FARMLAND DRAINAGE PLAN

Tiger Storage 1, LLC

c/o New Leaf Energy, LLC.

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Prepared June 2026

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55 ILCS 5/5-12024 FARMLAND DRAINAGE REQUIREMENTS

Per 55 ILCS 5/5-12024 Item K (1), "a facility owner shall file a farmland drainage plan with the county and impacted drainage districts that outlines how surface and subsurface drainage of farmland will be restored during and following construction and deconstruction of the energy storage system."

SURFACE DRAINAGE

The existing drainage patterns of the existing site will be generally maintained and the surface drainage runoff will decrease in the post-development condition. The existing cultivated farmland land use on site will be converted to meadow land use where gravel and concrete are not proposed which will provide increased soil stabilization and infiltration, decreasing the overall drainage runoff attributed to the site. Additionally, two (2) stormwater basins are proposed to slow the runoff from the site. Included as **Attachment 1**, a preliminary Stormwater Report which details the hydrologic characteristics of BESS developments and concludes their minimal effect on drainage patterns or runoff volume with the assistance of well-maintained vegetation. During final engineering, the pre- and post-development drainage areas shall be analyzed for quantity of runoff in the 2-year and 100-year storm events. This analysis is anticipated to show an overall decrease in runoff quantity in the post-development condition.

Prior to construction, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared for the Project that conforms with the Illinois Environmental Protection (IEPA) guidelines. The SWPPP will outline measures to reduce impacts to local and neighboring drainage features. Construction of the Project will not commence until a National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 is received from the IEPA, indicating approval of the Project SWPPP.

SUBSURFACE DRAINAGE

Existing drain tile on site has been preliminary located and mapped by Huddleston McBride. **Exhibit 2, Attachment A** contains a Drain Tile Probability Map which contains this information. As detailed in the Drain Tile Mitigation Plan (Attachment 2), the site design will be preemptively reviewed to identify potential impacts to existing drain tile. If existing drain tile is expected to be impacted, it will be field located and preemptively relocated. If drain tile is impacted during construction, the contractor shall repair as soon as possible and confirm impacts are mitigated to negate upstream impacts. Refer to **Exhibit 2** for general construction approaches and drain tile repair details.

The contractor will adhere to all surface drainage and subsurface drainage requirements listed within the Illinois Department of Agriculture's Agriculture Impact Mitigation Agreement.

CONCLUSION

As detailed above, studies have been completed to research the hydrologic impacts of battery energy storage systems and have concluded that facilities themselves have little to no impact on runoff volumes or rates. Rain that falls directly on the BESS system runs to the pervious areas around and under the surrounding panels.

Based on the proposed development of the project site and the findings of the above-referenced reports, increases in runoff volume or rate are not anticipated. The project also meets all County, AIMA, and IEPA requirements.

Exhibit 1 – Preliminary Stormwater Report

STORMWATER REPORT

Tiger Energy Storage 1, LLC

Rock Island County, IL

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1. PROJECT DESCRIPTION

The development is a proposed Battery Energy Storage System (BESS) with associated infrastructure located in Rock Island County, IL. The proposed development will include a BESS equipment pad, gravel access drives, and associated electrical equipment foundations.

This report evaluates the pre and post development runoff characteristics of the development and addresses the storm water requirements of Rock Island County. The analysis compares peak runoff rates in pre and post development conditions during the 2-year and 100-year, 24-hour storm events. The analysis was completed with the assistance of HydroCAD Version 10.20-5c.

1.1. Pre-Development Conditions

The existing site is approximately 16.7 acres of agricultural land. In the existing condition, there are 5 drainage areas that contain proposed infrastructure. The drainage areas can be delineated as follows:

- EX-01 flows west toward 14th St.
- EX-02 flows north toward existing agricultural land.
- EX-03 flows northeast toward existing agricultural land.
- EX-04 flows east toward existing agricultural land.
- EX-05 flows south toward existing agricultural land

Refer to **Exhibit 5** for the Pre-Development Drainage Area Map.

There are two wetlands to the north of the project area, in accordance with the wetland delineation report prepared by Kimley-Horn. Refer to **Exhibit 1**. These wetlands will not be disturbed in the construction or maintenance of the development.

According to data obtained from FEMA GIS data website, the project lies in panel 17161C0315F with an effective date of 4/5/2010. The project is within Zone X, an area of minimal flood hazard. Refer to **Exhibit 2** for the FEMA Firm Map.

The National Resources Conservation Service (NRCS) soils report concludes that onsite soils consist of mostly silt loams that classify as type B/D soils (Refer to **Exhibit 4** for NRCS Soils Report). For calculations details in this report, the soil types in both pre and post development conditions are assumed to be Type B.

1.2. Post-Development Conditions

The proposed project consists of a Battery Energy Storage System (BESS) and associated infrastructure for a power generating facility. The BESS area will consist of an array of Battery Storage Modules, gravel access drives, associated electrical equipment foundations and underground utilities. The facility will be surrounded by a perimeter fence. All developed areas that are not occupied by gravel or concrete roads or foundations will be seeded with natural, meadow-like species. This permanent meadow vegetation will be maintained by the project owner for the lifespan of the project. The drainage patterns for the site will change due to the addition of impervious areas. The drainage areas can be delineated as follows:

- DA-01 flows west toward 14th St.
- DA-02 flows north toward a proposed pond to existing agricultural land.
- DA-03 flows northeast toward existing agricultural land.
- DA-04 flows east toward a proposed pond to existing agricultural land.
- DA-05 flows south toward existing agricultural land

Refer to **Exhibit 6** for the Post-Development Drainage Area Map.

2. POST-CONSTRUCTION STORM WATER MANAGEMENT

In the post-development conditions, ground cover inside the subject property will change from agricultural row crops to impervious and meadow. The proposed impervious areas on site are the gravel and concrete access roads and the BESS area. Despite the addition of impervious area, the peak runoff rates decreased from pre- to post-development conditions due to the rest of the site being seeded, with the exception of DA-03.

The site peak discharges were estimated using methods outlined in the NRCS TR-55 and the following parameters: subbasin area (acres), flowlines (feet [ft.]), time of concentrations (Tc, hours), slope (ft./ft.), and Curve Number. Curve Numbers were determined based upon soil classification and land use for each subbasin. The NOAA Precipitation Frequency Data Server was used to model the rainfall on site. The 1-foot contour interval topographic survey was examined to identify points where onsite flow discharges from the development area. The release rates for the 2-year and 100-year storm were calculated using HydroCAD Version 10.20-3c. Detailed calculations have been provided in **Exhibits 7** and **8** and a summary of the pre vs. post development composite curve numbers and runoff rates are provided below.

Table 1: Summary Pre vs. Post Development Composite Curve Numbers

Point of Analysis (POA)	*Drainage Area (AC)*		*Curve Numbers*	
	Pre	*Post*	*Pre*	*Post*
POA-01	7.32	5.62	81	61.73
POA-02	3.06	1.71	81	85.43
POA-03	1.46	4.56	81	89.48
POA-04	3.17	3.13	81	66.40
POA-05	1.69	1.68	81	71.57
Total	**16.70**		**81**	**73.60**

Table 2: Summary Pre vs. Post Development 2-Year Storm Runoff Rates		
Point of Analysis	*Pre (cfs)*	*Post (cfs)*
POA-01	11.43	0.82
POA-02	3.59	4.73
POA-03	2.53	11.37
POA-04	3.35	2.51
POA-05	2.59	1.79
SITE TOTALS	**23.49**	**21.22**

Table 3: Summary Pre vs. Post Development 100-Year Storm Runoff Rates		
Point of Analysis	*Pre (cfs)*	*Post (cfs)*
POA-01	43.62	9.88
POA-02	13.94	15.50
POA-03	9.60	33.83
POA-04	13.10	17.95
POA-05	9.90	9.59
SITE TOTALS	**90.16**	**86.75**

3. CONCLUSION

Based on the proposed improvements on the project site and the calculations included within this report, increases in runoff rate are not anticipated for the Project. Runoff rates decrease for 4 of the 5 drainage areas in the post-development conditions with the existing. The HydroCAD model shows a decrease in the average Curve Number for the whole site as well including a decrease in the total runoff volume. Refer to **Exhibit 7** and **Exhibit 8** for additional detail. Overall, the proposed conditions will reduce both peak runoff rate and volume on the property.

Exhibit 1 – National Wetlands Inventory Map

Wetland Delineation Report

Tiger Storage

Bowling Township

Rock Island County, Illinois

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June 2025

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1 Introduction

Wetland scientists Trey Jonas and Cady Peterson with Kimley-Horn and Associates, Inc. (Kimley-Horn) conducted a wetland investigation and field delineation for New Leaf Energy, Inc. and the Tiger Storage Project in Bowling Township, Rock Island County, Illinois. The wetland investigation and delineation included 81 acres located in parcel ID # 23-02-300-001, of Section 02, Township 16N, and Range 02W (the "study area"). The study area is shown on **Figure 1.** The study area consists of undeveloped agricultural land and forested area. Cover types within the study area include deciduous forest and cultivated cropland.

A routine level 2 (onsite) wetland delineation, as outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* (January 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010)* occurred on May 28th, 2025. The purpose of this delineation was to identify the extent of wetlands within the study area. The information will be used to facilitate project design and determine if aquatic resource impacts are avoidable and/or if minimization of impacts can result from design modifications.

2 Project Description

New Leaf Energy, Inc. is proposing a battery storage energy system (BESS) development.

3 Statement of Qualifications

Kimley-Horn has extensive experience completing wetland investigations and delineations across the United States. Kimley-Horn's personnel have been trained to use the *1987 Corps of Engineers Wetlands Delineation Manual (USACE, 1987)* along with the applicable regional supplements. Kimley-Horn has experience completing off-site hydrology analysis, historic aerial reviews, and difficult or atypical situation delineations.

Ashley Payne earned a Bachelor of Arts Degree in Environmental Biology from Saint Mary's University of Minnesota. She is an environmental scientist with over 14 years of experience specializing in wetland services, environmental documentation and assessments, and geographic information systems mapping and data collection. During the last 14 years, she has successfully completed hundreds of delineations for various types of projects. In the last seven years, Ashley's primary focus has been the delineation of agricultural fields for future development. She is familiar with completing historic aerial reviews and off-site hydrology determinations which are required for delineation of farmed wetlands. Ashley has also obtained environmental permits for clients through efficient and thorough preparation of permit applications, and by coordinating with agency personnel. Ashley is a certified delineator in the state of Minnesota and her primary focus is environmental work in the Midwest. She has extensive experience working in Minnesota, Illinois, Wisconsin, Michigan, Iowa, and South Dakota.

Keller Leet-Otley earned a Bachelor of Arts Degree in Environmental Science from Colby College. He is an environmental scientist who specializes in wetland delineation and permitting, geographic information systems mapping, and threatened and endangered species due diligence. He has led the delineation of agricultural fields, roadway corridors, and undeveloped areas for future development and transit projects. He is proficient using ArcGIS to produce client specific exhibits for various project types. Keller has prepared environmental permit applications and documentation for public and private sector clients. He is a certified delineator in the state of Minnesota and his focus is environmental work in the upper Midwest.

Trey Jonas holds a Bachelor of Science in Environmental Geoscience from Winona State University. He brings 5 years of professional experience in environmental regulation. He specializes in GIS mapping, wetland delineations, and permit application writing. Trey has reviewed permit applications for hundreds of

public and private applicants in the state of Minnesota. He is a certified wetland delineator-in-training in the state of Minnesota.

Cady Peterson earned a Bachelor of Science in Environmental Science from Bethel University. She specializes in wetland delineation, environmental permitting, GIS mapping, and species due diligence. Cady has experience with agricultural and forested wetland delineations in Minnesota, Illinois, Missouri, and Michigan.

4 Regulatory Requirements

A summary of the permit requirements that may pertain to the project is provided below. Any activity planned within areas identified as wetland must be coordinated with and approved by the appropriate agencies prior to commencement of such activities.

4.1 State and Federal Regulations

The regulatory authority of the U.S. Army Corps of Engineers (USACE) covers Waters of the United States (WOTUS) in accordance with Section 404 of the Clean Water Act (CWA). Generally, the USACE reviews delineations to determine whether wetlands are jurisdictional (i.e., WOTUS). On March 12, 2025, the U.S. Environmental Protection Agency (EPA) and Department of the Army ("the agencies") announced a joint memorandum issuing guidance to field staff on implementation of the continuous surface connection requirement under the CWA. The final ruling is pending as of the date of this report.

Based on the March 2025 ruling, the Clean Waters Act's use of "waters" encompasses only relatively permanent, standing, or continuously flowing bodies, ordinarily called streams, oceans, rivers, and lakes. Wetlands qualify as WOTUS only if "indistinguishable from waters of the United States," having a continuous surface connection to bodies that are waters of the United States in their own right, with no clear division between waters and wetlands. USACE retains the authority to make final decisions regarding federal jurisdiction of aquatic resources. Obtaining a jurisdictional determination (JD) from the USACE clarifies the scope of federal jurisdiction over delineated aquatic resources and identifies which resources are subject to CWA regulations.

Section 10 of the Rivers and Harbors Act requires that regulated activities conducted below the ordinary high-water mark elevation of navigable Waters of the U.S. or mean high water mark for tidal waters be approved/permitted by the USACE. Regulated activities include the placement/removal of structures, work involving dredging, disposal of dredged material, filling, excavation, or any other disturbance of soils/sediments or modification of a navigable waterway. Navigable Waters of the U.S. are those waters that are subject to the ebb and flow of the tide shoreward to the mean high-water mark and/or are presently used or have been used in the past or may be susceptible to use to transport interstate or foreign commerce.

At this time, Illinois does not regulate wetlands under Section 404 or require setback buffers for wetlands on private land.

4.2 Local Regulations

At this time, based on publicly available information, Bowling Township and Rock Island County do not regulate wetlands or require setback buffers for wetlands.

5 Mapping and Background Information

Prior to field reconnaissance, potential wetland areas within the project study area were identified through a desktop review of United States Geological Survey (USGS) topographic maps, National Wetlands Inventory (NWI), National Hydrography Dataset (NHD), Illinois Department of Natural Resources (IDNR)

Public Waters database, LiDAR data, the soil survey for Rock Island County, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), aerial photography, and antecedent precipitation data for a location near the study area. The selected resources are described below:

5.1 Topography

The Milan, IL 7.5-minute USGS topographic map and 2-foot contours derived from a digital elevation model (DEM) from USGS were reviewed for the study area. According to the USGS topographic map (see **Figure 2**), the study area is undeveloped, partially wooded land with a stream identified as Sheldon Creek depicted in the southeastern corner. The 2-foot contour data depict the study area sloping east towards Sheldon Creek in the eastern portion of the study area, and west offsite towards Kyte Creek in the western portion of the study area. The study area ranges from 698 feet (above mean sea level) to 746 feet, see **Figure 3**.

5.2 National Wetlands Inventory

NWI mapping, available from the U.S. Fish and Wildlife Service (USFWS) Wetland Mapper (updated in 2024), depicts potential wetland areas and waterbodies based on stereoscopic analysis of high altitude and aerial photographs and was reviewed for the study area. According to the NWI map, there is one riverine wetland (R4SBC) in the southeastern portion of the study area, **see Figure 3**.

5.3 National Hydrography Dataset

The NHD, available from USGS, depicts drainage networks and related features, including rivers, streams, canals, lakes, and ponds. The NHD dataset is not field verified. According to NHD mapping, there is one NHD flowline feature within the study area that is a tributary to Sheldon Creek, **see Figure 3**.

5.4 IDNR Public Waters

The IDNR Public Waters viewer depicts IDNR Public Waters. According to the Public Waters viewer, there are no Public Waters within the study area or the vicinity of the study area.

5.5 Soil Survey

The Natural Resources Conservation Service's (NRCS) *Web Soil Survey* for Rock Island County was reviewed for the study area. According to the survey, there are 11 soil mapping units within the study area which are generally silt loams with some silty clay loam. The study area was mapped with soils with a non-hydric soil rating of 0% or a predominantly non-hydric soil rating from 1% to 32%. Maps and information obtained from the NRCS online web soil survey are included in **Figure 4** and **Appendix A**.

5.6 Federal Emergency Management Agency Floodplain

The FEMA FIRM was reviewed for the study area. According to FEMA, the study area is located in Zone X of panel 17161C0315F (Effective 04/05/2010), which is outside the designated 100-year floodplain zones, see **Figure 5**.

5.7 Aerial Photography Review

Aerial photography, acquired from Google Earth, was reviewed to identify the potential for wetlands across the study area. Nine photos were reviewed between 2006 and 2024, available in **Appendix B**. These photos were used to determine the presence of wetland hydrology using industry accepted offsite hydrology analysis for areas showing crop stress or other potential wetland signatures. Each image was interpreted for the presence or lack of hydrologic indicators.

5 Areas of Investigation (AOIs) were identified in the study area. All 5 AOIs had wetland signatures in at least 30% of the historic aerials with normal precipitation conditions, however, only AOIs 1 and 2 met

primary hydrology indicators during the field delineation and were delineated as Wetland 1 and Wetland 2, respectively. AOIs 3-5 had wetland signatures in at least 30% of the historic aerials with normal precipitation conditions, however they lacked hydrology indicators or hydric soils in the field; thus, these areas were not delineated as wetland. The AOIs are shown in **Appendix B**.

5.8 Precipitation

Precipitation data for the study area were obtained from the U.S. Army Corps of Engineers Antecedent Precipitation Tool. WETS (Wetlands) tables were reviewed for climate stations within the vicinity of the study area to determine the current hydrologic conditions for the study area and if those conditions are typical for this time of year. Ninety-day rolling precipitation levels leading up to the field review were compared to historical data. In summary, the field visit constituted normal precipitation conditions. This information is included in **Appendix C**.

6 Field Investigation

A routine level 2 (onsite) wetland delineation, as outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* (January 1987) along with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010)* occurred on May 28th, 2025

During the onsite delineation, vegetation, soils, and current hydrologic characteristics were evaluated at each wetland area and area of investigation identified within the study area. Wetland boundaries were digitally recorded with a GPS with sub-meter accuracy until one or more of the three criteria were no longer present. The sample point locations, wetland boundaries, and aquatic resources are shown in **Figure 6**.

In addition to wetlands that were investigated and delineated, non-wetland aquatic features were delineated. Non-wetland aquatic features are defined based on the observation of the following characteristics:

- Flow
    - Perennial: contains water at all times of the year except during extreme drought
    - Intermittent: contains water occasionally or seasonally
    - Ephemeral: contains water only during and immediately after periods of rainfall or snowmelt
- Ordinary High Water Mark (OHWM): The limit line on the shore established by the fluctuation of the water surface. It is shown by such things as a clear line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, the presence of litter and debris, or other features influenced by the surrounding area
- Bank Shape
    - Undercut: banks that overhang the stream channel
    - Steep: bank slope of approximately greater than 30 degrees
    - Gradual: bank slope of approximately 30 degrees or less

Sample points were completed for all observed wetlands. Non-wetland linear features include grass-lined swales, channels, erosional features, and roadside ditches, which lack flow, an OHWM, and/or an established bed and bank. Erosional features contained drainage patterns but lacked vegetation. Roadside ditches contained upland vegetation along roadside areas. The linear features are included in **Figure 6** to demonstrate surficial connections between resources. Historic aerials were reviewed for sample points taken in agricultural fields (See **Appendix B**). The field data sheets are included in **Appendix D**. Study area photos and a photo locations map can be found in **Appendix E**.

7 Summary of Results

Table 1: Wetland Delineation Summary

Resource ID	Wetland Plant Community	Cowardin Classification[1]	Size (acres)[2]	NWI?	Hydric Soils?[3]	Photo ID	Associated Sample Points	NOTES	Regulatory Status[4]
Wetlands									
Wetland 1	Seasonally Flooded Basin	PEM1Af	0.24	No	Yes	3	SP-4 (Wet) SP-3 (Up)	Wetland located in depression along the western portion of the study area. The wetland collects runoff from the surrounding landscape and drains southwest. The wetland boundary was based on the change in topography, presence of hydric soil, and an offsite aerial review. The resource appears surficially isolated from other aquatic resources.	USACE Non-Jurisdictional: does not have a continuous surficial connection to a Traditionally Navigable Water (TNW) or Relatively Permanent Water (RPW).
Wetland 2	Seasonally Flooded Basin	PEM1Af	0.16	No	Yes	4	SP-2 (Wet) SP-3 (Up)	Wetland located in depression along the central portion of the study area. The wetland collects runoff from the surrounding landscape and drains southeast. The wetland boundary was based on the change in topography, presence of hydric soil, and an offsite aerial review. The resource appears surficially isolated from other aquatic resources.	USACE Non-Jurisdictional: does not have a continuous surficial connection to a TNW or RPW.

[1] The Cowardin Classification System codes are found here: https://doee.dc.gov/sites/default/files/dc/sites/ddoe/release_content/attachments/Appendix%20H_Cowardin%20Classification%20Diagram.pdf
[2] Size of wetland features and additional areas investigated provided in acres within the study area.
[3] Areas identified as hydric contain partially hydric soils (equal to or greater than 33% of soil component) mapped within the resource area.
[4] Regulatory Status is based on best professional judgment and has not been verified with agency staff.

Table 2: Linear Feature Delineation Summary

Resource ID	Cowardin Classification	Size (linear feet)[5]	NWI?	Photo ID	NOTES	Regulatory Status[6]
Streams						
Intermittent Stream 1	R4SBC	1437	R4SBC	6, 8, 10	Intermittent Stream 1 was located in the forested area in the southeast portion of the study area and collected drainage from the surrounding landscape. The stream drained offsite to the north and is a tributary to Sheldon Creek. The stream had steep banks 3 to 4 feet deep and 1-2 feet wide. Standing water within the bed was approximately 4-12 inches in depth.	USACE-Jurisdictional: tributary classifies as a RPW.
Intermittent Stream 2	R4SBC	30	R4SBC	8	Intermittent Stream 2 was located in the forested area in the southeast portion of the study area and collected drainage from Ephemeral Stream 2. The stream drained east into Intermittent Stream 1. The stream had shallow banks 4-12 inches deep and 2-3 feet wide. Standing water within the bed was approximately 4-12 inches in depth.	USACE-Jurisdictional: tributary classifies as an RPW.
Ephemeral Stream 1	-	99	No	7	Ephemeral Stream 1 was located in the forested area in the southeast portion of the study area and collected drainage from the surrounding landscape. The stream drained west into Intermittent Stream 1 and had shallow banks 4-12 inches deep and 3-4 feet wide. Vegetation was present on the banks and within the stream bed. Water levels were approximately 2-6 inches in depth.	USACE Non-Jurisdictional: does not connect to a TNW or meet the definition of an RPW.
Ephemeral Stream 2	-	104	No	8	Ephemeral Stream 2 was located in the forested area in the southeast portion of the study area and collected drainage from the surrounding landscape. The stream drained east into Intermittent Stream 2 and had shallow banks 4-12 inches deep and 3-4 feet wide. Vegetation was present on the banks and within the stream bed. Water levels were approximately 2-6 inches in depth.	USACE Non-Jurisdictional: does not connect to a TNW or meet the definition of an RPW.

[5] Size of non-wetland, linear features provided in linear feet within the study area.
[6] Regulatory Status is based on best professional judgment and has not been verified with agency staff.

Resource ID	Cowardin Classification	Size (linear feet)[5]	NWI?	Photo ID	NOTES	Regulatory Status[6]
Ephemeral Stream 3	-	219	No	-	Ephemeral Stream 3 was located in the forested area in the eastern portion of the study area and collected drainage from the surrounding landscape. The stream drained east offsite and had shallow banks 4-12 inches deep and 3-4 feet wide. Vegetation was present on the banks and within the stream bed. Water levels were approximately 2-6 inches in depth.	USACE Non-Jurisdictional: does not connect to a TNW or meet the definition of an RPW.
Ephemeral Stream 4	-	137	No	6	Ephemeral Stream 4 was located in the forested area in the eastern portion of the study area and collected drainage from the surrounding landscape. The stream drained east into Intermittent Stream 1 and had shallow banks 1-2 feet deep and 3-4 feet wide. Vegetation was present on the banks and within the stream bed. Water levels were approximately 2-6 inches in depth.	USACE Non-Jurisdictional: does not connect to a TNW or meet the definition of an RPW.

8 Report Preparation

The procedures followed for this wetland delineation are in accordance with the *Corps of Engineers Wetlands Delineation Manual* and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (August 2010).

This report describes study area conditions for a specific date in time and is generally valid for a period of five years from the date of the final field investigation and delineation, which was May 28th, 2025.

9 Conclusion

The field delineation identified two wetlands, two intermittent streams, and four ephemeral streams within the study area. Each of the delineated resources is described in Table 1 and Table 2. Both wetlands are anticipated to be USACE non-jurisdictional. Both intermittent streams are anticipated to be USACE-jurisdictional. All delineated ephemeral streams and linear features are anticipated to be USACE non-jurisdictional.

10 Disclaimer

Kimley-Horn has prepared this document based on limited field observations and our interpretation, as scientists, of applicable regulations and agency guidance. While Kimley-Horn believes our interpretation to be accurate, final authority to interpret the regulations lies with the appropriate regulatory agencies. Regulatory agencies occasionally issue guidance that changes the interpretation of published regulations. Guidance issued after the date of this report has the potential to invalidate our conclusions and/or recommendations and may cause a need to reevaluate our conclusions and/or recommendations.

Because Kimley-Horn has no regulatory authority, the Client understands that proceeding based solely upon this document does not protect the Client from potential sanction or fines from the applicable regulatory agencies. The Client acknowledges that they have the opportunity to submit documentation to the regulatory agencies for concurrence prior to proceeding with any work. If the Client elects not to do so, then the Client proceeds at their sole risk.

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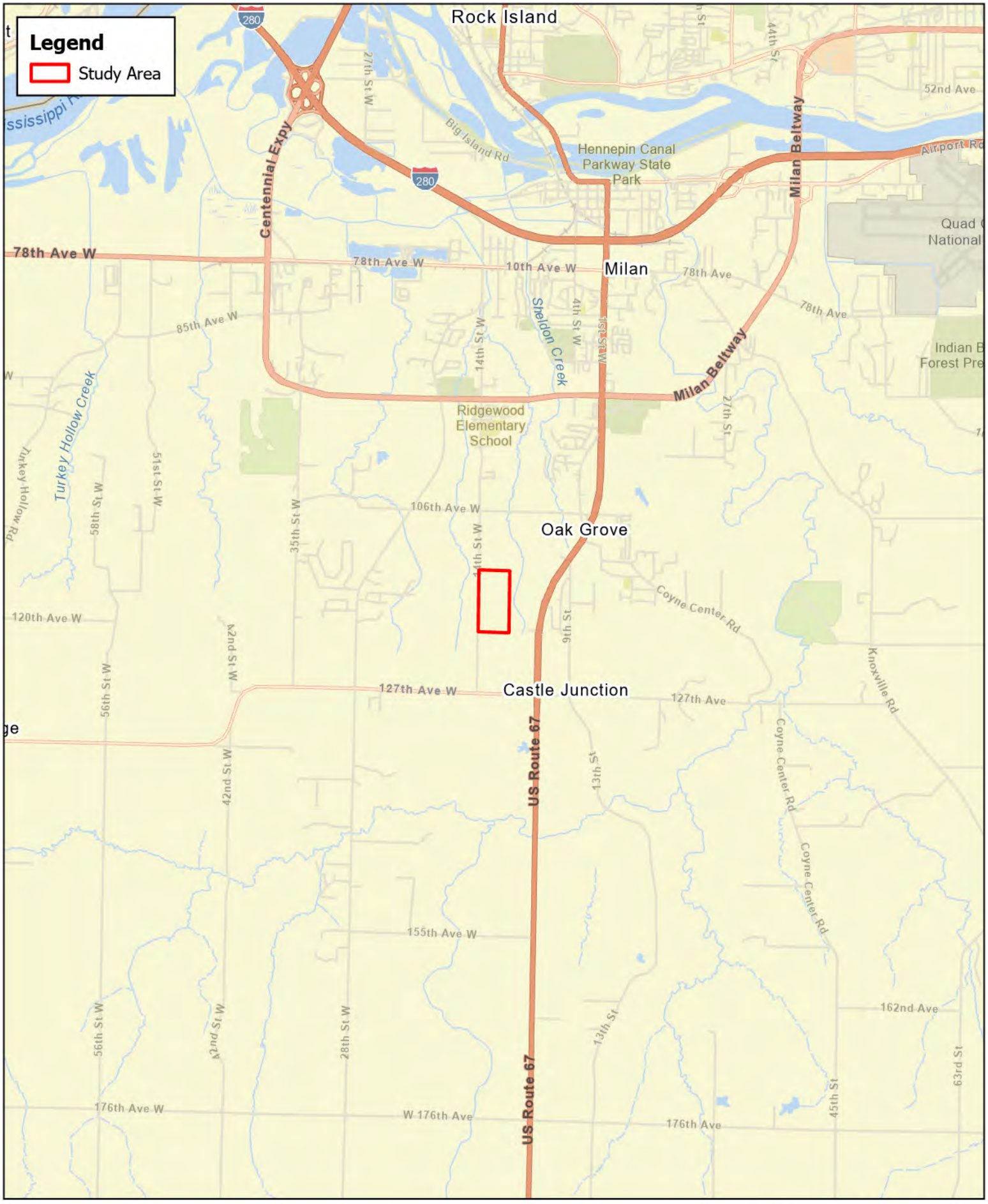
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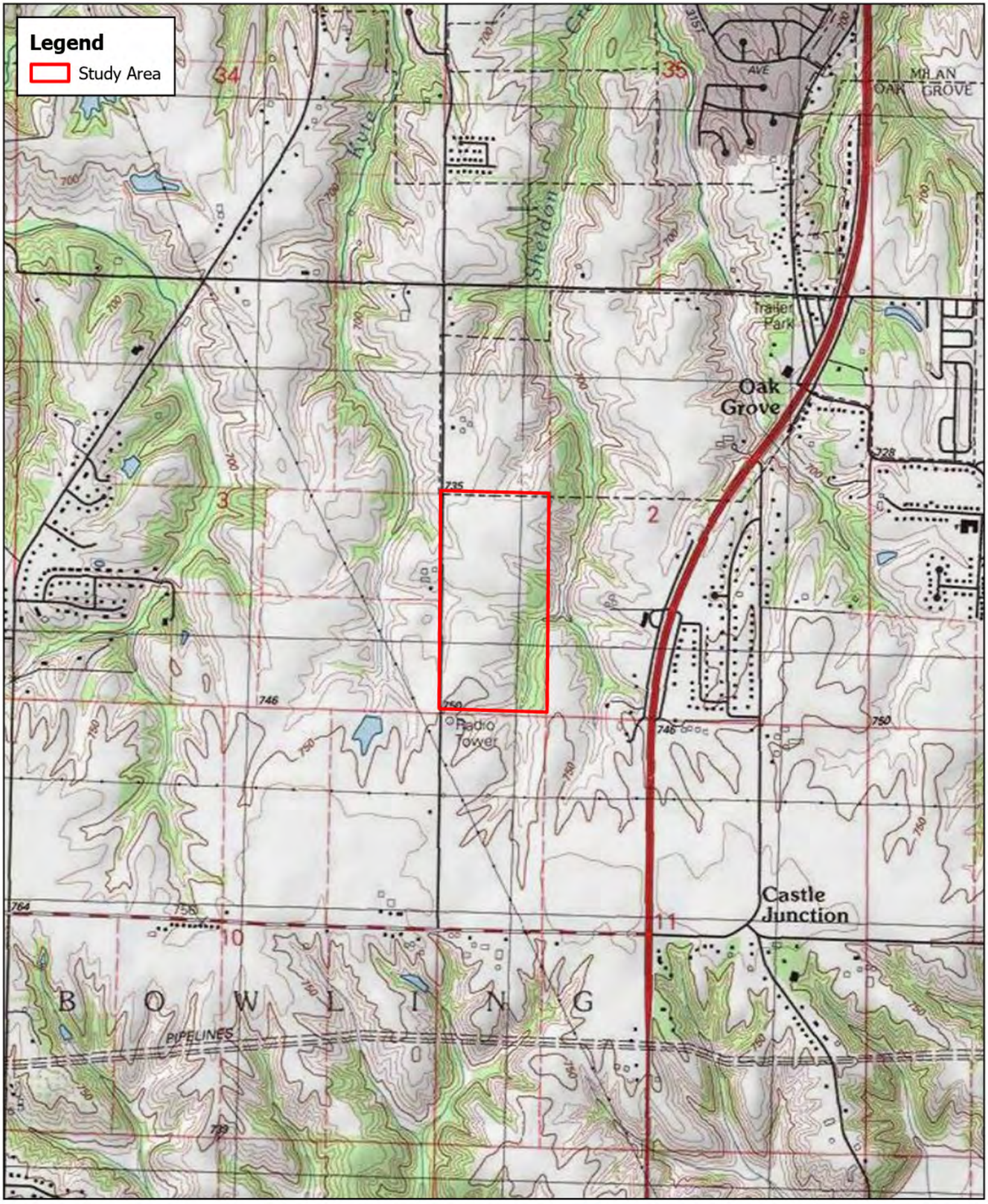
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Figures



Kimley»Horn

Figure 1. Project Location
Bowling Township, Rock Island County
New Leaf Energy, Inc.

