



# Water Resources Delineation Report

## 38.56 Acres, KaneSolar01, Lincoln Highway, Kane County, Illinois

December 27, 2022

Prepared for:  
Horizon Solar Power  
330 W Goethe St.  
Chicago, IL 60610

Prepared by:  
Davey Resource Group, Inc.  
5641 W 73<sup>rd</sup> Street  
Indianapolis, IN 46278  
317-558-8545



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## Executive Summary

The 38.56-acre study area is located north of Lincoln Highway and west of Meredith Road in Kane County, Illinois, within Section 34, Township 40 North, Range 6 East. A water resources delineation was performed by Catherine Holland and Kelly Volansky on December 7th, 2022.

The study area encompasses approximately 38.56 acres of agricultural land. The study area consists of an agricultural field.

A map of the location and size of the water resources identified on the property is shown in Appendix A. Three emergent wetlands totaling 0.41-acre were identified within the study area (Table 1). Wetlands A and C are isolated and show no hydrologic connection to the nearby Virgil Ditch. Thus, these wetlands may be considered isolated wetlands and Waters of the State, subject to regulation by Illinois Environmental Protection Agency (IEPA) and Illinois Department of Natural Resources (IDNR). Wetland B extends off site, to the west, and is hydrologically connected to Virgil Ditch via the Virgil Ditch floodplain. Virgil Ditch shows connectivity to East Branch South Branch Kishwaukee River, which in turn connects to the Rock River. Rock River is connected to the Mississippi River, a Traditionally Navigable Water of the United States.

Table 1. Water Resources Delineated on Site

ID	Type	Latitude	Longitude	Connectivity to Waters of the U.S. <sup>1</sup>	Total Area/Length Within Study Area (Acres/LF)
Wetland A	Emergent	41.8992629 N	88.5416732 W	Non-jurisdictional	0.22
Wetland B	Emergent	41.8981590 N	88.5448156 W	Jurisdictional	0.03
Wetland C	Emergent	41.8970697 N	88.5447478 W	Non-jurisdictional	0.16

<sup>1</sup> The final determination of a wetlands' connectivity to Waters of the U.S. is made by the US Army Corps of Engineers.

## Introduction

### Study Area Description and Location

The 38.56-acre study area is located in Virgil Township, Kane County, Illinois (Appendix B). The area is located west of the intersection of Lincoln Highway and Meredith Road.

The study area contains an agricultural field. An aerial photograph of the study area is included in Appendix D. Surrounding land use is predominantly occupied by agricultural fields.

### Secondary Source Information

The study area is shown on the Maple Park Quadrangle of the United States Geological Survey (USGS) map (Appendix E). The study area is between 880 and 860 feet above sea level.

A National Wetlands Inventory (NWI) map showing nearby NWI wetlands is located in Appendix F. One emergent wetland (PEM1A) is shown adjacent to Wetland B, outside of the study area boundary.

A map from the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey showing the soil types located on and adjacent to the site is found in Appendix G. The *Hydric Soils of the United States* (1991) was reviewed to determine potential hydric soils identified within the study area. Table 2 provides a list of soil types mapped for the site.

Table 2. Soil Types Mapped for the Site

Map Unit	Soil Description	Hydric Determination <sup>1</sup>
149A	Brenton Silt Loam, 0 to 2 percent slopes	Predominantly non-hydric
152A	Drummer silty clay loam, 0 to 2 percent slopes	Hydric
330A	Peotone silty clay loam, 0 to 2 percent slopes	Hydric
618E	Senachwine silt loam, 12 to 20 percent slopes	Predominantly non-hydric
656B	Octagon silt loam, 2 to 4 percent slopes	Predominantly non-hydric
662B	Barony silt loam, 2 to 5 percent slopes	Non-hydric

<sup>1</sup>As determined by The Hydric Soils of the United States (1991).

## Methodology

The Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (US Army Corps of Engineers 2012) were used in delineating wetlands within the study area. Water resources were delineated and surveyed on December 7<sup>th</sup>, 2022. The water resources delineation fieldwork, boundary mapping, and data analysis were performed by Catherine Holland and Kelly Volansky. Vegetation, soils, and wetlands maps were prepared using ArcGIS™ PRO v.2.8.3. Photopoints, data points, stream lines, and wetland areas were mapped and collected using a Trimble® GNSS R1 device.

Streams are identified as linear, flowing water features with a defined bed and bank. Streams are classified as ephemeral, intermittent, or perennial based upon flow regime. Ephemeral streams have flowing water only during, and for a short duration after, precipitation events. Intermittent

streams have flowing water during certain times of the year, when groundwater and rainfall provide water for stream flow. During dry periods intermittent streams may not have flowing water. Perennial streams have flowing water year-round, receiving water from groundwater and rainfall runoff.

Wetlands are identified based on three criteria: vegetation, soils, and hydrology. An area must meet all three criteria to be considered a jurisdictional wetland. Sampling points were established in the field to determine wetlands boundaries. Data sheets reporting the results of soils, vegetation, and hydrology analyses were completed for each sample station and are located in Appendix J.

Soil samples were obtained to determine the extent of hydric soils on the site. A standard Munsell soil color chart was used to determine the hue, value, and chroma of each soil sample. Soil samples were taken to a depth to adequately make a hydric soil determination. Criteria established by the National Technical Committee for Hydric Soils (1991) were used to determine hydric soils.

Wetland hydrology was characterized during this water resources delineation. Inundation and/or soil saturation were noted for each sample point. Other hydrological indicators, including watermarks, drift lines, sediment deposits, wetlands drainage patterns, blackened leaves, morphological indicators, iron/manganese concretions, and oxidized root zones within the upper soil layers, were documented, if observed.

Quantitative vegetation data were collected at each sampling point. Dominance was estimated by percent areal cover. Four strata were considered for each sample point—trees, saplings/shrubs, herbs, and woody vines. Trees were defined as any woody plant having a diameter at breast height (DBH) greater than 3.0 inches. Saplings and shrubs were those woody plants with a DBH of less than 3.0 inches and greater than 3.2 feet in height. For each stratum, plant species within a plot were identified and percent areal cover was estimated for each species. Thirty-foot-radius plots were used for trees and vines; 15-foot-radius plots were used for saplings and shrubs; and 5-foot-radius plots were used for herbs.

