August 26, 2024

Mr. Rob LeForce, B.W.
Environmental Analyst, Land and Water Resources
Associated Electric Cooperative, Inc.
2814 S. Golden Ave
Springfield, MO 65801

Re: Turney Energy Center Wetland Delineation Report

Dear Mr. LeForce:

Burns & McDonnell was retained by Associated Electric Cooperative, Inc. (AECI) to provide wetland delineation services for the proposed Turney Energy Center (Project) in Clinton County, Missouri (Figure A-1, Appendix A). The proposed Project and the results of the wetland delineation effort are described below.

Introduction

AECI plans to construct the Turney Energy Center (TEC) in Clinton County, Missouri. The Project consists of six parts. These are 1) the TEC, a natural gas-fired simple-cycle electrical generation plant; 2) a new water supply pipeline; 3) an onsite natural gas lateral line; 4) an electrical distribution line upgrade; 5) an electrical interconnection line build; and 6) a new substation south of the City of Turney, Missouri.

The Project has the potential to impact wetlands or other waterbodies that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE) as designated by Section 404 of the Clean Water Act. Burns & McDonnell conducted a wetland delineation for the Project to evaluate the presence of wetlands and other waterbodies, including streams, drainages, and ponds. The delineation was conducted based on the proposed Project layout (Survey Area). The Survey Area included in this report and displayed in the accompanying figures is based on the latest Project design and encompasses approximately 193 acres.

Methods

The following discussions summarize the methods used to review existing data and conduct the wetland delineation.

Existing Data Review

Burns & McDonnell reviewed available background information for the Survey Area before conducting a site visit. This available background information included 2018

U.S. Geological Survey (USGS) 7.5-minute topographic maps (Lathrop, Plattsburg), USGS National Hydrography Dataset (NHD), U.S. Fish & Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, National Agriculture Imagery Program (NAIP) aerial photography (2019), and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2017 Soil Survey Geographic (SSURGO) digital data for Clinton County, Missouri. Figures A-2 and A-3 in Appendix A depict this data. The USACE Antecedent Precipitation Tool was used to evaluate climate conditions before the site visit.

Wetland presence based only on NWI maps cannot be assumed to be an accurate assessment of potentially occurring jurisdictional wetlands. Wetland identification criteria differ between the USFWS and the USACE. As a result, wetlands shown on an NWI map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional wetlands are not always included on NWI maps. Therefore, a field visit was conducted to identify any wetlands or other aquatic resources that may be present within the proposed Project.

Wetland Delineation Field Survey

Burns & McDonnell wetland scientists completed an onsite wetland delineation on April 22 and August 6, 2024. The delineation was completed following the 1987 *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest* — Version 2.0 (Regional Supplement).

Sample plots were established at multiple locations, and Wetland Determination Data Forms from the Regional Supplement were completed to characterize the Survey Area (Appendix B). Vegetation, soil conditions, and hydrologic indicators were recorded at each sample plot. Locations of sample plots and other identified features were recorded using a sub-meter accurate global positioning system (GPS) unit. Natural color photographs were taken onsite and are included in Appendix C.

Results

The following sections describe the results of the existing data review and the completed wetland delineation.

Existing Data Review

The USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography of the Survey Area and potential locations of wetlands and other aquatic resources (Figure A-2). The USGS topographic maps indicate that most of the Survey Area is relatively flat and generally sloping to the south.

The NWI data indicates one palustrine forested (PFO) wetland, five palustrine unconsolidated bottom (PUB) wetlands and nineteen riverine wetlands within the Survey Area. The NHD data indicates twenty stream crossings within the Survey Area. The 2018 aerial photography indicates that the Project Area consists primarily of farmed crop fields and a maintained transmission line right-of-way (Figure A-3 and Figure A-4). According to the FEMA Flood Hazard Rate map for Clinton County, one 100-year flood zone is within the Survey Area on the northwest side (Figure A-2).

The NRCS SSURGO digital data indicates that a portion of ten soil map units are located within the Survey Area (Figure A-3, Soils Index). One of these soils (34020; Colo silty clay loam) is on the national hydric soil list (Figure A-3).

The USACE Antecedent Precipitation Tool indicates that climate conditions near the Survey Area were normal the three months before the April 22 survey and drier than normal conditions for the August 6, 2024 survey (Appendix D).

Wetland Delineation Field Survey

On April 22, 2024, and August 6, 2024, a two-person team comprised of a wetland scientist and a GPS specialist, both with Burns & McDonnell, conducted a wetland delineation of the Survey Area. The land cover and delineated wetlands and other aquatic resources are discussed below.

Vegetation. The Survey Area was comprised mainly of farmed crop fields, maintained transmission line and road right-of-way, and forests. The dominant vegetation in the upland areas included Japanese bristle grass (*Setaria faberi*), Kentucky bluegrass (*Poa pratensis*), henbit deadnettle (*Lamium amplexicaule*), poison hemlock (*Conium maculatum*), field pennycress (*Thlaspi arvense*), tall goldenrod (*Solidago altissima*), multiflora rose (*Rosa multiflora*), black willow (*Salix nigra*), rough-leaf dogwood

(*Cornus drummondii),* white mulberry (*Morus alba*), American elm (*Ulmus americana*), honey locust (*Gleditsia triacanthos*), Osage orange (*Maclura pomifera*), and eastern cottonwood (*Populus deltoides*). Common vegetation observed within delineated wetland areas is described below, and species are indicated on the Data Forms in Appendix B.

Soils. Typical upland soils ranged from black (10YR 2/1) to very dark brown (10YR 2/2) in color and silty clay loam to clay in texture. Typical wetland soils ranged from black (10YR 2/1) to very dark gray (10YR 3/1) in color and silty clay loam to clay in texture. Redoximorphic features were typically present in wetland soils but were uncommon in upland soils.

Hydrology. The primary sources of hydrology for the wetlands were groundwater and precipitation. Hydrology indicators within the wetlands included surface water, high water table, saturation, drainage patterns, geomorphic position, and a positive FAC-neutral test.

Delineated Areas

Nine wetlands and 24 streams were identified during the wetland delineation. The wetlands and streams are described by type below, and their locations are shown on Figure A-4 in Appendix A. Sample plots were located in wetlands and adjacent uplands. Data forms for these sample plots are included in Appendix B, and photographs of sample plots, wetlands, and streams are included in Appendix C.

Wetlands

Delineated wetland types included palustrine emergent (PEM), PFO, and PUB; each type is described in more detail below (Table 1).

Five PEM wetlands, encompassing 1.81 acres, were delineated. Vegetation in the wetlands was dominated by tufted foxtail (*Alopecurus carolinianus*), reed canary grass (*Phalaris arundinacea*), stinging nettle (*Urtica dioica*), yellow ironweed (*Verbesina alternifolia*), Canada goldenrod (*Solidago canadensis*), narrow-leaf cattail (*Typha angustifolia*), black willow, American sycamore (*Platanus occidentalis*), white mulberry, and American elm. Observed indicators of wetland hydrology included surface water, high water table, saturation, geomorphic position, and a positive FAC-neutral test. Soils ranged from black (10YR 2/1) to very dark gray (10YR 3/1) in color,

and redoximorphic concentrations were present. Soils ranged from silty clay loam to clay in texture. Hydric soil was indicated by Redox Dark Surface (F6).

One PFO wetland, encompassing 0.21 acre was delineated. Vegetation in the wetland was dominated by Canadian wood nettle (*Laportea canadensis*), American sycamore, and hackberry (*Celtis occidentalis*). Observed indicators of wetland hydrology included geomorphic position and a positive FAC-neutral test. Soils were very dark gray (10YR 3/1) in color, and redoximorphic concentrations were present. Soils ranged from silty clay loam to clay in texture. Hydric soil was indicated by Depleted Matrix (F3).

Two PUB wetlands, encompassing 2.22 acres, were delineated. PUB wetlands were open water ponds characterized by a combined areal cover of less than 30 percent of vegetation. Vegetation surrounding the PUB wetlands included reed canary grass, stinging nettle, curly dock (*Rumex crispus*), tall goldenrod, black willow, and white mulberry.

Table 1: Delineated Wetlands

Wetland ID	Wetland Type [a]	Delineated Area (acres)	Associated Photos in Appendix C	Figure A-4 Page Number
W-01	PUB	2.10	C-15	3
W-02	PEM	1.39	C-1	3
W-03	PEM	0.26	C-3	11
W-04	PUB	0.31	C-16	12
W-05	PEM	0.07	C-6	16
W-06	PUB	0.12	C-17	19
W-07	PEM	0.02	C-9	2
W-08	PFO	0.21	C-10	1
W-09	PEM	0.07	C-12	1
	Total:	4.55		

[a] Symbols for wetland type: PEM = palustrine emergent, PUB = palustrine unconsolidated bottom, PFO = palustrine forested

Streams

Thirteen ephemeral stream crossings were identified, extending for a delineated length of 1,639 feet (Table 2). The ephemeral streams were characterized by a defined bed and bank with little or no flow during the site visit. These streams likely carry water only during and after precipitation events. The ephemeral streams ranged from approximately 0.5 to 2 feet wide and from 0.25 to 0.5 foot deep at the ordinary high water mark (OHWM). Bank heights ranged from 0.5 to 1.5 feet. These stream crossings flowed through a maintained transmission line right-of-way and forested riparian corridor within the Survey Area, where common riparian vegetation included Kentucky bluegrass, black willow, honey locust, black walnut (*Juglans nigra*), American elm, and mulberry.