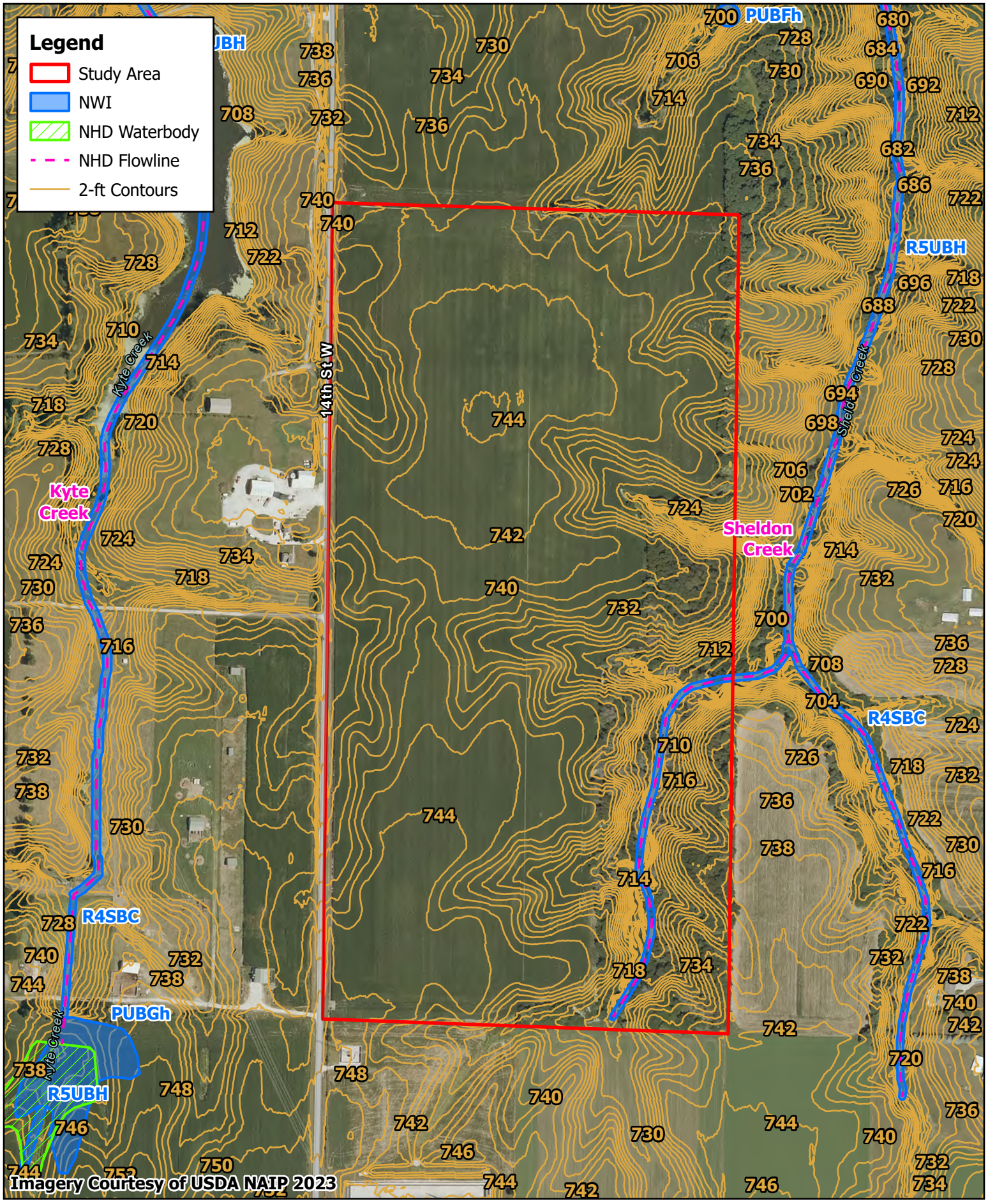


Kimley»Horn

0 1,000 2,000 US Feet

N

Figure 2. USGS Topographic Map
Bowling Township, Rock Island County
New Leaf Energy, Inc.

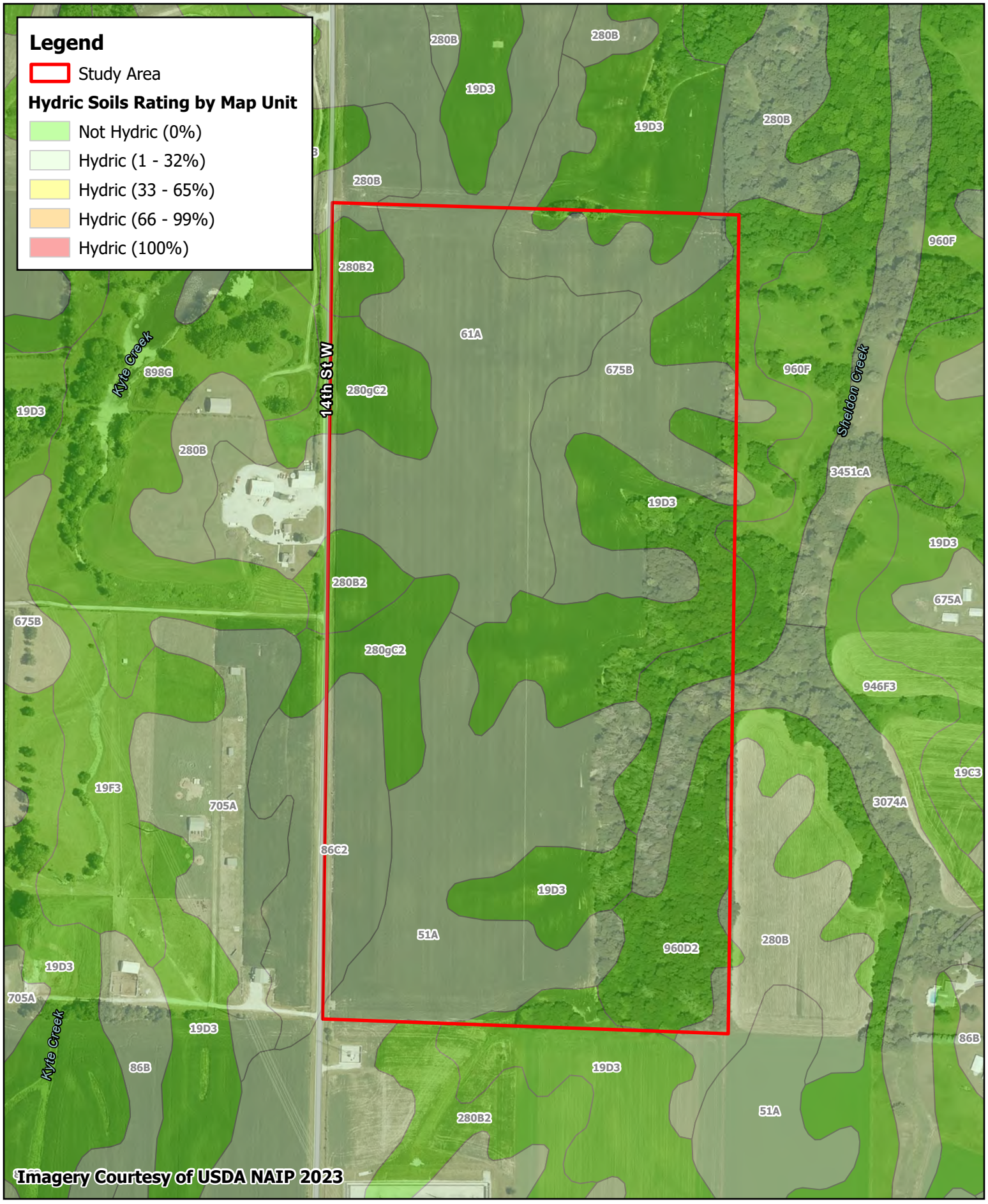


Kimley»Horn

0 200 400 Feet

N

Figure 3. NWI, NHD, and 2-ft Contours
Bowling Township, Rock Island County
New Leaf Energy, Inc.

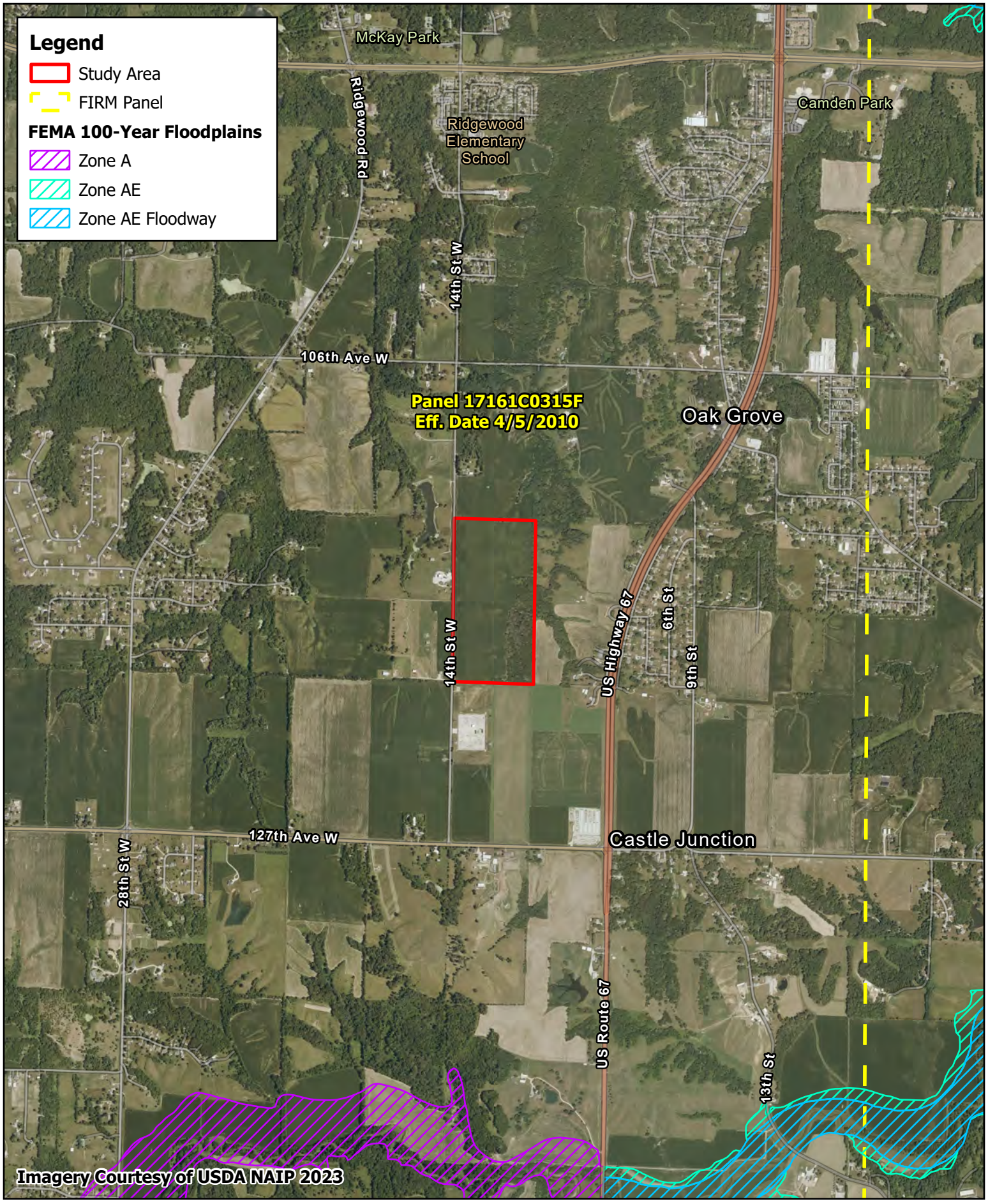


Kimley»Horn

0 200 400 Feet

N

Figure 4. Hydric Soils Rating
Bowling Township, Rock Island County
New Leaf Energy, Inc.

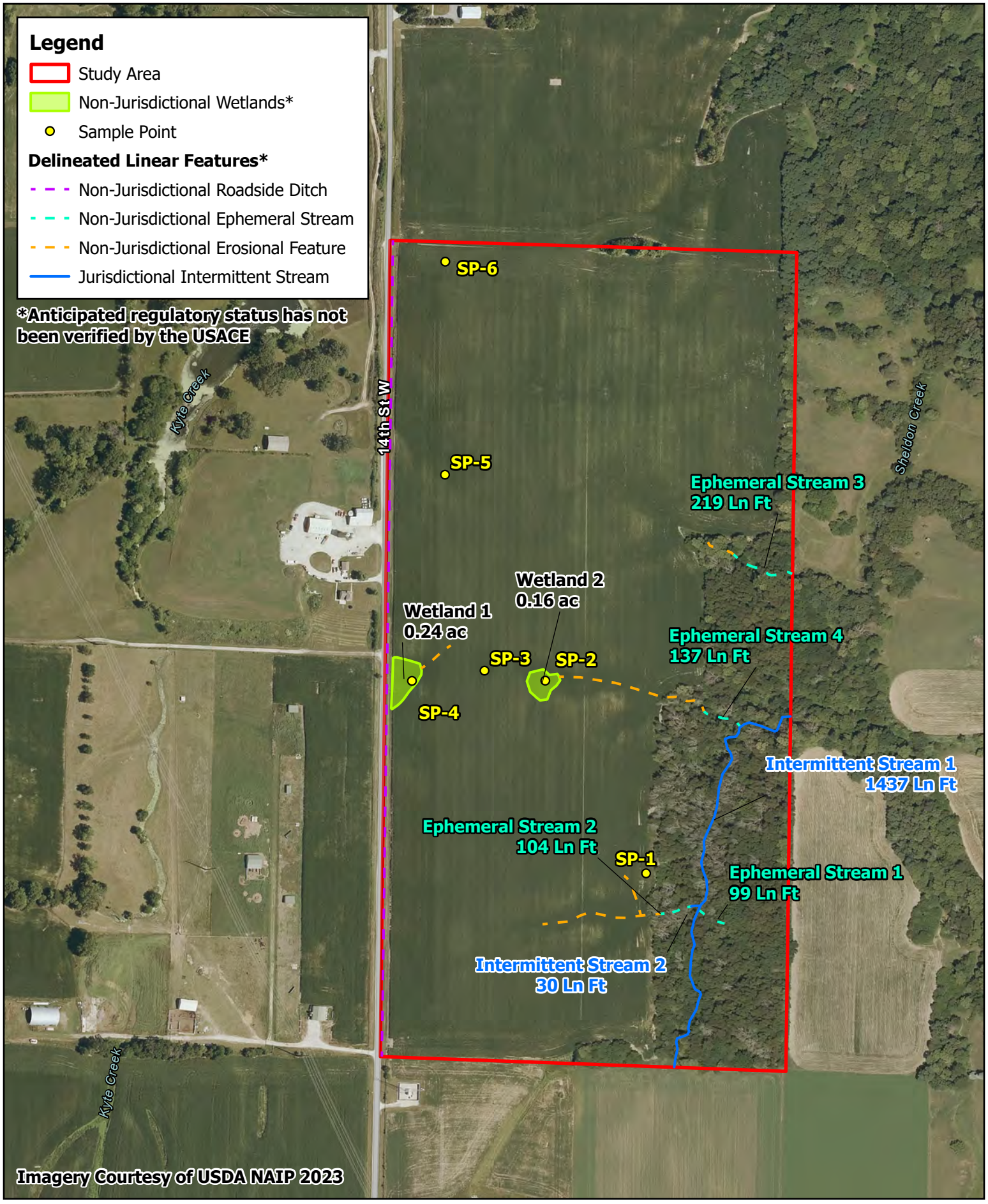


Kimley»Horn

0 1,000 2,000 Feet

N

Figure 5. FEMA 100-Year Floodplains
Bowling Township, Rock Island County
New Leaf Energy, Inc.



Kimley»Horn

0 200 400 Feet

N

Figure 6. Delineation Summary
Bowling Township, Rock Island County
New Leaf Energy, Inc.

Appendix A: Hydric Soils Information



Map Scale: 1:4,820 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rock Island County, Illinois
Survey Area Data: Version 20, Aug 21, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 17, 2020—Sep 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
19D3	Sylvan silty clay loam, 10 to 18 percent slopes, severely eroded	0	15.9	19.5%
51A	Muscatune silt loam, 0 to 2 percent slopes	8	15.8	19.4%
61A	Atterberry silt loam, 0 to 2 percent slopes	2	15.9	19.6%
86C2	Osco silt loam, 5 to 10 percent slopes, eroded	4	4.2	5.2%
280B	Fayette silt loam, glaciated, 2 to 5 percent slopes	2	0.8	1.0%
280B2	Fayette silt loam, glaciated, 2 to 5 percent slopes, eroded	0	2.7	3.4%
280gC2	Fayette silt loam, glaciated, 5 to 10 percent slopes, eroded	0	5.8	7.1%
675B	Greenbush silt loam, 2 to 5 percent slopes	2	10.8	13.3%
960D2	Hickory-Sylvan-Fayette silt loams, 10 to 18 percent slopes, eroded	0	5.3	6.6%
960F	Hickory-Sylvan-Fayette silt loams, 18 to 30 percent slopes	0	1.9	2.3%
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded	10	2.1	2.6%
Totals for Area of Interest			**81.2**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Percent Present" returns the cumulative percent composition of all components of a map unit for which a certain condition is true. For example, attribute "Hydric Rating by Map Unit" returns the cumulative percent composition of all components of a map unit where the corresponding hydric rating is "Yes". Conditions may be simple or complex. At runtime, the user may be able to specify all, some or none of the conditions in question.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Appendix B: Historic Aerial Review

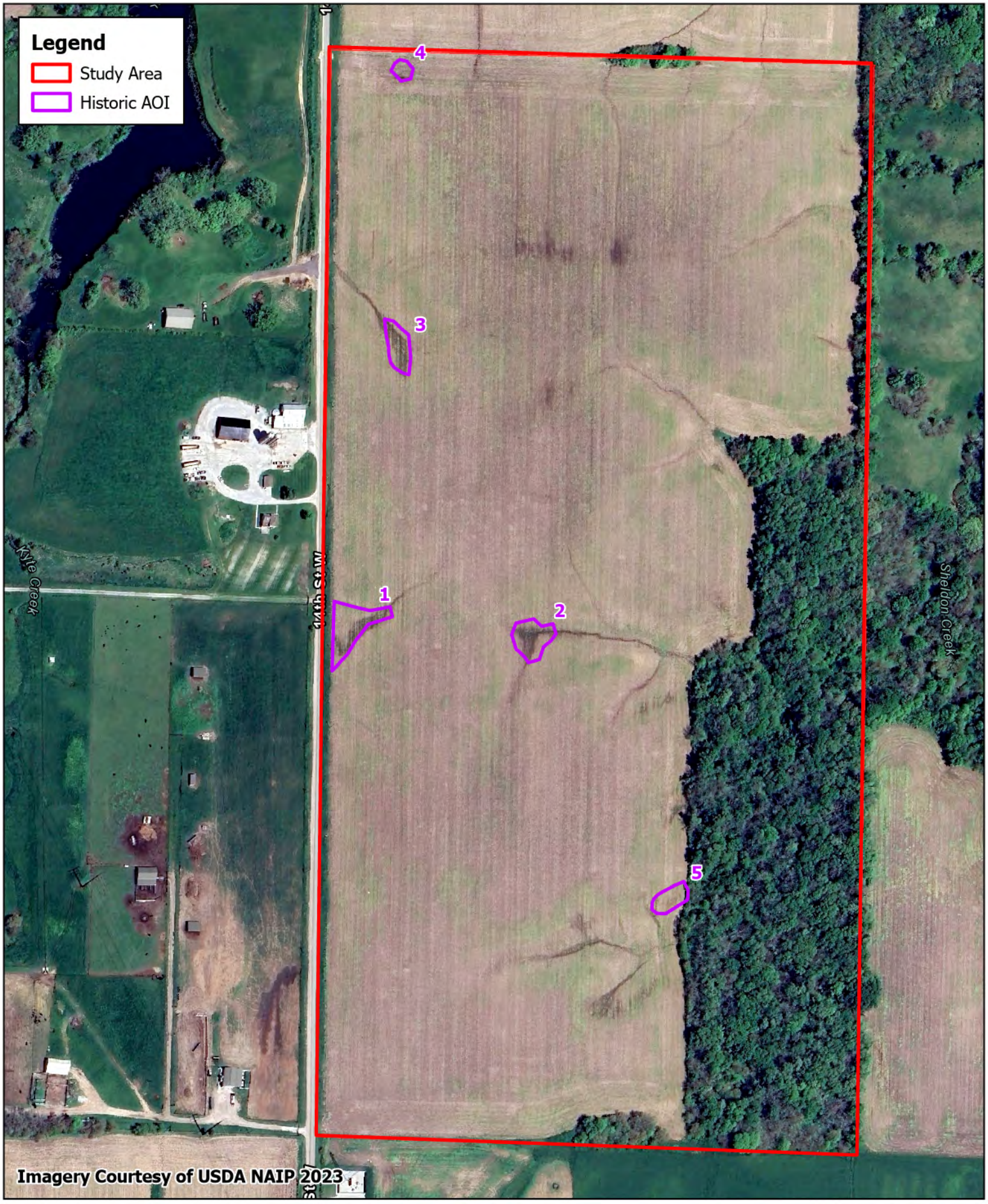
Appendix B. Historic Aerial Review*

		Image Interpretation** (Area of Investigation)				
Date Image Taken	Climate Condition***	1	2	3	4	5
6/22/2006	Normal	NV	NV	NV	NV	NV
6/6/2007	Normal	NV	NV	NV	NV	NV
9/12/2011	Normal	CS	CS	CS	CS	CS
4/21/2014	Drier than Normal	SS	SS	SS	SS	SS
9/27/2017	Normal	NV	NV	NV	NV	CS
4/25/2019	Normal	SS	NV	NV	NV	NV
3/6/2020	Normal	SS	SS	SS	SS	NSS
6/16/2022	Normal	NV	SS	NV	SS	NSS
5/2/2024	Normal	SS	SS	SS	SS	CS
Number of normal years		8	8	8	8	8
Number of normal years with wet signatures		4	4	3	4	3
Percent of normal years with wet signatures		50%	50%	38%	50%	38%
Hydric Soils present		Yes	Yes	Yes	Yes	No
Identified on NWI		No	No	No	No	No
Hydrology indicators observed during field review?		Yes	Yes	No	No	No
Has wetland signature in 30% or more in normal years?		Yes	Yes	Yes	Yes	Yes
Wetland Present?		Yes	Yes	No	No	No
Wetland Number		1	2	N/A	N/A	N/A

**Methodology for determining the presence of wetland explained in Guidance for Offsite Hydrology/ Wetland Determinations from Minnesota Board of Water and Soil Resources (BWSR) and St Paul District Corps of Engineers (July 1, 2016)*

***CS = Crop Stress, NC = Not Cropped, SS = Soil Wetness Signature, SW = Standing Water, AP = Altered Pattern, NV = Normal Vegetative Cover, DO= Drowned Out*

****Climate condition based on USACE APT 90-day rolling precipitation total for wetland hydrology determination for the given photo date. Methodology is described in report.*



Kimley»Horn

0 200 400 Feet

N

Historic AOI map
Bowling Township, Rock Island County
New Leaf Energy, Inc.



Kimley»Horn

0 150 300
Feet

N

Historic Aerial (June 2006)
Bowling Township, Rock Island County
New Leaf Energy, Inc.



Kimley»Horn

0 150 300
Feet

N

Historic Aerial (June 2007)
Bowling Township, Rock Island County
New Leaf Energy, Inc.



Kimley»Horn

0 150 300
Feet

N

Historic Aerial (September 2011)
Bowling Township, Rock Island County
New Leaf Energy, Inc.

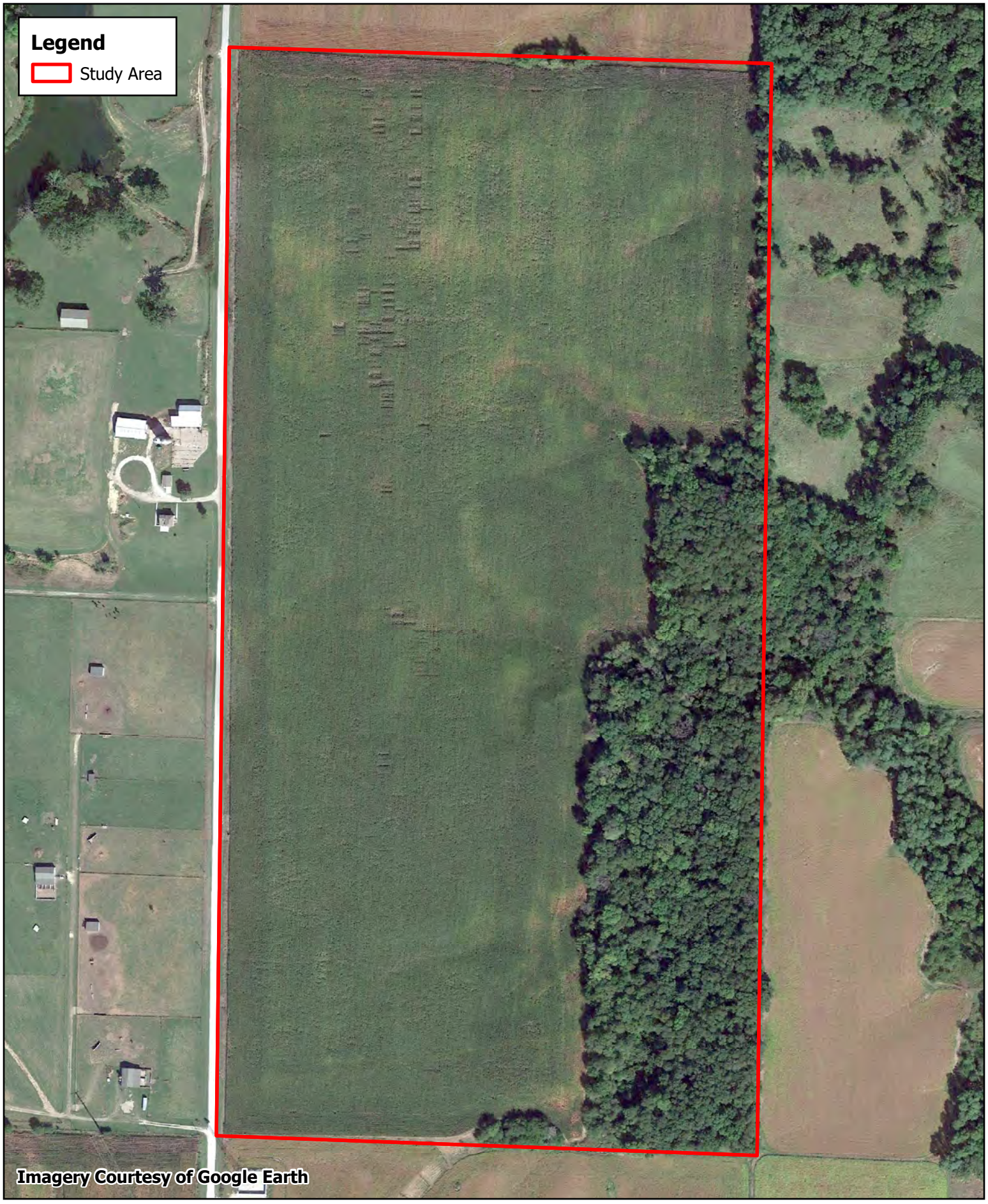


Kimley»Horn

0 150 300
Feet

N

Historic Aerial (April 2014)
Bowling Township, Rock Island County
New Leaf Energy, Inc.



Kimley»Horn

0 150 300
Feet

N

Historic Aerial (September 2017)
Bowling Township, Rock Island County
New Leaf Energy, Inc.



Kimley»Horn

0 150 300
Feet

N

Historic Aerial (April 2019)
Bowling Township, Rock Island County
New Leaf Energy, Inc.

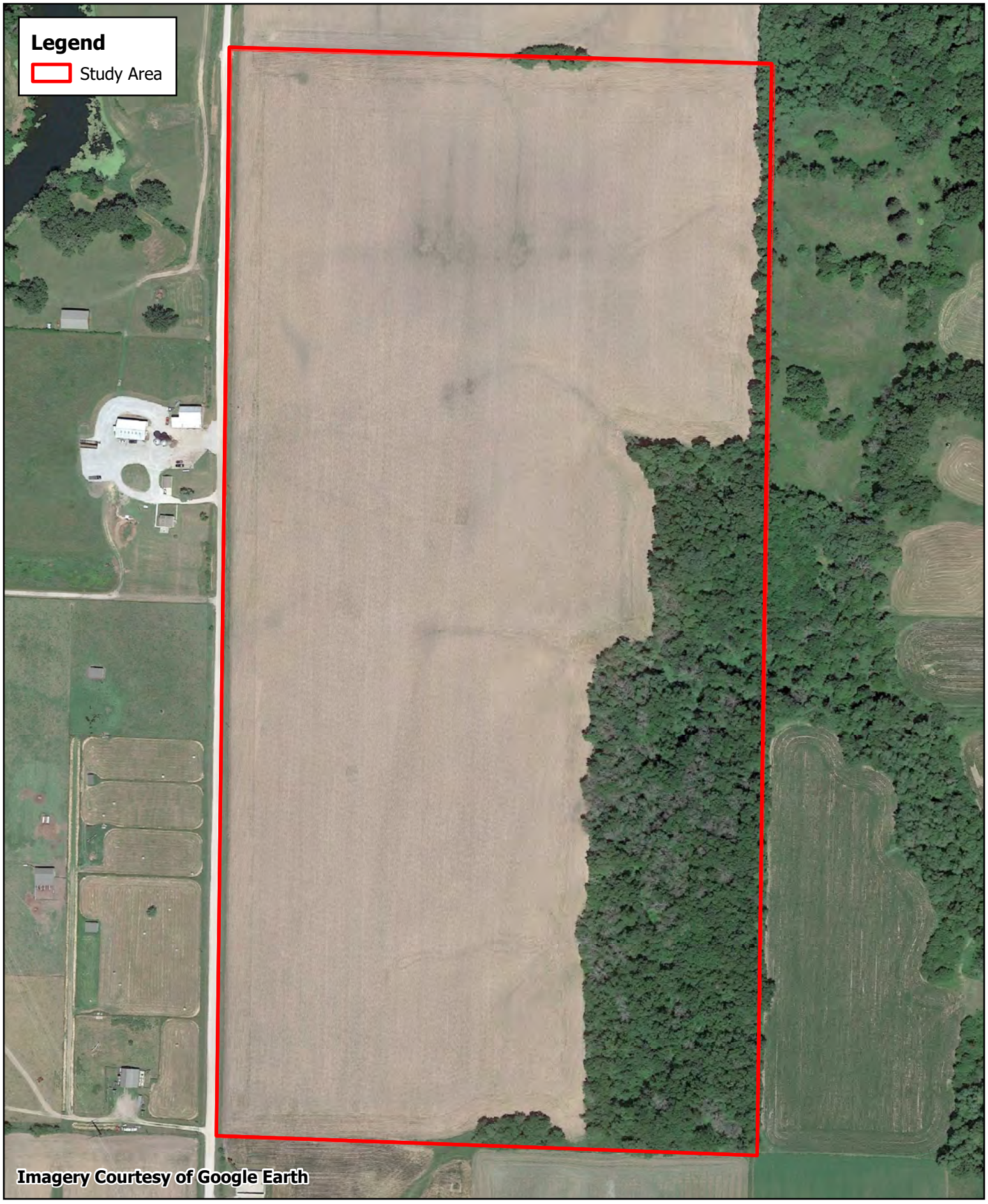


Kimley»Horn

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Feet

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Historic Aerial (March 2020)
Bowling Township, Rock Island County
New Leaf Energy, Inc.

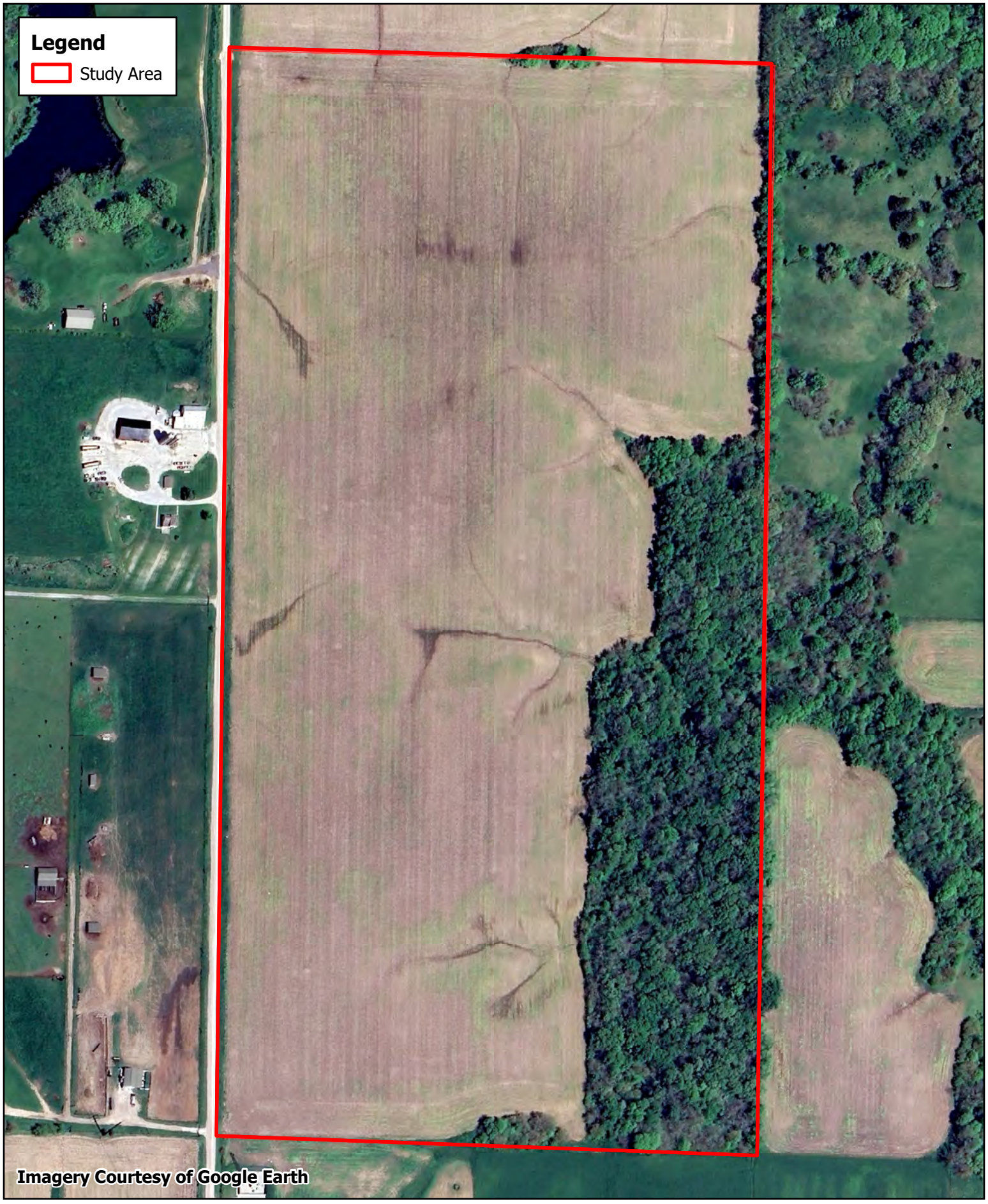


Kimley»Horn

0 150 300
Feet

N

Historic Aerial (June 2022)
Bowling Township, Rock Island County
New Leaf Energy, Inc.