Any species within a stratum comprising 20% or more of the total plot areal cover was considered to be dominant. Dominant species within all strata were then added to determine the percentage of wetlands vegetation for each sample point. The wetlands vegetation criterion was met if greater than 50% of the dominant vegetation was indicative of wetlands conditions.

Plants with an indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) were considered to be indicative of wetlands conditions. Plants with an indicator status of facultative upland (FACU) or upland (UPL) were considered to be indicative of upland conditions. Plants that could only be identified to genus were sometimes assigned an indicator status based on the professional judgment of Davey Resource Group. These plants were classified as wetlands indicator species (WIS) or upland indicator species (UIS). See Appendix I for a more detailed explanation of wetlands vegetation indicator statuses.

Wetlands that are hydrologically connected to traditional navigable waters of the United States are considered non-isolated and fall under the federal jurisdiction of the U.S. Army Corps of Engineers (USACE).

## Results

### WETLANDS

#### Vegetation

The site contains an agricultural field and three emergent wetlands. Photograph locations are shown in Appendix A. Photographs showing water resources identified on the site are included in Appendix H. Wetland assessment data forms are included in Appendix J.

- **Wetland A (0.22 acre, emergent)** contained dominant vegetation consisting of horsetail (*Equisetum hymale*, FAC). Non-dominant vegetation observed included Japanese bristlegrass (*Setaria faberi*, FACU), poison hemlock (*Conium maculatum*, FACW), and rough cocklebur (*Xanthium strumarium*, FAC). Adjacent upland vegetation consisted of corn (*Zea mays*, UPL).
- **Wetland B (0.03 acre, emergent)** contained dominant vegetation consisting of rough cocklebur (*Xanthium strumarium*, FAC). Non-dominant vegetation observed included American water plantain (*Alisma subcordatum*, OBL) and corn (*Zea mays*). Adjacent upland vegetation consisted of corn (*Zea mays*).
- **Wetland C (0.16 acre, emergent)** contained dominant vegetation consisting of American water plantain (*Alisma subcordatum*, OBL) and rough cocklebur (*Xanthium strumarium*, FAC). Non-dominant vegetation observed included yellow foxtail grass (*Setaria pumila*, FAC), velvetleaf (*Abutilon theophrasti*, FACU), fall panicgrass (*Panicum dichotomiflorum*, FACW), giant bristlegrass (*Setaria magna*, UNK). Adjacent upland vegetation consisted of corn (*Zea mays*).

#### Soils

All wetlands delineated on site contained hydric soils. Each wetland met the Thick Dark Surface (A12) hydric soil indicator.

#### Hydrology

Hydrology present in the study area derives primarily from overland flow. The emergent wetlands coincide with depressions pooling water within agricultural fields. The primary hydrologic indicator identified on site was Water-Stained Leaves (B9). Secondary indicators identified included Saturation Visible on Aerial Imagery (C9), Geomorphic position (D2), and FAC-Neutral test (D5). Table 3 shows the hydrology indicators observed in each wetland on the site.

**Table 3. Hydrology Indicators for On-Site Wetlands**

Wetland	Primary Indicator Numbers	Primary Indicator Descriptions	Secondary Indicator Numbers	Secondary Indicator Descriptions
A	N/A	N/A	C9, D2	Saturation Visible on Aerial Imagery, Geomorphic Position
B	B9	Water-Stained Leaves	D2, D5	Geomorphic Position, FAC-Neutral Test
C	B9	Water-Stained Leaves	D2, D5	Geomorphic Position, FAC-Neutral Test