Table 2: Delineated Streams

Stream ID	Stream Type	Delineated Length (feet)	Photograph in Appendix C	Figure A-4 Page Number
S-01	Intermittent	745	C-18	3
S-02	Intermittent	1154	C-19	5
S-03	Ephemeral	109	C-20	5
S-04	Intermittent	301	C-21	5
S-05	Intermittent	115	C-22	5
S-06	Ephemeral	136	C-23	4, 6
S-07	Intermittent	169	C-24	13
S-08	Intermittent	50	C-25	14
S-09	Intermittent	55	C-26	14
S-10	Ephemeral	48	C-27	12
S-11	Ephemeral	55	C-28	11
S-12	Ephemeral	267	C-29	8
S-13	Intermittent	128	C-30	15
S-14	Intermittent	103	C-31	16
S-15	Ephemeral	125	C-32	16
S-16	Ephemeral	104	C-33	17
S-17	Ephemeral	444	C-34	19
S-18	Ephemeral	67	C-35	2
S-19	Ephemeral	87	C-36	2
S-20	Intermittent	51	C-37	2
S-21	Ephemeral	58	C-38	1
S-22	Perennial	52	C-39	1

Stream ID	Stream Type	Delineated Length (feet)	Photograph in Appendix C	Figure A-4 Page Number
S-23	Ephemeral	60	C-40	1
S-24	Ephemeral	79	C-41	3
	Total:	4562		

Nine intermittent stream crossings, extending for a delineated length of 2,871 feet, were identified. The intermittent streams were characterized by the presence of a low volume of flow at the time of the site visit. These streams likely are partially fed by groundwater but may not flow during dry periods. The intermittent streams ranged from approximately 1 to 6 feet wide and from 0.25 to 1 foot deep at the OHWM. Bank height ranged from 1 to 5 feet. The intermittent streams flowed through a maintained transmission line right-of-way within the Survey Area, where common riparian vegetation included Kentucky bluegrass, tall goldenrod, and American elm.

One perennial stream crossing was identified, extending for a delineated length of 52 feet (Table 2). This stream had a substantial flow volume during the site visit and likely flows year-round. The perennial stream was approximately 30 feet wide and 3 feet deep at the OHWM. This stream crossing flowed through a forested riparian corridor within the Survey Area, where common riparian vegetation included jewelweed (*Impatiens pallida*), coralberry (*Symphoricarpos orbiculatus*), honey locust, black walnut, and Osage orange.

Summary

Burns & McDonnell conducted a wetland delineation of the Survey Area to identify the presence of wetlands and other aquatic resources. Seven wetlands and twenty-three streams were identified during the delineation efforts. To avoid the need for a Section 404 Permit from the USACE, the proposed Project should be designed to avoid all impacts to potentially jurisdictional waters. If impacts to jurisdictional features cannot be avoided entirely, they should be minimized, and a Section 404 Nationwide Permit from the USACE would be required.

If you have any questions or require additional information, please contact Jessica Ramirez by telephone at (210) 381-1867 or by email at jramirez2@burnsmcd.com.

Sincerely,

Jessica Ramirez
Assistant Wetland Scientist

Appendices:

Appendix A –	Figures
Appendix B –	Routine Wetland Determination Forms – Midwest Region
Appendix C –	Ground Photographs
Appendix D –	Antecedent Precipitation Tool Results

cc: Chris Howell, Burns & McDonnell

APPENDIX A – FIGURES

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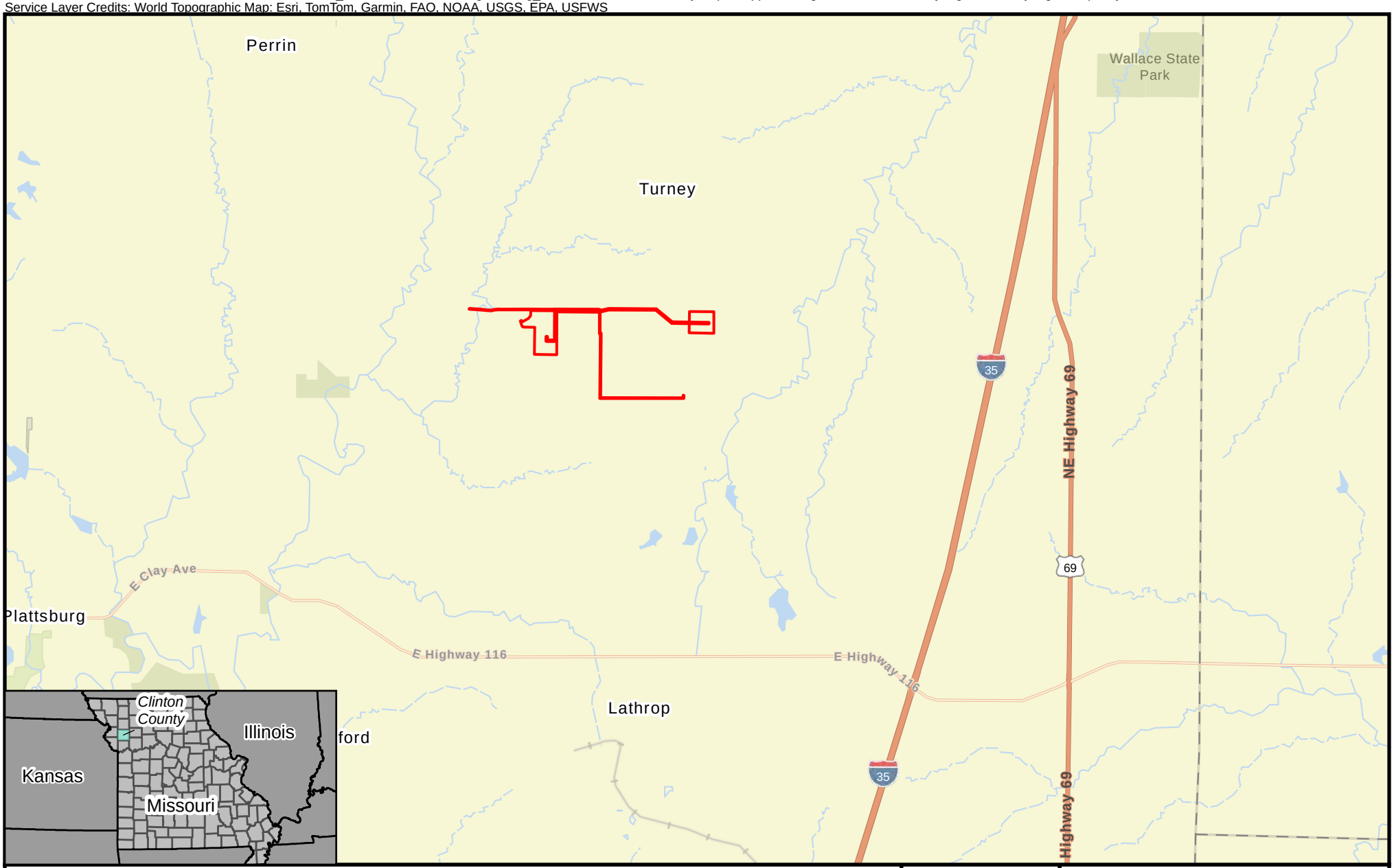

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Figure A-1
General Location Map
Turney Energy Center
AECI
Clinton County, Missouri

Source: ESRI, Associated Electric Cooperative, Inc., and Burns & McDonnell

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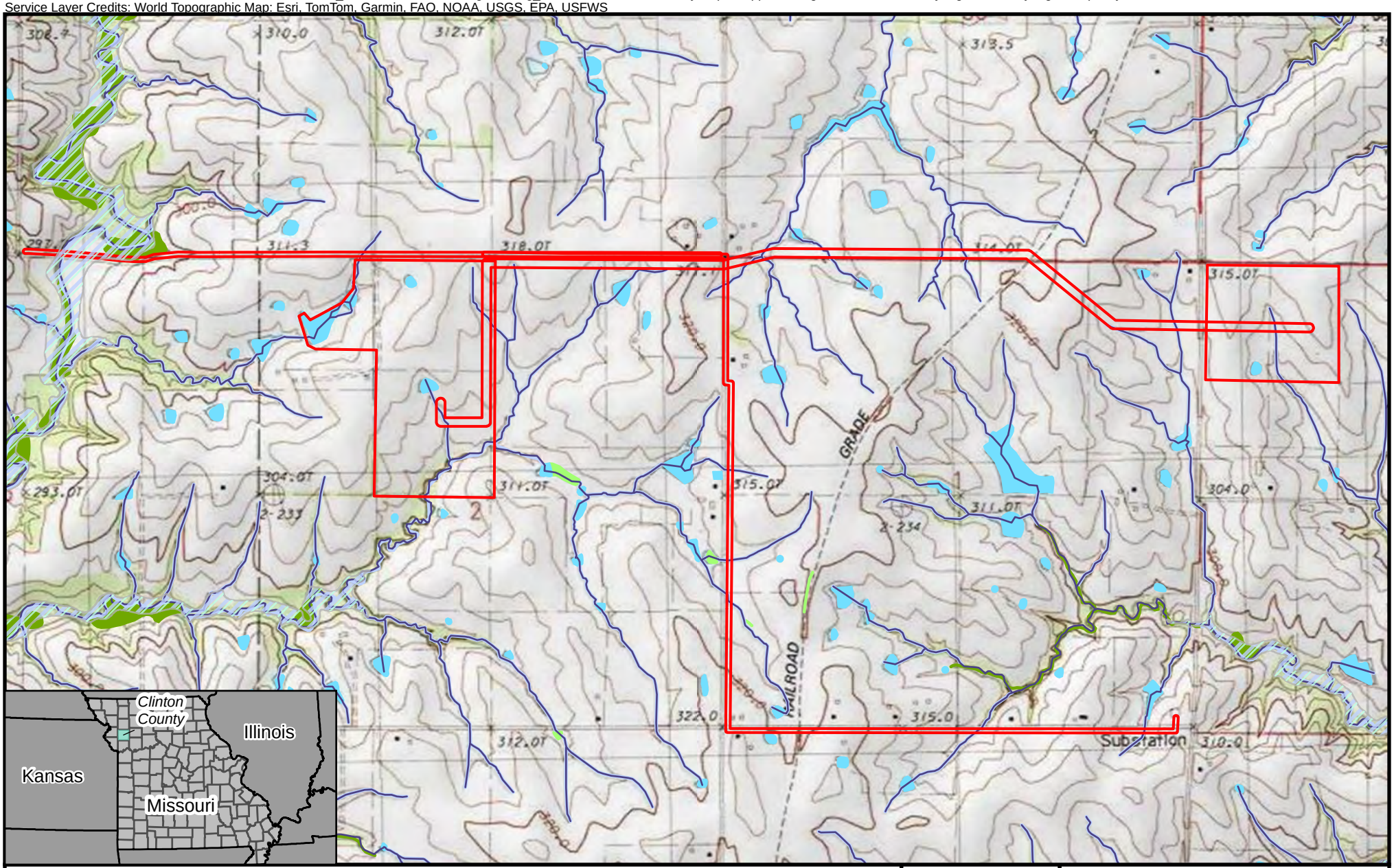