Kimley»Horn

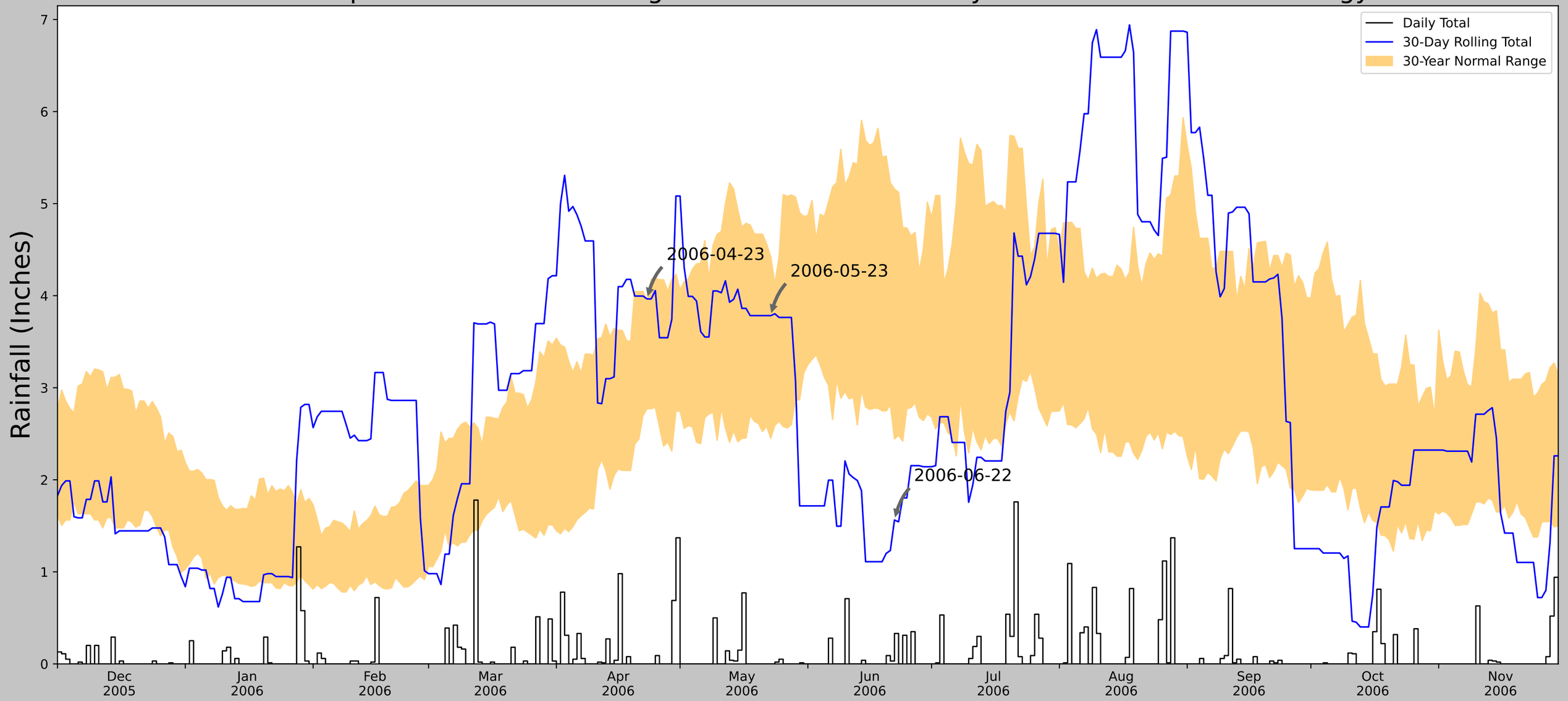
0 150 300
Feet

N

Historic Aerial (May 2024)
Bowling Township, Rock Island County
New Leaf Energy, Inc.

Appendix C: Precipitation Data

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.402765, -90.584489
Observation Date	2006-06-22
Elevation (ft)	732.093
Drought Index (PDSI)	Incipient drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2006-06-22	2.444488	5.158662	1.562992	Dry	1	3	3
2006-05-23	2.450394	4.421654	3.783465	Normal	2	2	4
2006-04-23	2.772835	3.944882	3.964567	Wet	3	1	3
Result							Normal Conditions - 10

US Army Corps of Engineers

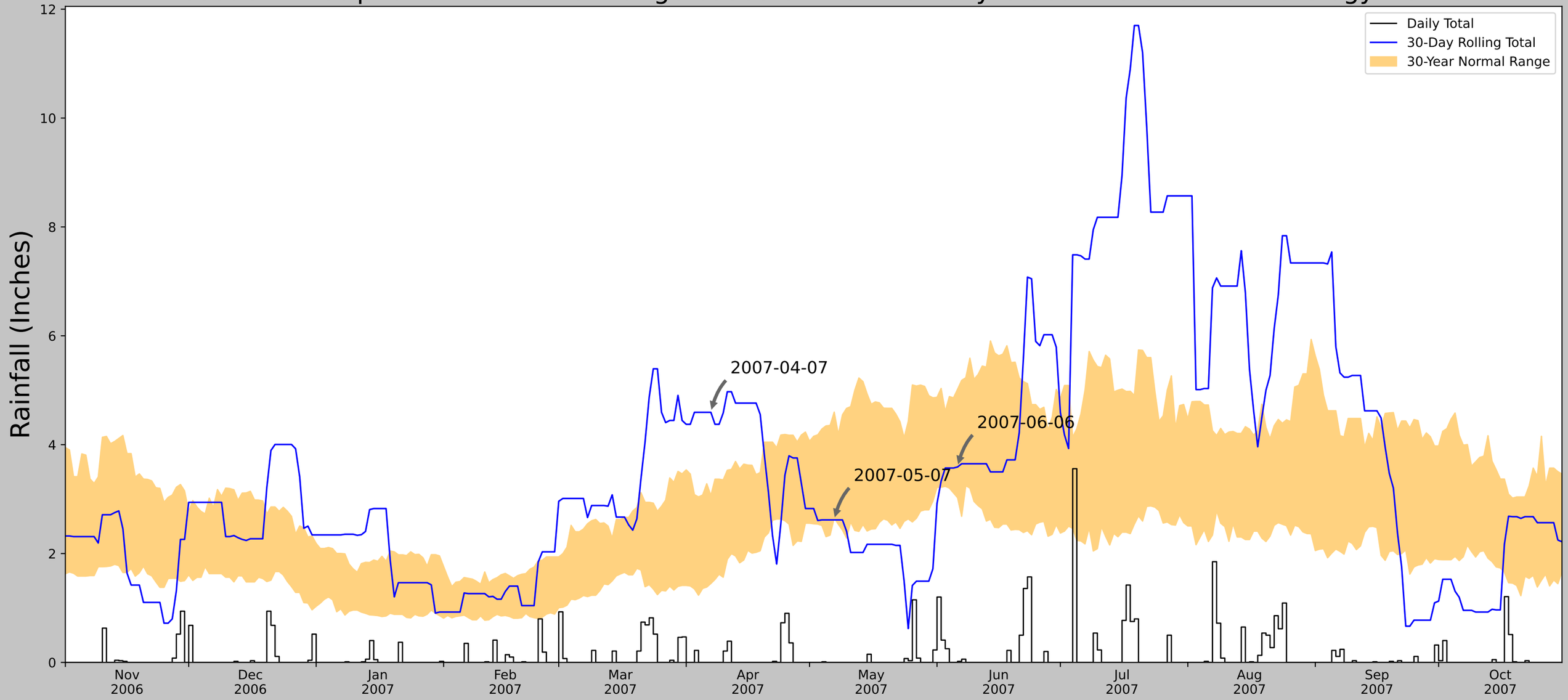
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11353	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.402765, -90.584489
Observation Date	2007-06-06
Elevation (ft)	732.093
Drought Index (PDSI)	Normal
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2007-06-06	3.025591	5.01811	3.590551	Normal	2	3	6
2007-05-07	2.655906	4.599213	2.61811	Dry	1	2	2
2007-04-07	1.449606	3.065748	4.594488	Wet	3	1	3
Result							Normal Conditions - 11

US Army Corps of Engineers

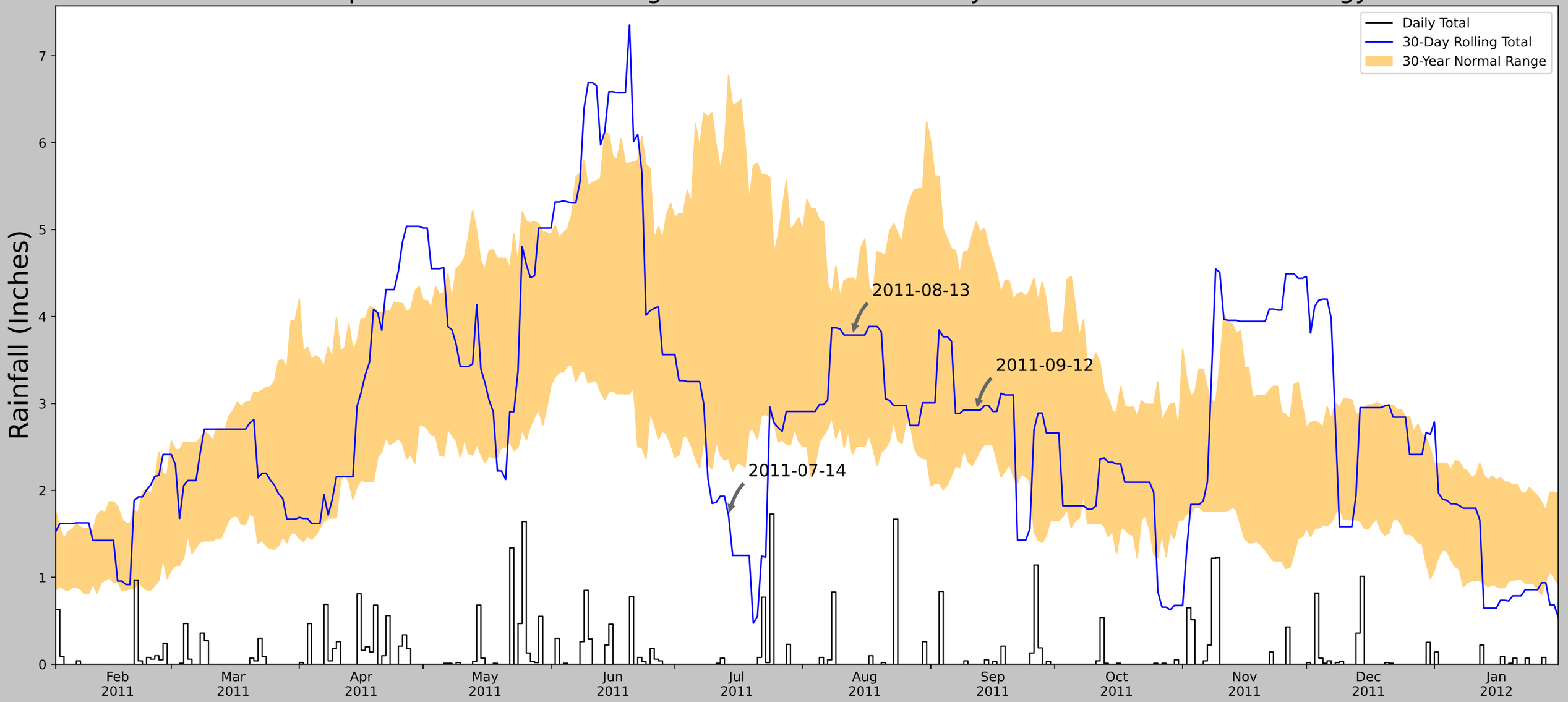
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Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11353	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.402765, -90.584489
Observation Date	2011-09-12
Elevation (ft)	732.093
Drought Index (PDSI)	Moderate wetness
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2011-09-12	2.368504	5.089764	2.925197	Normal	2	3	6
2011-08-13	2.416536	4.444882	3.787402	Normal	2	2	4
2011-07-14	2.370473	6.770866	1.712598	Dry	1	1	1
Result							Normal Conditions - 11

US Army Corps of Engineers

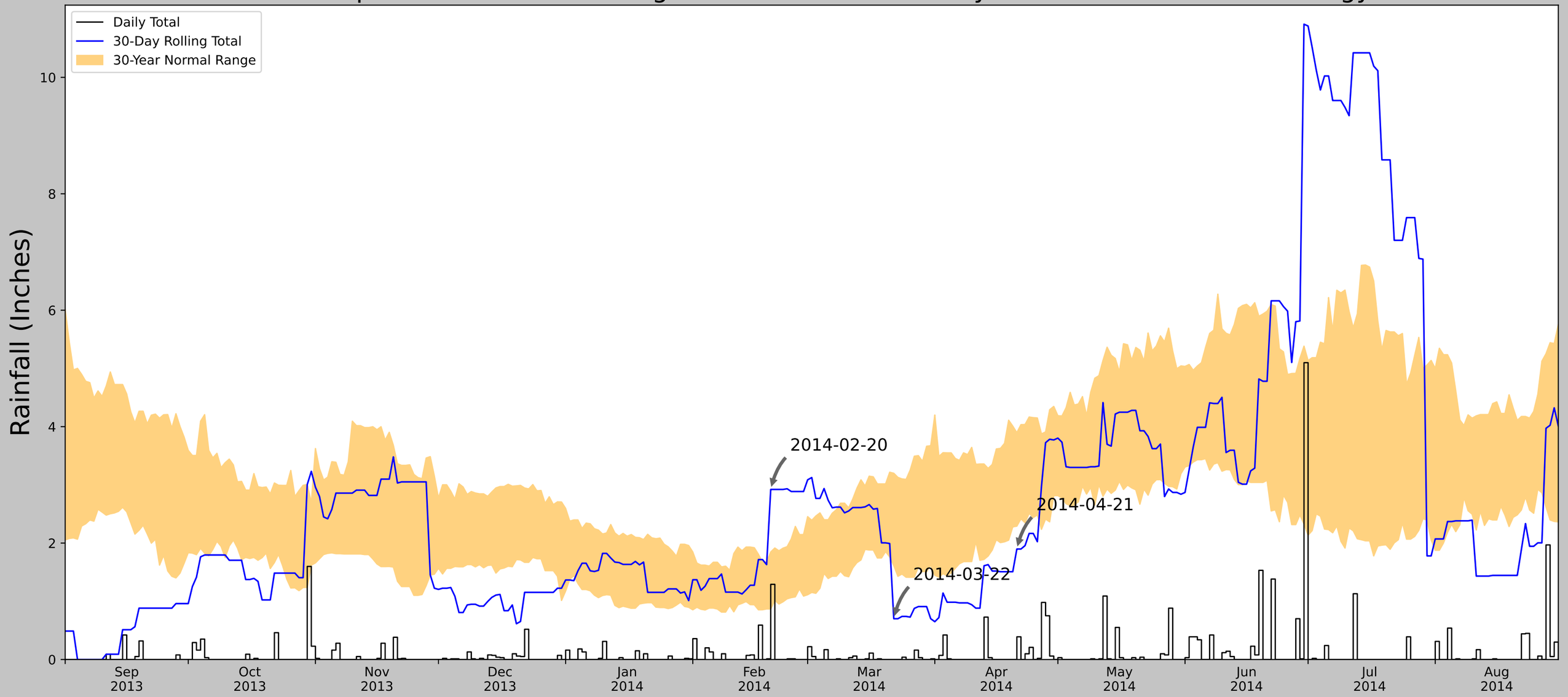
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11353	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.402765, -90.584489
Observation Date	2014-04-21
Elevation (ft)	732.093
Drought Index (PDSI)	Normal
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
2014-04-21	2.290551	3.896851	1.897638	Dry	1	3	3
2014-03-22	1.61378	3.199606	0.700787	Dry	1	2	2
2014-02-20	0.86811	1.847244	2.92126	Wet	3	1	3
Result							Drier than Normal - 8

US Army Corps of Engineers

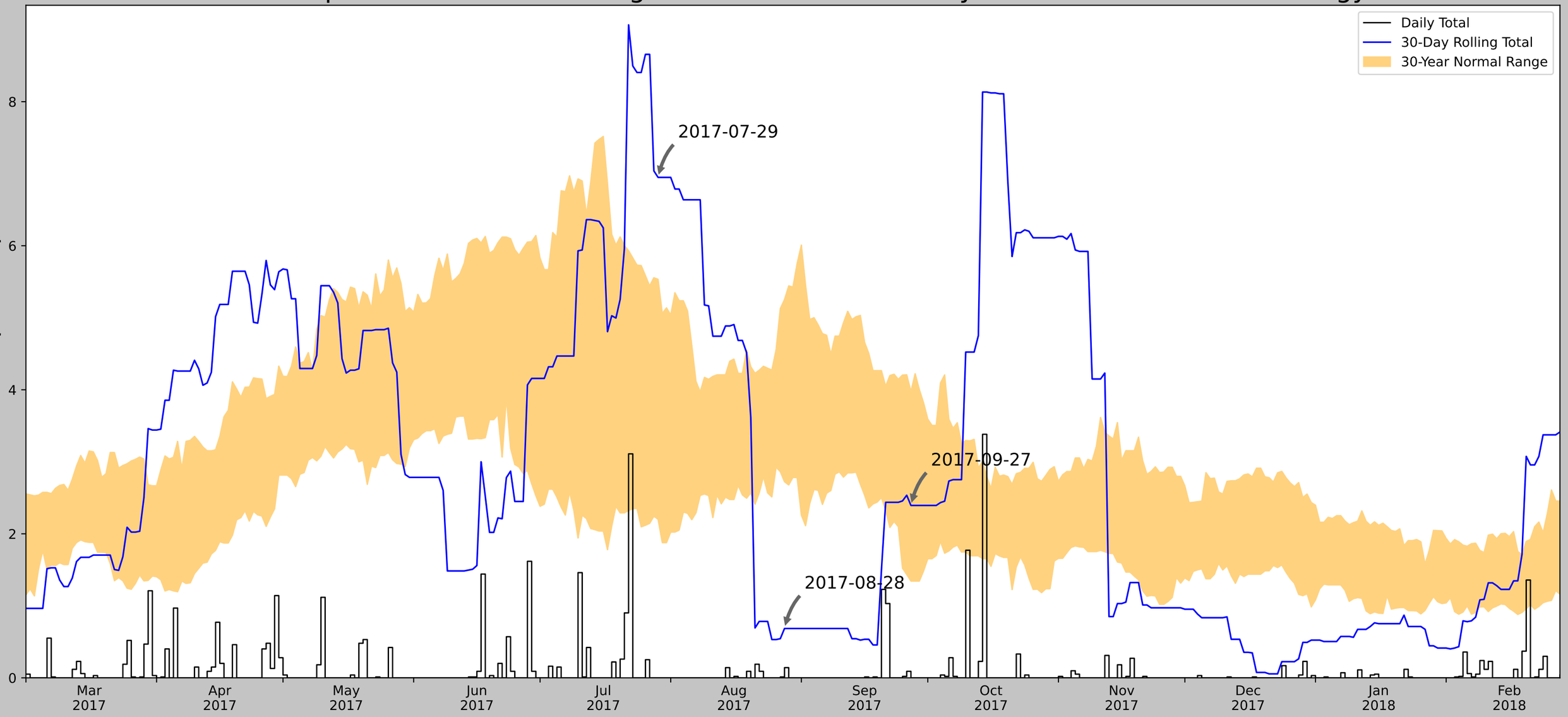
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Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11353	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.402765, -90.584489
Observation Date	2017-09-27
Elevation (ft)	732.093
Drought Index (PDSI)	Moderate wetness
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2017-09-27	1.342913	3.975197	2.393701	Normal	2	3	6
2017-08-28	2.723228	5.25315	0.685039	Dry	1	2	2
2017-07-29	2.201575	5.533465	6.948819	Wet	3	1	3
Result							Normal Conditions - 11

US Army Corps of Engineers

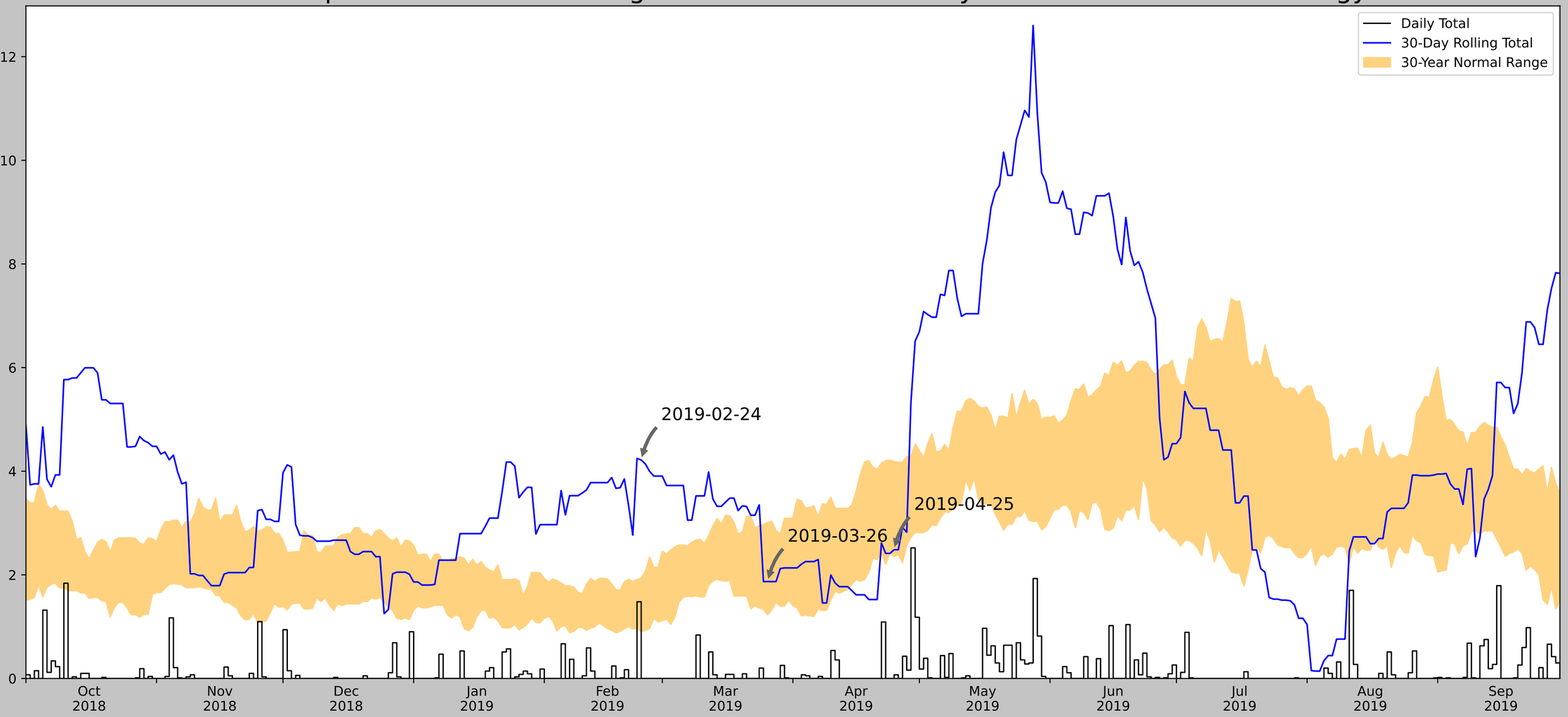
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11353	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.402765, -90.584489
Observation Date	2019-04-25
Elevation (ft)	732.093
Drought Index (PDSI)	Extreme wetness
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
2019-04-25	2.358661	4.187795	2.484252	Normal	2	3	6
2019-03-26	1.229921	3.011417	1.870079	Normal	2	2	4
2019-02-24	0.907874	1.938189	4.216536	Wet	3	1	3
Result							Normal Conditions - 13

US Army Corps of Engineers

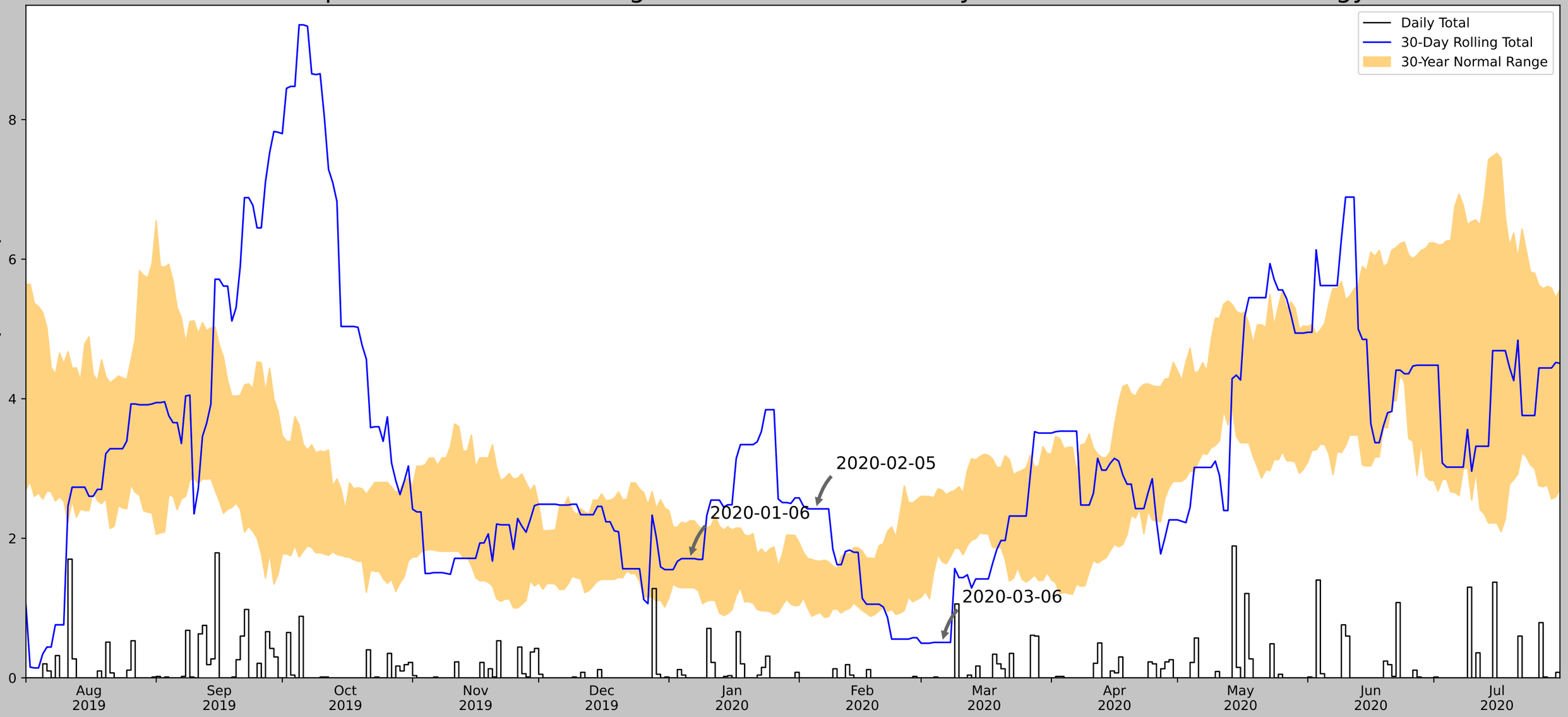
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11353	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.402765, -90.584489
Observation Date	2020-03-06
Elevation (ft)	732.093
Drought Index (PDSI)	Extreme wetness
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
2020-03-06	1.666535	2.68937	0.507874	Dry	1	3	3
2020-02-05	0.913386	1.677165	2.42126	Wet	3	2	6
2020-01-06	1.290551	2.251575	1.708661	Normal	2	1	2
Result							Normal Conditions - 11

US Army Corps of Engineers

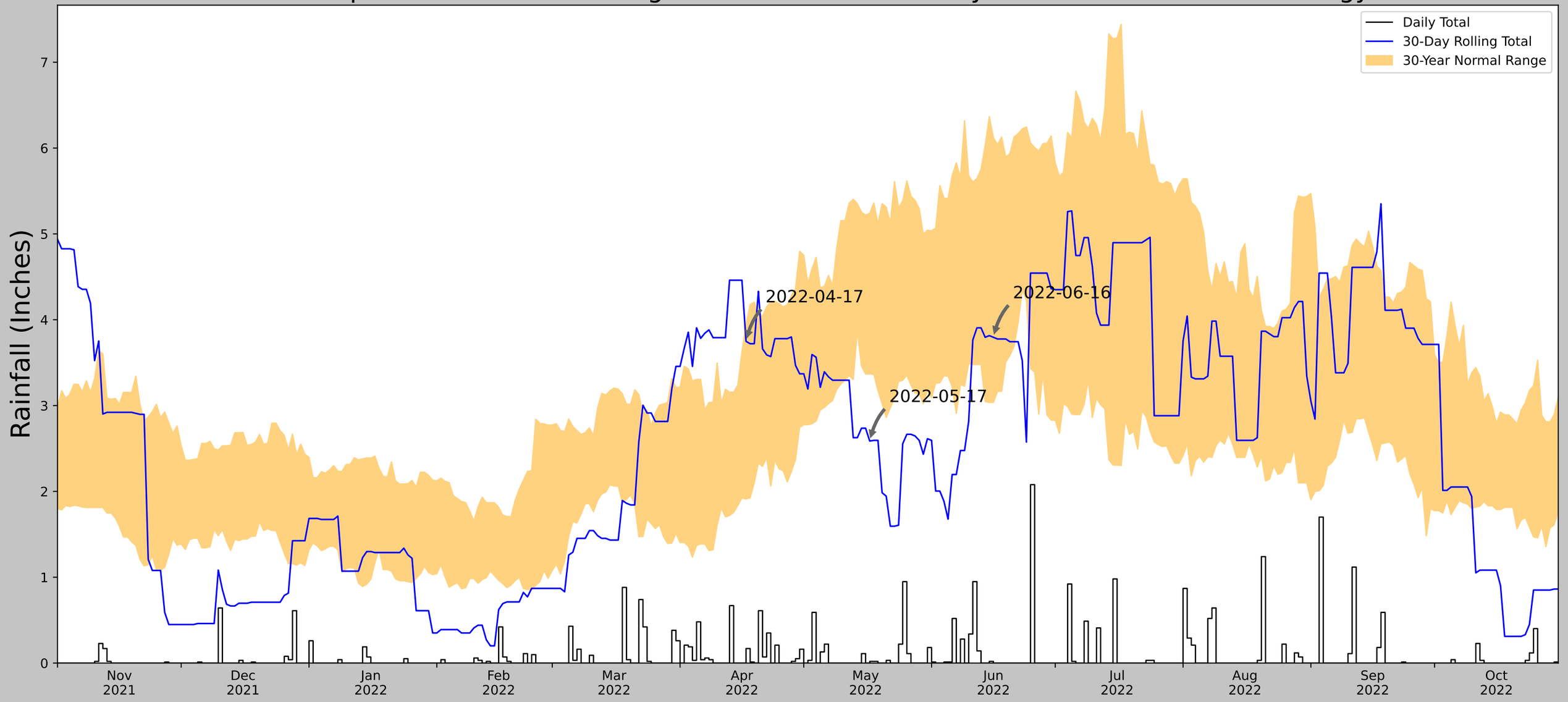
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11352	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.402765, -90.584489
Observation Date	2022-06-16
Elevation (ft)	732.093
Drought Index (PDSI)	Normal
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-06-16	3.036614	6.119685	3.795276	Normal	2	3	6
2022-05-17	3.36811	5.240158	2.586614	Dry	1	2	2
2022-04-17	1.911024	3.949606	3.748032	Normal	2	1	2
Result							Normal Conditions - 10

