allium vineale*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	90	=Total Cover	
50% of total cover: 45		20% of total cover: 18	

Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	23	x 3 =	69
FACU species	26	x 4 =	104
UPL species	75	x 5 =	375
Column Totals:	124 (A)		548 (B)

Prevalence Index = B/A = 4.42

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 12

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 13

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.3082071 Long: -84.10207088 Datum:

Soil Map Unit Name: FwC - Faywood Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 13

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Triticum aestivum*	15	Yes	UPL
2. *Rumex crispus*	10	Yes	FAC
3. *Sorghum halepense*	5	No	FACU
4. *Lamium purpureum*	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 =Total Cover		
50% of total cover: 18	20% of total cover: 7		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of 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: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	5	x 4 =	20
UPL species	20	x 5 =	100
Column Totals:	35 (A)		150 (B)

Prevalence Index = B/A = 4.29

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 13

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	98	10YR 2/1	2	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 14

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30578486 Long: -84.10174796 Datum:

Soil Map Unit Name: FwC - Faywood Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point to Wetland #7

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 14

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Schedonorus arundinaceus*	25	Yes	FACU
2. *Bromus inermis*	20	Yes	UPL
3. *Lolium perenne*	15	No	FACU
4. *Rumex crispus*	10	No	FAC
5. *Scirpus atrovirens*	5	No	OBL
6. *Persicaria maculosa*	5	No	FACW
7.			
8.			
9.			
10.			
11.			
	80 =Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of 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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	40	x 4 =	160
UPL species	20	x 5 =	100
Column Totals:	80 (A)		305 (B)

Prevalence Index = B/A = 3.81

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 14

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 15

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30538968 Long: -84.10160283 Datum:

Soil Map Unit Name: FwC - Faywood Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:
Point within Wetland #7

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 15

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	10	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover: 2	
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Herb Stratum (Plot size: 5 ft rad)			
1. *Leersia oryzoides*	40	Yes	OBL
2. *Agrostis hyemalis*	30	Yes	FAC
3. *Typha latifolia*	20	Yes	OBL
4. *Epilobium coloratum*	2	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	92	=Total Cover	
50% of total cover: 46		20% of total cover: 19	
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	2	x 2 =	4
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	102 (A)		164 (B)

Prevalence Index = B/A = 1.61

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 15

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	70	10YR 5/6	25	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 6/8	3	C	PL		Prominent redox concentrations
			10YR 2/1	2	C	M		Faint redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 16

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30540485 Long: -84.10057452 Datum:

Soil Map Unit Name: McC - McAfee Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 16

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Celtis occidentalis*	3	Yes	FACU
2. *Juglans nigra*	3	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	6 =Total Cover		
50% of total cover: 3	20% of total cover: 2		
Herb Stratum (Plot size: 5 ft rad)			
1. *Symphyotrichum lateriflorum*	30	Yes	FACW
2. *Elymus riparius*	30	Yes	FACW
3. *Ambrosia trifida*	20	No	FAC
4. *Schedonorus arundinaceus*	10	No	FACU
5. *Rumex crispus*	5	No	FAC
6. *Solidago canadensis*	5	No	FACU
7. *Verbesina alternifolia*	3	No	FAC
8.			
9.			
10.			
11.			
	103 =Total Cover		
50% of total cover: 52	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	28	x 3 =	84
FACU species	21	x 4 =	84
UPL species	0	x 5 =	0
Column Totals:	109 (A)		288 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 16

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 17

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.3050877135 Long: -84.1007902838 Datum:

Soil Map Unit Name: McC - McAfee Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Upland point to Wetland #8

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 17

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Acer negundo*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5 =Total Cover		
50% of total cover: 3	20% of total cover: 1		
Herb Stratum (Plot size: 5 ft rad)			
1. *Leersia oryzoides*	35	Yes	OBL
2. *Glechoma hederacea*	15	Yes	FACU
3. *Polygonum cespitosum*	15	Yes	UPL
4. *Persicaria hydropiper*	10	No	OBL
5. *Agrostis hyemalis*	10	No	FAC
6. *Rumex crispus*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	15	x 4 =	60
UPL species	15	x 5 =	75
Column Totals:	95 (A)		240 (B)

Prevalence Index = B/A = 2.53

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 17

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	93	10YR 5/6	5	C	M	Loamy/Clayey	Distinct redox concentrations
			10YR 2/1	2	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 18

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30499421 Long: -84.10083483 Datum:

Soil Map Unit Name: McC - McAfee Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Point within Wetland #8

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- ____ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 18

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Leersia oryzoides*	35	Yes	OBL
2. *Carex vulpinoidea*	15	Yes	OBL
3. *Agrostis hyemalis*	15	Yes	FAC
4. *Persicaria hydropiper*	10	No	OBL
5. *Epilobium coloratum*	10	No	FACW
6. *Rumex altissimus*	8	No	FACW
7. *Teucrium canadense*	5	No	FACW
8. *Bidens cernua*	2	No	OBL
9.			
10.			
11.			
	100 =Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	62	x 1 =	62
FACW species	23	x 2 =	46
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		153 (B)

Prevalence Index = B/A = 1.53

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 18

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	93	10YR 5/6	7	C	PL	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 19

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30306327 Long: -84.10169815 Datum:

Soil Map Unit Name: ErB - Elk Silt Loam, 2-6% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Point within Wetland #9

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 19

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Schedonorus arundinaceus*	20	Yes	FACU
2. *Carex vulpinoidea*	15	Yes	OBL
3. *Carex frankii*	10	Yes	OBL
4. *Persicaria hydropiper*	10	Yes	OBL
5. *Leersia oryzoides*	10	Yes	OBL
6. *Rumex crispus*	5	No	FAC
7. *Bidens cernua*	5	No	OBL
8. *Solidago canadensis*	5	No	FACU
9.			
10.			
11.			
	80 =Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	80 (A)		165 (B)

Prevalence Index = B/A = 2.06

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 19

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/3	90	10YR 4/3	10	D	M	Loamy/Clayey	
8-14	10YR 4/2	95	10YR 3/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 20

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30159009 Long: -84.10210666 Datum:

Soil Map Unit Name: No - Nolin Silt Loam, 0-2% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No X**
Wetland Hydrology Present?	Yes	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No X**

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 20

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	5	Yes	FAC
2. *Platanus occidentalis*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover: 2	

Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Herb Stratum (Plot size: 5 ft rad)			
1. *Erigeron philadelphicus*	20	Yes	FACU
2. *Rumex crispus*	15	Yes	FAC
3. *Viola sororia*	10	Yes	FAC
4. *Triticum aestivum*	10	Yes	UPL
5. *Medicago sativa*	10	Yes	UPL
6. *Carex blanda*	5	No	FAC
7. *Rorippa sinuata*	5	No	FACW
8. *Galinsoga quadriradiata*	2	No	FACU
9. *Allium vineale*	2	No	FACU
10.			
11.			
	79	=Total Cover	
50% of total cover: 40		20% of total cover: 16	

Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	35	x 3 =	105
FACU species	24	x 4 =	96
UPL species	20	x 5 =	100
Column Totals:	89 (A)		321 (B)

Prevalence Index = B/A = 3.61

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 20

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	90	10YR 4/3	10	D	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 21

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 2%

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30943463 Long: -84.09653889 Datum:

Soil Map Unit Name: FwC - Faywood Silt Loam, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 21

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	20	Yes	FACU
2. *Quercus macrocarpa*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover: 7	
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Lonicera maackii*	10	Yes	UPL
2. *Ulmus americana*	3	No	FACW
3. *Rosa multiflora*	3	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	16	=Total Cover	
50% of total cover: 8		20% of total cover: 4	
Herb Stratum (Plot size: 5 ft rad)			
1. *Poa pratensis*	15	Yes	FACU
2. *Schedonorus arundinaceus*	15	Yes	FACU
3. *Muhlenbergia schreberi*	10	Yes	FAC
4. *Digitaria sanguinalis*	10	Yes	FACU
5. *Medicago sativa*	10	Yes	UPL
6. *Carex blanda*	8	No	FAC
7. *Allium vineale*	8	No	FACU
8. *Plantago major*	8	No	FACU
9. *Cichorium intybus*	3	No	FACU
10.			
11.			
	87	=Total Cover	
50% of total cover: 44		20% of total cover: 18	
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	33	x 3 =	99
FACU species	82	x 4 =	328
UPL species	20	x 5 =	100
Column Totals:	138 (A)		533 (B)

Prevalence Index = B/A = 3.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 21

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/30/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 22

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.307640 Long: -84.097419 Datum:

Soil Map Unit Name: CnD - Cynthiana-Faywood Complex, 6-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Swale

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 22

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Schedonorus arundinaceus*	50	Yes	FACU
2. *Agrostis stolonifera*	30	Yes	FACW
3. *Schoenoplectus tabernaemontani*	5	No	OBL
4. *Xanthium strumarium*	5	No	FAC
5. *Symphyotrichum lateriflorum*	5	No	FACW
6. *Persicaria maculosa*	5	No	FACW
7.			
8.			
9.			
10.			
11.			
	100 =Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of 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: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	40	x 2 =	80
FAC species	5	x 3 =	15
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	100 (A)		300 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 22