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Figure A-2
NHD, NWI, FEMA Floodplain, and USGS Topographic Map
Turney Energy Center
AECI
Clinton County, Missouri

Source: ESRI, NHD, NWI, FEMA, USGS, Associated Electric Cooperative, Inc., and Burns &McDonnell

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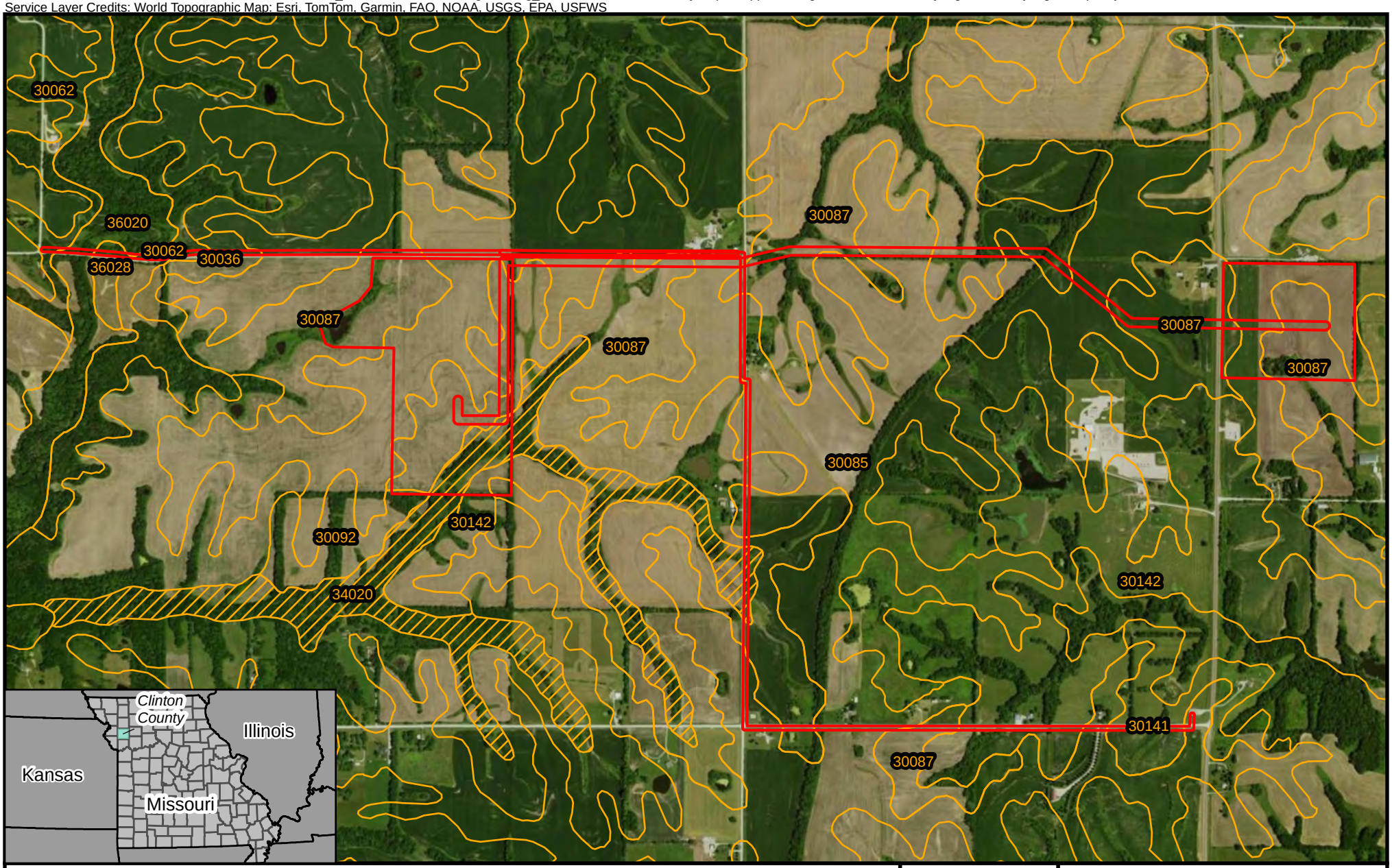

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Figure A-3
NRCS Soils and
Aerial Imagery Map
Turney Energy Center
AECI
Clinton County, Missouri

Source: ESRI, NRCS, SSURGO Database, Associated Electric Cooperative, Inc., Burns & McDonnell

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Figure A-3 Soils Index

Soil Map Symbol		Map Unit Name
30036	-	Armstrong loam, 5 to 9 percent slopes
30062	-	Gara loam, 9 to 14 percent slopes
30085	-	Grundy silt loam, 2 to 5 percent slopes
30087	-	Grundy silt loam, 5 to 9 percent slopes
30092	-	Grundy silty clay loam, 5 to 9 percent slopes, moderately eroded
30141	-	Lamoni silty clay loam, 5 to 9 percent slopes
30142	-	Lamoni silty clay loam, 5 to 9 percent slopes, moderately eroded
34020	-	Colo silty clay loam, drainageway, 2 to 5 percent slopes, frequently flooded
36020	-	Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded
36028	-	Nevin silt loam, 0 to 2 percent slopes, rarely flooded

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Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH
100 50 0 100
Scale in Feet

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Figure A-4
Wetlands and Water Resources
Turney Energy Center
AECI
Clinton County, Missouri
Page 1 of 19

Source: ESRI, Associated Electric Cooperative, Inc., and Burns & McDonnell
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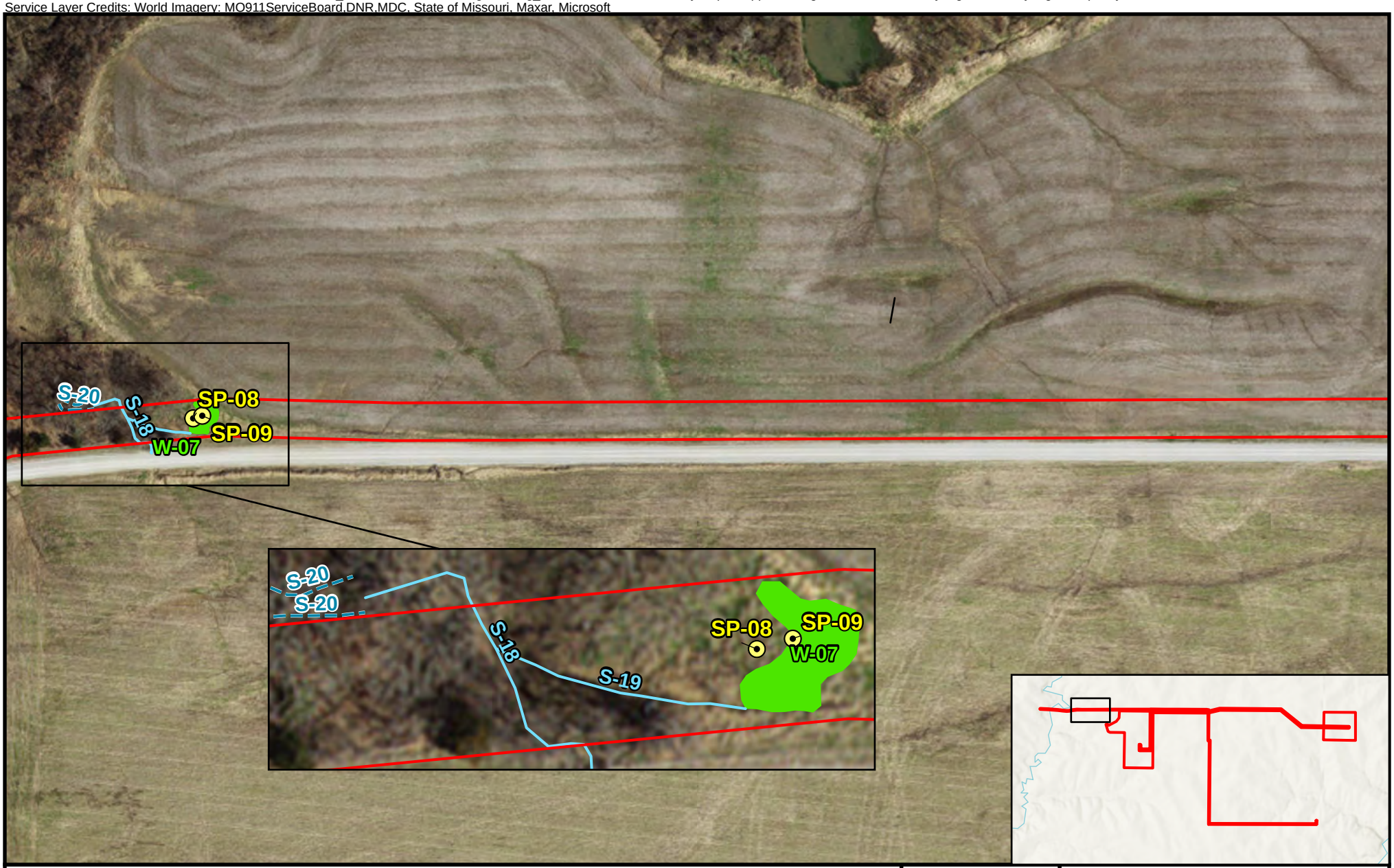