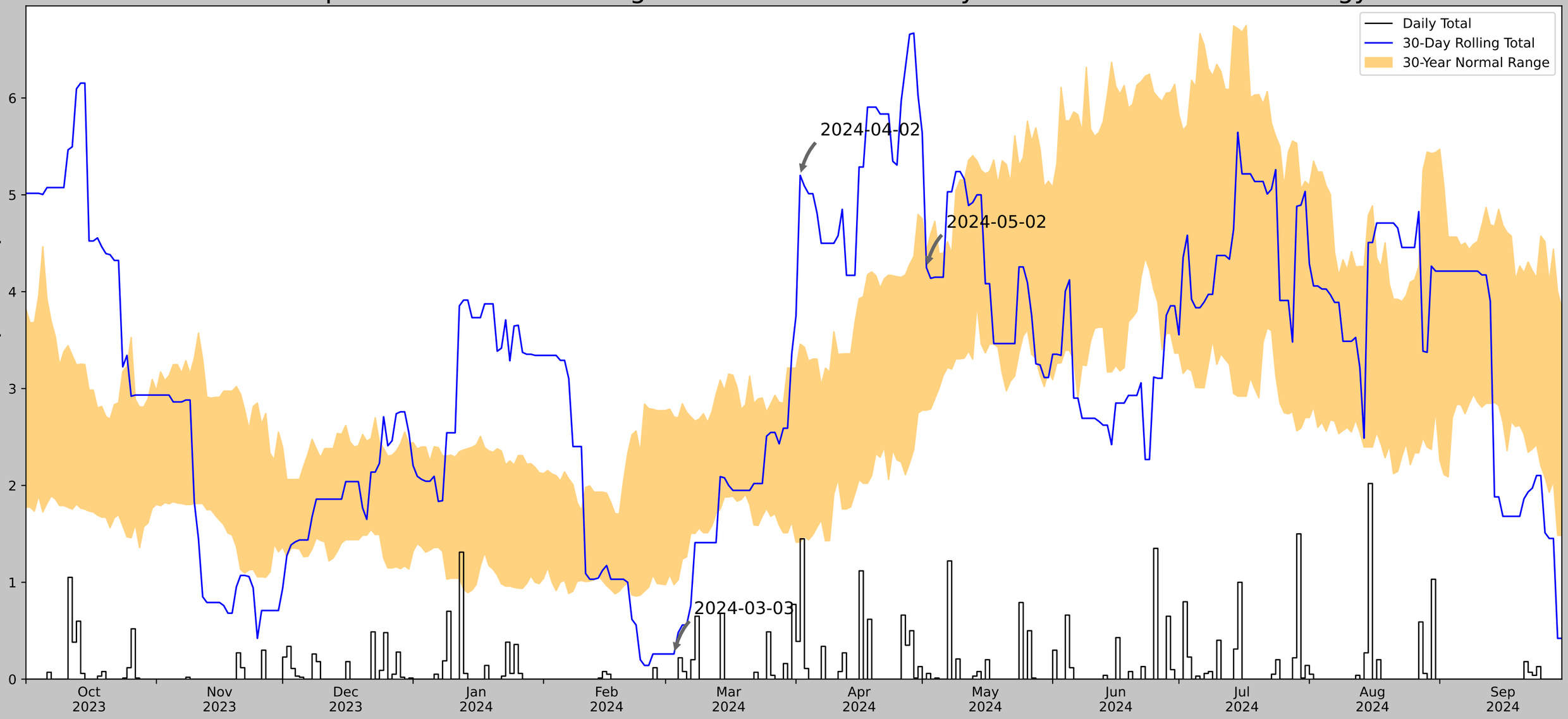
US Army Corps of Engineers

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

ERDC

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11353	90



Coordinates	41.402765, -90.584489
Observation Date	2024-05-02
Elevation (ft)	732.093
Drought Index (PDSI)	Incipient wetness
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-05-02	2.776772	4.42126	4.248032	Normal	2	3	6
2024-04-02	1.41378	3.458662	5.200788	Wet	3	2	6
2024-03-03	0.975591	2.707087	0.259843	Dry	1	1	1
Result							Normal Conditions - 13

US Army Corps of Engineers

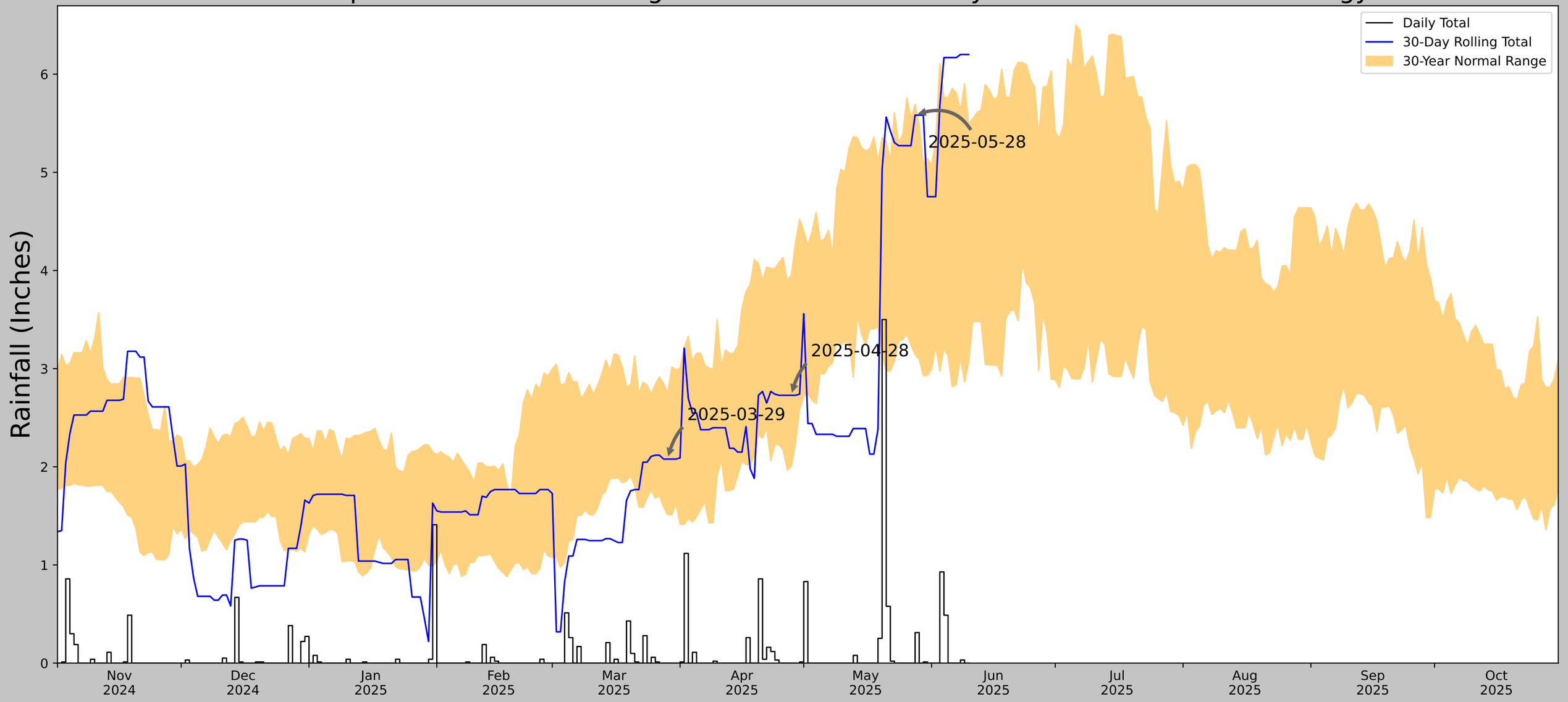
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11352	90

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	41.402765, -90.584489
Observation Date	2025-05-28
Elevation (ft)	732.093
Drought Index (PDSI)	Moderate drought
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-05-28	3.144882	5.69252	5.582677	Normal	2	3	6
2025-04-28	2.006693	3.959055	2.728347	Normal	2	2	4
2025-03-29	1.511024	2.754331	2.07874	Normal	2	1	2
Result							Normal Conditions - 12

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

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
MOLINE QUAD CITY INTL AP	41.4481, -90.5236	576.116	4.446	155.977	2.694	11353	90

Appendix D: Field Data Sheets

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Tiger Storage | City/County: Rock Island County | Sampling Date: 2025-05-28
Applicant/Owner: New Leaf Energy, Inc. | State: Illinois | Sampling Point: SP-1
Investigator(s): Trey Jonas and Cady Peterson | Section, Township, Range: S02 T16N R2W
Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex
Slope (%): 10 | Lat: 41.40159666 | Long: -90.58397836 | Datum: WGS 84
Soil Map Unit Name: 51A - Muscatune silt loam, 0 to 2 percent slopes | NWI classification: N/A
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 ✔
Hydric Soil Present?	Yes ____	No ✔
Wetland Hydrology Present?	Yes ____	No ✔

Is the Sampled Area within a Wetland? Yes ____ No ✔

Remarks:
The sample point was taken within an AOI on a hillslope. Antecedent precipitation conditions were normal prior to the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Glycine max	5	✔	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5 =Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 5.00

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.

Hydrophytic Vegetation Present? Yes ____ No ✔

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

SOIL

Sampling Point: SP-1

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 14	10YR 4/3	50					Clay Loam	
0 - 14	10YR 4/4	50					Clay Loam	
14 - 24	10YR 5/4	95	10YR 5/6	5	C	M	Clay Loam	
-								
-								
-								

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21) 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** ✔

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ 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)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** ✔

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

Remarks:

VEGETATION Continued – Use scientific names of plants. Sampling Point: SP-1

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
		=Total Cover	
Sapling/Shrub Stratum			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
		=Total Cover	
Herb Stratum			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
	5	=Total Cover	
Woody Vine Stratum			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

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 3.28 ft (1 m) tall.

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

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

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

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Tiger Storage | City/County: Rock Island County | Sampling Date: 2025-05-28
Applicant/Owner: New Leaf Energy, Inc. | State: Illinois | Sampling Point: SP-2
Investigator(s): Trey Jonas and Cady Peterson | Section, Township, Range: S02 T16N R2W
Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave
Slope (%): 2 | Lat: 41.403286 | Long: -90.58523606 | Datum: WGS 84
Soil Map Unit Name: 19D3 - Sylvan silty clay loam, 10 to 18 percent slopes, severely eroded | NWI classification: N/A
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 ____
Hydric Soil Present? Yes ✔ No ____
Wetland Hydrology Present? Yes ✔ No ____

Is the Sampled Area within a Wetland? Yes ✔ No ____

Remarks:
Sample point taken within a depression in an agricultural field. Antecedent precipitation conditions were normal prior to the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Glycine max	5	✔	UPL
2. Sida cordifolia	2	✔	FAC
3.			
4.			
5.			
	7 =Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	=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: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 2	x 3 = 6
FACU species 0	x 4 = 0
UPL species 5	x 5 = 25
Column Totals: 7 (A)	31 (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.

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sample point was taken in a tilled agricultural field. Vegetation assumed hydrophytic due to the presence of hydric soils and hydrology indicators.

SOIL

Sampling Point: SP-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 - 18	10YR 3/2	95	10YR 5/6	5	C	M	Clay Loam	
-								
-								
-								
-								
-								

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21) 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** ___

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ 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)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ✔ **No** ___

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

Remarks:

VEGETATION Continued – Use scientific names of plants. Sampling Point: SP-2

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
		=Total Cover	
Sapling/Shrub Stratum			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
	7	=Total Cover	
Herb Stratum			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
		=Total Cover	
Woody Vine Stratum			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

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 3.28 ft (1 m) tall.

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

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

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

Sample point was taken in a tilled agricultural field. Vegetation assumed hydrophytic due to the presence of hydric soils and hydrology indicators.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Tiger Storage | City/County: Rock Island County | Sampling Date: 2025-05-28
Applicant/Owner: New Leaf Energy, Inc. | State: Illinois | Sampling Point: SP-3
Investigator(s): Trey Jonas and Cady Peterson | Section, Township, Range: S02 T16N R2W
Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave
Slope (%): 2 | Lat: 41.40340334 | Long: -90.58590978 | Datum: WGS 84
Soil Map Unit Name: 280gC2 - Fayette silt loam, glaciated, 5 to 10 percent slopes, eroded | NWI classification: N/A
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 ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Sample point taken on the hillslope between two depressions within an agricultural field. Antecedent precipitation conditions were normal prior to the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Glycine max	5	✔	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5 =Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 5.00

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.

Hydrophytic Vegetation Present? Yes ____ No ✔

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

SOIL

Sampling Point: SP-3

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 16	10YR 2/2	100					Clay Loam	
16 - 24	10YR 4/3	100					Clay Loam	
-								
-								
-								
-								

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21) 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** ✔

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ 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)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ___ **No** ✔

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

Remarks:

VEGETATION Continued – Use scientific names of plants. Sampling Point: SP-3

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
		=Total Cover	
Sapling/Shrub Stratum			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
		=Total Cover	
Herb Stratum			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
	5	=Total Cover	
Woody Vine Stratum			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

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 3.28 ft (1 m) tall.

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

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

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

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Tiger Storage | City/County: Rock Island County | Sampling Date: 2025-05-28
Applicant/Owner: New Leaf Energy, Inc. | State: Illinois | Sampling Point: SP-4
Investigator(s): Trey Jonas and Cady Peterson | Section, Township, Range: S03 T16N R2W
Landform (hillside, terrace, etc.): Depression | Local relief (concave, convex, none): Concave
Slope (%): 2 | Lat: 41.40393345 | Long: -90.58746122 | Datum: WGS 84
Soil Map Unit Name: 61A - Atterberry silt loam, 0 to 2 percent slopes | NWI classification: N/A
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 ✔	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:
Sample point taken at a low point within a depression in an agricultural field. Antecedent precipitation conditions were normal prior to the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Glycine max	5	✔	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5 =Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 5.00

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.

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks: (Include photo numbers here or on a separate sheet.)
Sample point was taken in a tilled agricultural field. Vegetation assumed hydrophytic due to the presence of hydric soils and hydrology indicators.

SOIL

Sampling Point: SP-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 - 10	10YR 4/2	95	10YR 7/8	5	C	M	Clay Loam	
10 - 16	10YR 4/3	100	10YR 7/8				Clay Loam	
-								
-								
-								
-								

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21) 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** ___

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ 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)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✔ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✔	Depth (inches): ___
Water Table Present?	Yes ✔	No ___	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes ✔	No ___	Depth (inches): 10

Wetland Hydrology Present? **Yes** ✔ **No** ___

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

Remarks:

VEGETATION Continued – Use scientific names of plants.

Sampling Point: SP-4

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
		=Total Cover	
Sapling/Shrub Stratum			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
		=Total Cover	
Herb Stratum			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
	5	=Total Cover	
Woody Vine Stratum			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

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 3.28 ft (1 m) tall.

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

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

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

Sample point was taken in a tilled agricultural field. Vegetation assumed hydrophytic due to the presence of hydric soils and hydrology indicators.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Tiger Storage | City/County: Rock Island County | Sampling Date: 2025-05-28
Applicant/Owner: New Leaf Energy, Inc. | State: Illinois | Sampling Point: SP-5
Investigator(s): Trey Jonas and Cady Peterson | Section, Township, Range: S02 T16N R2W
Landform (hillside, terrace, etc.): Hillslope | Local relief (concave, convex, none): Undulating
Slope (%): 2 | Lat: 41.4051783 | Long: -90.58642556 | Datum: WGS 84
Soil Map Unit Name: 280gC2 - Fayette silt loam, glaciated, 5 to 10 percent slopes, eroded | NWI classification: N/A
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 ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Sample point taken within AOI in an agricultural field. Antecedent precipitation conditions were normal prior to the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Glycine max	5	✔	UPL
2. Cirsium arvense	2	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	7 =Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	=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: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	2	x 4 =	8
UPL species	5	x 5 =	25
Column Totals:	7 (A)		33 (B)

Prevalence Index = B/A = 4.71

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.

Hydrophytic Vegetation Present? Yes ____ No ✔

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

SOIL

Sampling Point: SP-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 - 16	10YR 2/2	95	10YR 4/6	5	C	M	Clay Loam	
16 - 20	10YR 2/2	90	10YR 5/3	10	C	M	Clay Loam	
-								
-								
-								
-								

[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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21) 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** ___

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ 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)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✔	Depth (inches): ___
Water Table Present?	Yes ✔	No ___	Depth (inches): 17
Saturation Present? (includes capillary fringe)	Yes ✔	No ___	Depth (inches): 15

Wetland Hydrology Present? **Yes** ___ **No** ✔

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

Remarks:

VEGETATION Continued – Use scientific names of plants. Sampling Point: SP-5

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
	=Total Cover		
Sapling/Shrub Stratum			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
	=Total Cover		
Herb Stratum			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
	7 =Total Cover		
Woody Vine Stratum			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		

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 3.28 ft (1 m) tall.

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

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

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

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Tiger Storage | City/County: Rock Island County | Sampling Date: 2025-05-28
Applicant/Owner: New Leaf Energy, Inc. | State: Illinois | Sampling Point: SP-6
Investigator(s): Trey Jonas and Cady Peterson | Section, Township, Range: S02 T16N R2W
Landform (hillside, terrace, etc.): Plain | Local relief (concave, convex, none): Linear
Slope (%): 0 | Lat: 41.40701085 | Long: -90.58643033 | Datum: WGS 84
Soil Map Unit Name: 61A - Atterberry silt loam, 0 to 2 percent slopes | NWI classification: N/A
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 ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:
Sample point taken from top of hill within agricultural field. Antecedent precipitation conditions were normal prior to the site visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Glycine max	5	✔	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5 =Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 5.00

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.

Hydrophytic Vegetation Present? Yes ____ No ✔

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

SOIL

Sampling Point: SP-6

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 16	10YR 2/1	100					Clay Loam	
16 - 24	10YR 4/1	95	10YR 4/6	10	C	M	Clay Loam	
-								
-								
-								
-								

[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)
- ___ Depleted Below Dark Surface (A11)
- ✔ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21) 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** ___

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ 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)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? **Yes** ___ **No** ✔

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

Remarks:

VEGETATION Continued – Use scientific names of plants. Sampling Point: SP-6

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
	=Total Cover		
Sapling/Shrub Stratum			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
	=Total Cover		
Herb Stratum			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
	5 =Total Cover		
Woody Vine Stratum			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		

Definitions of Vegetation Strata:

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

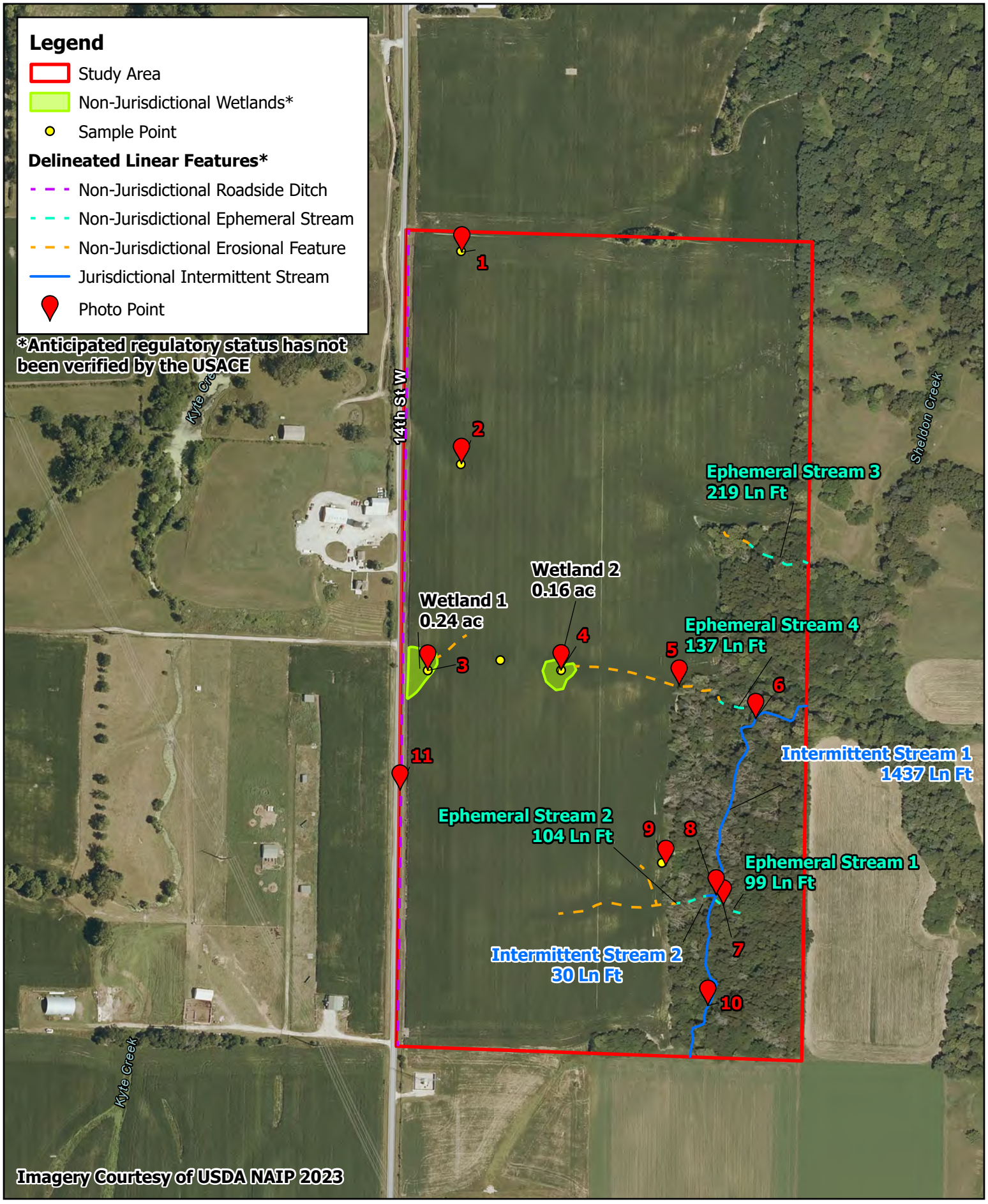
Sapling/Shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

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

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

Appendix E: Photos



Kimley»Horn

0 200 400 Feet

N

Photo Location Map
Bowling Township, Rock Island County
New Leaf Energy, Inc.



Photo 1: Overview of the study area facing south from SP-6 in AOI 4.



Photo 2: Overview of the study area facing east within AOI 3.



Photo 3: View of Wetland 1 facing north.



Photo 4: View of Wetland 2 facing west.



Photo 5: View of typical erosional feature on the study area, facing west.



Photo 6: View of Intermittent Stream 1 facing north.



Photo 7: View of Ephemeral Stream 1 facing southeast.



Photo 8: View of Intermittent Stream 2 facing west.



Photo 9: Overview of AOI 5 facing south near SP-1.



Photo 10: View of Intermittent Stream 2 facing south.



Photo 11: View of roadside ditch facing south.

Exhibit 2 – FEMA Firm Map

National Flood Hazard Layer FIRMette

FEMA

90°35'28"W 41°24'22"N



90°34'51"W 41°23'55"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

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
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

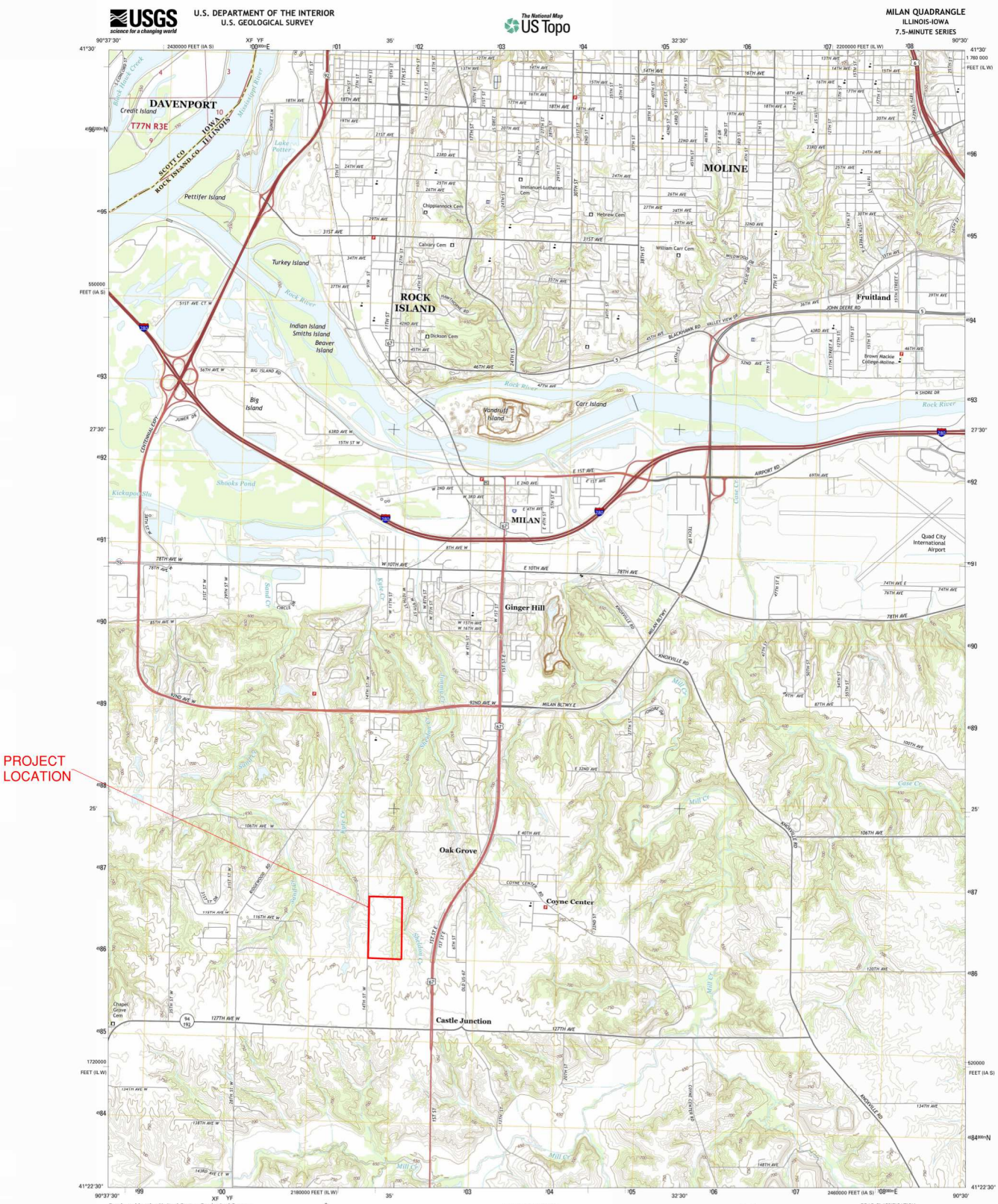
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 3/31/2026 at 3:38 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.

Exhibit 3 – USGS Map



Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 15T
10 000-foot ticks: Illinois Coordinate System of 1983 (west zone), Iowa Coordinate System of 1983 (south zone)

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, July 2014
Roads.....HERE, ©2013 - 2014
Names.....GNIS, 2015
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2014
Boundaries.....Multiple sources; see metadata file 1972 - 2015
Public Land Survey System.....BLM, 2014

UTM GRID AND 2015 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
Grid Zone Designation 15T

SCALE 1:24 000

KILOMETERS 0 0.5 0 1 2
METERS 1000 500 0 1000 2000
MILES 1 0.5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

ADJOINING QUADRANGLES
1 Davenport West
2 Davenport East
3 Silvis
4 Andalusia
5 Coal Valley
6 Reynolds
7 Hatherville
8 Orion

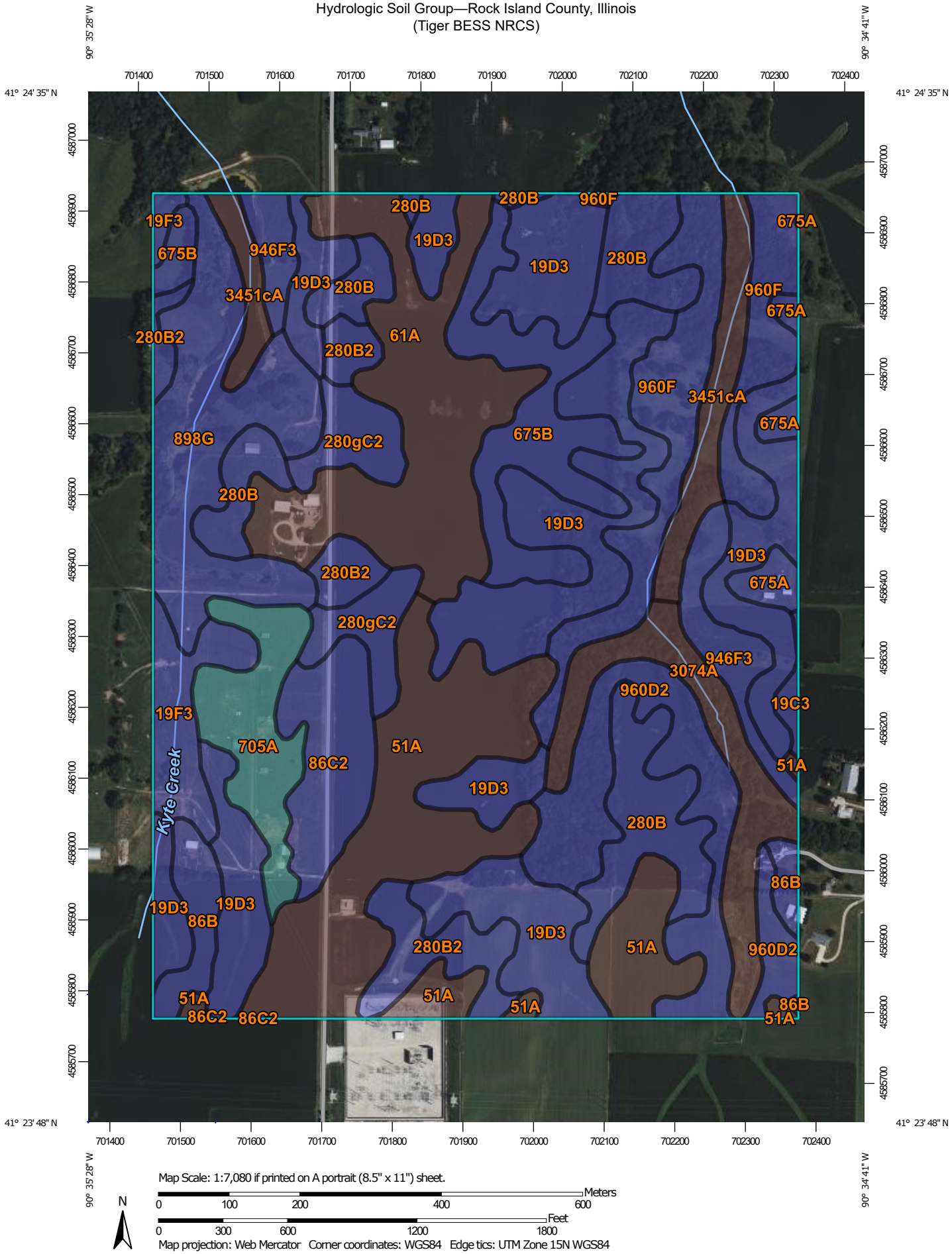
ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

MILAN, IL-IA
2015

USGS 20150619 USGS X24X21219
NGA REF NO. USGSX24X21219

Exhibit 4 – NRCS Soil Map

Hydrologic Soil Group—Rock Island County, Illinois
(Tiger BESS NRCS)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rock Island County, Illinois
Survey Area Data: Version 21, Aug 31, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 17, 2020—Sep 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
19C3	Sylvan silty clay loam, 5 to 10 percent slopes, severely eroded	B	0.7	0.3%
19D3	Sylvan silty clay loam, 10 to 18 percent slopes, severely eroded	B	51.4	19.4%
19F3	Sylvan silty clay loam, 18 to 35 percent slopes, severely eroded	B	6.5	2.5%
51A	Muscatune silt loam, 0 to 2 percent slopes	B/D	31.5	11.9%
61A	Atterberry silt loam, 0 to 2 percent slopes	B/D	23.7	9.0%
86B	Osco silt loam, 2 to 5 percent slopes	B	4.6	1.8%
86C2	Osco silt loam, 5 to 10 percent slopes, eroded	B	8.6	3.3%
280B	Fayette silt loam, glaciated, 2 to 5 percent slopes	B	18.1	6.9%
280B2	Fayette silt loam, glaciated, 2 to 5 percent slopes, eroded	B	9.6	3.6%
280gC2	Fayette silt loam, glaciated, 5 to 10 percent slopes, eroded	B	7.4	2.8%
675A	Greenbush silt loam, 0 to 2 percent slopes	B	2.6	1.0%
675B	Greenbush silt loam, 2 to 5 percent slopes	B	13.8	5.2%
705A	Buckhart silt loam, 0 to 2 percent slopes	C	9.1	3.5%
898G	Hickory-Sylvan silt loams, 35 to 60 percent slopes	B	18.2	6.9%
946F3	Hickory-Atlas complex, 18 to 35 percent slopes, severely eroded	B	6.9	2.6%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
960D2	Hickory-Sylvan-Fayette silt loams, 10 to 18 percent slopes, eroded	B	15.3	5.8%
960F	Hickory-Sylvan-Fayette silt loams, 18 to 30 percent slopes	B	17.5	6.6%
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded	B/D	10.3	3.9%
3451cA	Lawson silt loam, cool mesic, 0 to 2 percent slopes, frequently flooded	B/D	8.3	3.1%
Totals for Area of Interest			**264.0**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