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 4/4	100					Loamy/Clayey	
9-12	10YR 4/4	75	10YR 4/2	5	D	M	Loamy/Clayey	
			10YR 5/6	20	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/22/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 23

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.3062848 Long: -84.09693637 Datum:

Soil Map Unit Name: CnD - Cynthiana-Faywood Complex, 6-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No X**
Wetland Hydrology Present?	Yes	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No X**

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 23

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Symphyotrichum lanceolatum*	35	Yes	FACW
2. *Ambrosia trifida*	20	Yes	FAC
3. *Schedonorus arundinaceus*	20	Yes	FACU
4. *Elymus virginicus*	15	No	FACW
5. *Physalis virginiana*	10	No	UPL
6. *Conium maculatum*	5	No	FACW
7. *Sicyos angulatus*	2	No	FACU
8.			
9.			
10.			
11.			
	107 =Total Cover		
50% of total cover: 54	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	20	x 3 =	60
FACU species	22	x 4 =	88
UPL species	10	x 5 =	50
Column Totals:	107 (A)		308 (B)

Prevalence Index = B/A = 2.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 23

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	70	10YR 4/3	30	D	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 24

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30440526 Long: -84.09527232 Datum:

Soil Map Unit Name: No - Nolin Silt Loam, 0-2% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 24

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Morus alba*	5	Yes	UPL
2. *Celtis occidentalis*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Herb Stratum (Plot size: 5 ft rad)			
1. *Ambrosia trifida*	25	Yes	FAC
2. *Sorghum halepense*	25	Yes	FACU
3. *Vernonia gigantea*	10	No	FAC
4. *Symphyotrichum lateriflorum*	10	No	FACW
5. *Persicaria maculosa*	8	No	FACW
6. *Amaranthus spinosus*	5	No	FACU
7. *Sicyos angulatus*	5	No	FACU
8. *Alliaria petiolata*	5	No	FACU
9. *Digitaria sanguinalis*	3	No	FACU
10. *Sida spinosa*	2	No	UPL
11.			
	98	=Total Cover	
50% of total cover: 49		20% of total cover:	20
Woody Vine Stratum (Plot size: 30 ft rad)			
1. *Dioscorea oppositifolia*	10	Yes	UPL
2.			
3.			
4.			
5.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	18	x 2 =	36
FAC species	40	x 3 =	120
FACU species	48	x 4 =	192
UPL species	17	x 5 =	85
Column Totals:	123 (A)		433 (B)

Prevalence Index = B/A = 3.52

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 24

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 3/3	100					Loamy/Clayey	
9-13	10YR 3/4	75	10YR 4/4	25	D	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 25

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 3-4

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30366134 Long: -84.09447984 Datum:

Soil Map Unit Name: No - Nolin Silt Loam, 0-2% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** **Yes** **No X**
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No X**

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 25

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juglans nigra*	20	Yes	FACU
2. *Maclura pomifera*	15	Yes	UPL
3. *Acer negundo*	10	No	FAC
4. *Ulmus americana*	10	No	FACW
5.			
6.			
7.			
	55	=Total Cover	
50% of total cover: 28		20% of total cover:	11

Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Juglans nigra*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1

Herb Stratum (Plot size: 5 ft rad)			
1. *Elymus virginicus*	35	Yes	FACW
2. *Symphyotrichum lateriflorum*	15	Yes	FACW
3. *Vernonia gigantea*	15	Yes	FAC
4. *Sorghum halepense*	10	No	FACU
5. *Verbesina alternifolia*	5	No	FAC
6. *Conium maculatum*	5	No	FACW
7. *Calystegia sepium*	5	No	FAC
8. *Juglans nigra*	5	No	FACU
9. *Toxicodendron radicans*	5	No	FAC
10. *Ruellia strepens*	2	No	FAC
11.			
	102	=Total Cover	
50% of total cover: 51		20% of total cover:	21

Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	42	x 3 =	126
FACU species	40	x 4 =	160
UPL species	15	x 5 =	75
Column Totals:	162 (A)		491 (B)

Prevalence Index = B/A = 3.03

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 25

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					Loamy/Clayey	
6-12	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 26

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.3033481086 Long: -84.0951725946 Datum:

Soil Map Unit Name: No - Nolin Silt Loam, 0-2% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X			

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 26

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juglans nigra*	40	Yes	FACU
2. *Gleditsia triacanthos*	25	Yes	FAC
3. *Celtis occidentalis*	20	No	FACU
4. *Carya laciniosa*	15	No	FAC
5. *Morus rubra*	5	No	FACU
6.			
7.			
	105	=Total Cover	
50% of total cover: 53		20% of total cover:	21

Sapling/Shrub Stratum (Plot size: 15 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Lonicera maackii*	15	Yes	UPL
2. *Celtis occidentalis*	5	Yes	FACU
3. *Asimina triloba*	5	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5

Herb Stratum (Plot size: 5 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Elymus virginicus*	20	Yes	FACW
2. *Symphyotrichum lateriflorum*	20	Yes	FACW
3. *Viola sororia*	10	No	FAC
4. *Verbesina alternifolia*	10	No	FAC
5. *Ambrosia trifida*	10	No	FAC
6. *Carex blanda*	5	No	FAC
7. *Cryptotaenia canadensis*	2	No	FAC
8. *Allium vineale*	2	No	FACU
9.			
10.			
11.			
	79	=Total Cover	
50% of total cover: 40		20% of total cover:	16

Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	82	x 3 =	246
FACU species	72	x 4 =	288
UPL species	15	x 5 =	75
Column Totals:	209 (A)		689 (B)
Prevalence Index = B/A =			3.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 26

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	93	10YR 3/1	7	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 27

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30153215 Long: -84.09338017 Datum:

Soil Map Unit Name: CnD - Cynthiana-Faywood Complex, 6-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No X**
Wetland Hydrology Present?	Yes	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No X**

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 27

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20 =Total Cover		
50% of total cover: 10	20% of total cover: 4		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Acer negundo*	15	Yes	FAC
2. *Gleditsia triacanthos*	15	Yes	FAC
3. *Celtis occidentalis*	15	Yes	FACU
4. *Morus alba*	10	No	UPL
5.			
6.			
7.			
8.			
9.			
	55 =Total Cover		
50% of total cover: 28	20% of total cover: 11		
Herb Stratum (Plot size: 5 ft rad)			
1. *Elymus virginicus*	50	Yes	FACW
2. *Conium maculatum*	20	Yes	FACW
3. *Alliaria petiolata*	5	No	FACU
4. *Leersia virginica*	5	No	FACW
5. *Phytolacca americana*	5	No	FACU
6. *Viola sororia*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
	90 =Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	55	x 3 =	165
FACU species	25	x 4 =	100
UPL species	10	x 5 =	50
Column Totals:	165 (A)		465 (B)

Prevalence Index = B/A = 2.82

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 27

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 5/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 28

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30039587 Long: -84.09077079 Datum:

Soil Map Unit Name: FyD - Faywood Silty Clay Loam, 12-20% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 28

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	15	Yes	OBL
2. *Celtis occidentalis*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover: 5	

Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Herb Stratum (Plot size: 5 ft rad)			
1. *Ambrosia trifida*	35	Yes	FAC
2. *Poa pratensis*	35	Yes	FACU
3. *Symphyotrichum lateriflorum*	15	No	FACW
4. *Rumex altissimus*	5	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90	=Total Cover	
50% of total cover: 45		20% of total cover: 18	

Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	20	x 2 =	40
FAC species	35	x 3 =	105
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	115 (A)		340 (B)

Prevalence Index = B/A = 2.96

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 28

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	95	10YR 5/3	5	D	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 29

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.3001638 Long: -84.09000974 Datum:

Soil Map Unit Name: uLfC - Lowell-Faywood Silt Loams, 6-12% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Data point lies within agricultural field but was not classified as significantly disturbed because volunteer vegetation has become established since the most recent agricultural activities.