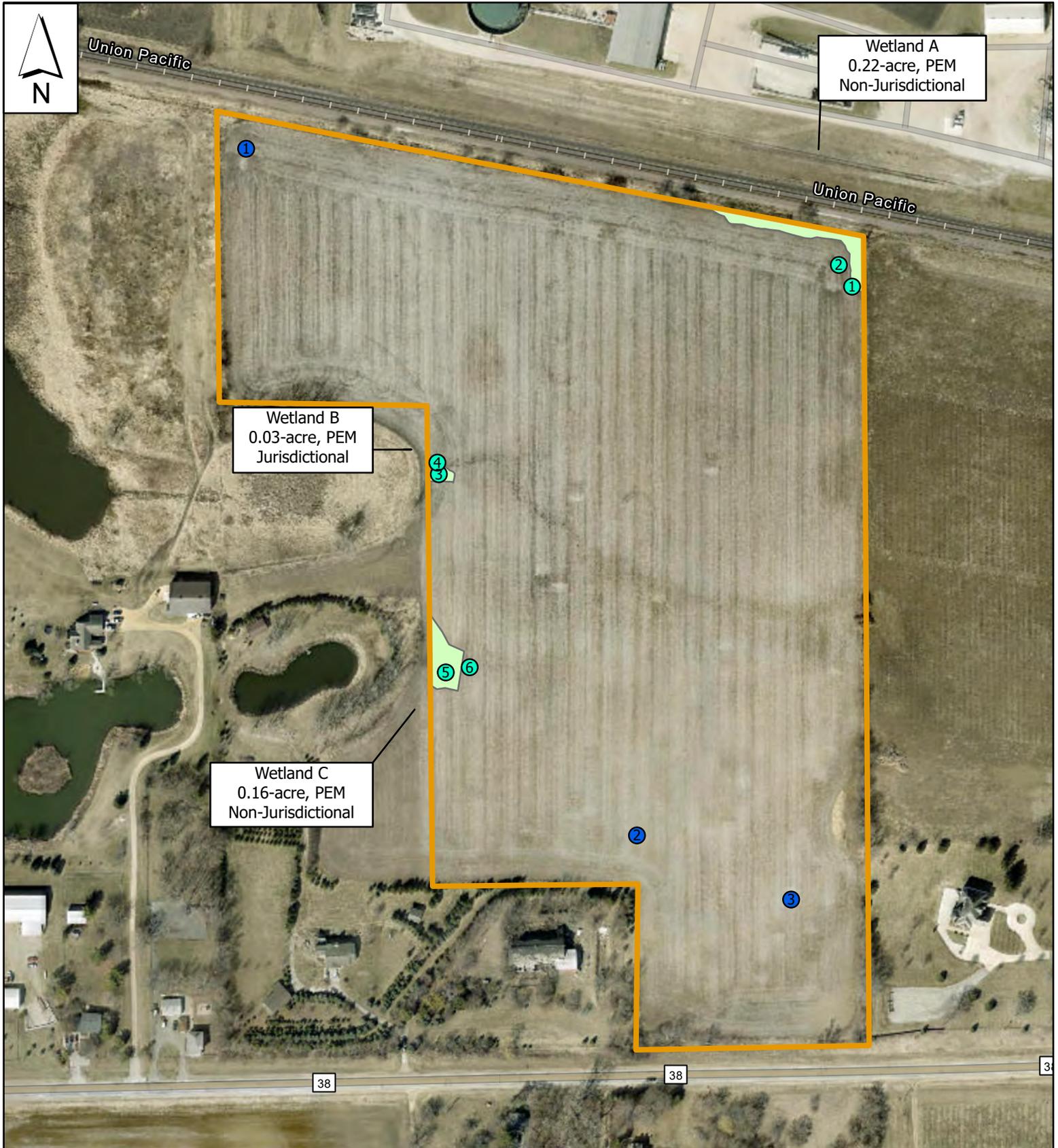
#### Conclusions

Three emergent wetlands totaling 0.41 acre were delineated within the study area. Wetland B extends off site, to the west, and is hydrologically connected to Virgil Ditch via the floodplain of Virgil Ditch. Virgil Ditch shows connectivity to East Branch South Branch Kishwaukee River, which in turn connects to the Rock River. Rock River is connected to the Mississippi River, a Traditionally Navigable Water of the United States.

DRG is confident that all jurisdictional wetlands and drainageways were identified on this site. All water resource studies conducted by Davey Resource Group are objective and based strictly on professional judgment. Davey Resource Group and its employees have no vested interest in this property or the proposed project. Appendix K contains references used in the creation of this report.

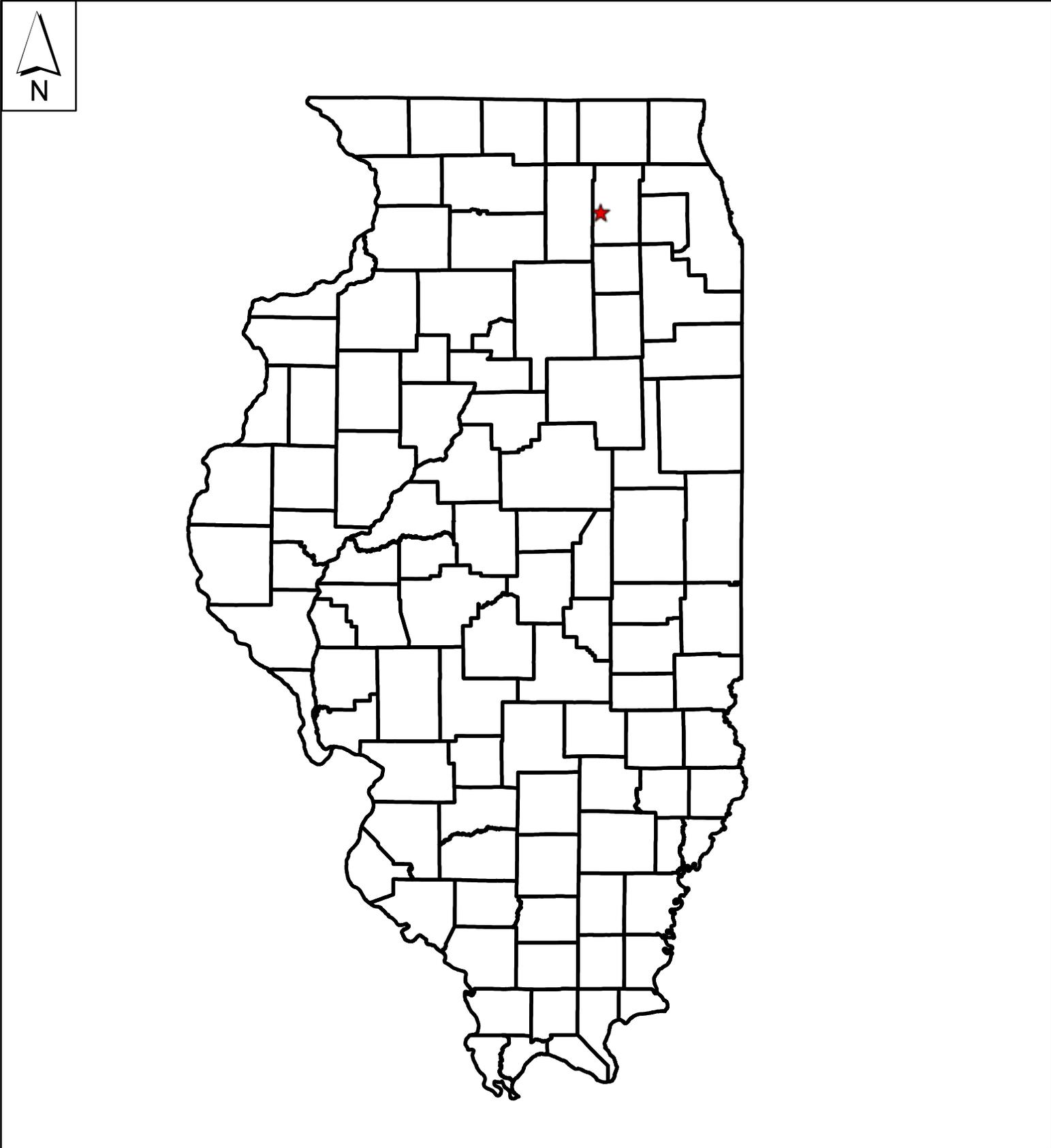
All wetlands delineations must be verified by the US Army Corps of Engineers to be considered official. This wetlands delineation is reflective of environmental conditions at the time the fieldwork was performed. Wetlands are dynamic natural systems; therefore, boundaries may change slightly over time.