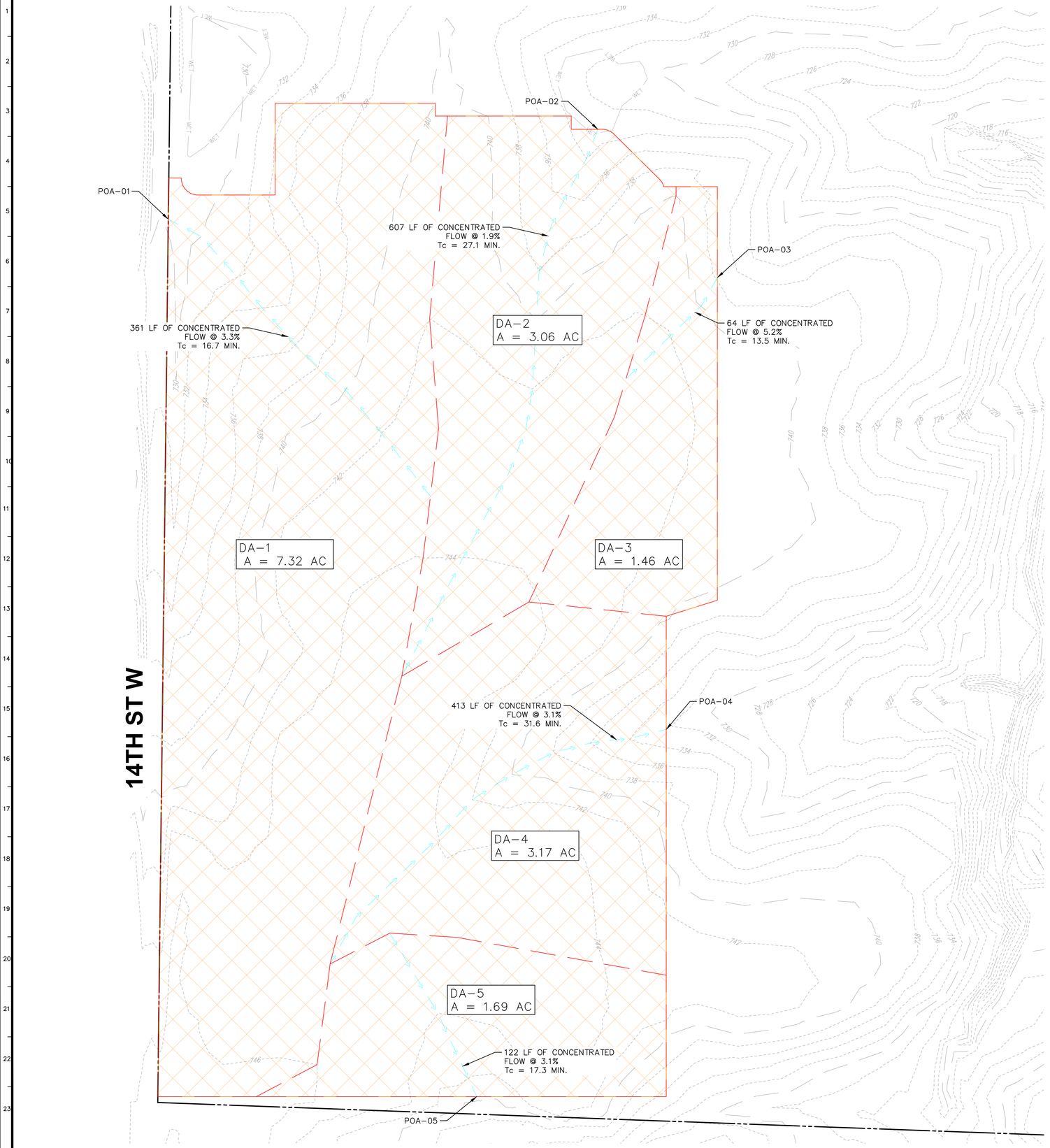
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Exhibit 5 – Pre-Development Drainage Area Map





GRAPHIC SCALE IN FEET
0 30 60 120

LEGEND

- PROPERTY BOUNDARY
- DRAINAGE BOUNDARY/ LIMITS OF ANALYSIS
- TIME OF CONCENTRATION FLOW PATH
- EX. WETLAND
- EX. CONTOURS
- ROW CROPS

PRE-DEVELOPMENT DRAINAGE AREAS

Drainage Area	ow Crop Type B(CN=81)	Total	Composite CN
EX-01	7.32	7.32	81
EX-02	3.06	3.06	81
EX-03	1.46	1.46	81
EX-04	3.17	3.17	81
EX-05	1.69	1.69	81
TOTAL (AC)	16.70	16.70	81.00

Table 2-2a Runoff curve numbers for urban areas 1/

Cover description: Cover type and hydrologic condition	Average percent impervious area 2/	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) 3/:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) 4/		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) 5/		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

Table 2-2b Runoff curve numbers for cultivated agricultural lands 1/

Cover description: Cover type	Treatment 2/	Hydrologic condition 3/	Curve numbers for hydrologic soil group: A	B	C	D
Fallow	Bare soil	—	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
	C&T+ CR	Poor	65	73	79	81
		Good	61	70	77	80
Small grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	81	84
		Good	60	72	80	83
	C&T	Poor	61	72	79	82
		Good	59	70	78	81
	C&T+ CR	Poor	60	71	78	81
		Good	58	69	77	80
Close-seeded or broadcast legumes or rotation meadow	SR	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C&T	Poor	63	73	80	83
		Good	51	67	76	80

Table 2-2c Runoff curve numbers for other agricultural lands 1/

Cover description: Cover type	Hydrologic condition	Curve numbers for hydrologic soil group: A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. 2/	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. 3/	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 4/	48	65	73
Woods—grass combination (orchard or tree farm). 5/	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. 6/	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 4/	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

No.	DATE	BY

Kimley»Horn
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WARRENVILLE, IL 60555
PHONE: 630 487 6500
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: SHK
DRAWN BY: SHK
CHECKED BY: CPC

new leaf energy

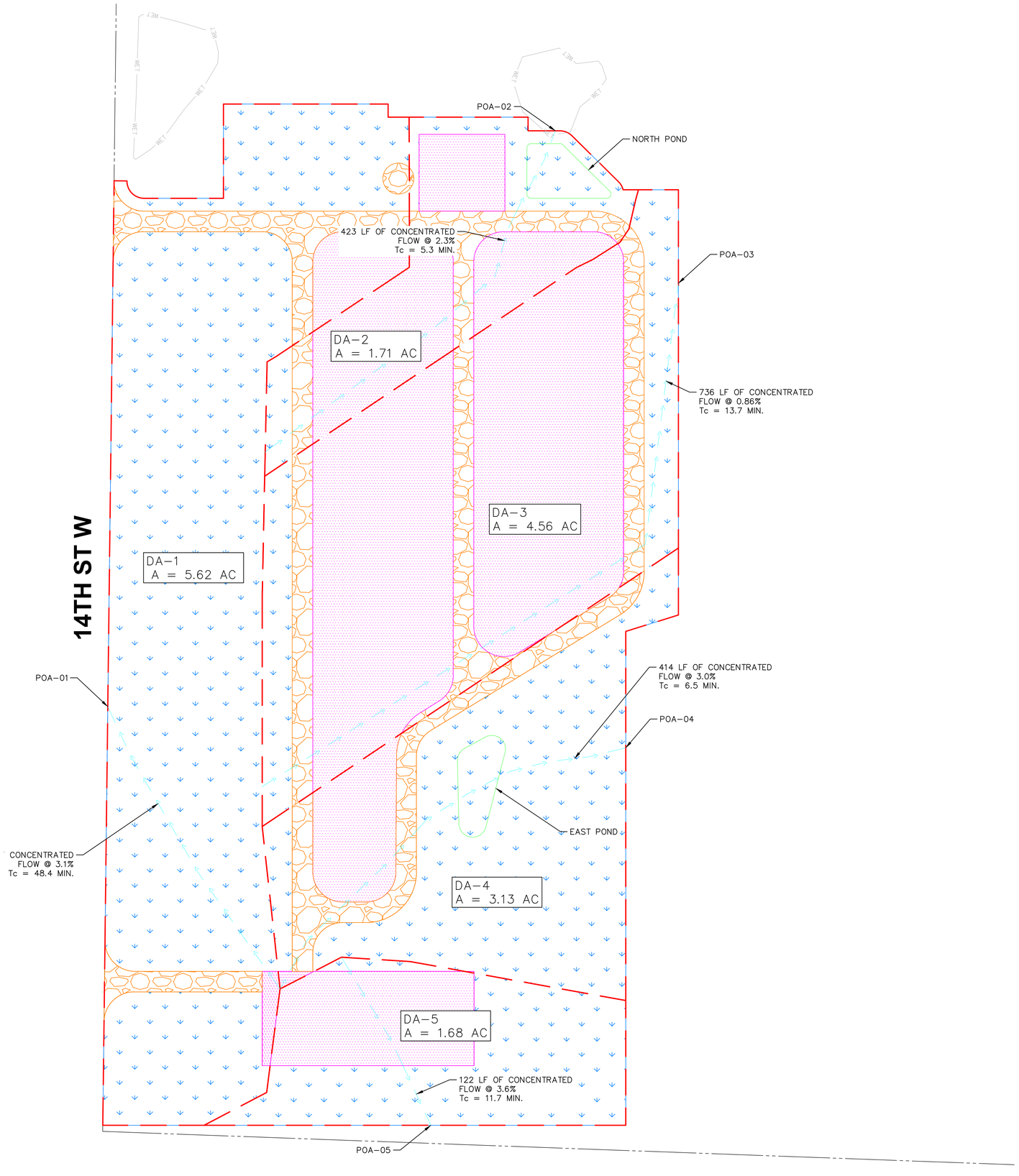
PROPOSED DRAINAGE PLAN - BESS

TIGER STORAGE
EAST OF 14TH ST W, OAK GROVE, IL, 61264

DATE: 4/2/26
KHA PROJECT NO. 268287036
SHEET NUMBER
EX - 5

Drawing name: K:\CHS_LDEV\268287036_New Leaf Energy_Tiger Storage_IL\2 Design\CAD\Exhibits\drainage\PRE_DRAINAGE.dwg Layout1 Apr 02, 2026 4:36pm by Sam.Kure
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Exhibit 6 – Post-Development Drainage Area Map





GRAPHIC SCALE IN FEET
0 30 60 120

LEGEND

- PROPERTY BOUNDARY
- DRAINAGE BOUNDARY/ LIMITS OF ANALYSIS
- TIME OF CONCENTRATION FLOW PATH
- WET — EX. WETLAND
- 700 — EX. CONTOURS
- 700 — PR. CONTOURS
- PR. BASIN
- IMPERVIOUS AREA
- MEADOW
- GRAVEL

POST-DEVELOPMENT DRAINAGE AREAS

Drainage Area	Meadow Type B (CN=58)	Gravel Type B (CN=85)	Paved Areas (CN=98)	Total	Composite CN
DA-01	4.96	0.42	0.24	5.62	61.73
DA-02	0.44	0.30	0.97	1.71	85.43
DA-03	0.74	0.71	3.11	4.56	89.48
DA-04	2.33	0.44	0.36	3.13	66.40
DA-05	1.11	0.00	0.57	1.68	71.57
TOTAL (AC)	9.58	1.87	5.25	16.70	73.60

Table 2-2a Runoff curve numbers for urban areas

Cover description: Cover type and hydrologic condition	Average percent impervious area	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.):					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roads, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only)		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation)		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

Table 2-2b Runoff curve numbers for cultivated agricultural lands

Cover description: Cover type	Treatment	Hydrologic condition	Curve numbers for hydrologic soil group: A	B	C	D
Fallow	Bare soil	—	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
	C&T+ CR	Poor	65	73	79	81
		Good	61	70	77	80
Small grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	81	84
		Good	60	72	80	83
	C&T	Poor	61	72	79	82
		Good	59	70	78	81
	C&T+ CR	Poor	60	71	78	81
		Good	58	69	77	80
Close-seeded or broadcast legumes or rotation meadow	SR	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C&T	Poor	63	73	80	83
		Good	51	67	76	80

Table 2-2c Runoff curve numbers for other agricultural lands

Cover description: Cover type	Hydrologic condition	Curve numbers for hydrologic soil group: A	B	C	D
Pasture, grassland, or range—continuous forage for grazing.	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element.	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30	48	65	73
Woods—grass combination (orchard or tree farm).	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods.	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

No.	DATE	BY

Kimley»Horn
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SCALE: AS NOTED
DESIGNED BY: SHK
DRAWN BY: SHK
CHECKED BY: CPC

new leaf energy

PROPOSED DRAINAGE PLAN - BESS

TIGER STORAGE
EAST OF 14TH ST W. OAK GROVE, IL 61264

DATE: 4/21/26

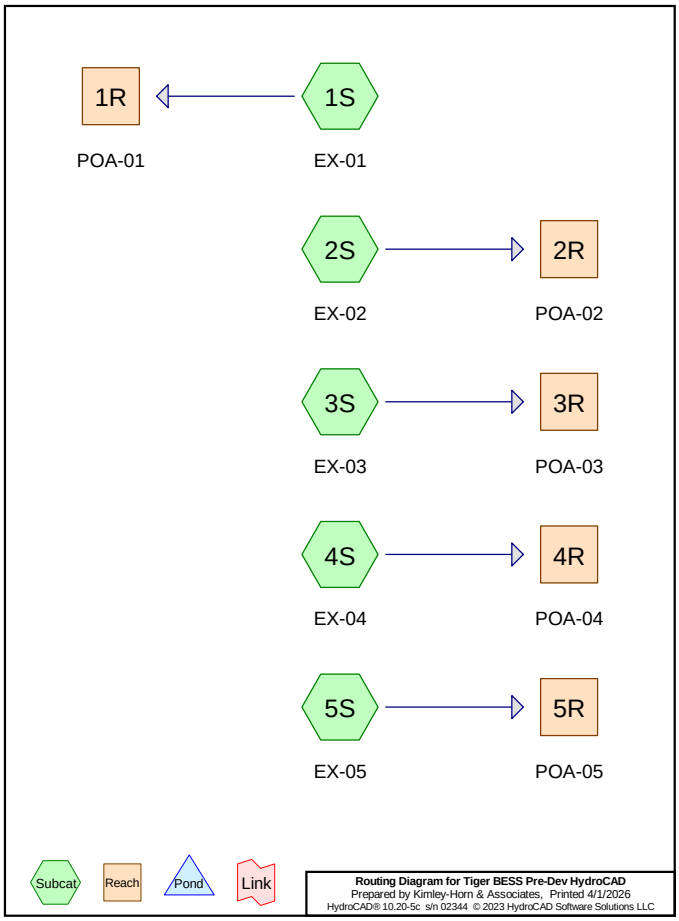
KHA PROJECT NO. 268287036

SHEET NUMBER

EX - 6

Drawing name: K:\DHS_LDE\268287036_New Leaf Energy_Tiger Storage_IL\2 Design\CAD\Exhibits\drainage\POST_DAM.dwg Layout1 Apr 21, 2026 2:06pm by, MichaelBoyke
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Exhibit 7 – Pre-Development HydroCAD Model



Project Notes

Defined 2 rainfall events from Tiger BESS PF Depth IDF
Defined 2 rainfall events from Tiger BESS PF Depth IDF

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	2.97	2
2	100-yr	Type II 24-hr		Default	24.00	1	7.17	2

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EX-01 Runoff Area=7.320 ac 0.00% Impervious Runoff Depth>1.18"
Flow Length=461' Tc=16.7 min CN=81 Runoff=11.43 cfs 0.717 af

Subcatchment 2S: EX-02 Runoff Area=3.060 ac 0.00% Impervious Runoff Depth>1.17"
Flow Length=707' Tc=27.1 min CN=81 Runoff=3.59 cfs 0.298 af

Subcatchment 3S: EX-03 Runoff Area=1.460 ac 0.00% Impervious Runoff Depth>1.18"
Flow Length=165' Tc=13.5 min CN=81 Runoff=2.53 cfs 0.143 af

Subcatchment 4S: EX-04 Runoff Area=3.170 ac 0.00% Impervious Runoff Depth>1.17"
Flow Length=514' Tc=31.6 min CN=81 Runoff=3.35 cfs 0.309 af

Subcatchment 5S: EX-05 Runoff Area=1.690 ac 0.00% Impervious Runoff Depth>1.18"
Flow Length=222' Tc=17.3 min CN=81 Runoff=2.59 cfs 0.165 af

Reach 1R: POA-01 Inflow=11.43 cfs 0.717 af
Outflow=11.43 cfs 0.717 af

Reach 2R: POA-02 Inflow=3.59 cfs 0.298 af
Outflow=3.59 cfs 0.298 af

Reach 3R: POA-03 Inflow=2.53 cfs 0.143 af
Outflow=2.53 cfs 0.143 af

Reach 4R: POA-04 Inflow=3.35 cfs 0.309 af
Outflow=3.35 cfs 0.309 af

Reach 5R: POA-05 Inflow=2.59 cfs 0.165 af
Outflow=2.59 cfs 0.165 af

Total Runoff Area = 16.700 ac Runoff Volume = 1.633 af Average Runoff Depth = 1.17"
100.00% Pervious = 16.700 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: EX-01

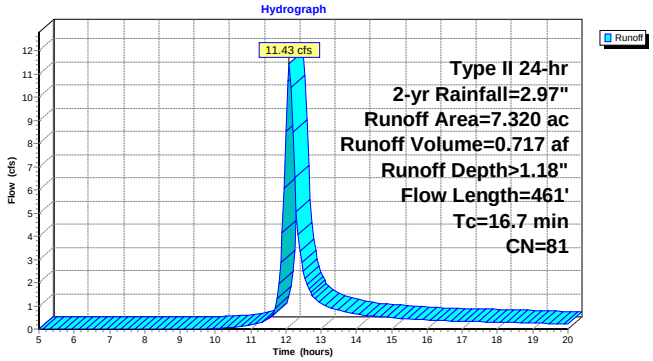
Runoff = 11.43 cfs @ 12.10 hrs, Volume= 0.717 af, Depth> 1.18"
Routed to Reach 1R : POA-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
7.320	81	Row crops, straight row, Poor, HSG B
7.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	100	0.0139	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
3.7	361	0.0333	1.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
16.7	461	Total			

Subcatchment 1S: EX-01



Summary for Subcatchment 2S: EX-02

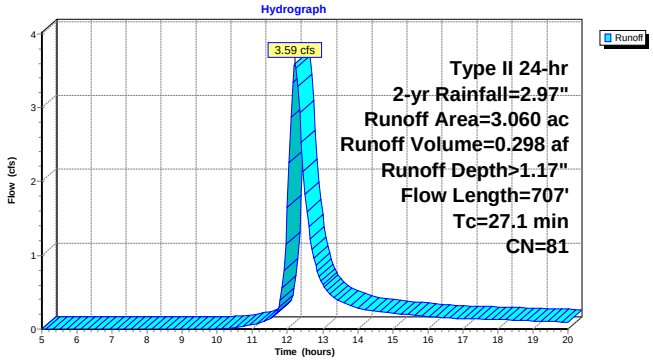
Runoff = 3.59 cfs @ 12.22 hrs, Volume= 0.298 af, Depth> 1.17"
Routed to Reach 2R : POA-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
3.060	81	Row crops, straight row, Poor, HSG B
3.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.0	100	0.0054	0.09		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
8.1	607	0.0192	1.25		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
27.1	707	Total			

Subcatchment 2S: EX-02



Summary for Subcatchment 3S: EX-03

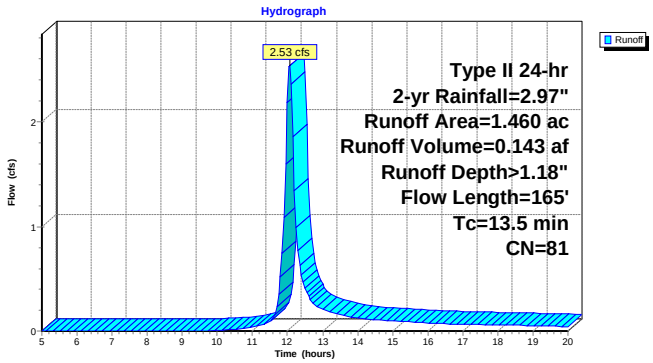
Runoff = 2.53 cfs @ 12.06 hrs, Volume= 0.143 af, Depth> 1.18"
Routed to Reach 3R : POA-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
1.460	81	Row crops, straight row, Poor, HSG B
1.460		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	100	0.0140	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
0.5	65	0.0519	2.05		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
13.5	165	Total			

Subcatchment 3S: EX-03



Summary for Subcatchment 4S: EX-04

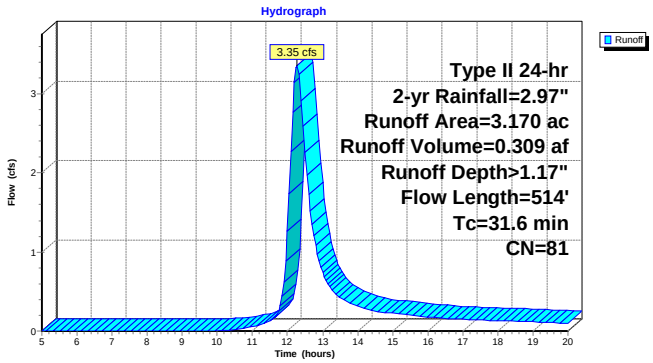
Runoff = 3.35 cfs @ 12.27 hrs, Volume= 0.309 af, Depth> 1.17"
Routed to Reach 4R : POA-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
3.170	81	Row crops, straight row, Poor, HSG B
3.170		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.2	100	0.0022	0.06		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
4.4	414	0.0308	1.58		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
31.6	514	Total			

Subcatchment 4S: EX-04



Summary for Subcatchment 5S: EX-05

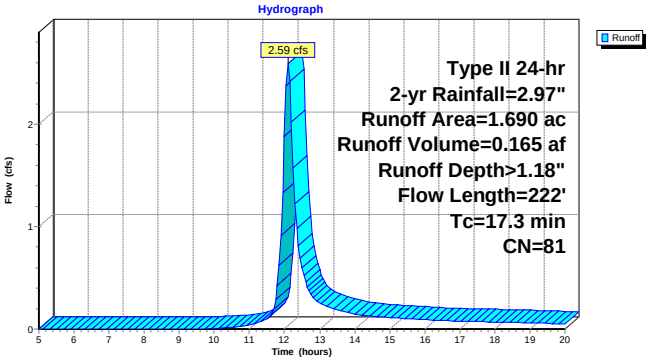
Runoff = 2.59 cfs @ 12.10 hrs, Volume= 0.165 af, Depth> 1.18"
Routed to Reach 5R : POA-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
1.690	81	Row crops, straight row, Poor, HSG B
1.690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0083	0.10		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
1.3	122	0.0312	1.59		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
17.3	222	Total			

Subcatchment 5S: EX-05



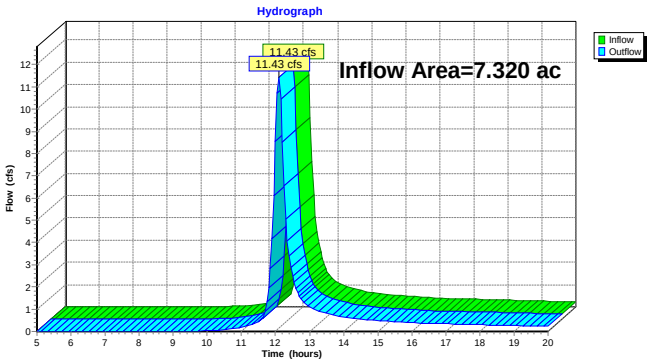
Summary for Reach 1R: POA-01

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.320 ac, 0.00% Impervious, Inflow Depth > 1.18" for 2-yr event
Inflow = 11.43 cfs @ 12.10 hrs, Volume= 0.717 af
Outflow = 11.43 cfs @ 12.10 hrs, Volume= 0.717 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: POA-01



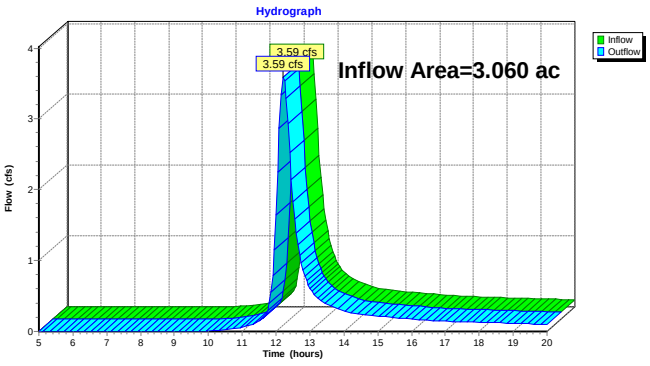
Summary for Reach 2R: POA-02

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.060 ac, 0.00% Impervious, Inflow Depth > 1.17" for 2-yr event
Inflow = 3.59 cfs @ 12.22 hrs, Volume= 0.298 af
Outflow = 3.59 cfs @ 12.22 hrs, Volume= 0.298 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 2R: POA-02



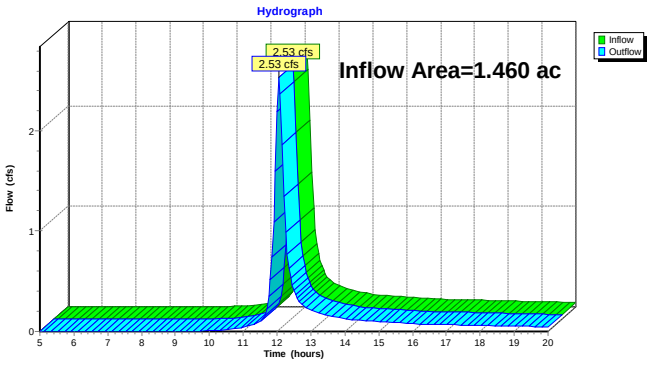
Summary for Reach 3R: POA-03

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.460 ac, 0.00% Impervious, Inflow Depth > 1.18" for 2-yr event
Inflow = 2.53 cfs @ 12.06 hrs, Volume= 0.143 af
Outflow = 2.53 cfs @ 12.06 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 3R: POA-03



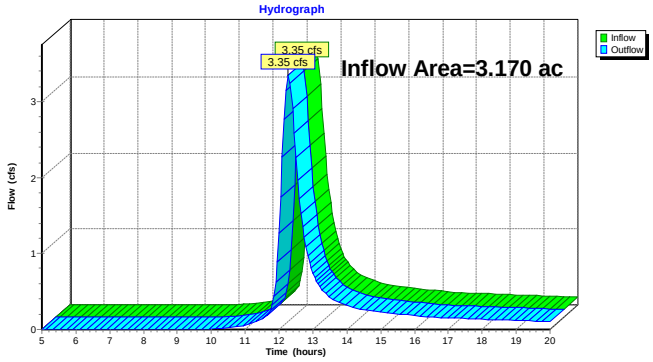
Summary for Reach 4R: POA-04

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.170 ac, 0.00% Impervious, Inflow Depth > 1.17" for 2-yr event
Inflow = 3.35 cfs @ 12.27 hrs, Volume= 0.309 af
Outflow = 3.35 cfs @ 12.27 hrs, Volume= 0.309 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: POA-04



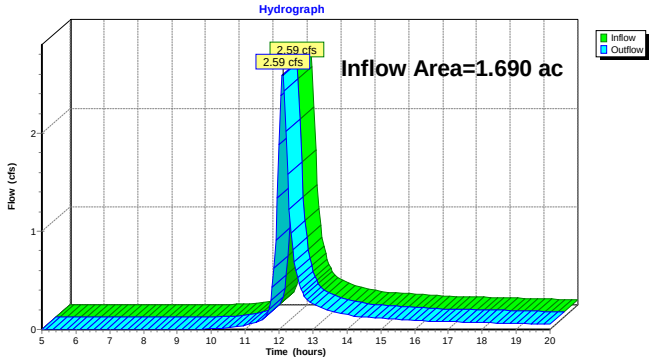
Summary for Reach 5R: POA-05

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.690 ac, 0.00% Impervious, Inflow Depth > 1.18" for 2-yr event
Inflow = 2.59 cfs @ 12.10 hrs, Volume= 0.165 af
Outflow = 2.59 cfs @ 12.10 hrs, Volume= 0.165 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 5R: POA-05



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: EX-01 Runoff Area=7.320 ac 0.00% Impervious Runoff Depth>4.62"
Flow Length=461' Tc=16.7 min CN=81 Runoff=43.62 cfs 2.820 af

Subcatchment 2S: EX-02 Runoff Area=3.060 ac 0.00% Impervious Runoff Depth>4.61"
Flow Length=707' Tc=27.1 min CN=81 Runoff=13.94 cfs 1.175 af

Subcatchment 3S: EX-03 Runoff Area=1.460 ac 0.00% Impervious Runoff Depth>4.63"
Flow Length=165' Tc=13.5 min CN=81 Runoff=9.60 cfs 0.563 af

Subcatchment 4S: EX-04 Runoff Area=3.170 ac 0.00% Impervious Runoff Depth>4.60"
Flow Length=514' Tc=31.6 min CN=81 Runoff=13.10 cfs 1.215 af

Subcatchment 5S: EX-05 Runoff Area=1.690 ac 0.00% Impervious Runoff Depth>4.62"
Flow Length=222' Tc=17.3 min CN=81 Runoff=9.90 cfs 0.651 af

Reach 1R: POA-01 Inflow=43.62 cfs 2.820 af
Outflow=43.62 cfs 2.820 af

Reach 2R: POA-02 Inflow=13.94 cfs 1.175 af
Outflow=13.94 cfs 1.175 af

Reach 3R: POA-03 Inflow=9.60 cfs 0.563 af
Outflow=9.60 cfs 0.563 af

Reach 4R: POA-04 Inflow=13.10 cfs 1.215 af
Outflow=13.10 cfs 1.215 af

Reach 5R: POA-05 Inflow=9.90 cfs 0.651 af
Outflow=9.90 cfs 0.651 af

Total Runoff Area = 16.700 ac Runoff Volume = 6.424 af Average Runoff Depth = 4.62"
100.00% Pervious = 16.700 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: EX-01

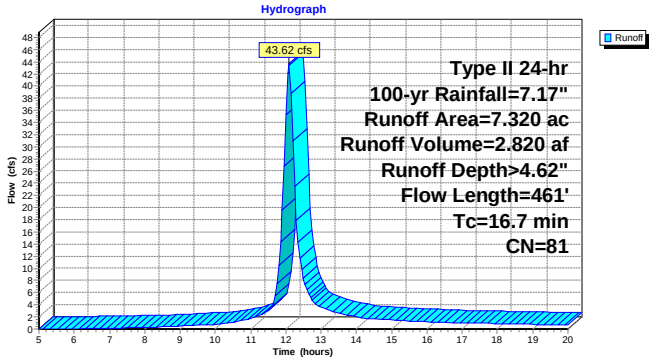
Runoff = 43.62 cfs @ 12.09 hrs, Volume= 2.820 af, Depth> 4.62"
Routed to Reach 1R : POA-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
7.320	81	Row crops, straight row, Poor, HSG B
7.320		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	100	0.0139	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
3.7	361	0.0333	1.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
16.7	461	Total			

Subcatchment 1S: EX-01



Summary for Subcatchment 2S: EX-02

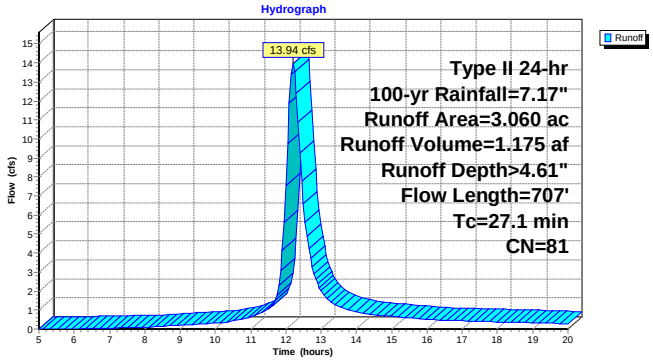
Runoff = 13.94 cfs @ 12.20 hrs, Volume= 1.175 af, Depth> 4.61"
Routed to Reach 2R : POA-02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
3.060	81	Row crops, straight row, Poor, HSG B
3.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.0	100	0.0054	0.09		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
8.1	607	0.0192	1.25		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
27.1	707	Total			

Subcatchment 2S: EX-02



Summary for Subcatchment 3S: EX-03

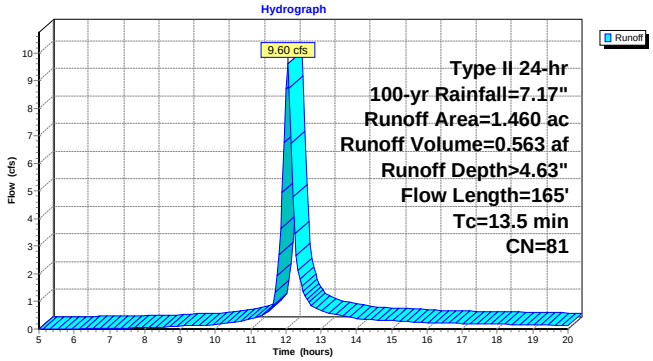
Runoff = 9.60 cfs @ 12.05 hrs, Volume= 0.563 af, Depth> 4.63"
Routed to Reach 3R : POA-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
1.460	81	Row crops, straight row, Poor, HSG B
1.460		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	100	0.0140	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
0.5	65	0.0519	2.05		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
13.5	165	Total			

Subcatchment 3S: EX-03



Summary for Subcatchment 4S: EX-04

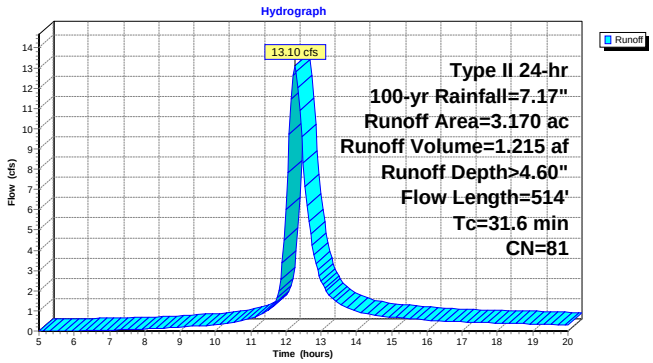
Runoff = 13.10 cfs @ 12.26 hrs, Volume= 1.215 af, Depth> 4.60"
Routed to Reach 4R : POA-04