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 29

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Prunus serotina*	5	Yes	FACU
2. *Gleditsia triacanthos*	3	Yes	FAC
3. *Morus alba*	3	Yes	UPL
4.			
5.			
6.			
7.			
8.			
9.			
	11 =Total Cover		
50% of total cover: 6	20% of total cover: 3		
Herb Stratum (Plot size: 5 ft rad)			
1. *Zea mays*	45	Yes	UPL
2. *Setaria viridis*	8	No	UPL
3. *Sorghum halepense*	5	No	FACU
4. *Coleataenia rigidula*	5	No	FACW
5. *Carex frankii*	5	No	OBL
6. *Rumex crispus*	5	No	FAC
7. *Digitaria sanguinalis*	5	No	FACU
8.			
9.			
10.			
11.			
	78 =Total Cover		
50% of total cover: 39	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of 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: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	5	x 2 =	10
FAC species	8	x 3 =	24
FACU species	15	x 4 =	60
UPL species	56	x 5 =	280
Column Totals:	89 (A)		379 (B)

Prevalence Index = B/A = 4.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 29

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21//25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 30

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30776508 Long: -84.09266019 Datum:

Soil Map Unit Name: No - Nolin Silt Loam, 0-2% Slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** **No** X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes X	No	

Remarks:

The Antecedent Precipitation Tool rates this date as Wet Season, Normal Conditions (12).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** X **No**

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 30

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft rad)			
1. *Rumex crispus*	20	Yes	FAC
2. *Ipomoea lacunosa*	15	Yes	FACW
3. *Leersia oryzoides*	10	No	OBL
4. *Rorippa sinuata*	8	No	FACW
5. *Echinochloa muricata*	5	No	FACW
6. *Setaria faberi*	5	No	UPL
7.			
8.			
9.			
10.			
11.			
	63 =Total Cover		
50% of total cover: 32	20% of total cover: 13		
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	28	x 2 =	56
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	63 (A)		151 (B)

Prevalence Index = B/A = 2.40

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 30

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	88	10YR 4/3	10	D	M	Loamy/Clayey	
			10YR 5/8	2	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 31

Investigator(s): L. Darnell Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.306783 Long: -84.091856 Datum:

Soil Map Unit Name: CnD: Cynthiana-Faywood complex, very rocky, 6-20% slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 31

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus macrocarpa*	15	Yes	FAC
2. *Quercus shumardii*	10	Yes	FAC
3. *Maclura pomifera*	10	Yes	UPL
4.			
5.			
6.			
7.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover: 7	
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Ulmus americana*	5	Yes	FACW
2. *Quercus macrocarpa*	3	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	8	=Total Cover	
50% of total cover: 4		20% of total cover: 2	
Herb Stratum (Plot size: 5 ft rad)			
1. *Poa pratensis*	35	Yes	FACU
2. *Schedonorus arundinaceus*	25	Yes	FACU
3. *Symphyotrichum lateriflorum*	15	No	FACW
4. *Cichorium intybus*	15	No	FACU
5. *Dipsacus fullonum*	8	No	FACU
6. *Rumex crispus*	5	No	FAC
7. *Lamium purpureum*	5	No	UPL
8. *Daucus carota*	3	No	UPL
9.			
10.			
11.			
	111	=Total Cover	
50% of total cover: 56		20% of total cover: 23	
Woody Vine Stratum (Plot size: 30 ft rad)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	33	x 3 =	99
FACU species	83	x 4 =	332
UPL species	18	x 5 =	90
Column Totals:	154 (A)		561 (B)

Prevalence Index = B/A = 3.64

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: DP 31

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/4	100					Loamy/Clayey	
8-12	10YR 4/4	90	10YR 3/6	10	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: South Fork Solar, LLC City/County: Nicholas Sampling Date: 10/21/25

Applicant/Owner: Heelstone Development, LLC State: KY Sampling Point: DP 32

Investigator(s): L. Darnell, C. Slone Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): <1

Subregion (LRR or MLRA): LRR N, MLRA 121 Lat: 38.30182954 Long: -84.08898734 Datum:

Soil Map Unit Name: No - Nolin silt loam 0-2% NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP 32

Tree Stratum (Plot size: 30 ft rad)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	40	Yes	FAC
2. *Juglans nigra*	25	Yes	FACU
3. *Celtis occidentalis*	25	Yes	FACU
4. *Carya glabra*	20	No	FACU
5.			
6.			
7.			
	110	=Total Cover	
50% of total cover: 55		20% of total cover:	22
Sapling/Shrub Stratum (Plot size: 15 ft rad)			
1. *Lonicera maackii*	5	Yes	UPL
2. *Juglans nigra*	3	Yes	FACU
3. *Celtis occidentalis*	3	Yes	FACU
4. *Rosa multiflora*	3	Yes	FACU
5.			
6.			
7.			
8.			
9.			
	14	=Total Cover	
50% of total cover: 7		20% of total cover:	3
Herb Stratum (Plot size: 5 ft rad)			
1. *Symphyotrichum lateriflorum*	15	Yes	FACW
2. *Ageratina altissima*	10	Yes	FACU
3. *Lysimachia nummularia*	10	Yes	FACW
4. *Elymus virginicus*	10	Yes	FACW
5. *Viola sororia*	10	Yes	FAC
6. *Amphicarpaea bracteata*	5	No	FAC
7. *Persicaria virginiana*	5	No	FAC
8.			
9.			
10.			
11.			
	65	=Total Cover	
50% of total cover: 33		20% of total cover:	13
Woody Vine Stratum (Plot size: 30 ft rad)			
1. *Vitis riparia*	5	Yes	FACW
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 13 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 46.2% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	60	x 3 =	180
FACU species	89	x 4 =	356
UPL species	5	x 5 =	25
Column Totals:	194 (A)		641 (B)

Prevalence Index = B/A = 3.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: DP 32

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]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** X

Remarks:

Appendix C

Stream Assessment Forms

High Gradient Bioassessment Stream Visit Sheet

Stream Name:	Perennial 1 (Big Brushy Creek)	**Location:**	South Fork
		Basin/Watershed:	Licking River/South Fork Licking River
Lat:	38.30408577 **Long:** -84.09478631	**County:**	Nicholas **USGS 7.5 Topo:** Carlisle
Date:	10/21/2025	**Investigators:**	C. Slone and L. Darnell

Type Sample: ☐ P-CHEM ☐ Macroinvertebrate ☐ Fish ☐ Bact.

WEATHER CONDITIONS:

Current	Past 24-Hours
☐ Heavy Rain	☐ Heavy Rain
☐ Steady Rain	☐ Steady Rain
☐ Intermittent Showers	☐ Intermittent Showers
☑ Clear/Sunny/Overcast	☑ Clear/Sunny/Overcast

Has there been rain in the last 7 days? ☑ Yes ☐ No

Appr. Air Temp: 57 °F ____ °C

Inches of rainfall in the past 24 hrs: 0 in

35 % Cloud Cover

P-Chem: Temp (°F) ____ D.O. (mg/L) ____ % Saturation ____ pH (S.U.) ____ Conductivity (µS) ____ ☐ Grab

Instream Watershed Features (at time of Assessment):

Stream Width EOW	20-30	ft
Stream Width BF	60-70	ft
Stream Bottom Width		ft
Avg. Bankfull Depth	8	ft
Avg. H_2O Depth Riffle	5	in

Local Watershed Features:
Predominant Surrounding Land Use:

☐ Surface Mining	☐ Construction	☐ Forest
☐ Deep Mining	☐ Commercial	☐ Pasture/Grazing
☐ Oil Wells	☐ Industrial	☐ Silviculture
☐ Land Disposal	☑ Row Crops	☐ Urban Runoff/Storm Sewer

Hydraulic Structures:

☐ Dams	☐ Bridge Abutments
☐ Island	☐ Waterfalls
☑ Other	☐ Culverts

Stream Flow:

☐ Dry	☐ Pooled	☐ Low	☑ Normal	
☐ High	☐ Very Rapid or Torrential			

Stream Type:

☑ Perennial	☐ Intermittent
☐ Ephemeral	☐ Seep

Riparian Vegetation:

Dominate Type:

☑ Trees	☐ Shrubs	**Dom. Tree/Shrub Taxa:**	Willow Weed
☐ Grasses	☑ Herbaceous		American Elm
Number of strata:			

Canopy Cover:

☐ Fully Exposed (0-25%)	
☑ Partially Exposed (25-50%)	
☐ Partially Shaded (50-75%)	
☐ Fully Shaded (75-100%)	

Channel Alterations:

☐ Dredging	
☐ Channelization	
(☐ Full	☐ Partial)

Substrate: ☐ Est. ☑ P.C.

	Riffle 15 %	Run 35 %	Pool 50 %
Silt/Clay(<0.06 mm / <0.002 in)	X	X	X
Sand (0.06 - 2 mm / 0.002-0.08 in)	X	X	X
Gravel (2 - 64 mm / 0.08 - 2.5 in)	X	X	X
Cobble (64 - 256 mm / 2.5 - 10.1 in)	X	X	X
Boulders (>256 mm / >10.1 in)	X	X	X
Bedrock			

Habitat Parameter	Condition Category: Optimal	Sub-optimal	Marginal	Poor
1. Epifaunal Substrate / Available Cover	Greater than 70% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, 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 15

☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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 **16**	☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	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 slowdeep).
Score **17**	☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	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; 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 **18**	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0			
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 40-80% 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 **19**	☐ ☑ ☐			
	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 **17**	☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	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 frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Score (LB) **8**	Left Bank ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	10 9 8 7 6 5 4 3 2 1 0			
Score (RB) **7**	Right Bank ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	10 9 8 7 6 5 4 3 2 1 0			

9.	**Vegetative Protection (score each bank)** Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zones 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 (LB)	**9**	Left Bank	☐ ☑	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
			10 9	8 7 6	5 4 3	2 1 0
Score (RB)	**9**	Right Bank	☐ ☑	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐
			10 9	8 7 6	5 4 3	2 1 0
10.	**Riparian Vegetative Zone Width (score each bank riparian zone)** Note: determine left or right side by facing downstream.	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 (LB)	**3**	Left Bank	☐ ☐	☐ ☐ ☐	☐ ☐ ☑	☐ ☐ ☐
			10 9	8 7 6	5 4 3	2 1 0
Score (RB)	**3**	Right Bank	☐ ☐	☐ ☐ ☐	☐ ☐ ☑	☐ ☐ ☐
			10 9	8 7 6	5 4 3	2 1 0
TOTAL SCORE	**155**	**Good**				

High Gradient Bioassessment Stream Visit Sheet

Stream Name:	Perennial 2 (Brushy Creek)	**Location:**	South Fork
		Basin/Watershed:	Licking River/South Fork Licking River
Lat:	38.30702592 **Long:** -84.09249588	**County:**	Nicholas **USGS 7.5 Topo:** Carlisle
Date:	10/21/2025	**Investigators:**	C. Slone and L. Darnell

Type Sample: ☐ P-CHEM ☐ Macroinvertebrate ☐ Fish ☐ Bact.