# Appendix A: Mapped Water Resources



	Site Location: Lincoln Highway, Virgil Township, Kane County, Illinois	<b>Legend</b> ● Photo Points ● Data Points Study Area (±38.56 Acres) Wetland (0.41 acre)
	Sources: Esri World Imagery Hybrid. Imagery Date 2021.	
	0      250      500      1,000 Feet	
Date: December 7, 2022		

# Appendix B: Location of Project Area on Illinois County Map



**DAVEY**   
**Resource Group**

Date: December 7, 2022

Site Location: Lincoln Highway,  
Virgil Township, Kane County, Illinois

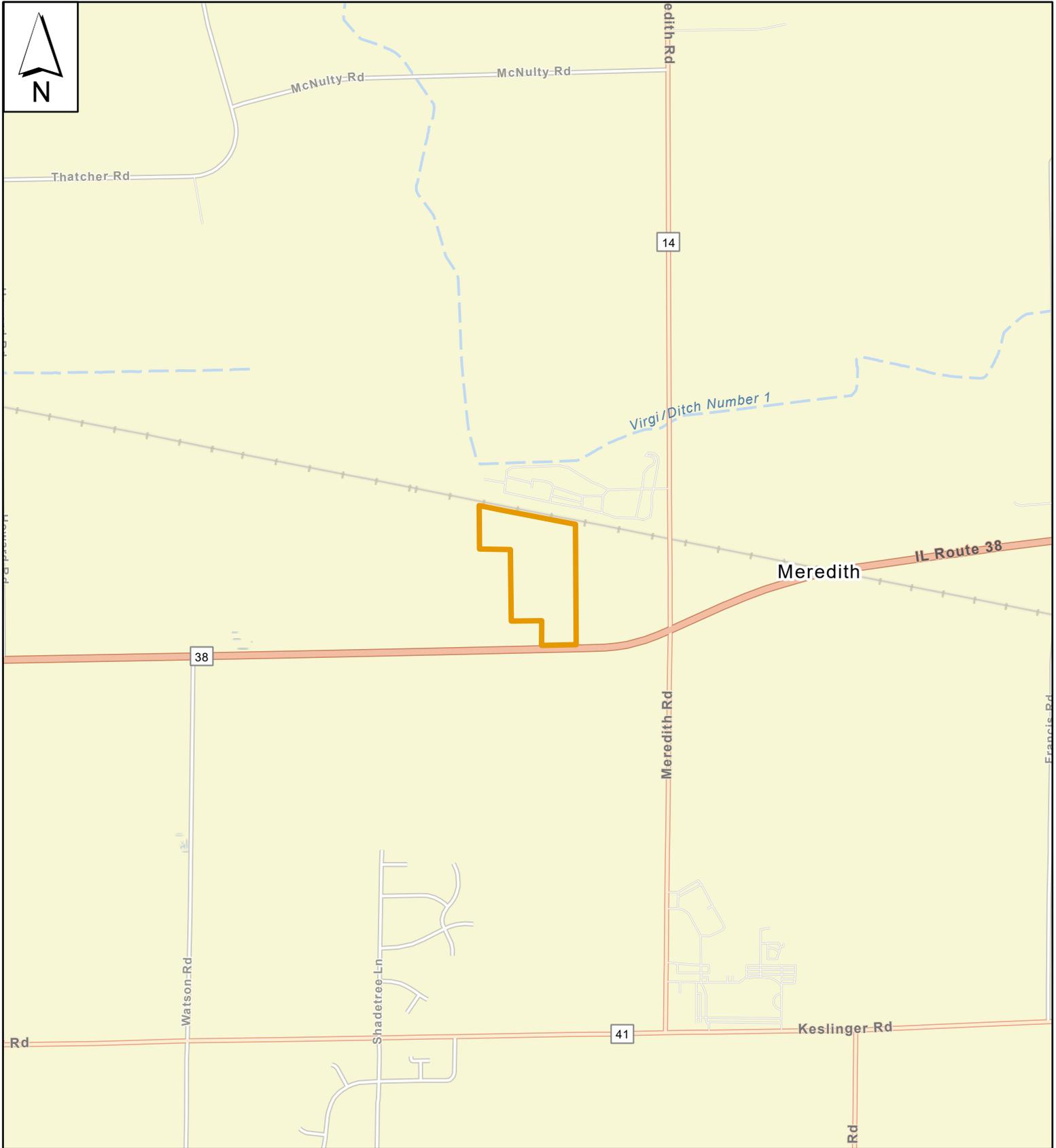
Sources: Illinois State Geological Survey, Prairie  
Research Institute, 2015