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
3.170	81	Row crops, straight row, Poor, HSG B
3.170		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.2	100	0.0022	0.06		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
4.4	414	0.0308	1.58		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
31.6	514	Total			

Subcatchment 4S: EX-04



Summary for Subcatchment 5S: EX-05

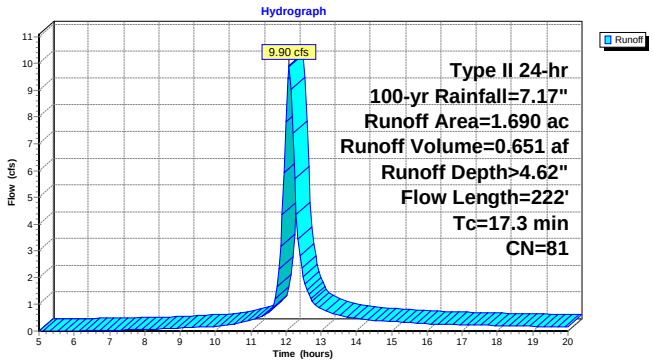
Runoff = 9.90 cfs @ 12.09 hrs, Volume= 0.651 af, Depth> 4.62"
Routed to Reach 5R : POA-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
1.690	81	Row crops, straight row, Poor, HSG B
1.690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0083	0.10		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.97"
1.3	122	0.0312	1.59		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
17.3	222	Total			

Subcatchment 5S: EX-05



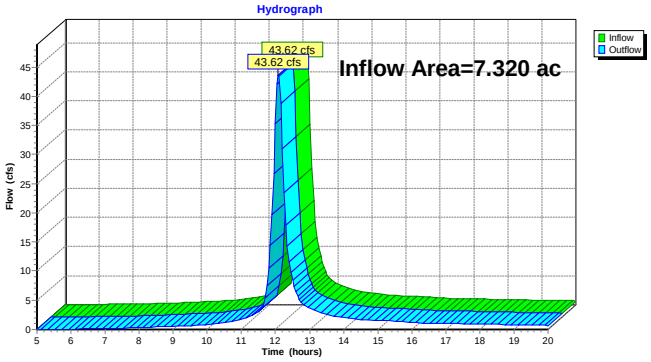
Summary for Reach 1R: POA-01

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 7.320 ac, 0.00% Impervious, Inflow Depth > 4.62" for 100-yr event
Inflow = 43.62 cfs @ 12.09 hrs, Volume= 2.820 af
Outflow = 43.62 cfs @ 12.09 hrs, Volume= 2.820 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 1R: POA-01



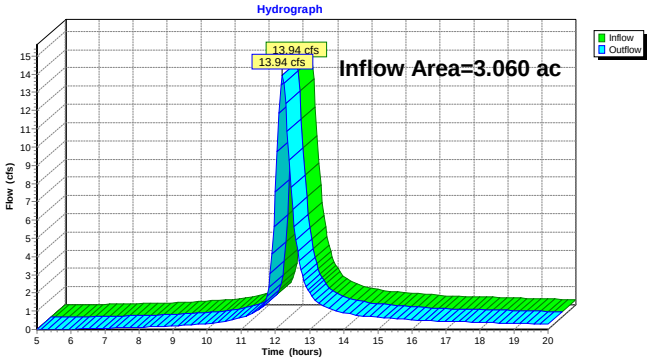
Summary for Reach 2R: POA-02

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.060 ac, 0.00% Impervious, Inflow Depth > 4.61" for 100-yr event
Inflow = 13.94 cfs @ 12.20 hrs, Volume= 1.175 af
Outflow = 13.94 cfs @ 12.20 hrs, Volume= 1.175 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 2R: POA-02



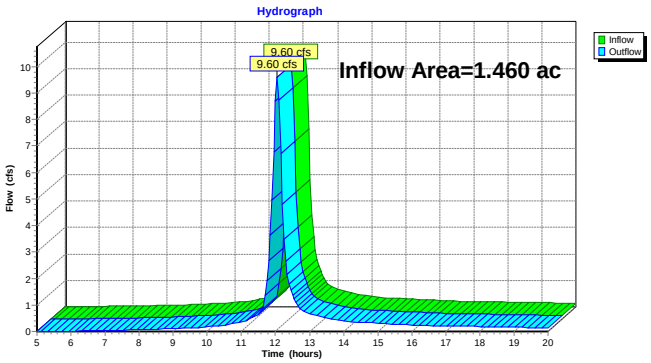
Summary for Reach 3R: POA-03

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.460 ac, 0.00% Impervious, Inflow Depth > 4.63" for 100-yr event
Inflow = 9.60 cfs @ 12.05 hrs, Volume= 0.563 af
Outflow = 9.60 cfs @ 12.05 hrs, Volume= 0.563 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 3R: POA-03



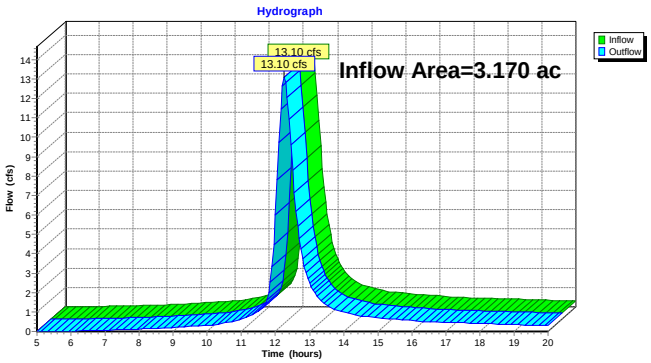
Summary for Reach 4R: POA-04

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.170 ac, 0.00% Impervious, Inflow Depth > 4.60" for 100-yr event
Inflow = 13.10 cfs @ 12.26 hrs, Volume= 1.215 af
Outflow = 13.10 cfs @ 12.26 hrs, Volume= 1.215 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: POA-04



Summary for Reach 5R: POA-05

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.690 ac, 0.00% Impervious, Inflow Depth > 4.62" for 100-yr event
Inflow = 9.90 cfs @ 12.09 hrs, Volume= 0.651 af
Outflow = 9.90 cfs @ 12.09 hrs, Volume= 0.651 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 5R: POA-05

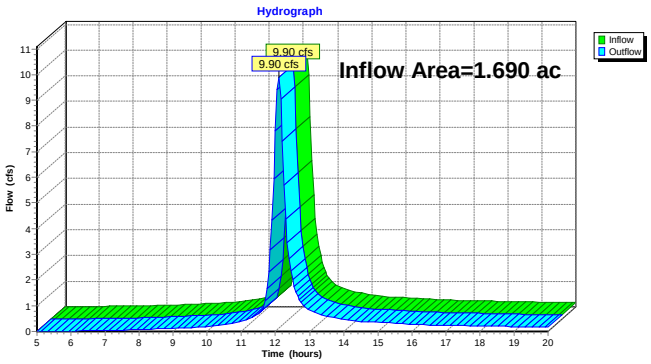
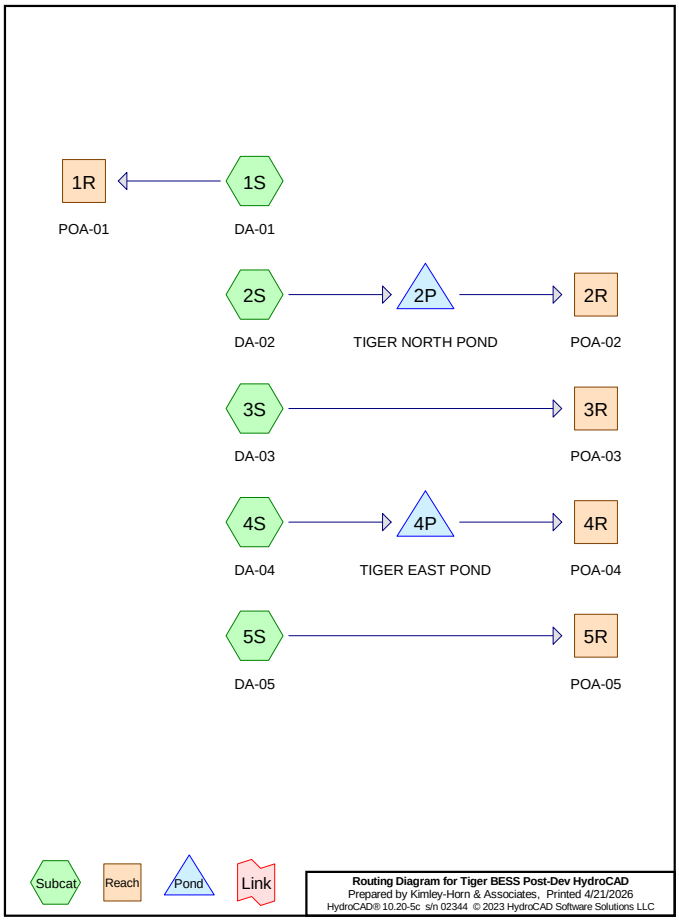


Exhibit 8 – Post-Development HydroCAD Model



Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-yr	Type II 24-hr		Default	24.00	1	2.97	2
2	100-yr	Type II 24-hr		Default	24.00	1	7.17	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.870	85	Gravel roads, HSG B (1S, 2S, 3S, 4S)
9.583	58	Meadow, non-grazed, HSG B (1S, 2S, 3S, 4S, 5S)
5.014	98	Paved parking, HSG B (2S, 3S, 4S, 5S)
0.240	98	Paved roads w/curbs & sewers, HSG B (1S)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
16.707	HSG B	1S, 2S, 3S, 4S, 5S
0.000	HSG C	
0.000	HSG D	
0.000	Other	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-01 Runoff Area=5.620 ac 4.27% Impervious Runoff Depth=0.39"
Flow Length=387' Tc=48.4 min CN=62 Runoff=0.82 cfs 0.181 af

Subcatchment 2S: DA-02 Runoff Area=1.710 ac 56.73% Impervious Runoff Depth=1.56"
Flow Length=523' Tc=5.3 min CN=85 Runoff=4.73 cfs 0.223 af

Subcatchment 3S: DA-03 Runoff Area=4.560 ac 68.20% Impervious Runoff Depth=1.87"
Flow Length=835' Tc=13.7 min CN=89 Runoff=11.37 cfs 0.712 af

Subcatchment 4S: DA-04 Runoff Area=3.130 ac 11.50% Impervious Runoff Depth=0.53"
Flow Length=514' Tc=6.5 min CN=66 Runoff=2.51 cfs 0.138 af

Subcatchment 5S: DA-05 Runoff Area=1.687 ac 34.02% Impervious Runoff Depth=0.79"
Flow Length=223' Tc=11.7 min CN=72 Runoff=1.79 cfs 0.111 af

Reach 1R: POA-01 Inflow=0.82 cfs 0.181 af
Outflow=0.82 cfs 0.181 af

Reach 2R: POA-02 Inflow=2.63 cfs 0.223 af
Outflow=2.63 cfs 0.223 af

Reach 3R: POA-03 Inflow=11.37 cfs 0.712 af
Outflow=11.37 cfs 0.712 af

Reach 4R: POA-04 Inflow=1.40 cfs 0.138 af
Outflow=1.40 cfs 0.138 af

Reach 5R: POA-05 Inflow=1.79 cfs 0.111 af
Outflow=1.79 cfs 0.111 af

Pond 2P: TIGER NORTH POND Peak Elev=732.28' Storage=2,094 cf Inflow=4.73 cfs 0.223 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0600 '/' Outflow=2.63 cfs 0.223 af

Pond 4P: TIGER EAST POND Peak Elev=738.73' Storage=899 cf Inflow=2.51 cfs 0.138 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0400 '/' Outflow=1.40 cfs 0.138 af

Summary for Subcatchment 1S: DA-01

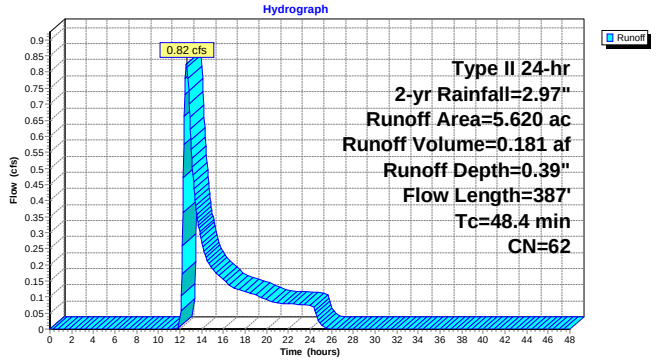
Runoff = 0.82 cfs @ 12.62 hrs, Volume= 0.181 af, Depth= 0.39"
Routed to Reach 1R : POA-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
4.960	58	Meadow, non-grazed, HSG B
0.420	85	Gravel roads, HSG B
0.240	98	Paved roads w/curbs & sewers, HSG B
5.620	62	Weighted Average
5.380		95.73% Pervious Area
0.240		4.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	100	0.0005	0.04		**Sheet Flow, MEADOW** Grass: Short n= 0.150 P2= 2.97"
3.9	287	0.0307	1.23		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
48.4	387	Total			

Subcatchment 1S: DA-01



Summary for Subcatchment 2S: DA-02

[49] Hint: Tc<2dt may require smaller dt

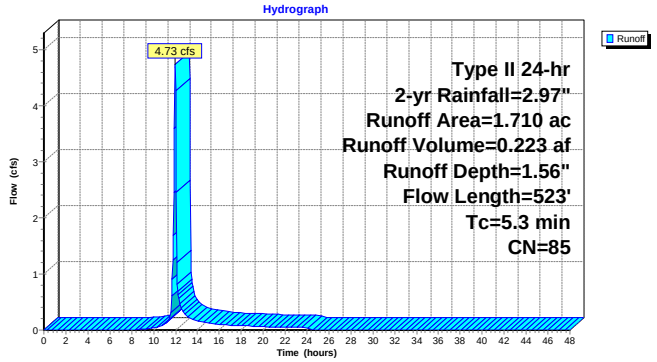
Runoff = 4.73 cfs @ 11.96 hrs, Volume= 0.223 af, Depth= 1.56"
Routed to Pond 2P : TIGER NORTH POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
0.440	58	Meadow, non-grazed, HSG B
0.300	85	Gravel roads, HSG B
0.970	98	Paved parking, HSG B
1.710	85	Weighted Average
0.740		43.27% Pervious Area
0.970		56.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0059	0.81		**Sheet Flow, IMPERVIOUS** Smooth surfaces n= 0.011 P2= 2.97"
1.7	319	0.0234	3.11		**Shallow Concentrated Flow, IMPERVIOUS** Paved Kv= 20.3 fps
1.6	104	0.0234	1.07		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
5.3	523	Total			

Subcatchment 2S: DA-02



Summary for Subcatchment 3S: DA-03

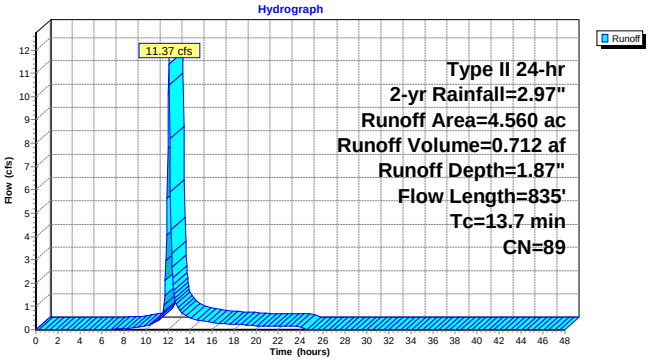
Runoff = 11.37 cfs @ 12.05 hrs, Volume= 0.712 af, Depth= 1.87"
Routed to Reach 3R : POA-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
0.740	58	Meadow, non-grazed, HSG B
0.710	85	Gravel roads, HSG B
3.110	98	Paved parking, HSG B
4.560	89	Weighted Average
1.450		31.80% Pervious Area
3.110		68.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0059	0.81		**Sheet Flow, IMPERVIOUS** Smooth surfaces n= 0.011 P2= 2.97"
3.8	427	0.0086	1.88		**Shallow Concentrated Flow, IMPERVIOUS** Paved Kv= 20.3 fps
7.9	308	0.0086	0.65		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
13.7	835	Total			

Subcatchment 3S: DA-03



Summary for Subcatchment 4S: DA-04

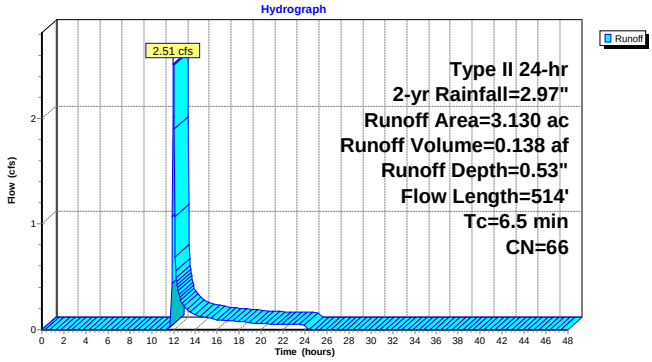
Runoff = 2.51 cfs @ 12.00 hrs, Volume= 0.138 af, Depth= 0.53"
Routed to Pond 4P : TIGER EAST POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
2.330	58	Meadow, non-grazed, HSG B
0.440	85	Gravel roads, HSG B
0.360	98	Paved parking, HSG B
3.130	66	Weighted Average
2.770		88.50% Pervious Area
0.360		11.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	100	0.0054	0.78		**Sheet Flow, IMPERVIOUS** Smooth surfaces n= 0.011 P2= 2.97"
0.7	146	0.0302	3.53		**Shallow Concentrated Flow, IMPERVIOUS** Paved Kv= 20.3 fps
3.7	268	0.0302	1.22		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
6.5	514	Total			

Subcatchment 4S: DA-04



Summary for Subcatchment 5S: DA-05

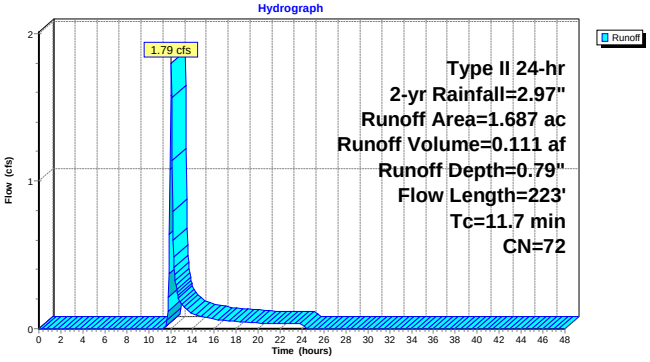
Runoff = 1.79 cfs @ 12.05 hrs, Volume= 0.111 af, Depth= 0.79"
Routed to Reach 5R : POA-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.97"

Area (ac)	CN	Description
0.574	98	Paved parking, HSG B
1.113	58	Meadow, non-grazed, HSG B
1.687	72	Weighted Average
1.113		65.98% Pervious Area
0.574		34.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0001	0.16		**Sheet Flow, IMPERVIOUS** Smooth surfaces n= 0.011 P2= 2.97"
0.2	46	0.0363	3.87		**Shallow Concentrated Flow, IMPERVIOUS** Paved Kv= 20.3 fps
1.0	77	0.0363	1.33		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
11.7	223	Total			

Subcatchment 5S: DA-05



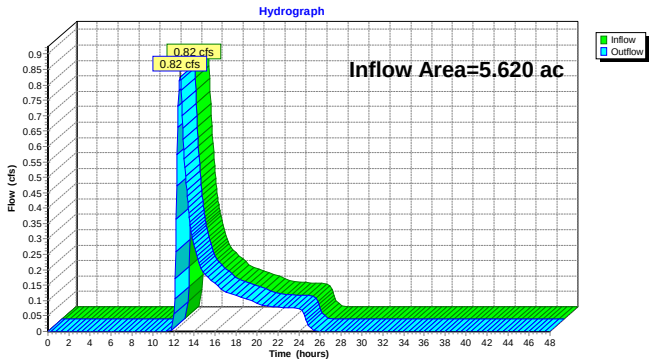
Summary for Reach 1R: POA-01

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.620 ac, 4.27% Impervious, Inflow Depth = 0.39" for 2-yr event
Inflow = 0.82 cfs @ 12.62 hrs, Volume= 0.181 af
Outflow = 0.82 cfs @ 12.62 hrs, Volume= 0.181 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 1R: POA-01



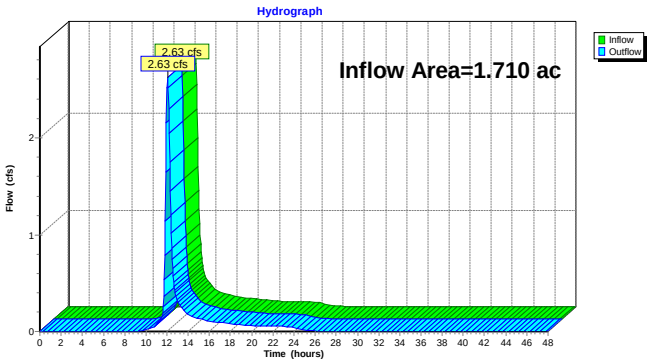
Summary for Reach 2R: POA-02

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.710 ac, 56.73% Impervious, Inflow Depth = 1.56" for 2-yr event
Inflow = 2.63 cfs @ 12.05 hrs, Volume= 0.223 af
Outflow = 2.63 cfs @ 12.05 hrs, Volume= 0.223 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 2R: POA-02



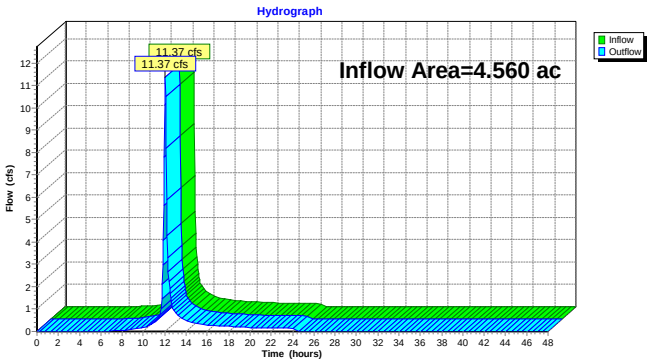
Summary for Reach 3R: POA-03

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.560 ac, 68.20% Impervious, Inflow Depth = 1.87" for 2-yr event
Inflow = 11.37 cfs @ 12.05 hrs, Volume= 0.712 af
Outflow = 11.37 cfs @ 12.05 hrs, Volume= 0.712 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 3R: POA-03



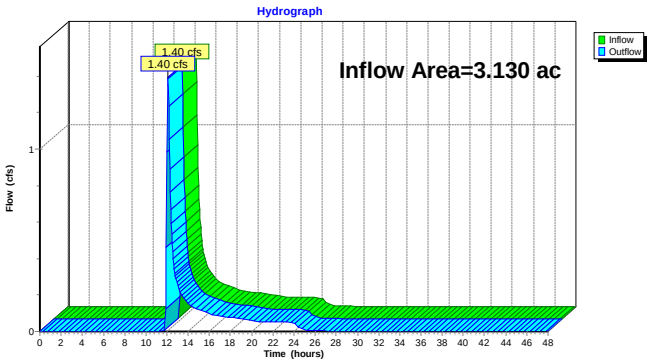
Summary for Reach 4R: POA-04

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.130 ac, 11.50% Impervious, Inflow Depth = 0.53" for 2-yr event
Inflow = 1.40 cfs @ 12.09 hrs, Volume= 0.138 af
Outflow = 1.40 cfs @ 12.09 hrs, Volume= 0.138 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 4R: POA-04



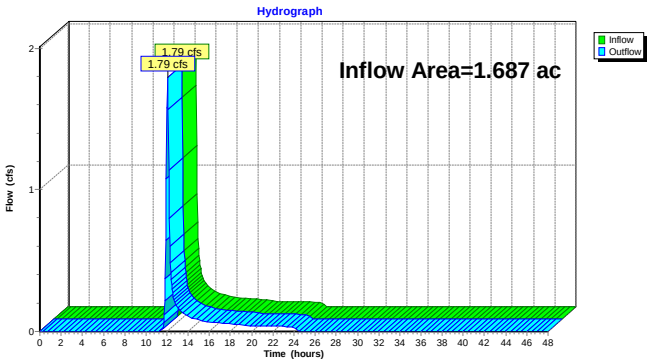
Summary for Reach 5R: POA-05

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.687 ac, 34.02% Impervious, Inflow Depth = 0.79" for 2-yr event
Inflow = 1.79 cfs @ 12.05 hrs, Volume= 0.111 af
Outflow = 1.79 cfs @ 12.05 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 5R: POA-05



Summary for Pond 2P: TIGER NORTH POND

Inflow Area = 1.710 ac, 56.73% Impervious, Inflow Depth = 1.56" for 2-yr event
Inflow = 4.73 cfs @ 11.96 hrs, Volume= 0.223 af
Outflow = 2.63 cfs @ 12.05 hrs, Volume= 0.223 af, Atten= 44%, Lag= 5.4 min
Primary = 2.63 cfs @ 12.05 hrs, Volume= 0.223 af
Routed to Reach 2R : POA-02

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 732.28' @ 12.05 hrs Surf.Area= 2,203 sf Storage= 2,094 cf

Plug-Flow detention time= 22.9 min calculated for 0.223 af (100% of inflow)
Center-of-Mass det. time= 23.3 min (848.9 - 825.7)

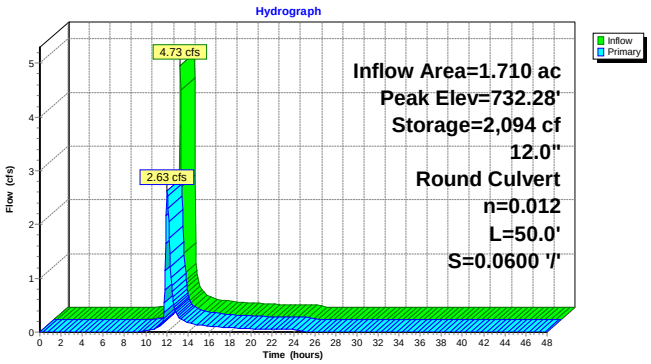
Volume	Invert	Avail.Storage	Storage Description
#1	731.00'	11,362 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
731.00	1,080	0	0
735.00	4,601	11,362	11,362

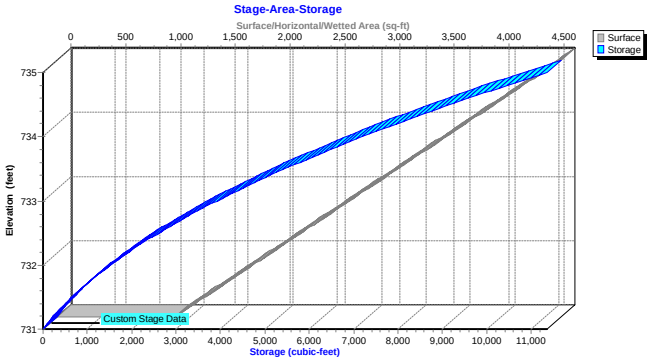
Device	Routing	Invert	Outlet Devices
#1	Primary	731.00'	**12.0" Round CMP_Round 12"** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 731.00' / 728.00' S= 0.0600 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.63 cfs @ 12.05 hrs HW=732.27' (Free Discharge)
1=CMP_Round 12" (Inlet Controls 2.63 cfs @ 3.35 fps)

Pond 2P: TIGER NORTH POND



Pond 2P: TIGER NORTH POND



Summary for Pond 4P: TIGER EAST POND

Inflow Area = 3.130 ac, 11.50% Impervious, Inflow Depth = 0.53" for 2-yr event
Inflow = 2.51 cfs @ 12.00 hrs, Volume= 0.138 af
Outflow = 1.40 cfs @ 12.09 hrs, Volume= 0.138 af, Atten= 44%, Lag= 5.3 min
Primary = 1.40 cfs @ 12.09 hrs, Volume= 0.138 af
Routed to Reach 4R : POA-04

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 738.73' @ 12.09 hrs Surf.Area= 1,589 sf Storage= 899 cf

Plug-Flow detention time= 23.9 min calculated for 0.138 af (100% of inflow)
Center-of-Mass det. time= 23.4 min (920.0 - 896.6)

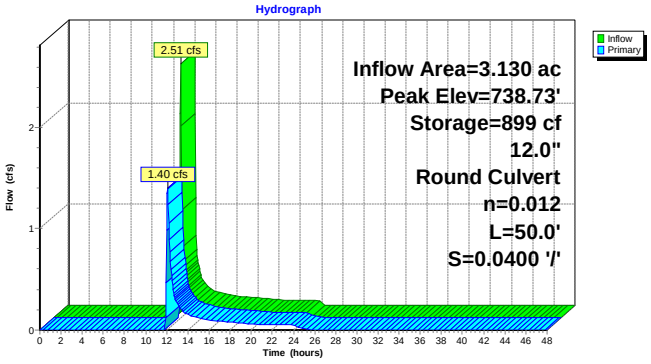
Volume	Invert	Avail.Storage	Storage Description
#1	738.00'	11,272 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
738.00	889	0	0
742.00	4,747	11,272	11,272

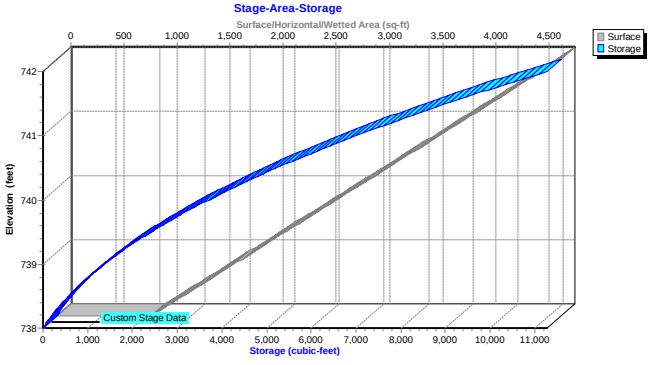
Device	Routing	Invert	Outlet Devices
#1	Primary	738.00'	**12.0" Round CMP_Round 12"** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 738.00' / 736.00' S= 0.0400 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.38 cfs @ 12.09 hrs HW=738.72' (Free Discharge)
1=CMP_Round 12" (Inlet Controls 1.38 cfs @ 2.28 fps)

Pond 4P: TIGER EAST POND



Pond 4P: TIGER EAST POND



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-01 Runoff Area=5.620 ac 4.27% Impervious Runoff Depth=2.93"
Flow Length=387' Tc=48.4 min CN=62 Runoff=9.88 cfs 1.371 af

Subcatchment 2S: DA-02 Runoff Area=1.710 ac 56.73% Impervious Runoff Depth=5.42"
Flow Length=523' Tc=5.3 min CN=85 Runoff=15.50 cfs 0.772 af

Subcatchment 3S: DA-03 Runoff Area=4.560 ac 68.20% Impervious Runoff Depth=5.87"
Flow Length=835' Tc=13.7 min CN=89 Runoff=33.83 cfs 2.232 af

Subcatchment 4S: DA-04 Runoff Area=3.130 ac 11.50% Impervious Runoff Depth=3.34"
Flow Length=514' Tc=6.5 min CN=66 Runoff=17.95 cfs 0.871 af

Subcatchment 5S: DA-05 Runoff Area=1.687 ac 34.02% Impervious Runoff Depth=3.97"
Flow Length=223' Tc=11.7 min CN=72 Runoff=9.59 cfs 0.559 af

Reach 1R: POA-01 Inflow=9.88 cfs 1.371 af
Outflow=9.88 cfs 1.371 af

Reach 2R: POA-02 Inflow=5.16 cfs 0.772 af
Outflow=5.16 cfs 0.772 af

Reach 3R: POA-03 Inflow=33.83 cfs 2.232 af
Outflow=33.83 cfs 2.232 af

Reach 4R: POA-04 Inflow=5.42 cfs 0.871 af
Outflow=5.42 cfs 0.871 af

Reach 5R: POA-05 Inflow=9.59 cfs 0.559 af
Outflow=9.59 cfs 0.559 af

Pond 2P: TIGER NORTH POND Peak Elev=734.48' Storage=9,101 cf Inflow=15.50 cfs 0.772 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0600 '/' Outflow=5.16 cfs 0.772 af

Pond 4P: TIGER EAST POND Peak Elev=741.80' Storage=10,330 cf Inflow=17.95 cfs 0.871 af
12.0" Round Culvert n=0.012 L=50.0' S=0.0400 '/' Outflow=5.42 cfs 0.871 af

Summary for Subcatchment 1S: DA-01

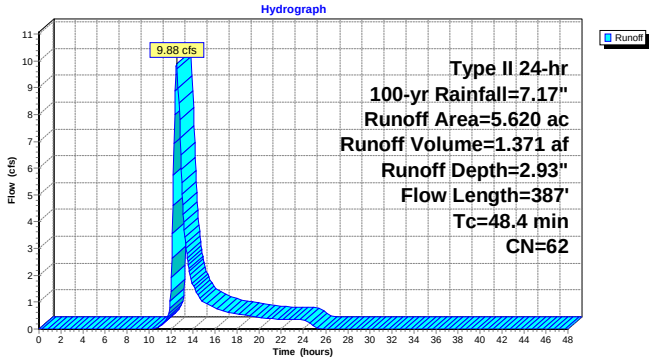
Runoff = 9.88 cfs @ 12.50 hrs, Volume= 1.371 af, Depth= 2.93"
Routed to Reach 1R : POA-01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
4.960	58	Meadow, non-grazed, HSG B
0.420	85	Gravel roads, HSG B
0.240	98	Paved roads w/curbs & sewers, HSG B
5.620	62	Weighted Average
5.380		95.73% Pervious Area
0.240		4.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.5	100	0.0005	0.04		**Sheet Flow, MEADOW** Grass: Short n= 0.150 P2= 2.97"
3.9	287	0.0307	1.23		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
48.4	387	Total			