WEATHER CONDITIONS:

Current	Past 24-Hours
☐ Heavy Rain	☐ Heavy Rain
☐ Steady Rain	☐ Steady Rain
☐ Intermittent Showers	☐ Intermittent Showers
☑ Clear/Sunny/Overcast	☑ Clear/Sunny/Overcast

Has there been rain in the last 7 days? ☑ Yes ☐ No

Appr. Air Temp: 60 °F ____ °C

Inches of rainfall in the past 24 hrs: 0 in

35 % Cloud Cover

P-Chem: Temp (°F) ____ D.O. (mg/L) ____ % Saturation ____ pH (S.U.) ____ Conductivity (µS) ____ ☐ Grab

Instream Watershed Features (at time of Assessment):

Stream Width EOW	20-30	ft
Stream Width BF	25-35	ft
Stream Bottom Width		ft
Avg. Bankfull Depth	6	ft
Avg. H_2O Depth Riffle	3	in

Local Watershed Features:
Predominant Surrounding Land Use:

☐ Surface Mining	☐ Construction	☐ Forest
☐ Deep Mining	☐ Commercial	☐ Pasture/Grazing
☐ Oil Wells	☐ Industrial	☐ Silviculture
☐ Land Disposal	☑ Row Crops	☐ Urban Runoff/Storm Sewer

Hydraulic Structures:

☐ Dams	☐ Bridge Abutments
☐ Island	☐ Waterfalls
☑ Other	☐ Culverts

Stream Flow:

☐ Dry	☐ Pooled	☐ Low	☑ Normal	
☐ High	☐ Very Rapid or Torrential			

Stream Type:

☑ Perennial	☐ Intermittent
☐ Ephemeral	☐ Seep

Riparian Vegetation:

Dominate Type:

☑ Trees	☐ Shrubs
☐ Grasses	☐ Herbaceous

Number of strata: ____

Dom. Tree/Shrub Taxa: American Sycamore

Canopy Cover:

☐ Fully Exposed (0-25%)
☐ Partially Exposed (25-50%)
☐ Partially Shaded (50-75%)
☑ Fully Shaded (75-100%)

Channel Alterations:

☐ Dredging
☐ Channelization
(☐ Full ☐ Partial)

Substrate: ☐ Est. ☑ P.C.

	Riffle 10 %	Run 55 %	Pool 35 %
Silt/Clay(<0.06 mm / <0.002 in)	X	X	X
Sand (0.06 - 2 mm / 0.002-0.08 in)	X	X	X
Gravel (2 - 64 mm / 0.08 - 2.5 in)	X	X	X
Cobble (64 - 256 mm / 2.5 - 10.1 in)	X		
Boulders (>256 mm / >10.1 in)	X	X	X
Bedrock			

Habitat Parameter	Optimal	Sub-optimal	Marginal	Poor
1. Epifaunal Substrate / Available Cover	Greater than 70% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, 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 14

☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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 slowdeep).
Score 16	☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	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; 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 14	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0			
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 40-80% 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 18	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	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 7	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	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 frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Score (LB) 7	Left Bank ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	10 9 8 7 6 5 4 3 2 1 0			
Score (RB) 8	Right Bank ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	10 9 8 7 6 5 4 3 2 1 0			

9. Vegetative Protection (score each bank) Note: determine left or right side by facing downstream.		More than 90% of the streambank surfaces and immediate riparian zones 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 (LB)	**6**	Left Bank	☐ 10 ☐ 9	☐ 8 ☐ 7 ☑ 6	☐ 5 ☐ 4 ☐ 3	☐ 2 ☐ 1 ☐ 0
Score (RB)	**8**	Right Bank	☐ 10 ☐ 9	☑ 8 ☐ 7 ☐ 6	☐ 5 ☐ 4 ☐ 3	☐ 2 ☐ 1 ☐ 0
10. Riparian Vegetative Zone Width (score each bank riparian zone) Note: determine left or right side by facing downstream.		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 (LB)	**5**	Left Bank	☐ 10 ☐ 9	☐ 8 ☐ 7 ☐ 6	☑ 5 ☐ 4 ☐ 3	☐ 2 ☐ 1 ☐ 0
Score (RB)	**4**	Right Bank	☐ 10 ☐ 9	☐ 8 ☐ 7 ☐ 6	☐ 5 ☑ 4 ☐ 3	☐ 2 ☐ 1 ☐ 0
TOTAL SCORE	**128**	**Fair**				

High Gradient Bioassessment Stream Visit Sheet

Stream Name:	Intermittent Stream 1	**Location:**	South Fork
		Basin/Watershed:	Licking River/South Fork Licking River
Lat:	38.30799435 **Long:** -84.10573479	**County:**	Nicholas **USGS 7.5 Topo:** Carlisle
Date:	10/20/2025	**Investigators:**	C. Slone and L. Darnell

Type Sample: ☐ P-CHEM ☐ Macroinvertebrate ☐ Fish ☐ Bact.

WEATHER CONDITIONS:

Current	Past 24-Hours
☐ Heavy Rain	☑ Heavy Rain
☐ Steady Rain	☐ Steady Rain
☐ Intermittent Showers	☐ Intermittent Showers
☑ Clear/Sunny/Overcast	☑ Clear/Sunny/Overcast

Has there been rain in the last 7 days? ☑ Yes ☐ No

Appr. Air Temp: 55 °F ____ °C

Inches of rainfall in the past 24 hrs: 1 in

40 % Cloud Cover

P-Chem: Temp (°F) ____ D.O. (mg/L) ____ % Saturation ____ pH (S.U.) ____ Conductivity (µS) ____ ☐ Grab

Instream Watershed Features (at time of Assessment):

Stream Width EOW		ft
Stream Width BF	1.5-3	ft
Stream Bottom Width		ft
Avg. Bankfull Depth	0.5	ft
Avg. H_2O Depth Riffle		in

Local Watershed Features:
Predominant Surrounding Land Use:

☐ Surface Mining	☐ Construction	☐ Forest
☐ Deep Mining	☐ Commercial	☐ Pasture/Grazing
☐ Oil Wells	☐ Industrial	☐ Silviculture
☐ Land Disposal	☑ Row Crops	☐ Urban Runoff/Storm Sewer

Hydraulic Structures:

☐ Dams	☐ Bridge Abutments
☐ Island	☐ Waterfalls
☐ Other	☑ Culverts

Stream Flow:

☐ Dry	☐ Pooled	☐ Low	☑ Normal	
☐ High	☐ Very Rapid or Torrential			

Stream Type:

☐ Perennial	☑ Intermittent
☐ Ephemeral	☐ Seep

Riparian Vegetation: **Dom. Tree/Shrub Taxa:**

Dominate Type:

☐ Trees	☐ Shrubs
☑ Grasses	☑ Herbaceous

Number of strata: ____

Canopy Cover:

- ☐ Fully Exposed (0-25%)
- ☑ Partially Exposed (25-50%)
- ☐ Partially Shaded (50-75%)
- ☐ Fully Shaded (75-100%)

Channel Alterations:

- ☐ Dredging
- ☐ Channelization (☐ Full ☐ Partial)

Substrate: ☐ Est. ☑ P.C.

	Riffle 30	Run 45 %	Pool 25 %
Silt/Clay(<0.06 mm / <0.002 in)	X	X	X
Sand (0.06 - 2 mm / 0.002-0.08 in)			
Gravel (2 - 64 mm / 0.08 - 2.5 in)			
Cobble (64 - 256 mm / 2.5 - 10.1 in)			
Boulders (>256 mm / >10.1 in)			
Bedrock			

Habitat Parameter	Optimal	Sub-optimal	Marginal	Poor
1. Epifaunal Substrate / Available Cover	Greater than 70% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, 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	**3**				
		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 slowdeep).
Score	**5**				
		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; 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
Score	**5**				
		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	**18**				
		20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
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 40-80% 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	**20**				
		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	**7**				
		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 frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Score (LB)	**9**	Left Bank			
		10 9	8 7 6	5 4 3	2 1 0
Score (RB)	**9**	Right Bank			
		10 9	8 7 6	5 4 3	2 1 0

9.	**Vegetative Protection (score each bank)** Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zones 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 (LB)	**10**	Left Bank	☑ 10 ☐ 9	☐ 8 ☐ 7 ☐ 6	☐ 5 ☐ 4 ☐ 3	☐ 2 ☐ 1 ☐ 0
Score (RB)	**10**	Right Bank	☑ 10 ☐ 9	☐ 8 ☐ 7 ☐ 6	☐ 5 ☐ 4 ☐ 3	☐ 2 ☐ 1 ☐ 0
10.	**Riparian Vegetative Zone Width (score each bank riparian zone)** Note: determine left or right side by facing downstream.	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 (LB)	**4**	Left Bank	☐ 10 ☐ 9	☐ 8 ☐ 7 ☐ 6	☐ 5 ☑ 4 ☐ 3	☐ 2 ☐ 1 ☐ 0
Score (RB)	**4**	Right Bank	☐ 10 ☐ 9	☐ 8 ☐ 7 ☐ 6	☐ 5 ☑ 4 ☐ 3	☐ 2 ☐ 1 ☐ 0
TOTAL SCORE	**108**	**Poor**				

High Gradient Bioassessment Stream Visit Sheet

Stream Name:	Intermittent Stream 2	**Location:**	South Fork Site
		Basin/Watershed:	Licking River/South Fork Licking River
Lat:	38.303787	**Long:**	-84.101404
County:	Nicholas	**USGS 7.5 Topo:**	Carlisle
Date:	10/21/2025	**Investigators:**	L. Darnell

Type Sample: ☐ P-CHEM ☐ Macroinvertebrate ☐ Fish ☐ Bact.