0      40      80      160  
Miles

Legend

-  Site Location
-  County Boundaries

# Appendix C: Location of Study Area on Highway Map



**DAVEY**   
**Resource Group**

Date: December 7, 2022

Site Location: Lincoln Highway,  
 Virgil Township, Kane County, Illinois

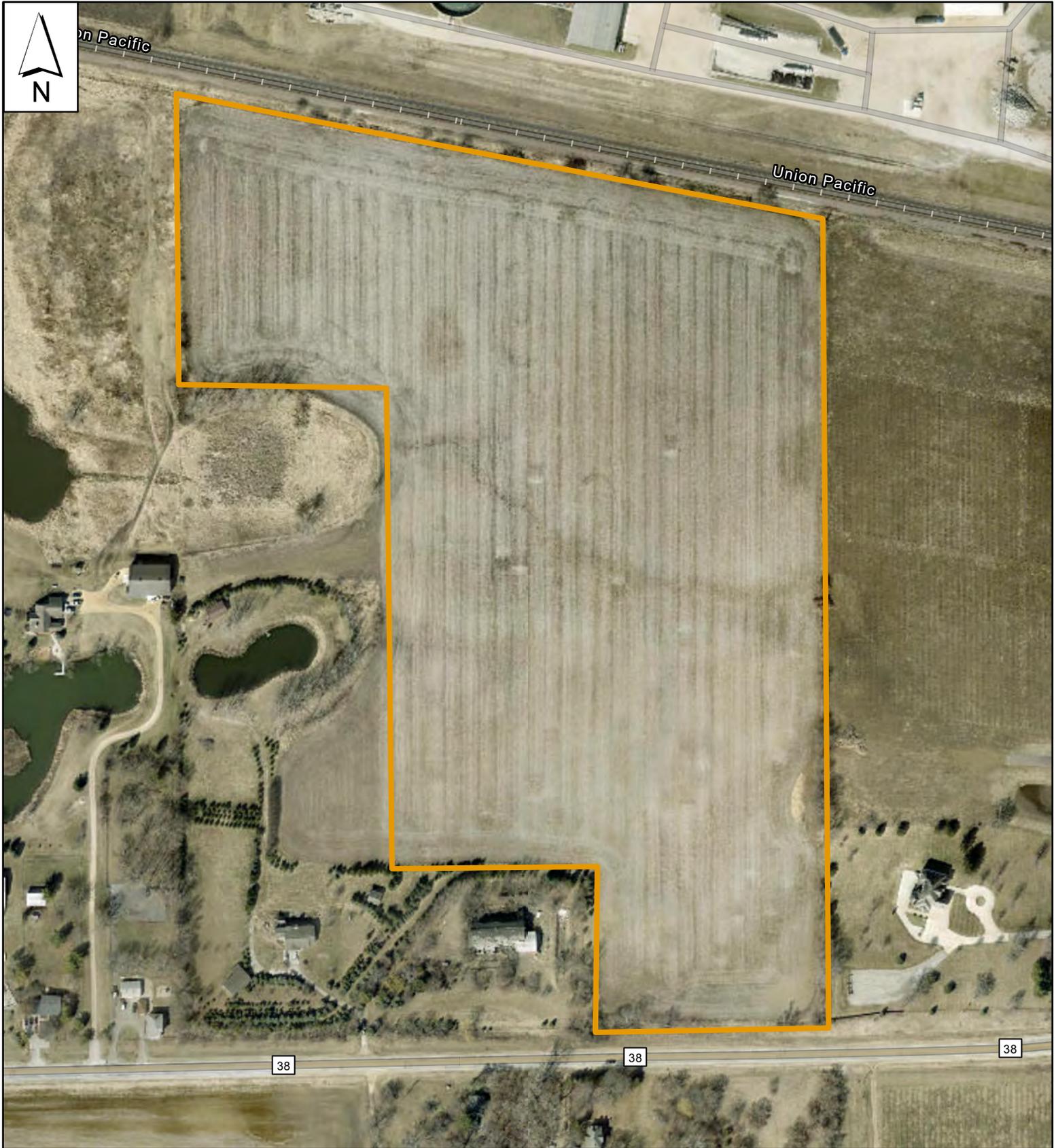
Sources: Esri World Imagery Hybrid. Imagery  
 Date 2021.

0 1,500 3,000 6,000  
 Feet

Legend

 Study Area

# Appendix D: Location of Study Area on Highway Map



**DAVEY**   
**Resource Group**

Date: December 7, 2022

Site Location: Lincoln Highway,  
Virgil Township, Kane County, Illinois

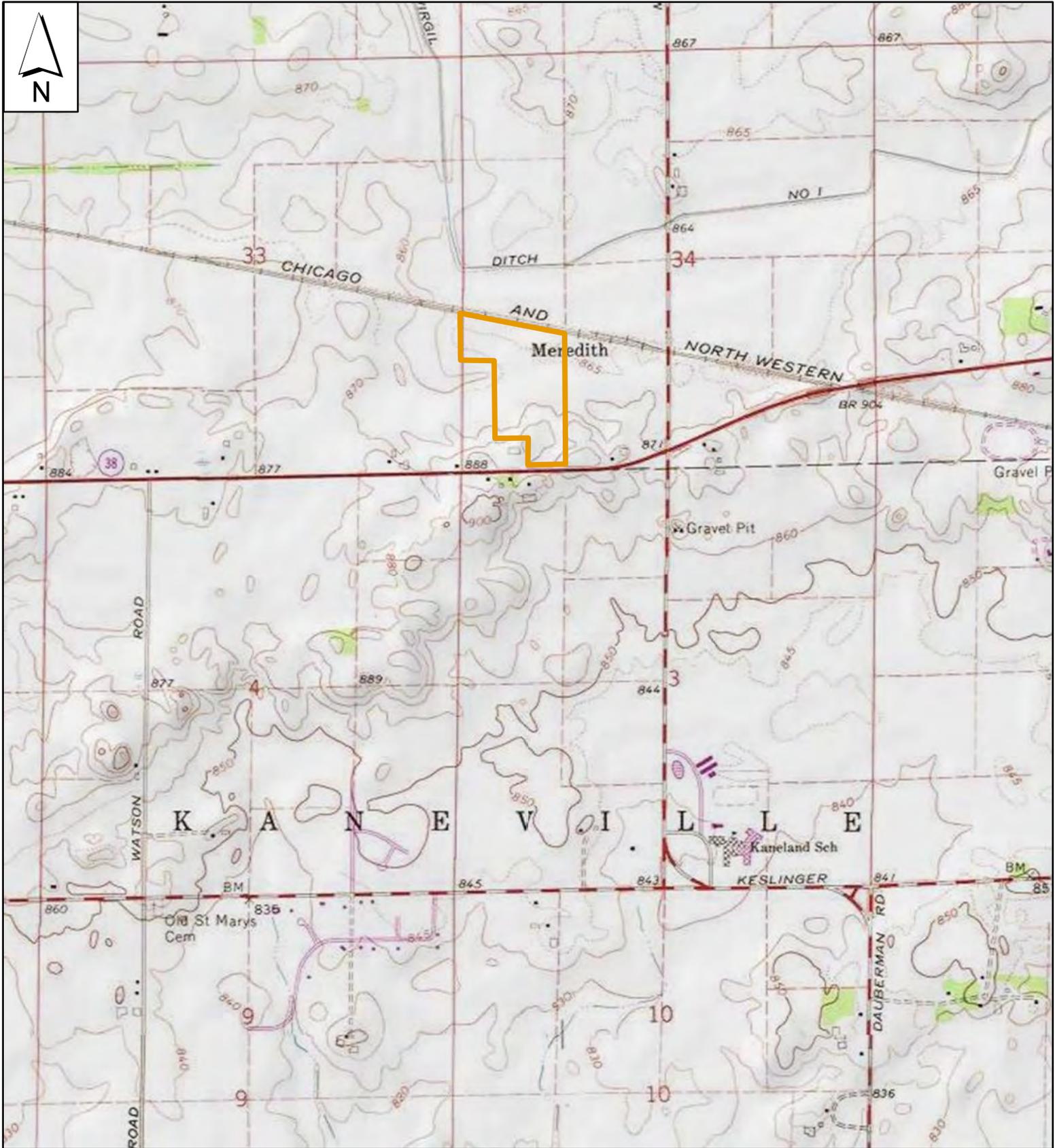
Sources: Esri World Imagery Hybrid. Imagery  
Date 2021.