Subcatchment 1S: DA-01



Summary for Subcatchment 2S: DA-02

[49] Hint: Tc<2dt may require smaller dt

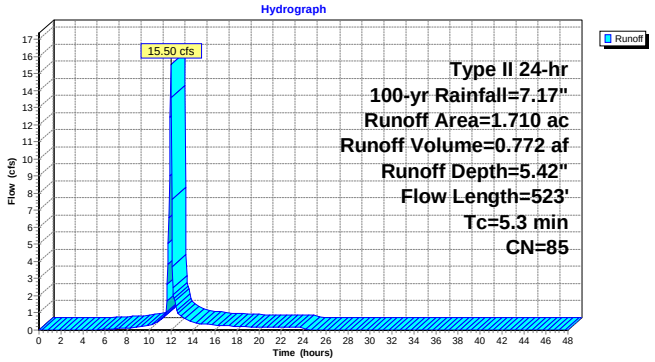
Runoff = 15.50 cfs @ 11.96 hrs, Volume= 0.772 af, Depth= 5.42"
Routed to Pond 2P : TIGER NORTH POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
0.440	58	Meadow, non-grazed, HSG B
0.300	85	Gravel roads, HSG B
0.970	98	Paved parking, HSG B
1.710	85	Weighted Average
0.740		43.27% Pervious Area
0.970		56.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0059	0.81		**Sheet Flow, IMPERVIOUS** Smooth surfaces n= 0.011 P2= 2.97"
1.7	319	0.0234	3.11		**Shallow Concentrated Flow, IMPERVIOUS** Paved Kv= 20.3 fps
1.6	104	0.0234	1.07		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
5.3	523	Total			

Subcatchment 2S: DA-02



Summary for Subcatchment 3S: DA-03

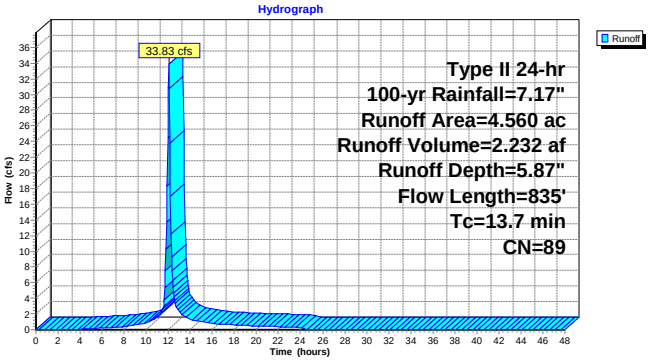
Runoff = 33.83 cfs @ 12.05 hrs, Volume= 2.232 af, Depth= 5.87"
Routed to Reach 3R : POA-03

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
0.740	58	Meadow, non-grazed, HSG B
0.710	85	Gravel roads, HSG B
3.110	98	Paved parking, HSG B
4.560	89	Weighted Average
1.450		31.80% Pervious Area
3.110		68.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0059	0.81		**Sheet Flow, IMPERVIOUS** Smooth surfaces n= 0.011 P2= 2.97"
3.8	427	0.0086	1.88		**Shallow Concentrated Flow, IMPERVIOUS** Paved Kv= 20.3 fps
7.9	308	0.0086	0.65		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
13.7	835	Total			

Subcatchment 3S: DA-03



Summary for Subcatchment 4S: DA-04

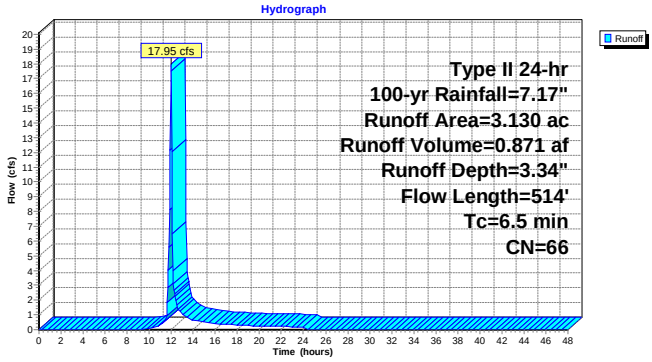
Runoff = 17.95 cfs @ 11.98 hrs, Volume= 0.871 af, Depth= 3.34"
Routed to Pond 4P : TIGER EAST POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
2.330	58	Meadow, non-grazed, HSG B
0.440	85	Gravel roads, HSG B
0.360	98	Paved parking, HSG B
3.130	66	Weighted Average
2.770		88.50% Pervious Area
0.360		11.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.1	100	0.0054	0.78		**Sheet Flow, IMPERVIOUS** Smooth surfaces n= 0.011 P2= 2.97"
0.7	146	0.0302	3.53		**Shallow Concentrated Flow, IMPERVIOUS** Paved Kv= 20.3 fps
3.7	268	0.0302	1.22		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
6.5	514	Total			

Subcatchment 4S: DA-04



Summary for Subcatchment 5S: DA-05

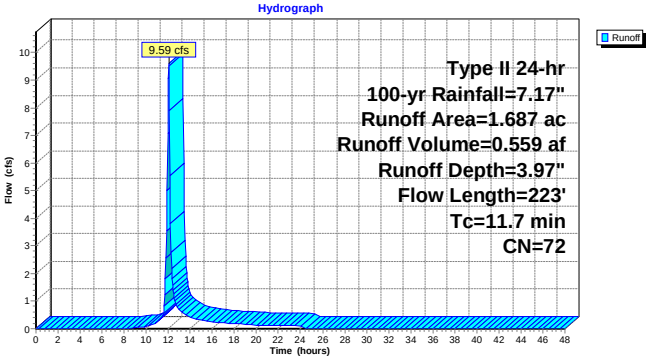
Runoff = 9.59 cfs @ 12.04 hrs, Volume= 0.559 af, Depth= 3.97"
Routed to Reach 5R : POA-05

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.17"

Area (ac)	CN	Description
0.574	98	Paved parking, HSG B
1.113	58	Meadow, non-grazed, HSG B
1.687	72	Weighted Average
1.113		65.98% Pervious Area
0.574		34.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0001	0.16		**Sheet Flow, IMPERVIOUS** Smooth surfaces n= 0.011 P2= 2.97"
0.2	46	0.0363	3.87		**Shallow Concentrated Flow, IMPERVIOUS** Paved Kv= 20.3 fps
1.0	77	0.0363	1.33		**Shallow Concentrated Flow, MEADOW** Short Grass Pasture Kv= 7.0 fps
11.7	223	Total			

Subcatchment 5S: DA-05



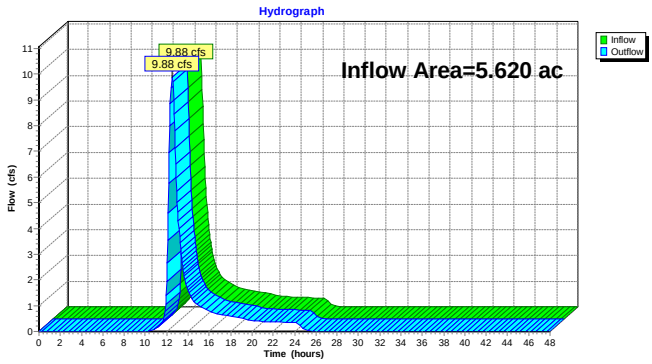
Summary for Reach 1R: POA-01

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.620 ac, 4.27% Impervious, Inflow Depth = 2.93" for 100-yr event
Inflow = 9.88 cfs @ 12.50 hrs, Volume= 1.371 af
Outflow = 9.88 cfs @ 12.50 hrs, Volume= 1.371 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 1R: POA-01



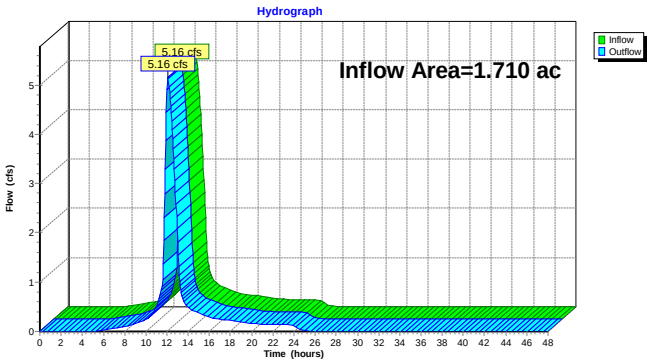
Summary for Reach 2R: POA-02

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.710 ac, 56.73% Impervious, Inflow Depth = 5.42" for 100-yr event
Inflow = 5.16 cfs @ 12.09 hrs, Volume= 0.772 af
Outflow = 5.16 cfs @ 12.09 hrs, Volume= 0.772 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 2R: POA-02



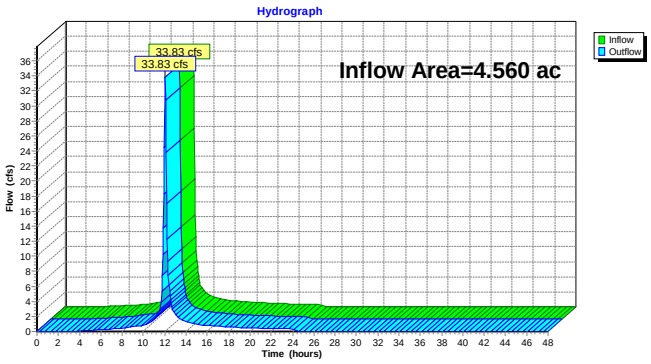
Summary for Reach 3R: POA-03

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.560 ac, 68.20% Impervious, Inflow Depth = 5.87" for 100-yr event
Inflow = 33.83 cfs @ 12.05 hrs, Volume= 2.232 af
Outflow = 33.83 cfs @ 12.05 hrs, Volume= 2.232 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 3R: POA-03



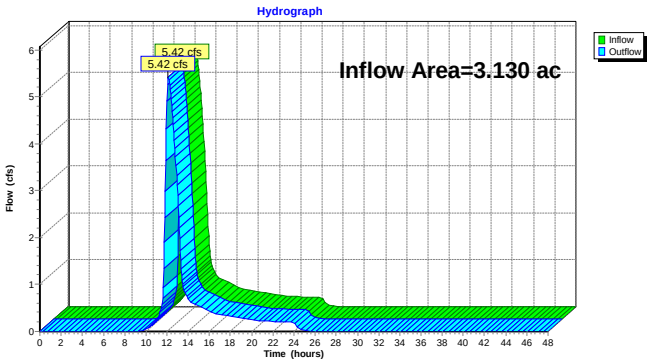
Summary for Reach 4R: POA-04

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.130 ac, 11.50% Impervious, Inflow Depth = 3.34" for 100-yr event
Inflow = 5.42 cfs @ 12.12 hrs, Volume= 0.871 af
Outflow = 5.42 cfs @ 12.12 hrs, Volume= 0.871 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 4R: POA-04



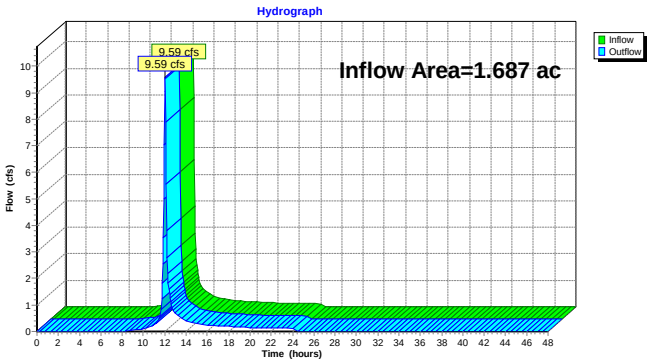
Summary for Reach 5R: POA-05

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.687 ac, 34.02% Impervious, Inflow Depth = 3.97" for 100-yr event
Inflow = 9.59 cfs @ 12.04 hrs, Volume= 0.559 af
Outflow = 9.59 cfs @ 12.04 hrs, Volume= 0.559 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 5R: POA-05



Summary for Pond 2P: TIGER NORTH POND

Inflow Area = 1.710 ac, 56.73% Impervious, Inflow Depth = 5.42" for 100-yr event
Inflow = 15.50 cfs @ 11.96 hrs, Volume= 0.772 af
Outflow = 5.16 cfs @ 12.09 hrs, Volume= 0.772 af, Atten= 67%, Lag= 7.8 min
Primary = 5.16 cfs @ 12.09 hrs, Volume= 0.772 af
Routed to Reach 2R : POA-02

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 734.48' @ 12.09 hrs Surf.Area= 4,146 sf Storage= 9,101 cf

Plug-Flow detention time= 22.0 min calculated for 0.772 af (100% of inflow)
Center-of-Mass det. time= 21.5 min (811.9 - 790.4)

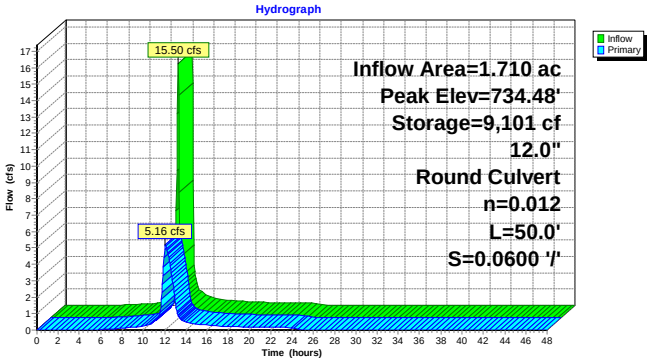
Volume	Invert	Avail.Storage	Storage Description
#1	731.00'	11,362 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
731.00	1,080	0	0
735.00	4,601	11,362	11,362

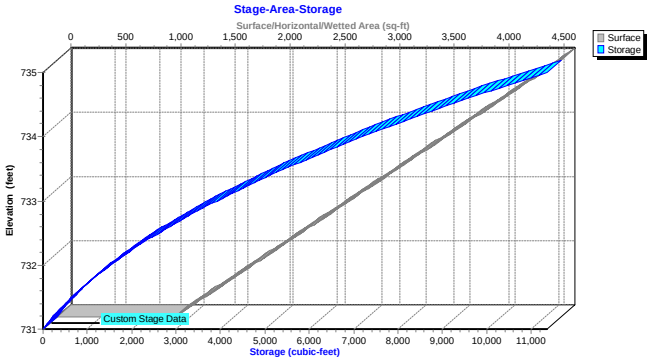
Device	Routing	Invert	Outlet Devices
#1	Primary	731.00'	**12.0" Round CMP_Round 12"** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 731.00' / 728.00' S= 0.0600 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.15 cfs @ 12.09 hrs HW=734.47' (Free Discharge)
1=CMP_Round 12" (Inlet Controls 5.15 cfs @ 6.55 fps)

Pond 2P: TIGER NORTH POND



Pond 2P: TIGER NORTH POND



Summary for Pond 4P: TIGER EAST POND

Inflow Area = 3.130 ac, 11.50% Impervious, Inflow Depth = 3.34" for 100-yr event
Inflow = 17.95 cfs @ 11.98 hrs, Volume= 0.871 af
Outflow = 5.42 cfs @ 12.12 hrs, Volume= 0.871 af, Atten= 70%, Lag= 8.5 min
Primary = 5.42 cfs @ 12.12 hrs, Volume= 0.871 af
Routed to Reach 4R : POA-04

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 741.80' @ 12.12 hrs Surf.Area= 4,552 sf Storage= 10,330 cf

Plug-Flow detention time= 19.6 min calculated for 0.870 af (100% of inflow)
Center-of-Mass det. time= 19.8 min (855.6 - 835.8)

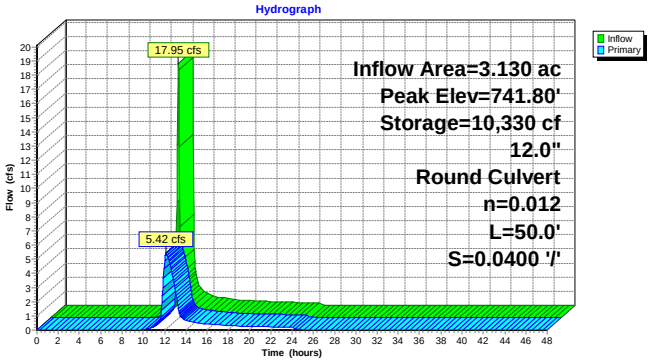
Volume	Invert	Avail.Storage	Storage Description
#1	738.00'	11,272 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
738.00	889	0	0
742.00	4,747	11,272	11,272

Device	Routing	Invert	Outlet Devices
#1	Primary	738.00'	**12.0" Round CMP_Round 12"** L= 50.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 738.00' / 736.00' S= 0.0400 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=5.40 cfs @ 12.12 hrs HW=741.78' (Free Discharge)
1=CMP_Round 12" (Inlet Controls 5.40 cfs @ 6.88 fps)

Pond 4P: TIGER EAST POND



Pond 4P: TIGER EAST POND

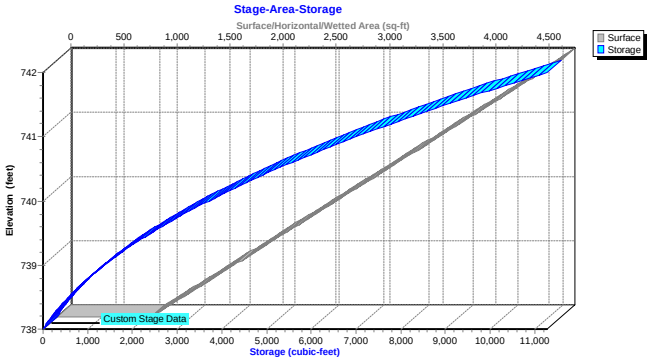


Exhibit 2 – Drain Tile Mitigation Plan

Drain Tile Mitigation Plan

Tiger Storage 1, LLC

c/o New Leaf Energy, LLC.

Prepared by:
Kimley-Horn Inc.
570 Lake Cook Road, Suite 200
Deerfield, IL 60015
Contact: Sean Hickey, P.E.
Phone: (708) 621-5007

Prepared June 2026

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REPAIR/INSTALLATION STANDARDS AND POLICIES *6*

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CONCLUSION *8*

ATTACHMENTS

Attachment A: Drain Tile Probability Map

Attachment B: Sample Drain Tile Repair Details

INTRODUCTION

As required by 55 ILCS 5/5-12024, the Tiger Storage 1, LLC Battery Energy Storage System (BESS) (Project) will be responsible for reasonably prompt repair of damage to public drainage systems stemming from construction, operation or maintenance of the proposed Project. Preserving proper drainage is essential for the Project to safely and reliably store power. The Project will be responsible for maintaining the integrity of the drainage system so as not to cause drainage issues within the project area or on neighboring properties. The Project will assess and identify drain tiles within the project footprint to avoid impacting public drainage systems to the greatest extent possible. In the event of impacts to drain tile systems within the project footprint, the contractor will act immediately to ensure there are no impacts to neighboring properties.

This Drain Tile Mitigation Plan has been prepared for activities associated with the construction of the Tiger Storage 1, LLC Battery Energy Storage System. Tiger Storage 1, LLC and its associated construction team are dedicated to working with all vested parties to reduce the potential for impacts to drain tile systems and have developed this mitigation plan for use during planning, construction, and restoration of the BESS facility in order to manage, mitigate and repair drainage systems impacted by construction activities.

Appropriate advanced planning and mitigation work will be undertaken as practicable to avoid disruption of any surface or subsurface drainage. This will be accomplished through communication with the Project contractor, field personnel, sub-contractors, and landowners. Tiger Storage 1, LLC will work with all parties to help mitigate and repair drain tile impacts from construction-related activities so that the drainage systems are able to maintain the agricultural character of the land. This mitigation plan will be revised and expanded as appropriate as the Project moves forward and additional site-specific information is obtained.

DRAIN TILE OVERVIEW

Drain tile is used in agricultural areas to improve drainage in soils with high groundwater or poor subsurface drainage by lowering the water table. Drain tile typically removes excess water from the top layer of soil in an attempt to improve crop productivity. Drain tile is typically laid out in a pattern that best fits the soil and topography of the area.

Laterals are smaller drain tile – typically 4” in diameter – aligned with field topography in order to intercept or capture water as it flows downhill. Mains and sub-mains – typically 6” to 18” in diameter – are placed to facilitate the placement of laterals and to convey water to an outlet. Refer to the Drain Tile Probability Map, prepared by Huddleston McBride dated 07/20/2025, found in **Attachment A**, for approximate existing site system information.

Historically, the most common materials used to manufacture drain tile have been clay, concrete, PVC, and PE. Practically all agricultural drain tile installed today is made from HDPE plastic. Drain tile made from HDPE plastic comes in various wall profiles (e.g. corrugated and smooth), diameters (e.g. 4” – 24” and larger), wall thicknesses (e.g. single and dual wall), and wall perforations (e.g. slotted and non-perforated).

Drain tile can be installed with a backhoe, tile plow, and chain machine or wheel trencher. Drain tile laterals are generally installed at a depth of three-to-five feet, and outlet tile is often installed five-to-six feet deep or deeper in some areas. Installation depths can vary dramatically based on the need to maintain grade through a slope and reach a desired outlet location and depth. The drain tile must be installed deep enough to effectively drain subsurface water from the property, minimizing the need to repair or install additional drain tile in the future.

PRE-CONSTRUCTION/DRAIN TILE ASSESSMENT PHASE

As detailed in the Desktop Drain Tile Memo, Huddleston McBride conducted a comprehensive review of data sources which included historical research, topographic data, predictive drainage analytics, and direct consultation with the landowner to provide the preliminary drain tile locations as seen within **Attachment A: Drain Tile Probability Map**.

Additional pre-construction drain tile assessments that can be completed to confirm the existing drain tile locations include the following:

1. Perimeter Field Survey and Investigation
   Kimley-Horn recommends obtaining a perimeter drain tile survey. Prior to construction, manual tile locating techniques and a locatable push rodder can be used to identify drain tile in the project area. A drain tile surveyor will stake and silt trench expected areas of drain tile along the perimeter of the project area. As drain tile is encountered, the surveyor will surface probe the tile and geolocate the tile in a map. The perimeter drain tile survey will identify any drain tile that drains off site to neighboring properties. By obtaining basic onsite locations from a perimeter drain tile survey, the project can anticipate potential impacts and plan for mitigation options.
2. Area of Interest Field Survey
   Another more rigorous option is to obtain a complete drain tile survey throughout the full Project area. A drain tile surveyor will go onsite and will stake, and slit trench expected areas of drain tile throughout the project area. As drain tile is encountered, the surveyor will surface probe the tile the entire length of the tile, providing accurate locations for all drain locations onsite.

Kimley-Horn recommends compiling all surveyed information and producing an existing drain tile plan. This plan will depict the existing locations of private drain tile as well as the post development onsite features, ensuring all parties are aware and cautious in locations of the subsurface drainage. This plan should identify areas of potential drain tile impacts and describe the mitigation options, as outlined in the Construction Phase Mitigation Options section below.

CONSTRUCTION PHASE MITIGATION OPTIONS

Using the information gathered during the pre-construction drain tile assessment phase, known locations of existing drain tile will be shared with all site sub-contractors. In some cases, drain tile information may be limited or locations not known.

During construction, drain tile shall be repaired as soon as possible before normal construction and installation resumes. In the event that drain tile has been exposed or damaged, Kimley-Horn recommends the contractor and sub-contractors do the following:

1. Drain Tile Identification and Stop Work
    a. If the drain tile location is not known, the drain tile will be demarked once it has been exposed during construction for all sub-contractors to be aware. The locations shall be added to the drain tile maps available onsite.
    b. Sub-contractors shall immediately notify the contractor and drain tile contractor personnel and stop working in the immediate area of the damaged drain tile. This will prevent additional damages from occurring on the tile run.
2. Documentation and Communication
    a. Photographs and a written memorandum should be prepared outlining the extent of the damage to the line, and how the damage occurred. This should be submitted to the Landowner, the Project Owner, and the drain tile contractor.
    b. Landowner should be contacted with repair or modification plan in compliance with the IDOA's AIMA requirements.
3. Drain Tile Repairs – Temporary
    a. The following should be completed immediately at each location where damage occurs, while the field team waits for the drain tile contractor to arrive onsite:
        i. Cut and temporarily cap or screen if water is not flowing through the drain tile.
        ii. Cut and temporarily repair if water is flowing through the drain tile.
    b. For temporary repairs, a rigid support or pipe will be laid across the full extent of the trench with a 1-foot minimum into undisturbed ground on both sides of the trench. Drain tile will be laid on the support and connected with adapters to the existing drain tile. This process will be utilized throughout the trenching phase to maintain drainage, as necessary.
    c. The temporary drain tile will be disconnected as the pipe is lowered into the trench to approximately 6 to 12-inches below the drain tile. The drain tile connections will be re-established as quickly as possible to reduce the amount of water flowing into the trench.
4. Drain Tile Repair – Permanent
    a. After the pipe is lowered into the trench but before the trench is backfilled, the drain tile shall be permanently repaired:
        i. Where drain tile was temporarily capped or screened, the drain tile will be laid onto a temporary support member (rigid beam, high strength composite material, rigid outer casing pipe etc.) that will keep the repaired drain tile supported the full length of the trench and into undisturbed ground on both sides of the trench. The rigid support will be stabilized, and adapters or couplers will connect the repaired tile to existing drain tile on both sides of the trench, as needed.
        ii. Where drain tile was temporarily repaired in the trench, the drain tile will be fortified based on the above-mentioned requirements. The rigid support will be stabilized. Refer to **Attachment B** for Sample Tile Repair Details.
5. Drain Tile Repair – Relocation and Installation
    a. In the event of new drain tile installation in lieu of drain tile repair, the appointed drain tile contractor, with approval from the contractor, will determine the optimal

methodology and orientation of the new drain tile given the property conditions. The relocation must adhere to the requirements of the IDOA's AIMA.

b. It is recommended a re-route drain tile plan is put into place indicating the following:
    i. Existing drain tile location
    ii. Location of where the drain tile was hit
    iii. The proposed re-route of the drain tile
    iv. Post development drain tile information (including size and material)
    v. Post development locations of observation wells

6. Documentation of Repairs
    a. Once repairs are completed, a write up of what was completed along with photographs shall be submitted to the contractor's Operations team. This information shall be submitted to the Landowner and kept documented onsite.
7. Construction Resumes
    a. Once the drain tile is repaired and documented to the landowner, construction within the affected area may resume.
    b. See Drain Tile Installation Guidelines for more in-depth construction measures of the drain tile installation process.
    c. Once construction of the site is complete, contractor shall replace a minimum of 6-inches of topsoil and reseed the affected areas.

DRAIN TILE INSTALLATION GUIDELINES

1. Excavation
    a. The trench or excavation for the drain tile repair shall be constructed to the depths indicated on the existing drain tile location map or as located in the field. The trench width may be increased above the top of the drain tile at the option of the contractor for better accessibility.
    b. Trench shields, shoring and bracing, or other methods necessary to safeguard construction personnel and to prevent damage to the existing improvements shall be furnished, placed, and subsequently re-moved by the contractor.
2. Preparing the bedding
    a. In stable soils, the tile shall be firmly and uniformly bedded throughout its entire length of the repair to the specified depth and in the specified manner.
    b. When the bottom of the trench does not provide a sufficiently stable or firm foundation for the drain tile, cradles for the tile (constructed of timber or fabricated lumber of a cleat-and-rail type construction), a sand-gravel mix, or other approved material shall be used to stabilize the bottom of the trench.
    c. Drain tile shall not be laid on a rock foundation. In the event that boulders, rocks or ledge rock, or cemented material that prevents satisfactory bedding are encountered at the required grade with the trench cross- section, the trench shall be excavated to a minimum depth of 6 inches below grade and backfilled to grade with a sand-gravel mixture or other approved material. The bedding material shall be shaped to grade and compacted. Alternative measures can be presented for consideration.
3. Laying tile
    a. Inlets/Outlets

i. The ends and inside surface of all tiles shall be kept clean during installation. All earth or other extraneous material within the tile shall be removed before installation of the new tile section. At the end of work each day and when repairs have been temporarily suspended, the open end shall be blocked so that earth or other extraneous material cannot enter the tile. On longer repair runs, the upper end of each tile line shall be blocked with permanent type material following satisfactory completion of tile installation.

b. Connections
   i. Lateral connections are made with manufactured junctions comparable in strength with the specified tile unless otherwise specified.
   ii. Where existing tile lines not shown on the drawings are crossed, they shall be bridged across the new trench or they shall be connected into the new tile lines.

c. Backfilling
   i. Backfilling of the trench shall be completed as rapidly as consistent with the soil conditions.
   ii. Backfill shall extend above the ground surface and be well rounded and centered over the trench.
   iii. Unless otherwise specified, where drain tile is installed under roads and at other designated locations shown on the drawings, the backfill shall be placed in successive layers of not more than 9 inches and each layer shall be compacted before the next layer is placed. The density of the compacted backfill shall not be less than the density of the surrounding adjacent earth material unless otherwise specified.

REPAIR/INSTALLATION STANDARDS AND POLICIES

If the drain tile is damaged during the construction activities for the Project, the drain tile would either be repaired to maintain current drainage operations or re-routed in a new system that preserves the original drainage patterns. The following standards and policies shall apply to the drain tile repair or installation:

A. The drain tile contractor will work under the direction of, and with the direct involvement of, the contractor causing the impact, and the contractor's construction management team.
B. All tile lines that are damaged, cut, or removed shall be staked or flagged with the stakes or flags placed in such a manner they would remain visible until the permanent repairs are completed.
C. Unused or discarded pieces of drain tile will be removed and disposed of promptly and properly.
D. If available during the time of construction, contractor will endeavor to use qualified local drain tile contractors with experience in Illinois to conduct drain tile repairs/replacements. An experienced drain tile expert ready to assist is paramount to a successful repair.

E. The Landowner shall be given the opportunity to observe temporary and permanent repairs on their property. For safety concerns, the contractor's operations team will coordinate with the Landowner to be properly escorted onto the active construction site.
F. Photographs and a written memo will be prepared outlining the extent of the damage to the line, and how the damage occurred. Once repairs are completed, a write-up of what was completed along with photos will be submitted to the contractor's Operations team. This information shall be submitted to the Landowner, County, and local drainage districts.
G. The original drain tile alignment, depth, gradient and water flow shall be maintained to the greatest extent practicable. Repair materials will be equivalent or better than those currently in place for repairing the damaged drain tile and will be joined to existing drain tile by means of adapters or couplers manufactured for that purpose. Measurements shall be used to ensure the proper gradient is maintained. A laser operated tiling machine will be required for segments of 100 feet or more.
H. Where there are repairs, all permanent drain tile repairs shall be completed by replacing the damaged tile across the zone of impact work area. If drain tile are found to be damaged, they must be repaired or replaced, so the drainage functions as well after construction as before the construction began.
I. Following completion of the construction, all repaired and/or newly installed drain tiles shall meet or exceed the industry standard specifications. If construction takes place in the winter, drain tiles, if flowing, would be temporarily repaired. Final repairs or installations drain tiles would be performed in the spring when soils are thawed and the ground is dry enough to limit rutting.

POST CONSTRUCTION

After the replacement of topsoil and reseeding, the drain tile mitigation shall be monitored until construction is complete. Conditions to be monitored during this period include drain tile settling, vegetation production, erosion, and drainage. The monitoring period is intended to allow for effects of weather changes such as frost action, precipitation, settling and changes in the seasons, from which various monitoring determinations can be made. Following the completion of construction and deconstruction, the Project Owner will be responsible for repairing drain tile failures caused by construction or deconstruction. Repairs will be completed using procedures outlined in Section 6 of the Agricultural Impact Mitigation Agreement between Project Owner and the Illinois Department of Agriculture.

CONCLUSION

Tiger Storage 1, LLC recognizes the importance of agricultural drainage systems in the proposed Project area and is committed to minimizing the potential for impacts to drainage systems as a result of construction-related activities. Huddleston McBride conducted a comprehensive review of data sources which included historical research, topographic data, predictive drainage analytics, and direct consultation with the landowner to preliminarily identify the locations of existing drain tile. Tiger Storage 1, LLC plans to use manual tile locating techniques in the future to ensure accurate locations. If drain tile is encountered, Tiger Storage 1, LLC and the contractor will work with the landowners to repair or re-route the drain tile to ensure the Project remains in compliance with the IDOA AIMA and this plan. The Project area will maintain its pre-development drainage conditions throughout construction.

Attachment A: Drain Tile Probability Map

EXISTING AGRICULTURAL DRAIN TILE INVESTIGATION
PROBABILITY MAPPING

TIGER STORAGE SOLAR
PREPARED FOR **NEW LEAF ENERGY**

Section no. 2, Bowling Twp., Rock Island Co., IL

EXISTING SUBSURFACE AGRICULTURAL DRAIN TILE INVESTIGATION REPORT

TIGER STORAGE SOLAR
NEW LEAF ENERGY

TIGER STORAGE SOLAR / NEW LEAF ENERGY , FIELD FILE NO. 27-3-2 , DATE: 7/20/2025 .
IN ACCORDANCE WITH LOCAL STORMWATER ORDINANCE STANDARD FOR AGRICULTURAL DRAIN TILE MAPPING
COPYRIGHT © 2017, BY HUDDLESTON MCBRIDE LAND DRAINAGE COMPANY

DESCRIPTION CHART NO. 1A : INVESTIGATION SLIT TRENCH LOCATIONS

ID NO.	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH GRD/INV.	FIELD NOTES:
NOTE: THIS DESCRIPTION CHART IS RESERVED FOR SITE INTENSIVE DRAIN TILE INVESTIGATION LOCATION, STAKING, GPS MAPPING AND EVALUATION IN ACCORDANCE WITH LOCAL STORMWATER ORDINANCE SPECIFICATIONS.						