WEATHER CONDITIONS:

Current	Past 24-Hours
☐ Heavy Rain	☐ Heavy Rain
☐ Steady Rain	☑ Steady Rain
☐ Intermittent Showers	☐ Intermittent Showers
☑ Clear/Sunny/Overcast	☐ Clear/Sunny/Overcast

Has there been rain in the last 7 days? ☑ Yes ☐ No

Appr. Air Temp: 60 °F ____ °C

Inches of rainfall in the past 24 hrs: ____ in

30 % Cloud Cover

P-Chem: Temp (°F) ____ D.O. (mg/L) ____ % Saturation ____ pH (S.U.) ____ Conductivity (µS) ____ ☐ Grab

Instream Watershed Features (at time of Assessment):

Stream Width EOW	1	ft
Stream Width BF	1-4	ft
Stream Bottom Width		ft
Avg. Bankfull Depth	0.5-1	ft
Avg. H_2O Depth Riffle		in

Local Watershed Features:
Predominant Surrounding Land Use:

☐ Surface Mining	☐ Construction	☐ Forest
☐ Deep Mining	☐ Commercial	☐ Pasture/Grazing
☐ Oil Wells	☐ Industrial	☐ Silviculture
☐ Land Disposal	☑ Row Crops	☐ Urban Runoff/Storm Sewer

Hydraulic Structures:
☐ Dams ☐ Bridge Abutments
☐ Island ☐ Waterfalls
☐ Other ☐ Culverts

Stream Flow:
☐ Dry ☑ Pooled ☑ Low ☐ Normal
☐ High ☐ Very Rapid or Torrential

Stream Type:
☐ Perennial ☑ Intermittent
☐ Ephemeral ☐ Seep

Riparian Vegetation: **Dom. Tree/Shrub Taxa:**
Dominate Type:
☐ Trees ☐ Shrubs
☑ Grasses ☑ Herbaceous
Number of strata:

Canopy Cover:
☑ Fully Exposed (0-25%)
☐ Partially Exposed (25-50%)
☐ Partially Shaded (50-75%)
☐ Fully Shaded (75-100%)

Channel Alterations:
☐ Dredging
☐ Channelization
(☐ Full ☐ Partial)

Substrate: ☐ Est. ☐ P.C.

	Riffle ____ %	Run 100 %	Pool ____ %
Silt/Clay(<0.06 mm / <0.002 in)		X	
Sand (0.06 - 2 mm / 0.002-0.08 in)			
Gravel (2 - 64 mm / 0.08 - 2.5 in)			
Cobble (64 - 256 mm / 2.5 - 10.1 in)			
Boulders (>256 mm / >10.1 in)			
Bedrock			

Habitat Parameter	Optimal	Sub-optimal	Marginal	Poor
1. Epifaunal Substrate / Available Cover	Greater than 70% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, 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 3

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 **5**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐
	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 slowdeep).
Score **5**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐
	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; 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
Score **5**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐
	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 **7**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
	20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0			
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 40-80% 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 **13**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
	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 **3**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐
	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 frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Score (LB) **6**	Left Bank ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐
	10 9 8 7 6 5 4 3 2 1 0			
Score (RB) **6**	Right Bank ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐
	10 9 8 7 6 5 4 3 2 1 0			

9. **Vegetative Protection (score each bank)** Note: determine left or right side by facing downstream.		More than 90% of the streambank surfaces and immediate riparian zones 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 (LB)	**6**	Left Bank	☑ 6		
Score (RB)	**6**	Right Bank	☑ 6		
10. **Riparian Vegetative Zone Width (score each bank riparian zone)** Note: determine left or right side by facing downstream.		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 (LB)	**2**	Left Bank	☑ 2		
Score (RB)	**2**	Right Bank	☑ 2		
TOTAL SCORE	**69**	**Poor**			

High Gradient Bioassessment Stream Visit Sheet

Stream Name:	**Intermittent Stream 3**			**Location:**	**South Fork Site**		
				Basin/Watershed:	**Licking River/South Fork Licking River**		
Lat:	**38.307309**	**Long:**	**-84.097416**	**County:**	**Nicholas**	**USGS 7.5 Topo:**	**Carlisle**
Date:	**10/22/2025**			**Investigators:**	**L. Darnell**		

Type Sample: ☐ **P-CHEM** ☐ **Macroinvertebrate** ☐ **Fish** ☐ **Bact.**

WEATHER CONDITIONS:	**Current**	**Past 24-Hours**
	☐ Heavy Rain	☐ Heavy Rain
	☐ Steady Rain	☐ Steady Rain
	☐ Intermittent Showers	☐ Intermittent Showers
	☑ Clear/Sunny/Overcast	☑ Clear/Sunny/Overcast

Has there been rain in the last 7 days? ☑ **Yes** ☐ **No**

Appr. Air Temp: **60** **°F** ____ **°C**

Inches of rainfall in the past 24 hrs: ____ in

30 **% Cloud Cover**

P-Chem: Temp (°F) ____ D.O. (mg/L) ____ % Saturation ____ pH (S.U.) ____ Conductivity (µS) ____ ☐ Grab

Instream Watershed Features (at time of Assessment):

Stream Width EOW	1	ft
Stream Width BF	1-3	ft
Stream Bottom Width		ft
Avg. Bankfull Depth	1-2	ft
Avg. H_2O Depth Riffle		in

Local Watershed Features:
Predominant Surrounding Land Use:

☐ Surface Mining	☐ Construction	☐ Forest
☐ Deep Mining	☐ Commercial	☑ Pasture/Grazing
☐ Oil Wells	☐ Industrial	☐ Silviculture
☐ Land Disposal	☑ Row Crops	☐ Urban Runoff/Storm Sewer

Hydraulic Structures:

☐ Dams	☐ Bridge Abutments
☐ Island	☐ Waterfalls
☐ Other	☐ Culverts

Stream Flow:

☐ Dry	☐ Pooled	☑ Low	☐ Normal	
☐ High	☐ Very Rapid or Torrential			

Stream Type:

☐ Perennial	☑ Intermittent
☐ Ephemeral	☐ Seep

Riparian Vegetation: **Dom. Tree/Shrub Taxa:**

Dominate Type:

☐ Trees	☐ Shrubs	
☑ Grasses	☑ Herbaceous	

Number of strata: ____

Canopy Cover:

☑ Fully Exposed (0-25%)	
☐ Partially Exposed (25-50%)	
☐ Partially Shaded (50-75%)	
☐ Fully Shaded (75-100%)	

Channel Alterations:

☐ Dredging

☐ Channelization (☐ Full ☐ Partial)

Substrate: ☐ Est. ☐ P.C.

	Riffle 20 %	Run 100 %	Pool 10 %
Silt/Clay(<0.06 mm / <0.002 in)	X	X	X
Sand (0.06 - 2 mm / 0.002-0.08 in)			
Gravel (2 - 64 mm / 0.08 - 2.5 in)			
Cobble (64 - 256 mm / 2.5 - 10.1 in)	X	X	
Boulders (>256 mm / >10.1 in)	X	X	
Bedrock			

Habitat Parameter	**Condition Category**			
	Optimal	**Sub-optimal**	**Marginal**	**Poor**
1. Epifaunal Substrate / Available Cover	Greater than 70% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, 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 **3**

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 **5**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐			
	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 slowdeep).
Score **5**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐			
	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; 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
Score **5**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐			
	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			
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 40-80% 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 **13**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	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 **6**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐			
	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 frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Score (LB) **2**	Left Bank ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐			
	10 9 8 7 6 5 4 3 2 1 0			
Score (RB) **2**	Right Bank ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐			
	10 9 8 7 6 5 4 3 2 1 0			

9. **Vegetative Protection (score each bank)** Note: determine left or right side by facing downstream.		More than 90% of the streambank surfaces and immediate riparian zones 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 (LB)	**2**	Left Bank				
			10 9	8 7 6	5 4 3	☑ 2 ☐ 1 ☐ 0
Score (RB)	**2**	Right Bank				
			10 9	8 7 6	5 4 3	☑ 2 ☐ 1 ☐ 0
10. **Riparian Vegetative Zone Width (score each bank riparian zone)** Note: determine left or right side by facing downstream.		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 (LB)	**4**	Left Bank				
			10 9	8 7 6	5 ☑ 4 3	2 1 0
Score (RB)	**4**	Right Bank				
			10 9	8 7 6	5 ☑ 4 3	2 1 0
TOTAL SCORE	**59**	**Poor**				

High Gradient Bioassessment Stream Visit Sheet

Stream Name:	Intermittent Stream 4	**Location:**	South Fork
		Basin/Watershed:	Licking River/South Fork Licking River
Lat:	38.30214071 **Long:** -84.08933701	**County:**	Nicholas **USGS 7.5 Topo:** Carlisle
Date:	10/21/2025	**Investigators:**	C. Slone and L. Darnell

Type Sample: ☐ P-CHEM ☐ Macroinvertebrate ☐ Fish ☐ Bact.