0      250      500      1,000  
Feet

Legend

 Study Area

# Appendix E: Location of Study Area on USGS 7.5-Minute Topographic Map



	Site Location: Lincoln Highway, Virgil Township, Kane County, Illinois	Legend Study Area
	Sources: Esri World Imagery Hybrid. Imagery Date 2021.	
Date: December 7, 2022	0      1,500      3,000      6,000 Feet	

# Appendix F: Location of Study Area on National Wetland Inventory Map



	Site Location: Lincoln Highway, Virgil Township, Kane County, Illinois	<b>Legend</b> NWI Study Area
	Sources: Esri World Imagery Hybrid. Imagery Date 2021.	
	0    500    1,000    2,000 Feet	
Date: December 7, 2022		

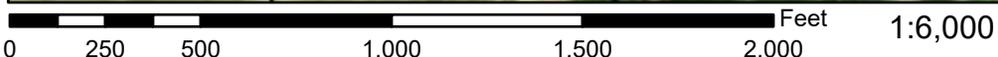


***Appendix H***  
***National Flood Hazard Layer FIRMette***

# National Flood Hazard Layer FIRMMette



88°32'54"W 41°54'3"N



88°32'16"W 41°53'36"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		8 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/12/2022 at 1:50 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

**Appendix I**  
**Site Photographs (12-07-2022)**



DP01, View looking north



DP01, View looking east



DP01, View looking south



DP01, View looking west



DP02, View looking north



DP02, View looking east

**Appendix I**  
**Continued**



DP02, View looking south



DP02, View looking west



DP03, View looking north



DP03, View looking east



DP03, View looking south



DP03, View looking west

**Appendix I**  
**Continued**



DP04, View looking north



DP04, View looking east



DP04, View looking south



DP04, View looking west



DP05, View looking north



DP05, View looking east

**Appendix I**  
**Continued**



DP05, View looking south



DP05, View looking west



DP06, View looking north



DP06, View looking east



DP06, View looking south



DP06, View looking west

**Appendix I**  
**Continued**



PP01, View looking north



PP01, View looking east



PP01, View looking south



PP01, View looking west



PP02, View looking north



PP02, View looking east

**Appendix I**  
**Continued**



PP02, View looking south



PP02, View looking west



PP03, View looking north



PP03, View looking east



PP03, View looking south



PP03, View looking west

## **Appendix J**

### **Definition of Wetlands Vegetation Indicator Status (from Lichvar et al 2016)**

**Obligate Wetlands (OBL).** Almost always is a hydrophyte, rarely in uplands.

**Facultative Wetlands (FACW).** Usually is a hydrophyte but occasionally found in uplands.

**Facultative (FAC).** Commonly occurs as either a hydrophyte or non-hydrophyte.

**Facultative Upland (FACU).** Occasionally is a hydrophyte but usually occurs in uplands.

**Obligate Upland (UPL).** Rarely is a hydrophyte, almost always in uplands.

Species for which little or no information was available to base an indicator status were assigned a no indicator (NI) status. An asterisk (\*) after the indicator status indicates that the indicator status was based on limited ecological information.

The wetlands indicator categories should not be equated to degrees of wetness. Many obligate wetlands species occur in permanently or semipermanently flooded wetlands, but a number of obligates also occur, and some are restricted to wetlands that are only temporarily or seasonally flooded. The facultative upland species include a diverse collection of plants that range from weedy species adapted to exist in a number of environmentally stressful or disturbed sites (including wetlands), to species in which a portion of the gene pool (an ecotype) always occurs in wetlands. Both the weedy and ecotype representatives of the facultative upland category occur in seasonally and semipermanently flooded wetlands.

Davey Resource Group has added two additional indicators for situations when plants can only be identified to genus. A Wetlands Indicator Species (WIS) is a plant that is most likely obligate wetlands, facultative wetlands, or facultative. An Upland Indicator Species (UIS) is a plant that is most likely indicative of upland or facultative upland conditions. These additional indicators are used when species identification is not possible. A variety of factors are part of the UIS and WIS assignments. Indicator statuses of all locally occurring members of the genus in question are considered, as are the health and size of the population and the indicator status of nearby plants.