DESCRIPTION CHART NO. 1B : SURVEY DATA POINT LOCATIONS

DATA POINT	SZ.	TYPE / QUALITY	FLOW %	SILT %	DEPTH HUB/INV.	FIELD NOTES:
NOTE: THIS DESCRIPTION CHART IS RESERVED FOR SITE INTENSIVE DRAIN TILE INVESTIGATION LOCATION, STAKING, GPS MAPPING AND EVALUATION IN ACCORDANCE WITH LOCAL STORMWATER ORDINANCE SPECIFICATIONS.						



SITE LOCATION
Section no. 2, Bowling Twp., Rock Island Co., IL

MAP LEGEND :

- *EXISTING DRAIN TILE FLOW DIRECTION*
- *EX. POLYETHYLENE MAINLINE OR SYSTEM PART*
- *EX. CLAY DRAIN TILE MAINLINE OR SYSTEM PARTS*
- *EX. CONCRETE DRAIN TILE MAINLINE OR SYSTEM PART*
- *EXISTING DRAIN TILE CONTINUES TO UPLAND WATERSHED*
- *EXISTING DRAIN TILE OUTLETS TO SURFACE*
- *EXIST. DRAIN TILE (1) INSPECTION STRUCTURE / (2) CATCH BASIN*
- *EXIST. DRAIN TILE (1) LOCATED END / (2) ASSUMED END*
- *EXISTING DRAIN TILE CONTINUES TO OFF-SITE OUTLET SYSTEM*
- *EXISTING DRAIN TILE FAILURE / FLOW SURCHARGE TO SURFACE*
- *EXISTING DRAIN TILE MAPPED BY SPECULATION AND ASSUMPTION*
- *EXISTING DRAIN TILE ABANDONED (NOT FUNCTIONAL)*
- *EXISTING DRAIN TILE "BLOWOUT" OR FAILURE*
- *HAND PROBE OR ELECTRONIC SCAN FOR DRAIN TILE LOCATION*
- *INVESTIGATION SLIT TRENCH FOR INVESTIGATION*
- *SPECIFIC PIT EXCAVATION FOR INVESTIGATION*
- *SURVEY DATA POINTS*
- *REPORT IDENTIFICATION NUMBER*

REPORT LEGEND :

ID NO.	*POINT OF EXCAVATION FOR SPECIFIC DRAIN TILE INVESTIGATION.*
SZ. (SIZE)	*DRAIN TILE INTERNAL DIAMETER IN INCHES.*
MATERIAL / QUALITY	*TYPE OF TILE MATERIALS, PIPE QUALITY - GOOD, FAIR & POOR.*
FLOW %	*PERCENTAGE OF TILE DIAMETER OCCUPIED BY ACTIVE FLOW.*
R	*RESTRICTED OR BACKED UP FLOW, SURCHARGED CONDITION*
SILT %	*PERCENTAGE OF TILE DIAMETER OCCUPIED BY RESTRICTIVE SILT.*
A	*ABANDONED, FILLED WITH SILT BLOCKAGE, NO FLOW POTENTIAL*
DEPTH	*MEASUREMENT FROM EXISTING GROUND LEVEL TO PIPE INVERT.*

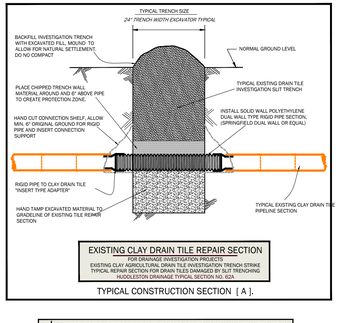
(GENERAL NOTES)

MAINLINE TILE	*TRUNK LINE OR MUTUAL DRAIN, COLLECTOR OF SUB-SYSTEMS.*
SUB-MAIN TILE	*SECONDARY TRUNK LINE OR RANDOM SYSTEM COLLECTOR.*
LATERAL TILE	*FEEDER LINE, SERVICE TILE OR SYSTEM SPUR.*
"BLOWOUT"	*EXISTING SYSTEM PIPE FAILURE OR RESTRICTION.*
DRAIN TILE ENDS	*MAINLINE, SUB-MAIN OR LATERAL PLANNED TERMINATION.*
SLIT TRENCH	*INVESTIGATION TRENCH, TYPICAL 2'- 0" WIDE x 6'- 0" DEPTH.*

SPECIAL NOTES :

- *ALL EXISTING AGRICULTURAL DRAIN TILES LOCATED DURING THIS INVESTIGATION SURVEY HAVE BEEN IDENTIFIED ON THIS PLAN AND FIELD STAKED AT < 50' INTERVALS, IN SOME OCCASIONS CERTAIN EXISTING LOCAL DRAIN TILE SECTIONS MAY BE SPECULATED AND CONSIDERED AS AN ASSUMED ROUTE WHICH SHALL BE DELINEATED ON THIS PLAN.*
- *ALL EXISTING DRAIN TILES DAMAGED DURING THE INVESTIGATION PROCESS SHALL BE REPAIRED TO THEIR ORIGINAL STATE IN ACCORDANCE WITH NATURAL RESOURCE CONSERVATION SERVICE STANDARDS FOR DRAIN TILE INSTALLATION AND REPAIR. (HUDDLESTON DRAINAGE 602A) TYPICAL STANDARD "A")*
- *ALL EXISTING DRAIN TILE LOCATION DIMENSIONS HAVE BEEN SURVEYED BY AGRICULTURAL GRADE GPS SURVEY SYSTEMS AND INCLUDE SUB METER ACCURACY, ALL LOCATIONS PERTINENT TO FINAL DESIGN SHALL BE VERIFIED BY THE PROJECT SURVEYOR.*
- *THIS DRAIN TILE INVESTIGATION REPORT IS INTENDED TO IDENTIFY EXISTING DRAIN TILE MAINLINE SYSTEMS ONLY WITH ADDITIONAL PRIORITY ON DRAIN TILES WHICH MAY SERVICE THE UPLAND PROPERTY OF OTHERS OR WITH MUTUAL DRAINAGE STATUS.*
- *THIS DRAIN TILE INVESTIGATION REPORT SHALL BE FILED WITH HUDDLESTON DRAINAGE LAND DRAINAGE CO., AND WILL BE REPRODUCED AND DISBURSED ONLY BY PERMISSION OF THE CONTRACT PRINCIPALS.*

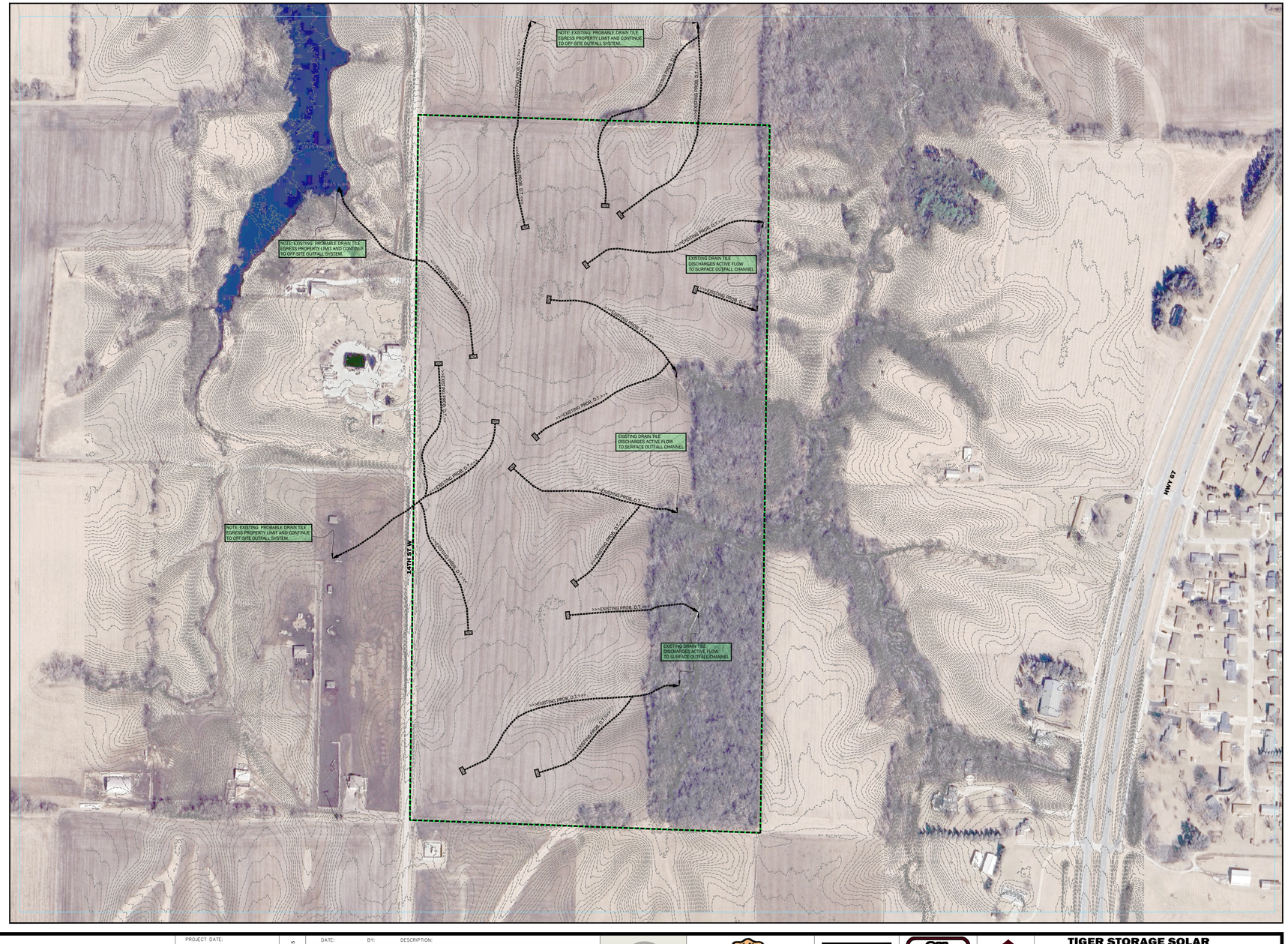
TOM HUDDLESTON, HUDDLESTON-McBRIDE DRAINAGE CO.



EXISTING CLAY DRAIN TILE REPAIR SECTION
FOR DRAINAGE INVESTIGATION PROJECTS
EXISTING CLAY DRAIN TILE REPAIR SECTION FOR TRENCH STRIKE
TYPICAL REPAIR SECTION FOR DRAIN TILES DAMAGED BY SLIT TRENCHING
HUDDLESTON DRAINAGE TYPICAL SECTION NO. 602A

TYPICAL CONSTRUCTION SECTION [A].

THESE SYMBOLS REPRESENT SURVEY DATA POINTS WHICH HAVE BEEN STAKED IN THE FIELD FOR THE SPECIFIC PURPOSE OF ELECTRONIC LOCATION AND ELEVATION DETERMINATION BY THE PROJECT SURVEYOR.
50 THESE DATA POINTS CONSIST OF A 2" X 2" GROUND HUB AND A 3'-0" ON-LINE LOCATION STAKE WHICH INCLUDES DATA POINT IDENTIFICATION NUMBER, SEPARATION MEASUREMENT FROM HUB TO PIPE INVERT, AND PIPE SIZE.
ALL EXISTING DRAIN TILE ROUTES HAVE BEEN FIELD STAKED WITH "EXISTING DRAIN TILE" PIN FLAGS AT 50' INTERVALS AND DOUBLE FLAGS AT INTERSECTIONS.



PROJECT CLIENT: **NEW LEAF ENERGY** Evan Comilloni, P.E. , Project Manager 55 Technology Drive, Suite 102, Lowell, MA 01851					
APPROVED BY AND DATE: *RUDY P. DIXON, P.E., +6*	PROJECT DATE: *+6*	REVISIONS	DATE:	BY:	DESCRIPTION:
ACKNOWLEDGMENTS: *HUDDLESTON DRAINAGE MAP and ARCHIVE SYSTEMS*	FIELD FILE NO.: *27-3-2*				
DRAWN BY AND DATE: *TOM HUDDLESTON +6*	DRAWING NO.: *27-3-2_P1*	WEATHER CONDITIONS: *SUNNY/ COOL - +9*	DRAWING SCALE: *1" TO 200'*	SHEET NO.: *ONE OF ONE*	

RUDY P. DIXON 062.065333 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

1976 HUDDLESTON-McBRIDE CO. 49 YEARS OF SERVICE TO NATURAL RESOURCE CONSERVATION 2025

ILLINOIS FARM BUREAU MEMBER

811 Know what's below. Call before you dig. NO EXCAVATING ON NUMBER

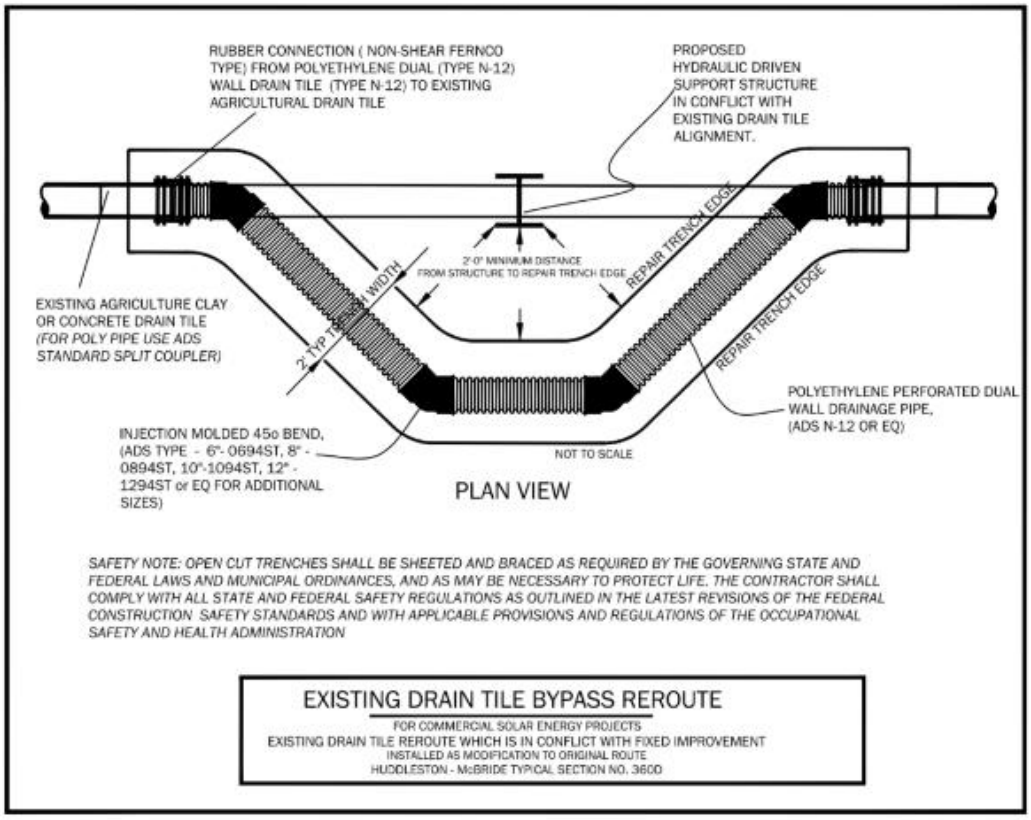
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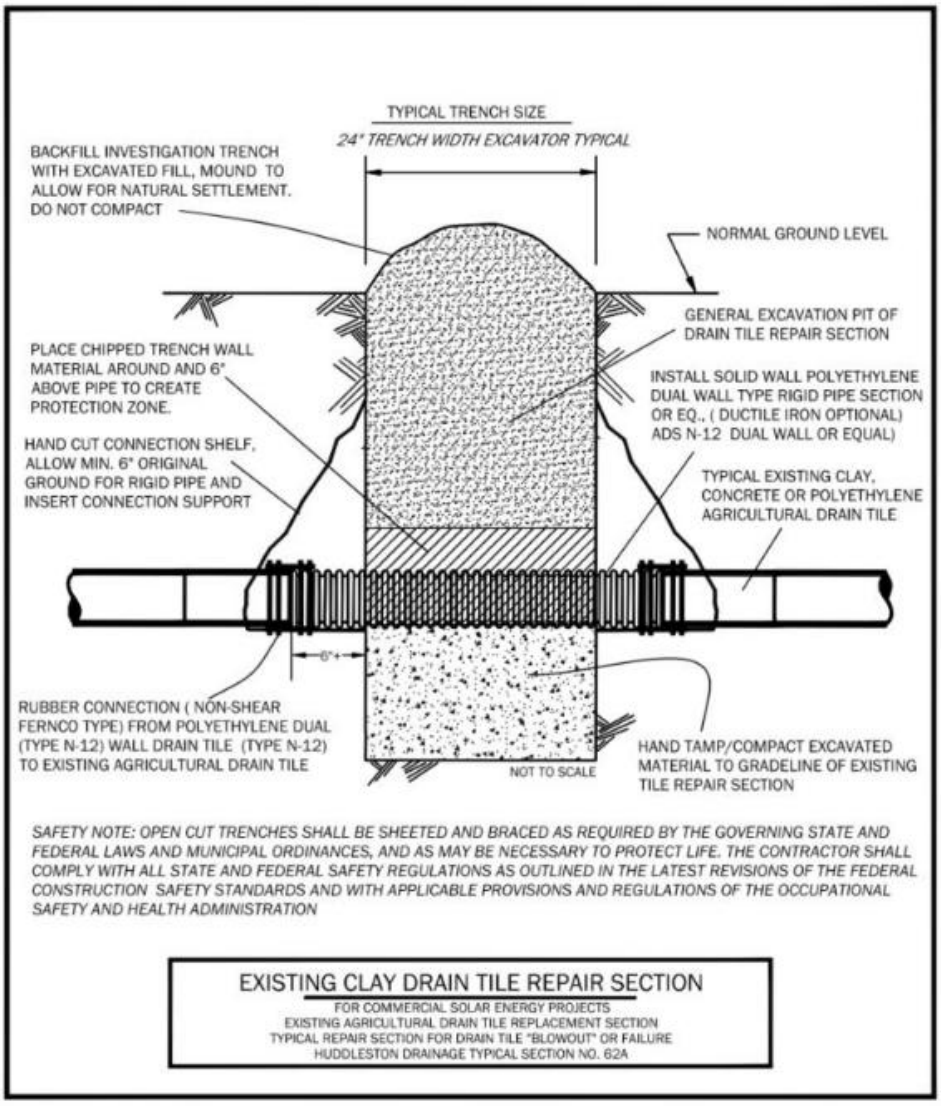
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HUDDLESTON McBRIDE
PROFESSIONAL LAND DRAINAGE SERVICES
Women-Owned Small Business (WOSB)
9504 FOWLER RD., ROCHELLE, ILLINOIS PHONE 815-562-6007

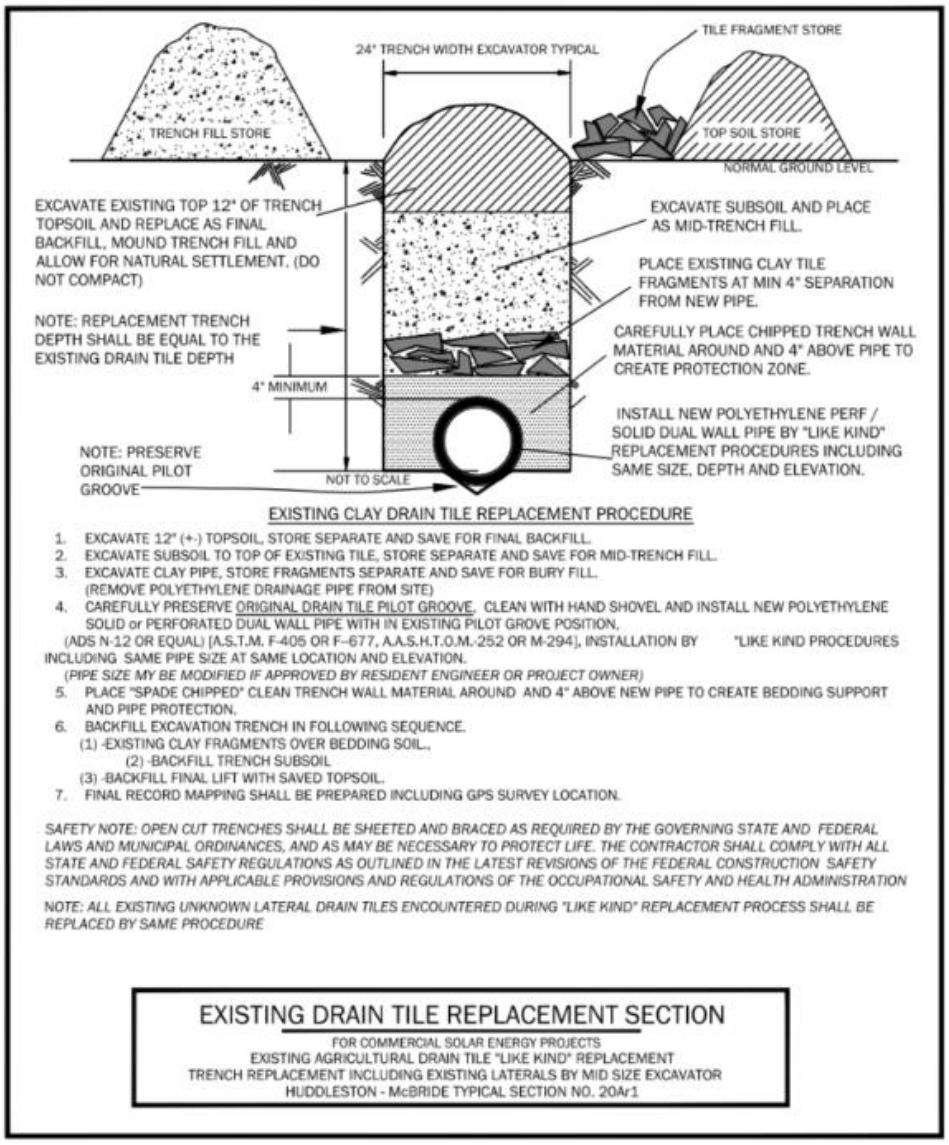
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COORDINATE SYSTEM: ILLINOIS STATE PLANE WEST NAD 83

Attachment B: Sample Drain Tile Repair Details


RUBBER CONNECTION (NON-SHEAR FERNCO TYPE) FROM POLYETHYLENE DUAL (TYPE N-12) WALL DRAIN TILE (TYPE N-12) TO EXISTING AGRICULTURAL DRAIN TILE
PROPOSED HYDRAULIC DRIVEN SUPPORT STRUCTURE IN CONFLICT WITH EXISTING DRAIN TILE ALIGNMENT.
EXISTING AGRICULTURE CLAY OR CONCRETE DRAIN TILE (FOR POLY PIPE USE ADS STANDARD SPLIT COUPLER)
2'-0" MINIMUM DISTANCE FROM STRUCTURE TO REPAIR TRENCH EDGE
REPAIR TRENCH EDGE
REPAIR TRENCH EDGE
POLYETHYLENE PERFORATED DUAL WALL DRAINAGE PIPE, (ADS N-12 OR EQ)
INJECTION MOLDED 45o BEND, (ADS TYPE - 6"- 0694ST, 8" - 0894ST, 10"-1094ST, 12" - 1294ST or EQ FOR ADDITIONAL SIZES)
NOT TO SCALE
PLAN VIEW
SAFETY NOTE: OPEN CUT TRENCHES SHALL BE SHEETED AND BRACED AS REQUIRED BY THE GOVERNING STATE AND FEDERAL LAWS AND MUNICIPAL ORDINANCES, AND AS MAY BE NECESSARY TO PROTECT LIFE. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND FEDERAL SAFETY REGULATIONS AS OUTLINED IN THE LATEST REVISIONS OF THE FEDERAL CONSTRUCTION SAFETY STANDARDS AND WITH APPLICABLE PROVISIONS AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
EXISTING DRAIN TILE BYPASS REROUTE
FOR COMMERCIAL SOLAR ENERGY PROJECTS
EXISTING DRAIN TILE REROUTE WHICH IS IN CONFLICT WITH FIXED IMPROVEMENT
INSTALLED AS MODIFICATION TO ORIGINAL ROUTE
HUDDLESTON - McBRIDE TYPICAL SECTION NO. 3600


TYPICAL TRENCH SIZE
24" TRENCH WIDTH EXCAVATOR TYPICAL
BACKFILL INVESTIGATION TRENCH WITH EXCAVATED FILL, MOUND TO ALLOW FOR NATURAL SETTLEMENT. DO NOT COMPACT
NORMAL GROUND LEVEL
GENERAL EXCAVATION PIT OF DRAIN TILE REPAIR SECTION
PLACE CHIPPED TRENCH WALL MATERIAL AROUND AND 6" ABOVE PIPE TO CREATE PROTECTION ZONE.
INSTALL SOLID WALL POLYETHYLENE DUAL WALL TYPE RIGID PIPE SECTION OR EQ., (DUCTILE IRON OPTIONAL) ADS N-12 DUAL WALL OR EQUAL)
HAND CUT CONNECTION SHELF, ALLOW MIN. 6" ORIGINAL GROUND FOR RIGID PIPE AND INSERT CONNECTION SUPPORT
TYPICAL EXISTING CLAY, CONCRETE OR POLYETHYLENE AGRICULTURAL DRAIN TILE
6"±
RUBBER CONNECTION (NON-SHEAR FERNCO TYPE) FROM POLYETHYLENE DUAL (TYPE N-12) WALL DRAIN TILE (TYPE N-12) TO EXISTING AGRICULTURAL DRAIN TILE
NOT TO SCALE
HAND TAMP/COMPACT EXCAVATED MATERIAL TO GRADELINE OF EXISTING TILE REPAIR SECTION
SAFETY NOTE: OPEN CUT TRENCHES SHALL BE SHEETED AND BRACED AS REQUIRED BY THE GOVERNING STATE AND FEDERAL LAWS AND MUNICIPAL ORDINANCES, AND AS MAY BE NECESSARY TO PROTECT LIFE. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND FEDERAL SAFETY REGULATIONS AS OUTLINED IN THE LATEST REVISIONS OF THE FEDERAL CONSTRUCTION SAFETY STANDARDS AND WITH APPLICABLE PROVISIONS AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
EXISTING CLAY DRAIN TILE REPAIR SECTION
FOR COMMERCIAL SOLAR ENERGY PROJECTS
EXISTING AGRICULTURAL DRAIN TILE REPLACEMENT SECTION
TYPICAL REPAIR SECTION FOR DRAIN TILE "BLOWOUT" OR FAILURE
HUDDLESTON DRAINAGE TYPICAL SECTION NO. 62A



EXISTING CLAY DRAIN TILE REPLACEMENT PROCEDURE

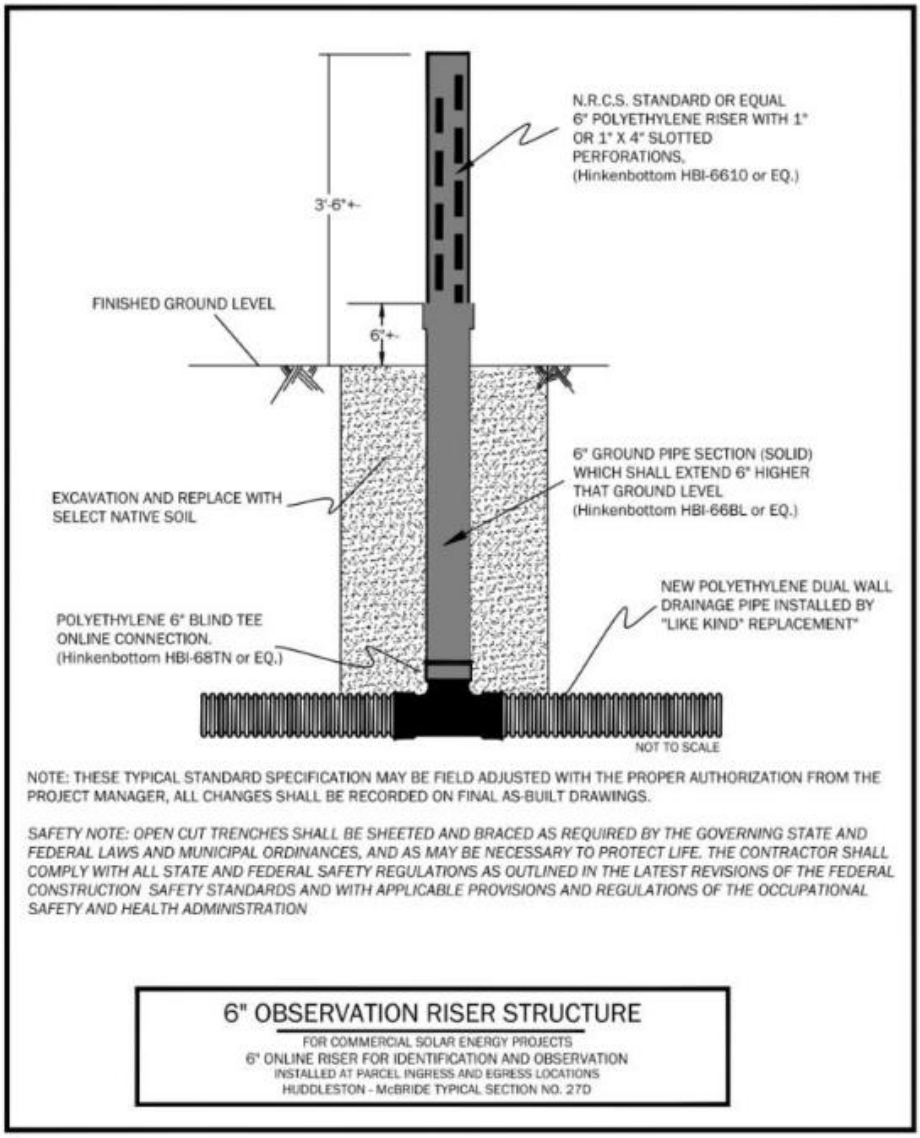
1. EXCAVATE 12" (+-) TOPSOIL, STORE SEPARATE AND SAVE FOR FINAL BACKFILL.
2. EXCAVATE SUBSOIL TO TOP OF EXISTING TILE, STORE SEPARATE AND SAVE FOR MID-TRENCH FILL.
3. EXCAVATE CLAY PIPE, STORE FRAGMENTS SEPARATE AND SAVE FOR BURY FILL.
   (REMOVE POLYETHYLENE DRAINAGE PIPE FROM SITE)
4. CAREFULLY PRESERVE ORIGINAL DRAIN TILE PILOT GROOVE. CLEAN WITH HAND SHOVEL AND INSTALL NEW POLYETHYLENE SOLID or PERFORATED DUAL WALL PIPE WITH IN EXISTING PILOT GROVE POSITION.
   (ADS N-12 OR EQUAL) [A.S.T.M. F-405 OR F--677, A.A.S.H.T.O.M.-252 OR M-294], INSTALLATION BY "LIKE KIND PROCEDURES INCLUDING SAME PIPE SIZE AT SAME LOCATION AND ELEVATION.
   (PIPE SIZE MY BE MODIFIED IF APPROVED BY RESIDENT ENGINEER OR PROJECT OWNER)
5. PLACE "SPADE CHIPPED" CLEAN TRENCH WALL MATERIAL AROUND AND 4" ABOVE NEW PIPE TO CREATE BEDDING SUPPORT AND PIPE PROTECTION.
6. BACKFILL EXCAVATION TRENCH IN FOLLOWING SEQUENCE.
   (1) -EXISTING CLAY FRAGMENTS OVER BEDDING SOIL.,
   (2) -BACKFILL TRENCH SUBSOIL
   (3) -BACKFILL FINAL LIFT WITH SAVED TOPSOIL.
7. FINAL RECORD MAPPING SHALL BE PREPARED INCLUDING GPS SURVEY LOCATION.

SAFETY NOTE: OPEN CUT TRENCHES SHALL BE SHEETED AND BRACED AS REQUIRED BY THE GOVERNING STATE AND FEDERAL LAWS AND MUNICIPAL ORDINANCES, AND AS MAY BE NECESSARY TO PROTECT LIFE. THE CONTRACTOR SHALL COMPLY WITH ALL STATE AND FEDERAL SAFETY REGULATIONS AS OUTLINED IN THE LATEST REVISIONS OF THE FEDERAL CONSTRUCTION SAFETY STANDARDS AND WITH APPLICABLE PROVISIONS AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

NOTE: ALL EXISTING UNKNOWN LATERAL DRAIN TILES ENCOUNTERED DURING "LIKE KIND" REPLACEMENT PROCESS SHALL BE REPLACED BY SAME PROCEDURE

EXISTING DRAIN TILE REPLACEMENT SECTION

FOR COMMERCIAL SOLAR ENERGY PROJECTS
EXISTING AGRICULTURAL DRAIN TILE "LIKE KIND" REPLACEMENT
TRENCH REPLACEMENT INCLUDING EXISTING LATERALS BY MID SIZE EXCAVATOR
HUDDLESTON - McBRIDE TYPICAL SECTION NO. 20Ar1



NOTE: THESE TYPICAL STANDARD SPECIFICATION MAY BE FIELD ADJUSTED WITH THE PROPER AUTHORIZATION FROM THE PROJECT MANAGER, ALL CHANGES SHALL BE RECORDED ON FINAL AS-BUILT DRAWINGS.

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6" OBSERVATION RISER STRUCTURE

FOR COMMERCIAL SOLAR ENERGY PROJECTS
6" ONLINE RISER FOR IDENTIFICATION AND OBSERVATION
INSTALLED AT PARCEL INGRESS AND EGRESS LOCATIONS
HUDDLESTON - McBRIDE TYPICAL SECTION NO. 27D