WEATHER CONDITIONS:

Current	Past 24-Hours
☐ Heavy Rain	☐ Heavy Rain
☐ Steady Rain	☐ Steady Rain
☐ Intermittent Showers	☐ Intermittent Showers
☑ Clear/Sunny/Overcast	☑ Clear/Sunny/Overcast

Has there been rain in the last 7 days? ☑ Yes ☐ No

Appr. Air Temp: 60 °F ____ °C

Inches of rainfall in the past 24 hrs: 0 in

30 % Cloud Cover

P-Chem: Temp (°F) ____ D.O. (mg/L) ____ % Saturation ____ pH (S.U.) ____ Conductivity (µS) ____ ☐ Grab

Instream Watershed Features (at time of Assessment):

Stream Width EOW		ft
Stream Width BF	1.5	ft
Stream Bottom Width		ft
Avg. Bankfull Depth	0.5	ft
Avg. H_2O Depth Riffle		in

Local Watershed Features:
Predominant Surrounding Land Use:

☐ Surface Mining	☐ Construction	☐ Forest
☐ Deep Mining	☐ Commercial	☐ Pasture/Grazing
☐ Oil Wells	☐ Industrial	☐ Silviculture
☐ Land Disposal	☑ Row Crops	☐ Urban Runoff/Storm Sewer

Hydraulic Structures:
☐ Dams ☐ Bridge Abutments ☐ Island ☐ Waterfalls ☐ Other ☐ Culverts

Stream Flow:
☐ Dry ☐ Pooled ☑ Low ☐ Normal ☐ High ☐ Very Rapid or Torrential

Stream Type:
☐ Perennial ☑ Intermittent ☐ Ephemeral ☐ Seep

Riparian Vegetation:
Dominate Type: ☑ Trees ☐ Shrubs ☐ Grasses ☐ Herbaceous
Number of strata:

Dom. Tree/Shrub Taxa: Box Elder, Black Walnut

Canopy Cover:
☐ Fully Exposed (0-25%)
☐ Partially Exposed (25-50%)
☐ Partially Shaded (50-75%)
☑ Fully Shaded (75-100%)

Channel Alterations:
☐ Dredging
☐ Channelization (☐ Full ☐ Partial)

Substrate: ☐ Est. ☑ P.C.

	Riffle 30	Run 60 %	Pool 10 %
Silt/Clay(<0.06 mm / <0.002 in)	X	X	X
Sand (0.06 - 2 mm / 0.002-0.08 in)			
Gravel (2 - 64 mm / 0.08 - 2.5 in)			
Cobble (64 - 256 mm / 2.5 - 10.1 in)			
Boulders (>256 mm / >10.1 in)	X	X	
Bedrock			

Habitat Parameter	Optimal	Sub-optimal	Marginal	Poor
1. Epifaunal Substrate / Available Cover	Greater than 70% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat & at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in form of new fall, 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 3

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 **8**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	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 slowdeep).
Score **5**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐			
	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; 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
Score **3**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐			
	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 **7**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0			
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 40-80% 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 **18**	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐			
	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 **3**	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐			
	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 frequently along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Score (LB) **4**	Left Bank ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐			
	10 9 8 7 6 5 4 3 2 1 0			
Score (RB) **2**	Right Bank ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐			
	10 9 8 7 6 5 4 3 2 1 0			

9.	**Vegetative Protection (score each bank)** Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zones 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 (LB)	**2**	Left Bank	☐ 10 ☐ 9	☐ 8 ☐ 7 ☐ 6	☐ 5 ☐ 4 ☐ 3	☑ 2 ☐ 1 ☐ 0
Score (RB)	**2**	Right Bank	☐ 10 ☐ 9	☐ 8 ☐ 7 ☐ 6	☐ 5 ☐ 4 ☐ 3	☑ 2 ☐ 1 ☐ 0
10.	**Riparian Vegetative Zone Width (score each bank riparian zone)** Note: determine left or right side by facing downstream.	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 (LB)	**2**	Left Bank	☐ 10 ☐ 9	☐ 8 ☐ 7 ☐ 6	☐ 5 ☐ 4 ☐ 3	☑ 2 ☐ 1 ☐ 0
Score (RB)	**7**	Right Bank	☐ 10 ☐ 9	☐ 8 ☑ 7 ☐ 6	☐ 5 ☐ 4 ☐ 3	☐ 2 ☐ 1 ☐ 0
TOTAL SCORE	**66**	**Poor**				

Appendix D

Site Photographs



Photograph 1: General view of agricultural fields in the southwestern part of the study area, facing northeast toward barns near the central farm road. October 21, 2025.



Photograph 2: General view of agricultural fields in the northern part of the study area, facing southwest along the northern edge of the site. October 21, 2025.



Photograph 3: View of a low-lying upland agricultural field located in the south-central part of the study area, facing north toward a wooded bend of Big Brushy Creek. October 21, 2025.



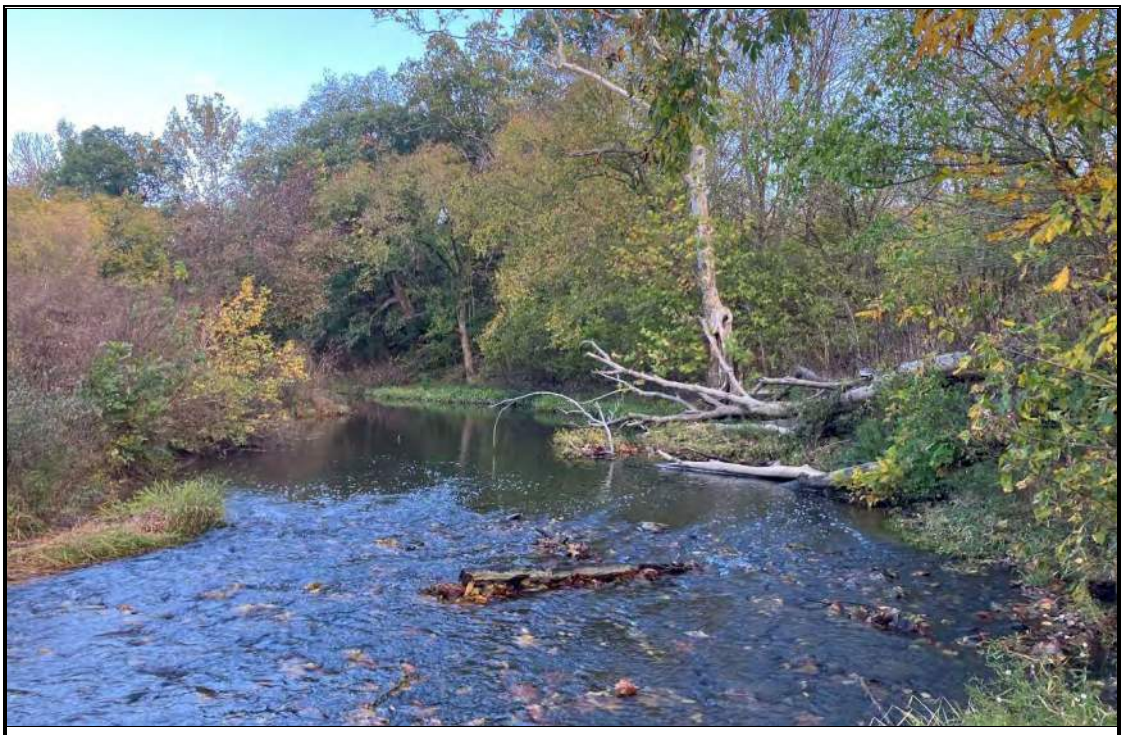
Photograph 4: View of a low-lying upland agricultural field located in the eastern part of the study area, facing east toward a wooded bend of Big Brushy Creek. October 21, 2025.



Photograph 5: View of upland forest habitat in the southeastern part of the study area, typical of wooded habitat on site. October 21, 2025.



Photograph 6: View of old field habitat in a small valley in the east-central part of the study area. October 22, 2025.



Photograph 7: View of Big Brushy Creek (Perennial Stream 1), facing downstream (northwest) at RBP 1 in the southern part of the study area. October 21, 2025.