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## ***Appendix K***

### ***Vegetation, Hydrology, and Soils Data Sheets***



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Kane Solar I City/County: Kane County Sampling Date: 2022-12-07  
 Applicant/Owner: Horizon Solar Power State: Illinois Sampling Point: 1  
 Investigator(s): Cat Holland, Kelly Volansky Section, Township, Range: S34 T40N R6E  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): K 95B Lat: 41.8992629 Long: -88.5416732 Datum: NAD 83  
 Soil Map Unit Name: 152A - Drummer silty clay loam, 0 to 2 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ Water-Stained Leaves (B9) ___ High Water Table (A2)      ___ Aquatic Fauna (B13) ___ Saturation (A3)      ___ Marl Deposits (B15) ___ Water Marks (B1)      ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2)      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3)      ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5)      ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7)      ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: 1

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																				
1. <u>Prunus spp.</u>	<u>5</u>	<input checked="" type="checkbox"/>		<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	<u>5%</u>																			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																				
1. _____				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>81</u></td> <td>x 3 = <u>243</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>106</u> (A)</td> <td><u>333</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.14</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>81</u>	x 3 = <u>243</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>106</u> (A)	<u>333</u> (B)	Prevalence Index = B/A = <u>3.14</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>81</u>	x 3 = <u>243</u>																			
FACU species <u>20</u>	x 4 = <u>80</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>106</u> (A)	<u>333</u> (B)																			
Prevalence Index = B/A = <u>3.14</u>																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		= Total Cover																		
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																				
1. <u>Equisetum hyemale</u>	<u>80</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Zea mays</u>	<u>50</u>	<input checked="" type="checkbox"/>																		
3. <u>Setaria faberi</u>	<u>20</u>		<u>FACU</u>																	
4. <u>Conium maculatum</u>	<u>5</u>		<u>FACW</u>																	
5. <u>Xanthium strumarium</u>	<u>1</u>		<u>FAC</u>																	
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	<u>156%</u>																			
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																				
1. _____				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
2. _____																				
3. _____																				
4. _____																				
		= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																				
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																

**SOIL**

Sampling Point: 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	10YR 2/1	100					Loam	
12 - 20	10YR 4/2	95	10YR 6/8	5	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 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) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

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

Hydric Soil Present? Yes  No

Remarks:

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Kane Solar I City/County: Kane County Sampling Date: 2022-12-07  
 Applicant/Owner: Horizon Solar Power State: Illinois Sampling Point: 2  
 Investigator(s): Cat Holland, Kelly Volansky Section, Township, Range: S34 T40N R6E  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): K 95B Lat: 41.8993099 Long: -88.5417135 Datum: NAD 83  
 Soil Map Unit Name: 152A - Drummer silty clay loam, 0 to 2 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ Water-Stained Leaves (B9) ___ High Water Table (A2)      ___ Aquatic Fauna (B13) ___ Saturation (A3)      ___ Marl Deposits (B15) ___ Water Marks (B1)      ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2)      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3)      ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5)      ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7)      ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ 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) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
--	---

<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
---	--

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: 2

	Absolute % Cover	Dominant Species?	Indicator Status																						
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )																									
1.																									
2.																									
3.																									
4.																									
5.																									
6.																									
7.																									
	_____ = Total Cover																								
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )																									
1.																									
2.																									
3.																									
4.																									
5.																									
6.																									
7.																									
	_____ = Total Cover																								
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )																									
1. <u>Zea mays</u>	<u>100</u>	<input checked="" type="checkbox"/>																							
2.																									
3.																									
4.																									
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									
11.																									
12.																									
	<u>100%</u> = Total Cover																								
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )																									
1.																									
2.																									
3.																									
4.																									
	_____ = Total Cover																								
<p><b>Dominance Test worksheet:</b></p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>0</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>NaN</u> (A/B)</p> <hr/> <p><b>Prevalence Index worksheet:</b></p> <table style="width:100%; border:none;"> <tr> <td style="width:50%;"></td> <td style="width:25%; text-align:center;">Total % Cover of:</td> <td style="width:25%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 1 = <u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 2 = <u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 3 = <u>0</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 4 = <u>0</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>0</u> (A)</td> <td style="text-align:center;"><u>0</u> (B)</td> </tr> </table> <p style="text-align:right;">Prevalence Index = B/A = <u>NaN</u></p> <hr/> <p><b>Hydrophytic Vegetation Indicators:</b></p> <p><input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> 2 - Dominance Test is &gt;50%</p> <p><input type="checkbox"/> 3 - Prevalence Index is ≤3.0<sup>1</sup></p> <p><input type="checkbox"/> 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</p> <p><small><sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</small></p> <hr/> <p><b>Definitions of Vegetation Strata:</b></p> <p><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.</p> <p><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p><b>Woody vines</b> – All woody vines greater than 3.28 ft in height.</p> <hr/> <p><b>Hydrophytic Vegetation Present?</b>      Yes _____ No <input checked="" type="checkbox"/></p>						Total % Cover of:	Multiply by:	OBL species	<u>0</u>	x 1 = <u>0</u>	FACW species	<u>0</u>	x 2 = <u>0</u>	FAC species	<u>0</u>	x 3 = <u>0</u>	FACU species	<u>0</u>	x 4 = <u>0</u>	UPL species	<u>0</u>	x 5 = <u>0</u>	Column Totals:	<u>0</u> (A)	<u>0</u> (B)
	Total % Cover of:	Multiply by:																							
OBL species	<u>0</u>	x 1 = <u>0</u>																							
FACW species	<u>0</u>	x 2 = <u>0</u>																							
FAC species	<u>0</u>	x 3 = <u>0</u>																							
FACU species	<u>0</u>	x 4 = <u>0</u>																							
UPL species	<u>0</u>	x 5 = <u>0</u>																							
Column Totals:	<u>0</u> (A)	<u>0</u> (B)																							
Remarks: (Include photo numbers here or on a separate sheet.)																									