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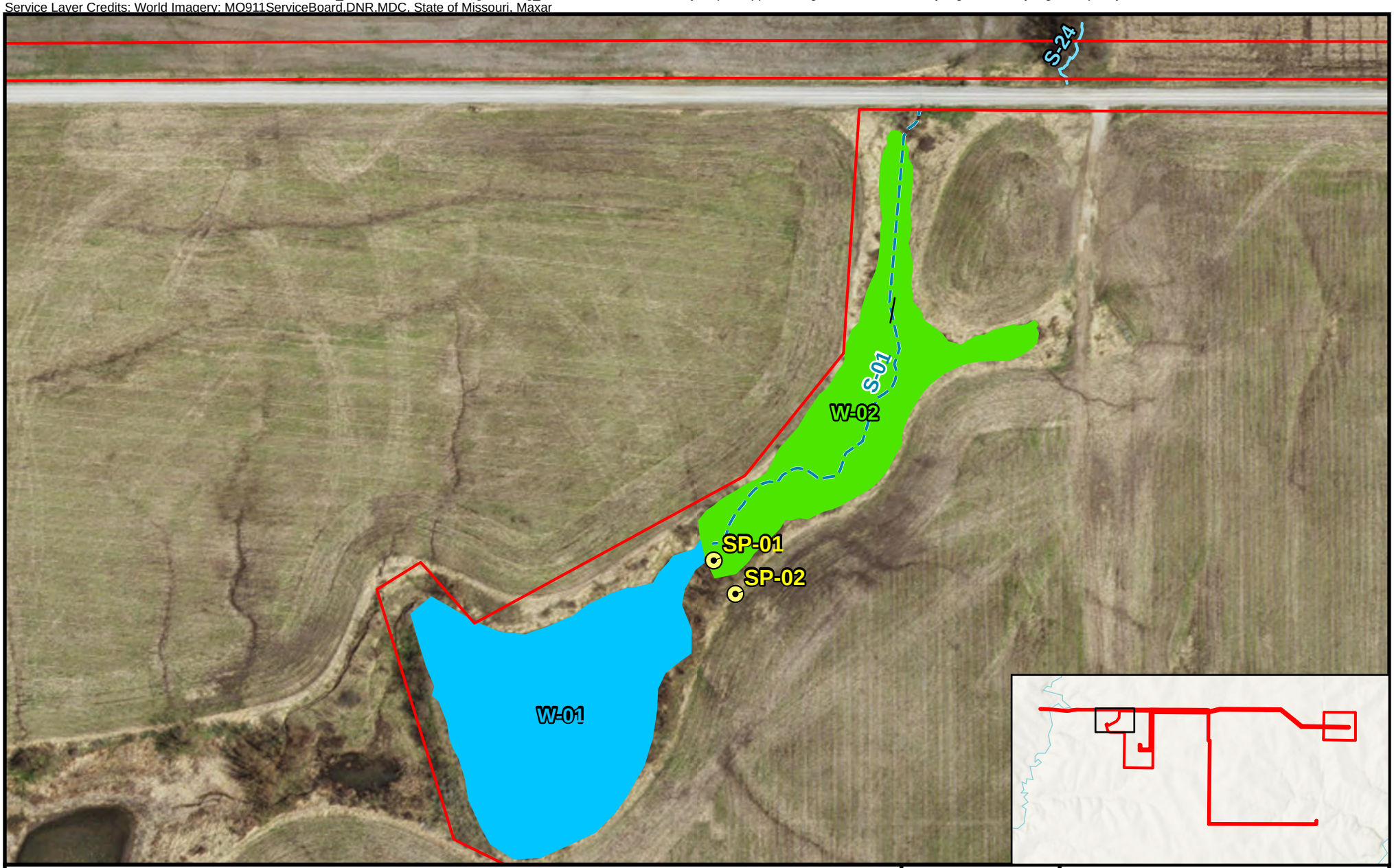

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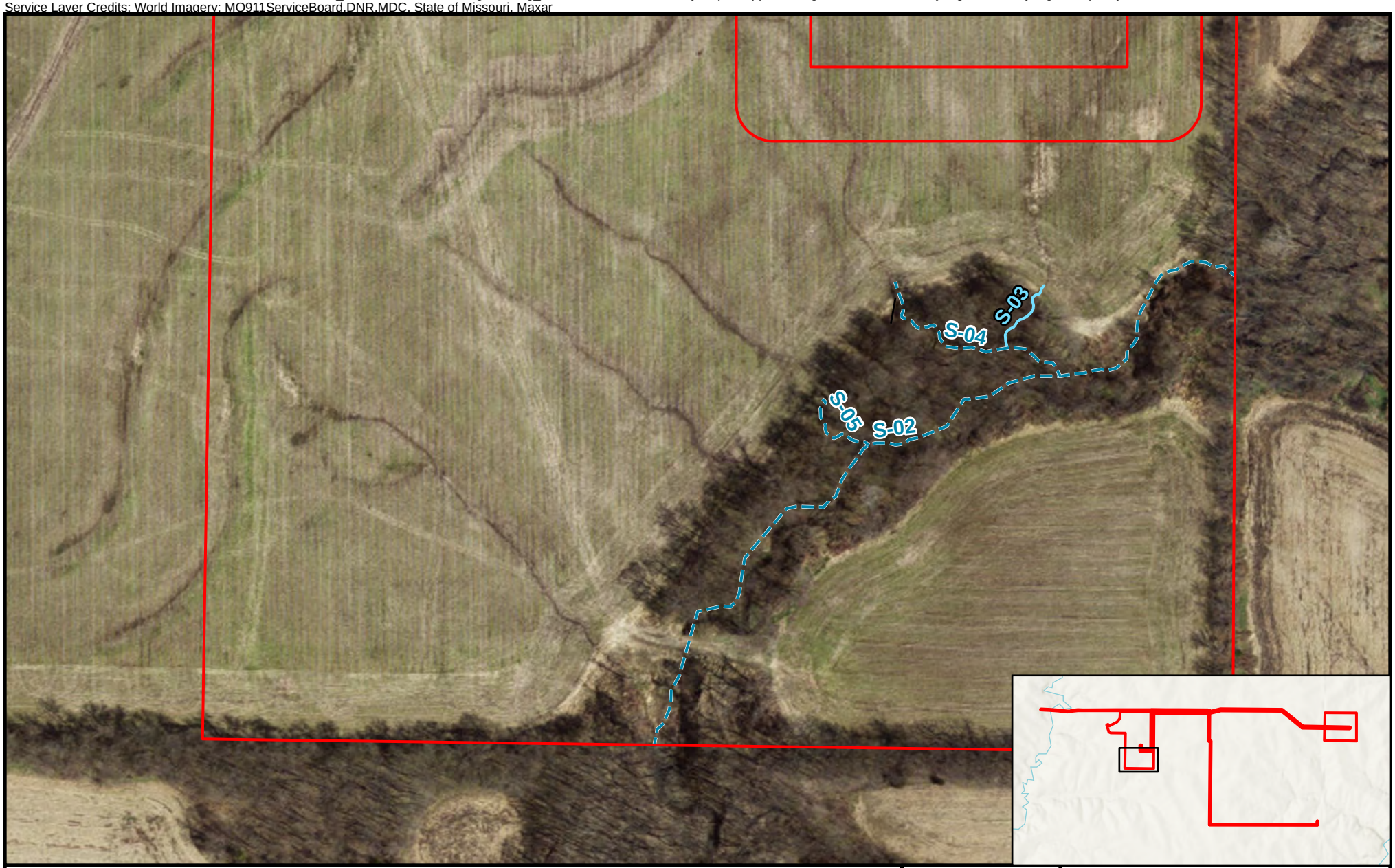

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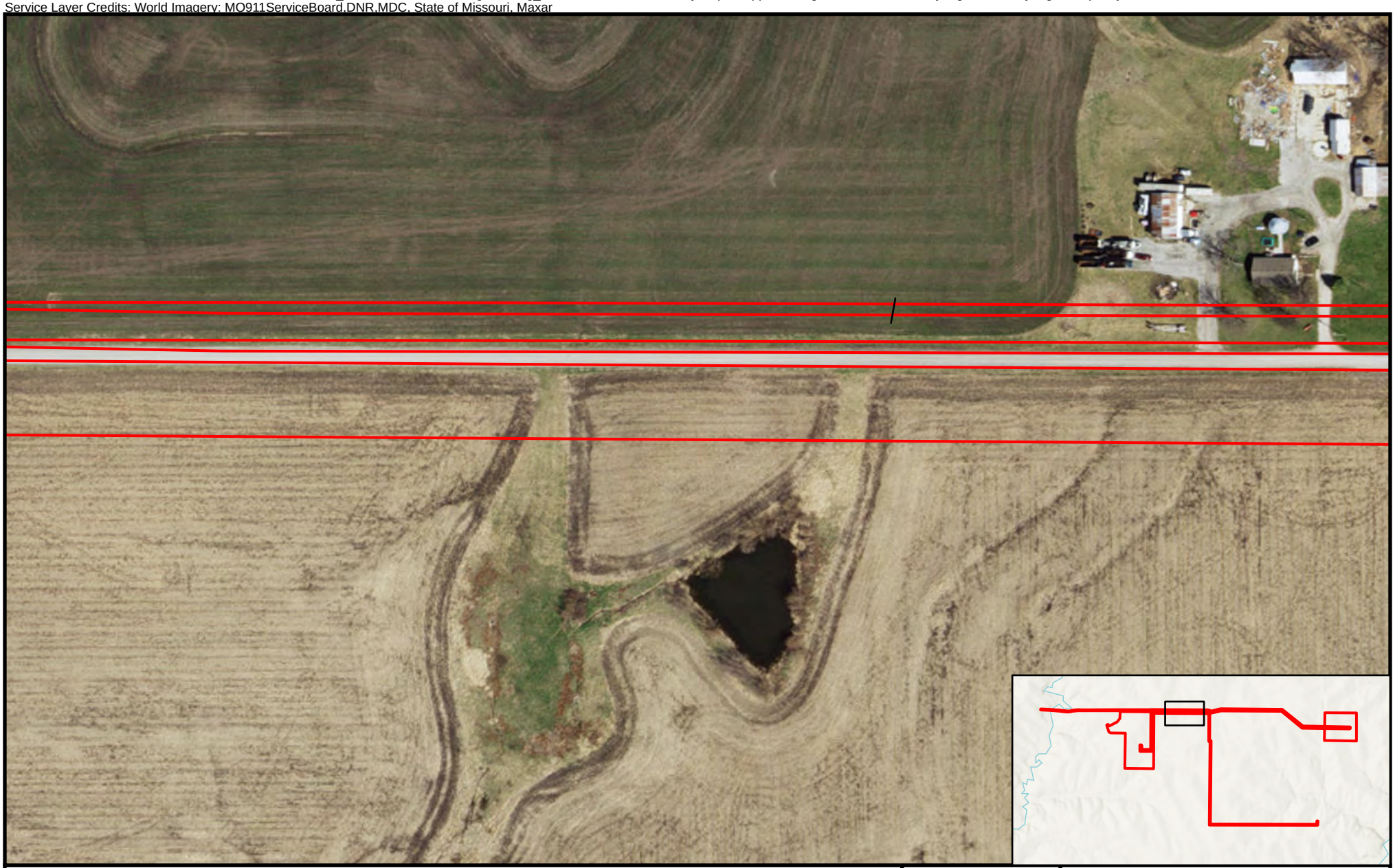