Photograph 8: Another view of Big Brushy Creek (Perennial Stream 1) facing downstream (northwest) along the southern edge of the study area. October 22, 2025.



Photograph 9 View of Brushy Creek (Perennial Stream 2) facing upstream (northwest) at RBP 2 in the northeastern part of the study area. October 21, 2025.



Photograph 10: View of Intermittent Stream 1 facing downstream (southwest) near where this stream empties into Big Brushy Creek. October 22, 2025.



Photograph 11: View of Intermittent Stream 2 located south of Pond 3 in the south-central part of the study area. October 22, 2025.



Photograph 12: View of Intermittent Stream 3. October 21, 2025.



Photograph 13: View of Intermittent Stream 4 in the southeastern part of the study area. October 21, 2025.



Photograph 14: View of Ephemeral Stream 1. October 20, 2025.



Photograph 15: View of Ephemeral Stream 2. October 21, 2025.



Photograph 16: View of Ephemeral Stream 3. October 22, 2025.



Photograph 17: View of Ephemeral Stream 4. October 21, 2025.



Photograph 18: View of Ephemeral Stream 5. October 22, 2025.



Photograph 19: View of Ephemeral Stream 6. October 22, 2025.



Photograph 20: View of Ephemeral Stream 7. October 21, 2025.



Photograph 21: View of Ephemeral Stream 8. October 21, 2025.



Photograph 22: View of Ephemeral Stream 9. October 21, 2025.



Photograph 23: View of Ephemeral Stream 10. October 21, 2025.



Photograph 24: View of Ephemeral Stream 11. October 21, 2025.



Photograph 25: View of Wetland 1 facing east from the western side of the wetland. Intermittent Stream 1 is visible on the left. October 20, 2025.



Photograph 26: View of Wetland 2 facing northeast from the southwestern part of the wetland. October 20, 2025.



Photograph 27: View of Wetland 3 facing northeast toward a fence that crosses the wetland. Intermittent Stream 1 is visible on the left. October 20, 2025.



Photograph 28: View of Wetland 4 and Intermittent Stream 1, facing north from near the center of the wetland. October 22, 2025.



Photograph 29: View of Wetland 5 facing north from the near the center of the wetland. Intermittent Stream 1 is visible in the background. October 22, 2025.



Photograph 30: View of Wetland 6 in the southwestern part of the study area. October 22, 2025.



Photograph 31: View of Wetland 7 facing west from the eastern edge of the wetland. October 22, 2025.



Photograph 32: View of Wetland 8 facing west with Pond 3 on the left. Wetland 7 is visible in the background. October 22, 2025.



Photograph 33: View of Wetland 9 in the south-central part of the study area. October 21, 2025.



Photograph 34: View of Pond 1 facing southwest from the northeastern side of the pond. October 20, 2025.



Photograph 35: View of Pond 2 facing east from the western side of the pond. October 20, 2025.



Photograph 36: View of Pond 3 facing southwest toward the dam from the eastern side of the pond. October 22, 2025.



Photograph 37: View of Pond 4 facing northeast from the southern side of the pond. October 21, 2025.

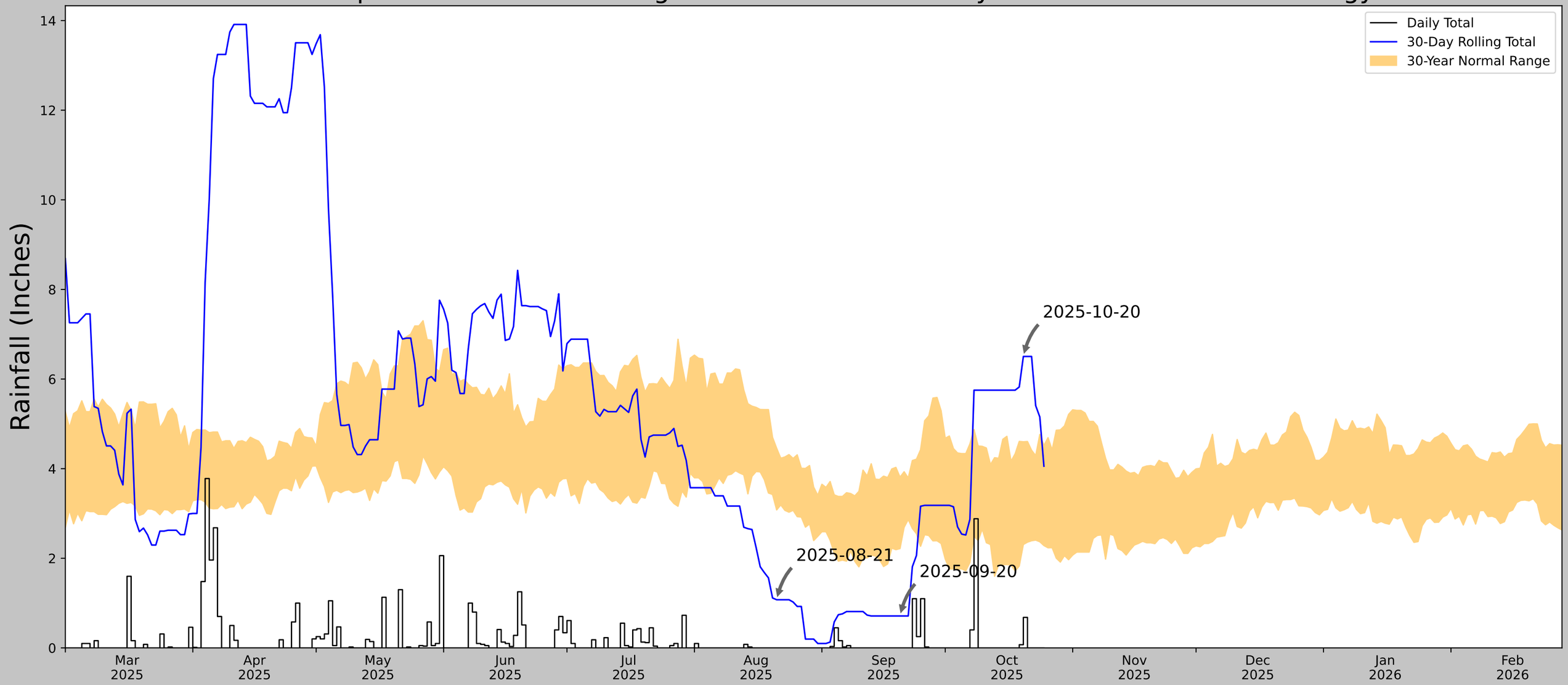


Photograph 38: View of an area which is mapped on the National Wetlands Inventory (NWI) map as a pond (PUBHh). No pond was present at this location. October 21, 2025.

Appendix E

Precipitation Data

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	38.3059, -84.099
Observation Date	2025-10-20
Elevation (ft)	841.056
Drought Index (PDSI)	Not available (2025-09)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-10-20	2.307874	4.600394	6.503937	Wet	3	3	9
2025-09-20	2.215748	3.810236	0.712598	Dry	1	2	2
2025-08-21	3.079134	4.456299	1.074803	Dry	1	1	1
Result							Normal Conditions - 12

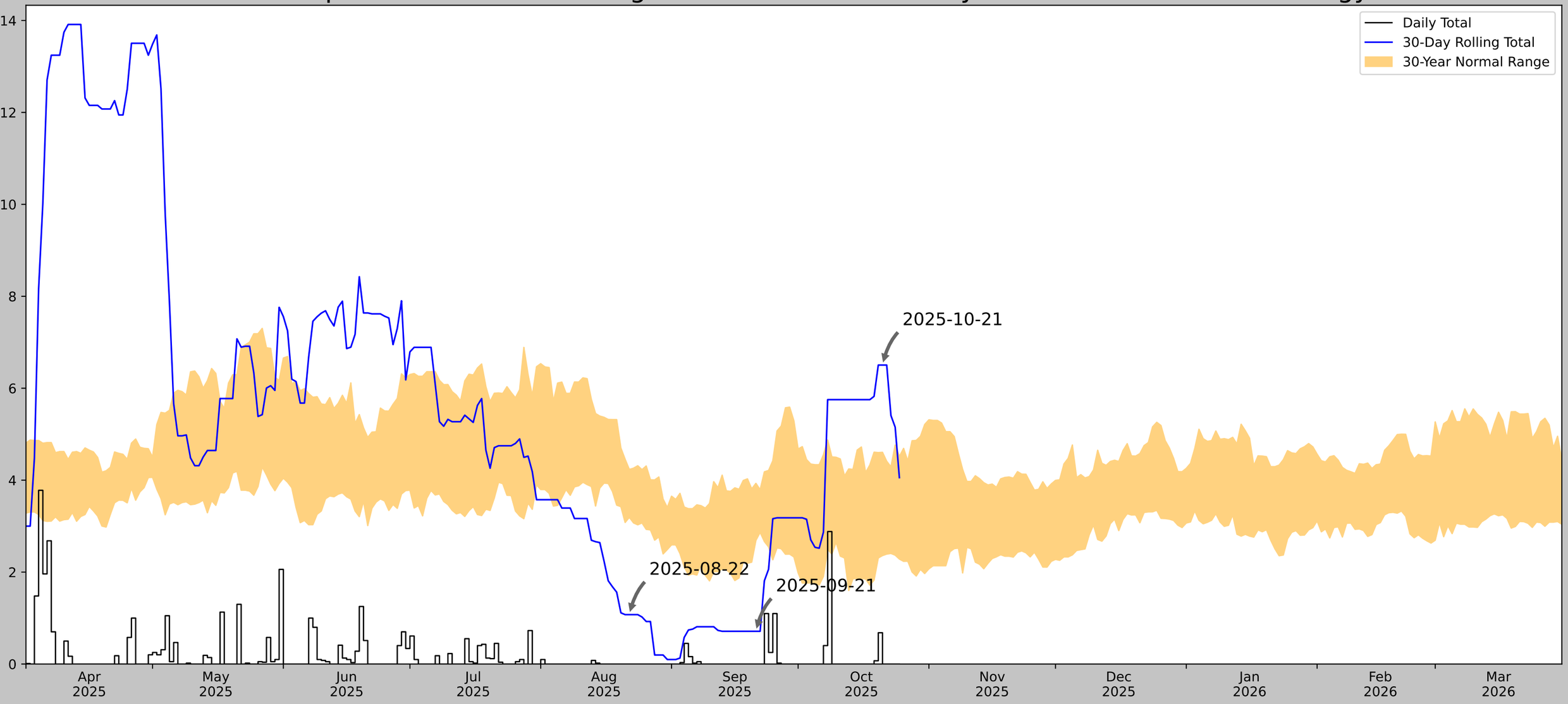
Figures and tables made by the
Antecedent Precipitation Tool
Version 3.0