**SOIL**

Sampling Point: 2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	10YR 2/1	100					Loam	
12 - 20	10YR 4/2	95	10YR 6/8	5			Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 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) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

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

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

Remarks:

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Kane Solar I City/County: Kane County Sampling Date: 2022-12-07  
 Applicant/Owner: Horizon Solar Power State: Illinois Sampling Point: 3  
 Investigator(s): Cat Holland, Kelly Volansky Section, Township, Range: S34 T40N R6E  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): K 95B Lat: 41.8981590 Long: -88.5448156 Datum: NAD 83  
 Soil Map Unit Name: 152A - Drummer silty clay loam, 0 to 2 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) ___ High Water Table (A2) ___ Aquatic Fauna (B13) ___ Saturation (A3) ___ Marl Deposits (B15) ___ Water Marks (B1) ___ Hydrogen Sulfide Odor (C1) ___ Sediment Deposits (B2) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Drift Deposits (B3) ___ Presence of Reduced Iron (C4) ___ Algal Mat or Crust (B4) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Iron Deposits (B5) ___ Thin Muck Surface (C7) ___ Inundation Visible on Aerial Imagery (B7) ___ Other (Explain in Remarks) ___ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ 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) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:	

**VEGETATION** – Use scientific names of plants.

Sampling Point: 3

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	_____ = Total Cover			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	_____ = Total Cover			
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				
1. <u>Xanthium strumarium</u>	<u>85</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Alisma subcordatum</u>	<u>20</u>	<input type="checkbox"/>	<u>OBL</u>	
3. <u>Cyperus flavescens</u>	<u>2</u>	<input type="checkbox"/>	<u>OBL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	<u>107%</u> = Total Cover			
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	_____ = Total Cover			
<p>Remarks: (Include photo numbers here or on a separate sheet.)</p>				

**Dominance Test worksheet:**

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

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

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

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>22</u>	x 1 = <u>22</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>85</u>	x 3 = <u>255</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>107</u> (A)	<u>277</u> (B)

Prevalence Index = B/A = 2.59

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

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

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

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

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

---

**Definitions of Vegetation Strata:**

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

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

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

---

**Hydrophytic Vegetation Present?**      Yes       No

**SOIL**

Sampling Point: 3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	10YR 2/1	100					Loam	
12 - 20	10YR 4/3	98	10YR 6/8	2	C	M	Clay	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 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) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

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

Hydric Soil Present? Yes  No

Remarks:



**VEGETATION** – Use scientific names of plants.

Sampling Point: 4

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30 ft r</u> )				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
				_____ = Total Cover
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
				_____ = Total Cover
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				
1. <u>Zea mays</u>	<u>80</u>	<input checked="" type="checkbox"/>		
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
				<u>80%</u> = Total Cover
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				
1.				
2.				
3.				
4.				
				_____ = Total Cover
Remarks: (Include photo numbers here or on a separate sheet.)				

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 0 (B)

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

---

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>0</u> (A)	<u>0</u> (B)

Prevalence Index = B/A = NaN

---

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

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

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

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

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

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**Definitions of Vegetation Strata:**

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

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

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

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**Hydrophytic Vegetation Present?**      Yes \_\_\_\_\_ No



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Kane Solar I City/County: Kane County Sampling Date: 2022-12-07  
 Applicant/Owner: Horizon Solar Power State: Illinois Sampling Point: 5  
 Investigator(s): Cat Holland, Kelly Volansky Section, Township, Range: S34 T40N R6E  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): K 95B Lat: 41.8970697 Long: -88.5447478 Datum: NAD 83  
 Soil Map Unit Name: 152A - Drummer silty clay loam, 0 to 2 percent slopes NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes  No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes  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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:	

**VEGETATION** – Use scientific names of plants.

Sampling Point: 5

Tree Stratum (Plot size: <u>30 ft r</u> )	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
	<u>0%</u>	= Total Cover		<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>60</u></td> <td>x 1 = <u>60</u></td> </tr> <tr> <td>FACW species <u>2</u></td> <td>x 2 = <u>4</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>124</u></td> <td>(A) <u>252</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.03</u>	Total % Cover of:	Multiply by:	OBL species <u>60</u>	x 1 = <u>60</u>	FACW species <u>2</u>	x 2 = <u>4</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>124</u>	(A) <u>252</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>60</u>	x 1 = <u>60</u>																	
FACW species <u>2</u>	x 2 = <u>4</u>																	
FAC species <u>60</u>	x 3 = <u>180</u>																	
FACU species <u>2</u>	x 4 = <u>8</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>124</u>	(A) <u>252</u> (B)																	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15 ft r</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
	_____	= Total Cover																
<b>Herb Stratum</b> (Plot size: <u>5 ft r</u> )				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.														
1. <u>Alisma subcordatum</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>OBL</u>															
2. <u>Xanthium strumarium</u>	<u>55</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. <u>Setaria pumila</u>	<u>5</u>		<u>FAC</u>															
4. <u>Abutilon theophrasti</u>	<u>2</u>		<u>FACU</u>															
5. <u>Panicum dichotomiflorum</u>	<u>2</u>		<u>FACW</u>															
6. <u>Setaria magna</u>	<u>2</u>																	
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
	<u>126%</u>	= Total Cover																
<b>Woody Vine Stratum</b> (Plot size: <u>30 ft r</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
	_____	= Total Cover																
Remarks: (Include photo numbers here or on a separate sheet.)																		

**SOIL**

Sampling Point: 5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 28	10YR 2/1	100					Loam	
28 - 30	10YR 4/3	98	10YR 6/8	2	C	M	Clay	
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								
-								

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 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) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

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

Hydric Soil Present? Yes  No

Remarks:

## Appendix L

### References

- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1*. United States Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List: 2016 Wetland Ratings*. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at <<http://websoilsurvey.nrcs.usda.gov/>>. Accessed December 2019.
- US Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)*. Headquarters, US Army Corps of Engineers, Washington, D.C.
- U.S. Fish and Wildlife Service. 2011. *National Wetlands Inventory Map: Great Bend Quadrangle*. United States Department of the Interior, Fish and Wildlife Service, Washington, D.C.
- U.S. Geological Survey. Great Bend Quadrangle, Indiana [map]. Revised 1992. 1:24,000. 7.5 Minute Series. United States Department of the Interior. Reston Virginia.
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