US Army Corps of Engineers.
ERDC

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PARIS	38.2053, -84.2383	794.948	10.268	46.108	5.094	11242	86
GEORGETOWN 7.2 ENE	38.2335, -84.4314	946.85	10.662	151.902	6.417	57	2
CYNTHIANA	38.3769, -84.3031	700.131	12.366	94.817	6.737	25	2
GEORGETOWN 1.7 N	38.2273, -84.5509	816.929	17.038	21.981	8.042	15	0
GEORGETOWN WTR WKS	38.2094, -84.5622	805.118	17.587	10.17	8.093	14	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	38.3059, -84.099
Observation Date	2025-10-21
Elevation (ft)	841.056
Drought Index (PDSI)	Not available (2025-09)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-10-21	2.359055	4.606299	6.503937	Wet	3	3	9
2025-09-21	2.690945	3.931496	0.712598	Dry	1	2	2
2025-08-22	3.190945	4.232677	1.074803	Dry	1	1	1
Result							Normal Conditions - 12

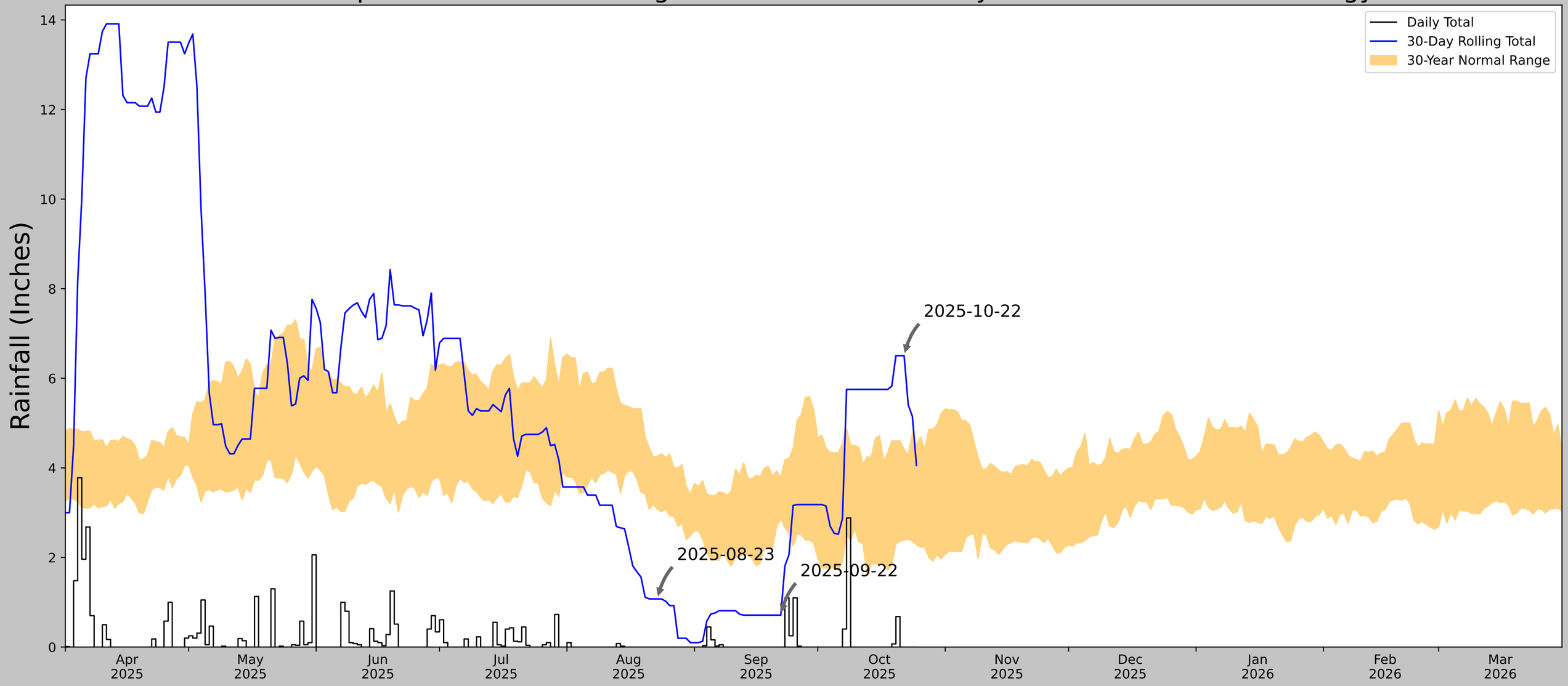
Figures and tables made by the Antecedent Precipitation Tool Version 3.0

US Army Corps of Engineers.
ERDC

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Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PARIS	38.2053, -84.2383	794.948	10.268	46.108	5.094	11242	85
GEORGETOWN 7.2 ENE	38.2335, -84.4314	946.85	10.662	151.902	6.417	57	2
CYNTHIANA	38.3769, -84.3031	700.131	12.366	94.817	6.737	25	3
GEORGETOWN 1.7 N	38.2273, -84.5509	816.929	17.038	21.981	8.042	15	0
GEORGETOWN WTR WKS	38.2094, -84.5622	805.118	17.587	10.17	8.093	14	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	38.3059, -84.099
Observation Date	2025-10-22
Elevation (ft)	841.056
Drought Index (PDSI)	Not available (2025-09)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-10-22	2.391732	4.411024	6.503937	Wet	3	3	9
2025-09-22	2.864961	3.792126	0.712598	Dry	1	2	2
2025-08-23	3.069685	4.261417	1.074803	Dry	1	1	1
Result							Normal Conditions - 12

Figures and tables made by the Antecedent Precipitation Tool Version 3.0

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Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PARIS	38.2053, -84.2383	794.948	10.268	46.108	5.094	11242	85
GEORGETOWN 7.2 ENE	38.2335, -84.4314	946.85	10.662	151.902	6.417	57	2
CYNTHIANA	38.3769, -84.3031	700.131	12.366	94.817	6.737	25	3
GEORGETOWN 1.7 N	38.2273, -84.5509	816.929	17.038	21.981	8.042	15	0
GEORGETOWN WTR WKS	38.2094, -84.5622	805.118	17.587	10.17	8.093	14	0

Table 1 - Recent Precipitation History
Merged Weather Station Data for South Fork Site
Nicholas County, Kentucky

Date	Precipitation (inches)
9/19/2025	0.00
9/20/2025	0.00
9/21/2025	0.00
9/22/2025	0.00
9/23/2025	1.10
9/24/2025	0.25
9/25/2025	1.10
9/26/2025	0.02
9/27/2025	0.00
9/28/2025	0.00
9/29/2025	0.00
9/30/2025	0.00
10/1/2025	0.00
10/2/2025	0.00
10/3/2025	0.00
10/4/2025	0.00
10/5/2025	0.00

Date	Precipitation (inches)
10/6/2025	0.00
10/7/2025	0.40
10/8/2025	2.88
10/9/2025	0.00
10/10/2025	0.00
10/11/2025	0.00
10/12/2025	0.00
10/13/2025	0.00
10/14/2025	0.00
10/15/2025	0.00
10/16/2025	0.00
10/17/2025	0.00
10/18/2025	0.00
10/19/2025	0.07
10/20/2025	0.68
10/21/2025	0.00
10/22/2025	0.00

Merged precipitation data generated by Antecedent Precipitation Tool, Version 3.0.
Weather data was from Paris, Georgetown 7.2ENE, Cynthiana, Georgetown 1.7N, and Georgetown Water Works weather stations.
Gray shading indicates the dates of the delineation.