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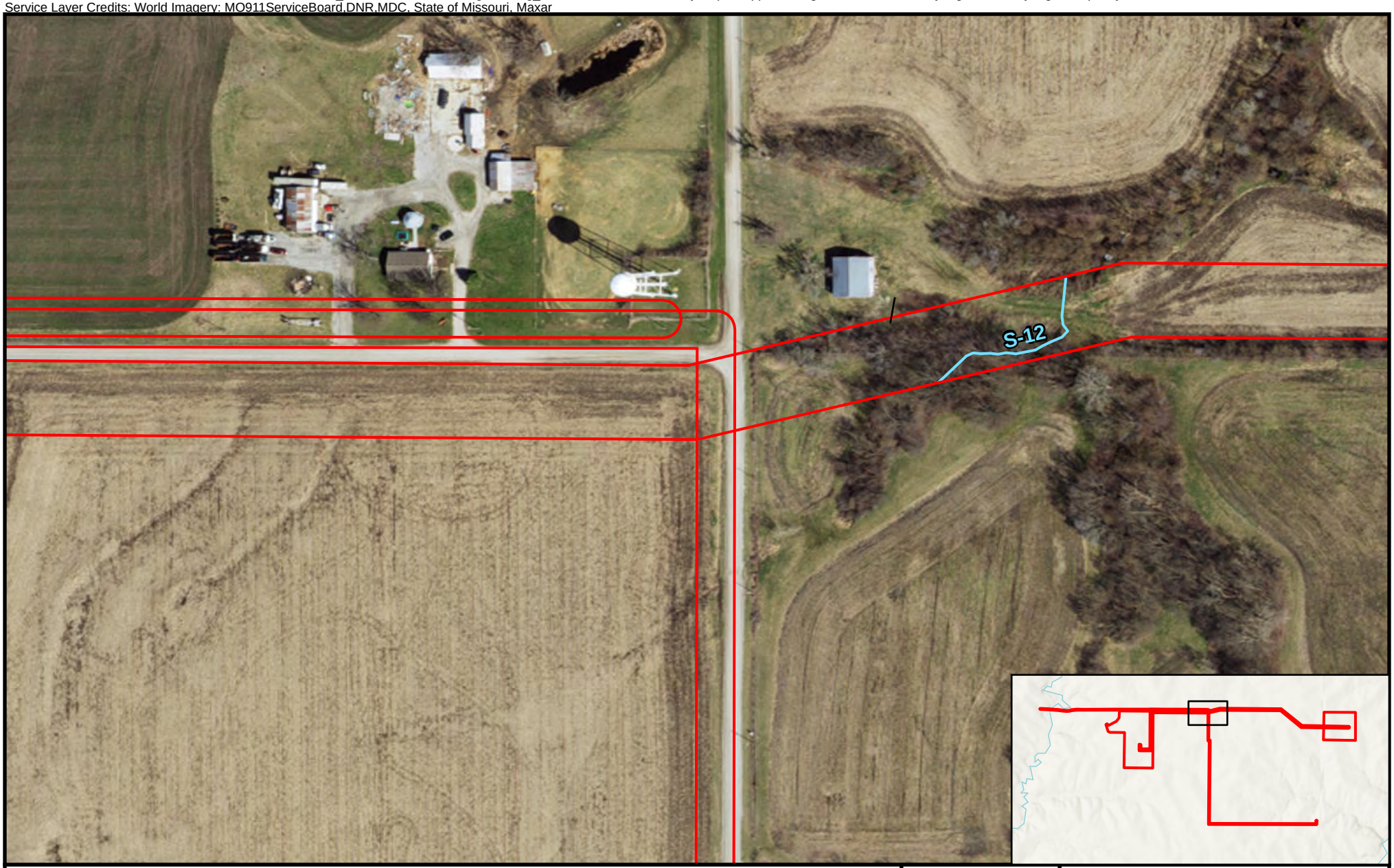

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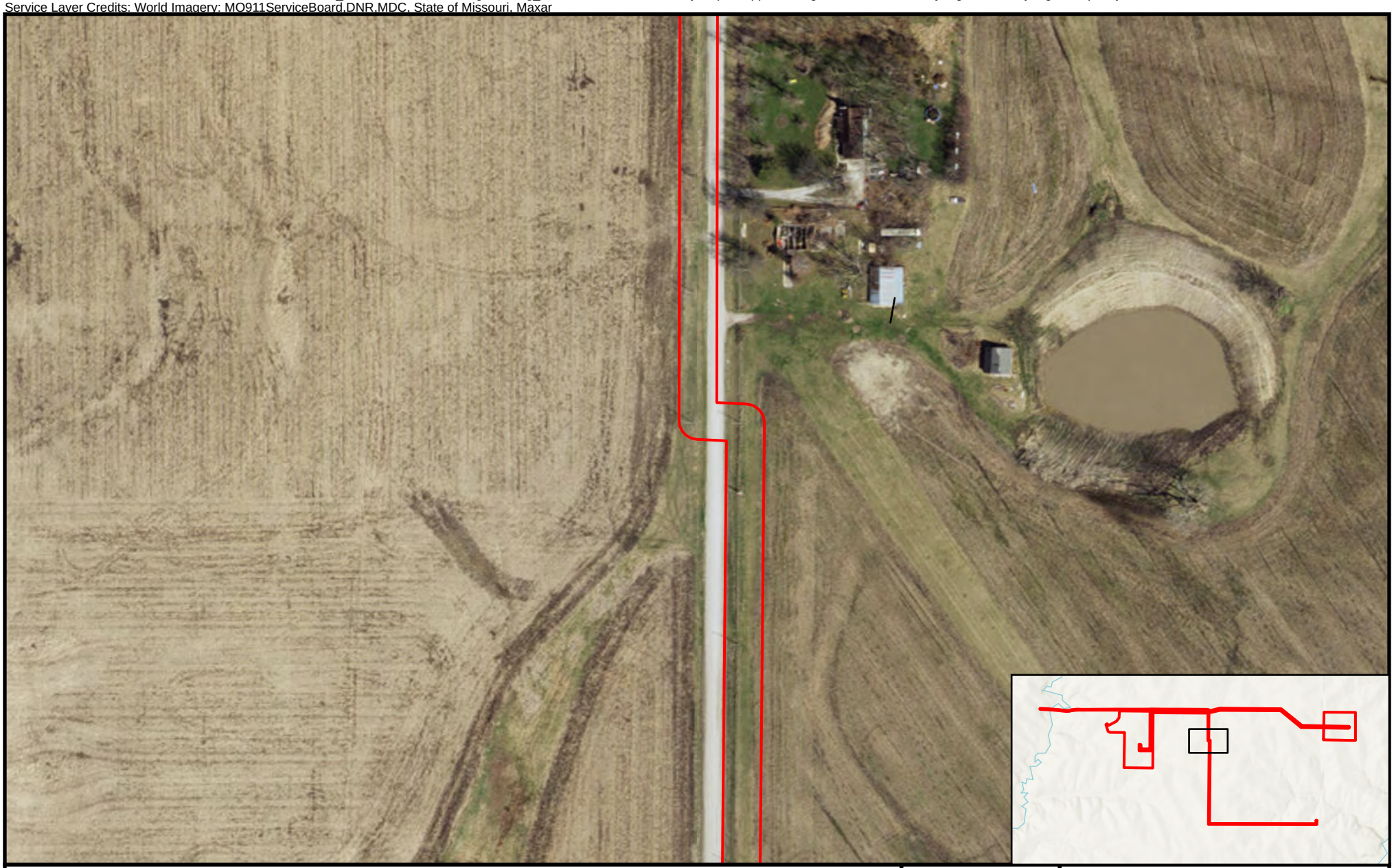

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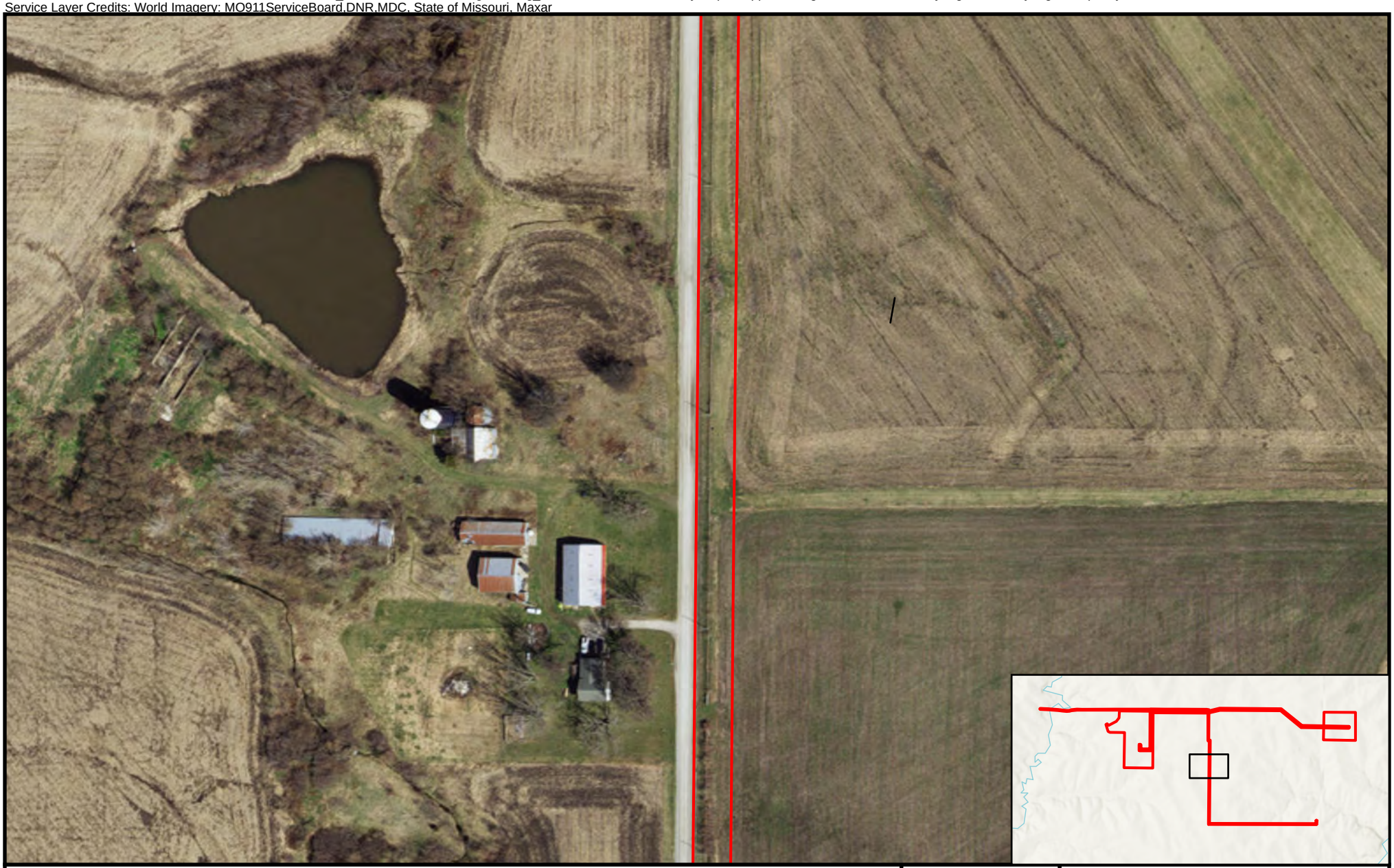

Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH

100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
Turney Energy Center
AECI
Clinton County, Missouri
Page 10 of 19

Source: ESRI, Associated Electric Cooperative, Inc., and Burns & McDonnell

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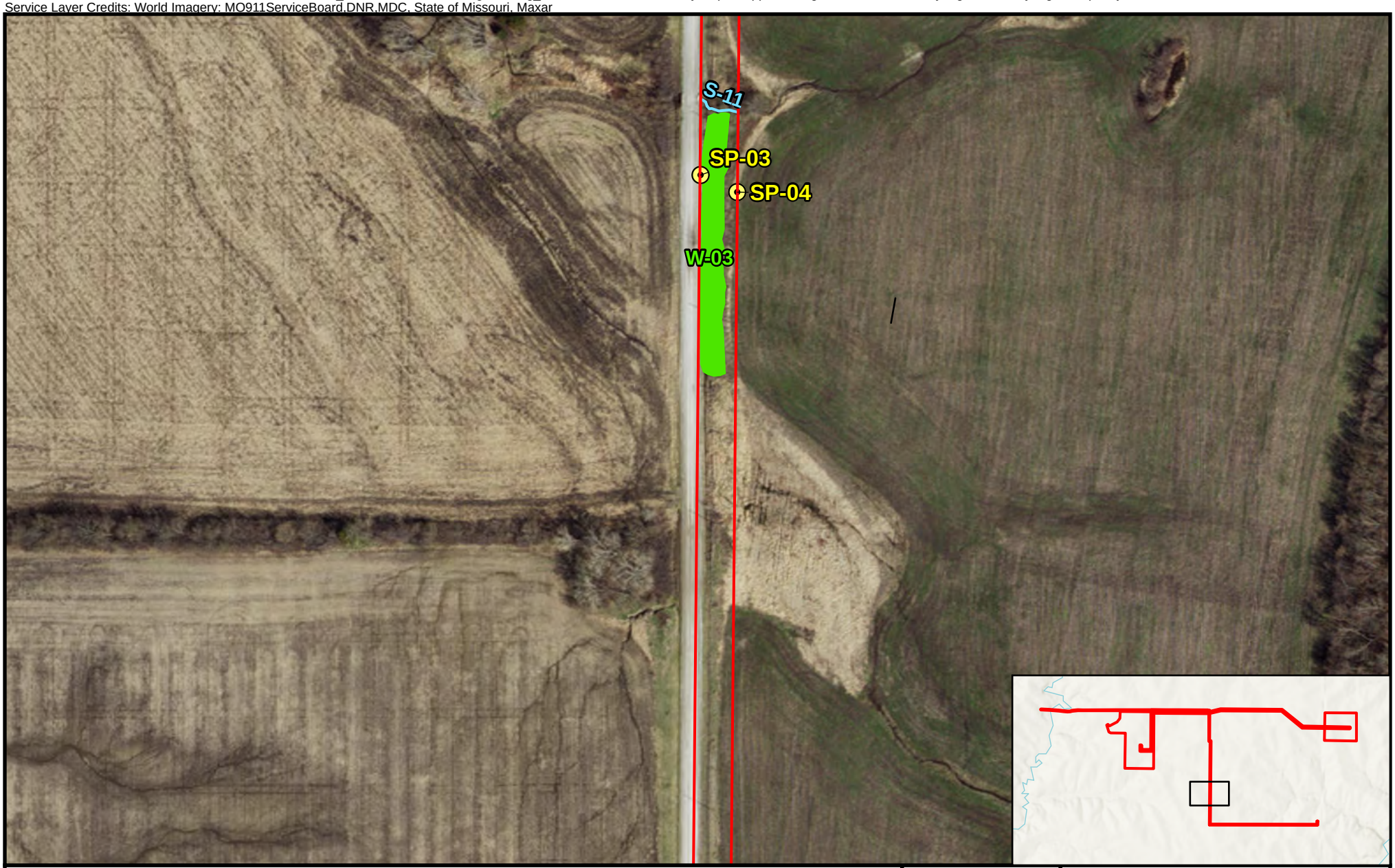

Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH

100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
Turney Energy Center
AECI
Clinton County, Missouri
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Source: ESRI, Associated Electric Cooperative, Inc., and Burns & McDonnell

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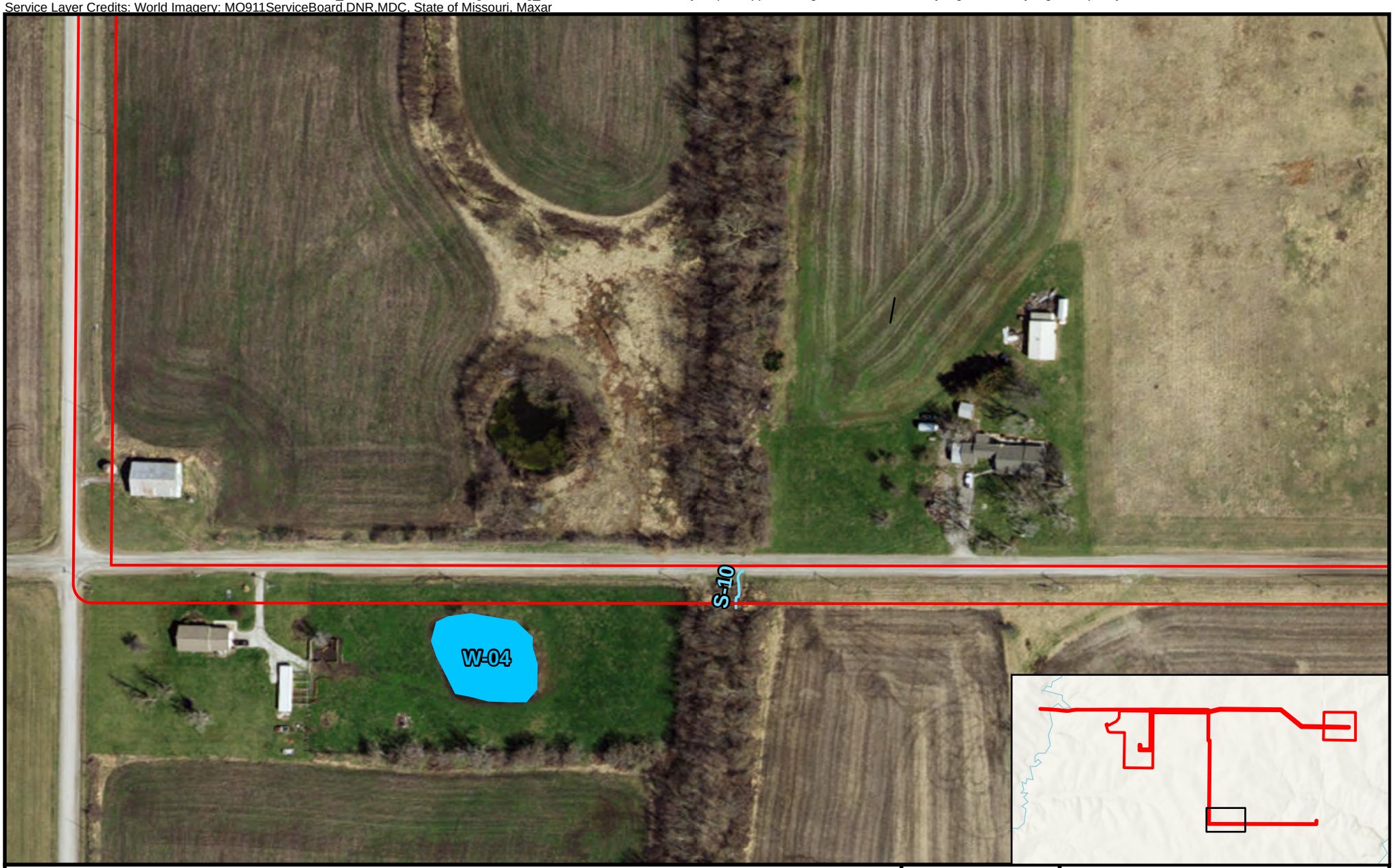

Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH
100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
Turney Energy Center
AECI
Clinton County, Missouri
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Source: ESRI, Associated Electric Cooperative, Inc., and Burns & McDonnell
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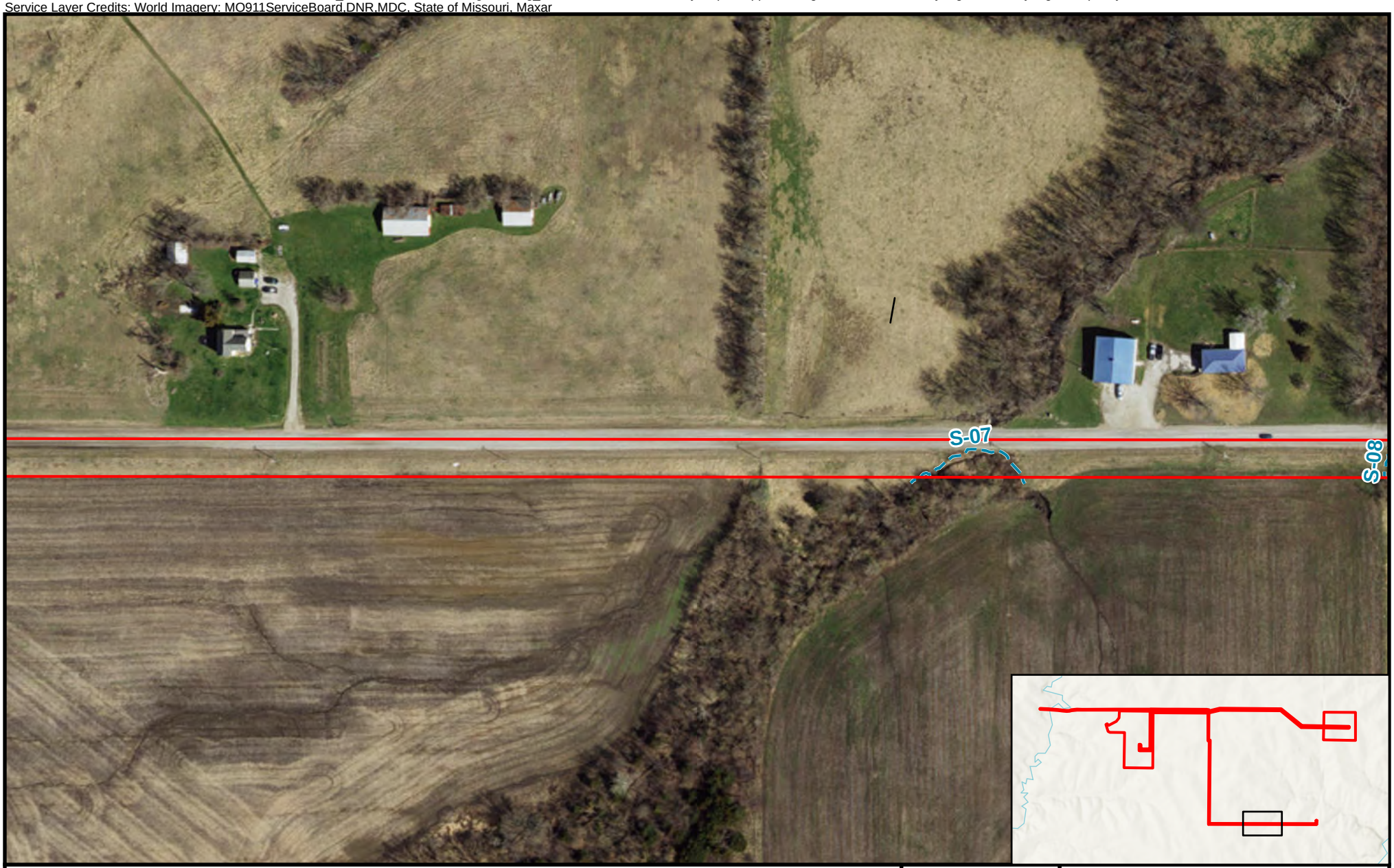

Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH

100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
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Clinton County, Missouri
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Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH

100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
Turney Energy Center
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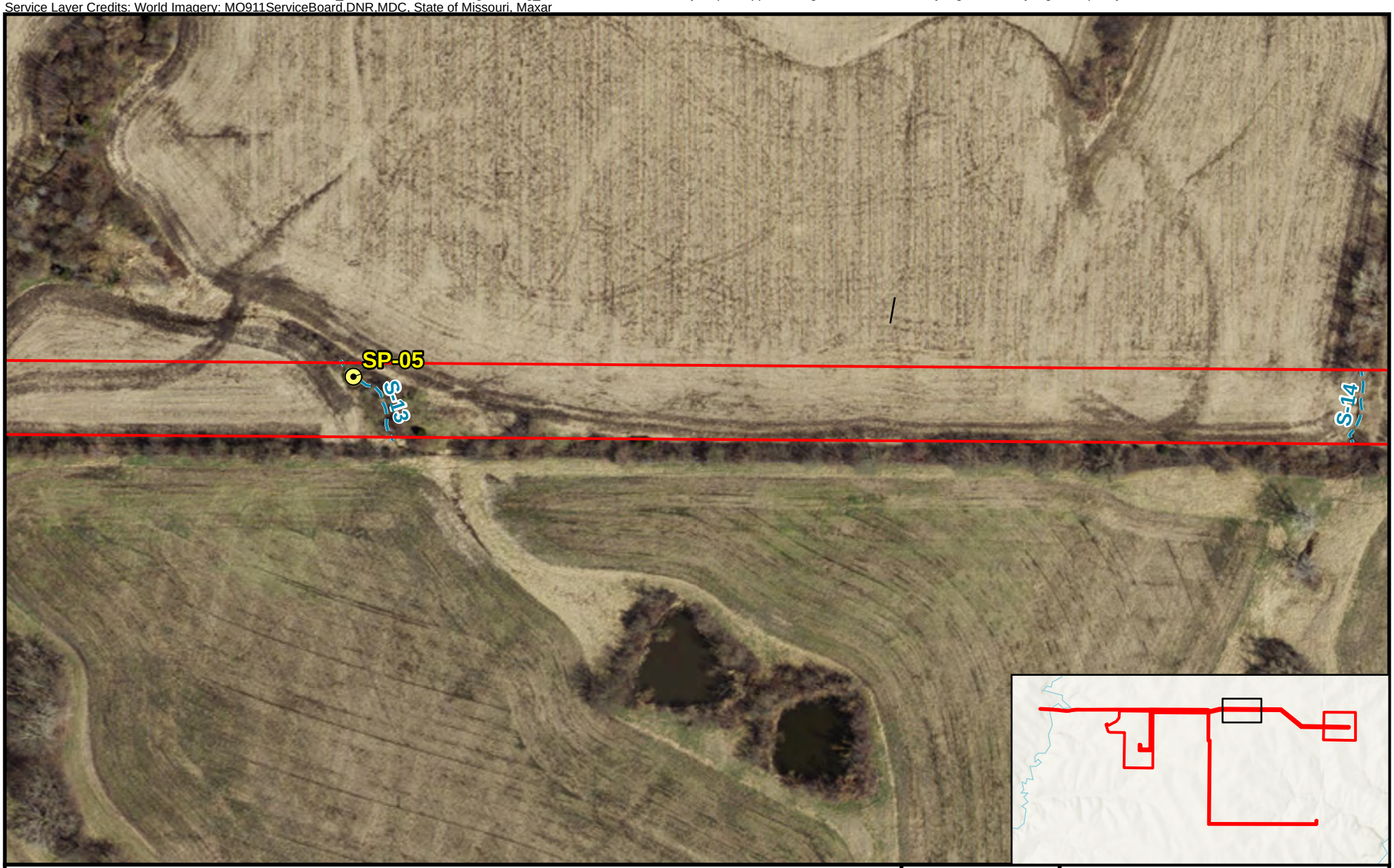

Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH
100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
Turney Energy Center
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Clinton County, Missouri
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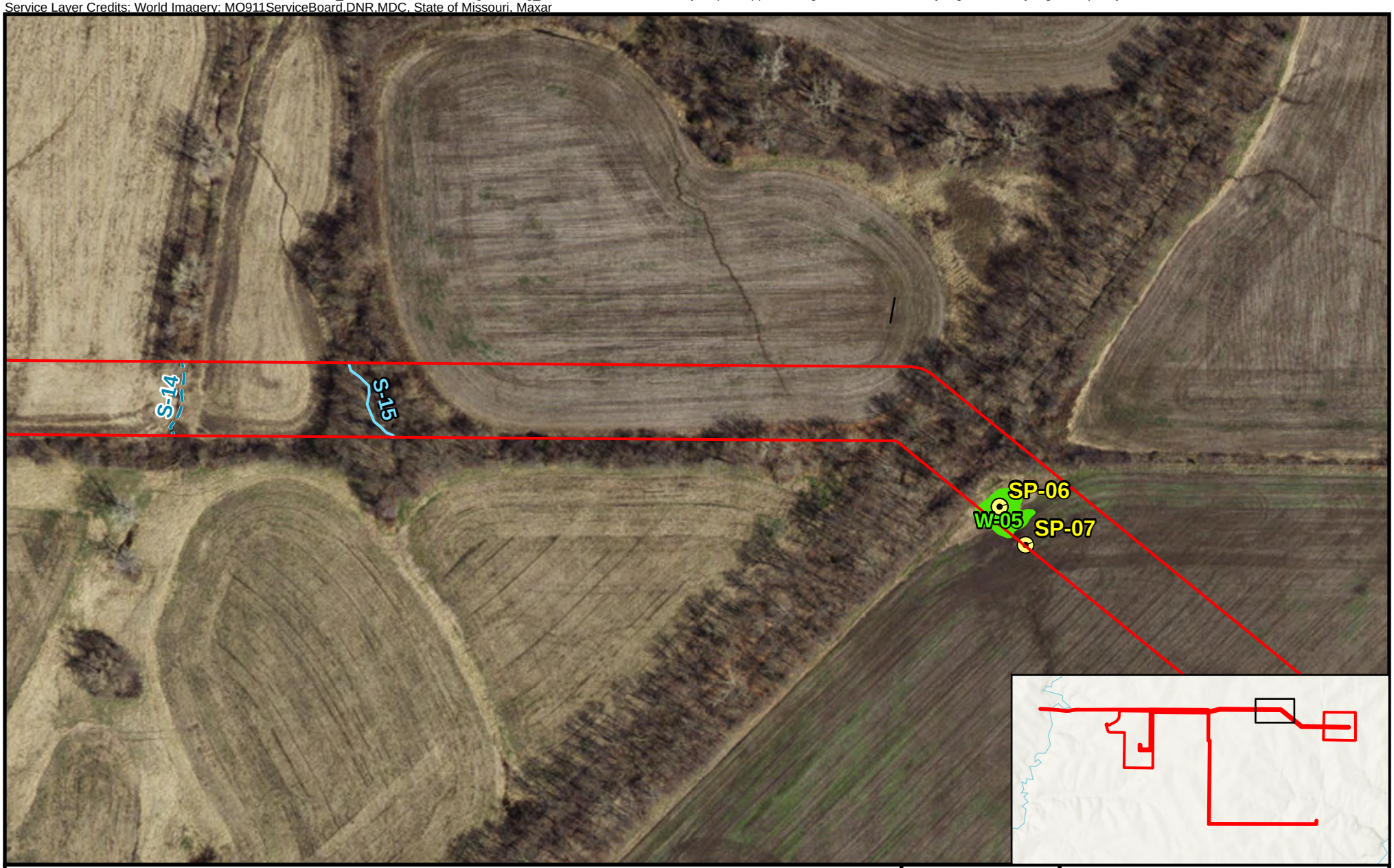

Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH
100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
Turney Energy Center
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Clinton County, Missouri
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Service Layer Credits: World Imagery: MO911ServiceBoard,DNR,MDC, State of Missouri, Maxar

Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH

100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
Turney Energy Center
AECI
Clinton County, Missouri
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Service Layer Credits: World Imagery: MO911ServiceBoard,DNR,MDC, State of Missouri, Maxar

Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH

100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
Turney Energy Center
AECI
Clinton County, Missouri

Source: ESRI, Associated Electric Cooperative, Inc., and Burns & McDonnell
Issued: 8/15/2024

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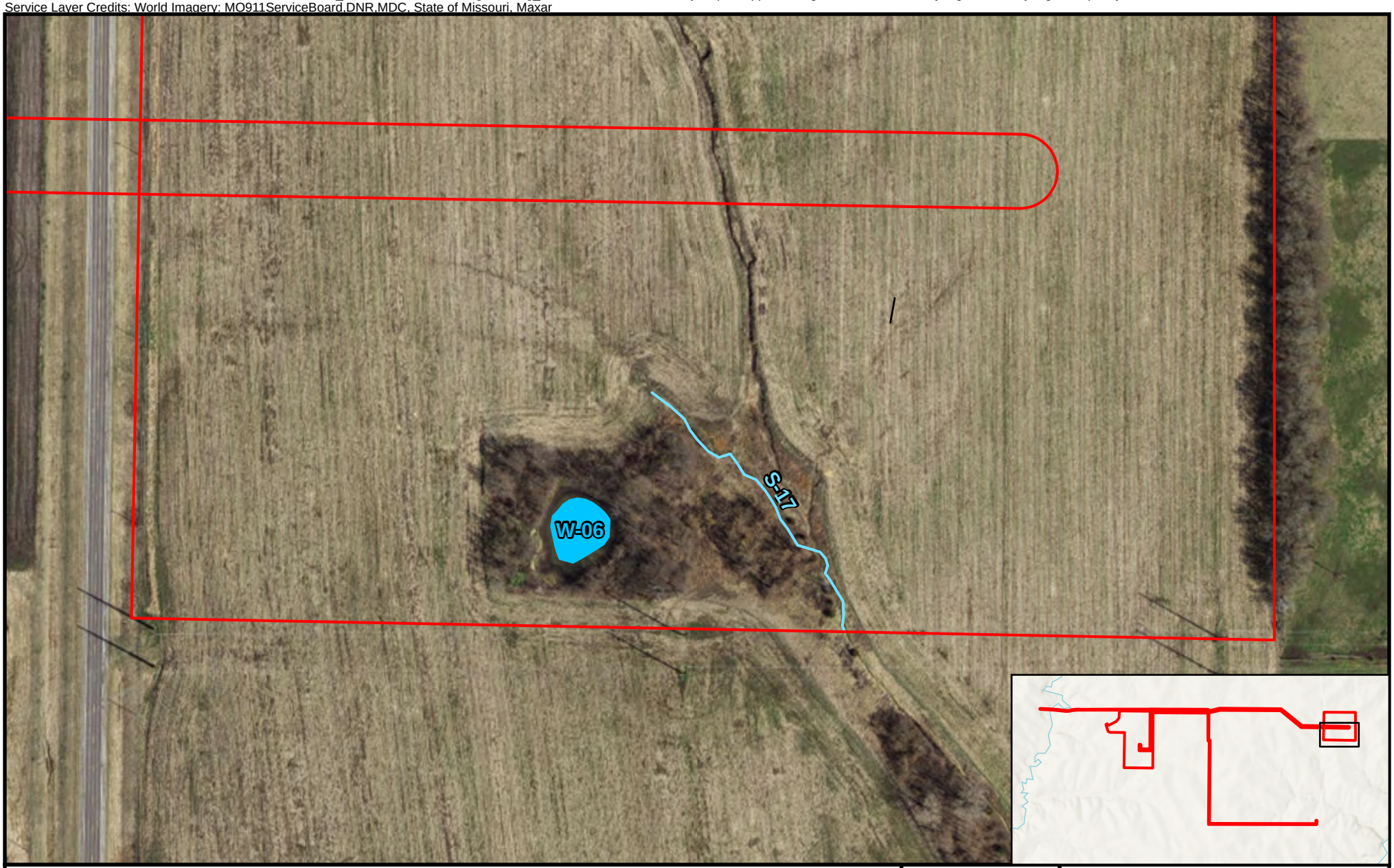
Service Layer Credits: World Imagery: MO911ServiceBoard,DNR,MDC, State of Missouri, Maxar



Survey Area
Sample Plot (SP)

Delineated Streams (S)
Ephemeral
Intermittent
Perennial

Delineated Wetlands (W)
PEM
PFO
PUB

NORTH

100 50 0 100
Scale in Feet

BURNS McDONNELL

Figure A-4
Wetlands and Water Resources
Turney Energy Center
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Clinton County, Missouri
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Source: ESRI, Associated Electric Cooperative, Inc., and Burns & McDonnell

Issued: 8/15/2024

APPENDIX B – ROUTINE WETLAND DETERMINATION FORMS – MIDWEST REGION

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-04-22

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-01

Investigator(s): J.Ramirez, C. Rogers | Section, Township, Range: S02 T55N R31W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 0 | Lat: 39.61375 | Long: -94.353023 | Datum: NAD 83

Soil Map Unit Name: 30087 - Grundy silt loam, 5 to 9 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:

Wetland sample plot within PEM W-02. The USACE Antecedent Precipitation Tool indicates normal climatic conditions three months prior to the survey.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	20	✔	OBL
2. Morus alba	5	✔	FAC
3.			
4.			
5.			
	25	= 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. Phalaris arundinacea	40	✔	FACW
2. Urtica dioica	15	✔	FACW
3. Rumex crispus	10		FAC
4. Solidago altissima	5		FACU
5. Galium aparine	5		FACU
6.			
7.			
8.			
9.			
10.			
	75	= 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: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	55	x 2 =	110
FAC species	15	x 3 =	45
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	100 (A)		215 (B)

Prevalence Index = B/A = 2.15

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.)

Dominance test is passed. See Photo C-1.

SOIL

Sampling Point: SP-01

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	93	5YR 4/6	7	C	M	Silty Clay Loam	
8 - 24	10YR 2/1	95	5YR 4/1	5	D	M	Silty 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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Indicator F6 is met.

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): 9

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 6

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

Indicators A2, A3, D2, and D5 are met.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-04-25

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-02

Investigator(s): J.Ramirez, C. Rogers | Section, Township, Range: S02 T55N R31W

Landform (hillslope, terrace, etc.): Side Slope | Local relief (concave, convex, none): None

Slope (%): 0 | Lat: 39.613628 | Long: -94.352921 | Datum: NAD 83

Soil Map Unit Name: 30087 - Grundy silt loam, 5 to 9 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:

Upland sample plot adjacent to PEM W-02. The USACE Antecedent Precipitation Tool indicates normal climatic conditions three months prior to survey. Vegetation, soils, and hydrology is disturbed due to being on the edge of an active farmed field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	10	✔	OBL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Salix nigra	10	✔	OBL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Lamium amplexicaule	45	✔	UPL
2. Conium maculatum	20	✔	FACW
3. Galium aparine	5		FACU
4. Thlaspi arvense	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
	75 = 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: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	45	x 5 =	225
Column Totals:	95 (A)		325 (B)

Prevalence Index = B/A = 3.42

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.)

Dominance test is passed. Vegetation is disturbed due to being on the edge of an active farmed field. See Photo C-2.

SOIL

Sampling Point: SP-02

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/2	98	7.5YR 5/8	2	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								

[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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compact soil

Depth (inches): 18

Hydric Soil Present? Yes _____ No ✔

Remarks:

No indicators are met. Excavation below 18" was prevented by compact soil. Multiple locations attempted. Soil is disturbed due to being on the edge of an active farmed field.

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:

D5 indicator is met. Hydrology is disturbed due to being on the edge of an active farmed field.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-04-25

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-03

Investigator(s): J.Ramirez, C. Rogers | Section, Township, Range: S01 T55N R31W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 39.605663 | Long: -94.337336 | Datum: NAD 83

Soil Map Unit Name: 34020 - Colo silty clay loam, drainageway, 2 to 5 percent slopes, frequently flooded | 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:

Wetland sample plot within PEM W-03. The USACE Antecedent Precipitation Tool indicates normal climatic conditions three months prior to survey. Sample plot was in a drainage ditch alongside of a road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Morus alba	10	✔	FAC
2. Ulmus americana	10	✔	FACW
3.			
4.			
5.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Salix nigra	30	✔	OBL
2.			
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Typha angustifolia	30	✔	OBL
2. Conium maculatum	5		FACW
3. Rumex crispus	5		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40	= 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: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	15	x 2 =	30
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		135 (B)

Prevalence Index = B/A = 1.50

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.)

Dominance test is passed. See Photo C-3. Vegetation is disturbed due to being in a drainage ditch alongside of a road andfarmed field.

SOIL

Sampling Point: SP-03

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 24	10YR 3/1	95	10YR 5/1	5	D	M	Clay	
-								
-								
-								
-								
-								
-								

[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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

No indicators are met. Soil is disturbed due to being in a drainage ditch alongside of a road.

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): 2

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 2

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

Indicators A2, A3, D2, and D5 are met. Hydrology disturbed due to being in a drainage ditch alongside of a road.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-04-25

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-04

Investigator(s): J.Ramirez, C. Rogers | Section, Township, Range: S01 T55N R31W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 0 | Lat: 39.605601 | Long: -94.337159 | Datum: NAD 83

Soil Map Unit Name: 34020 - Colo silty clay loam, drainageway, 2 to 5 percent slopes, frequently flooded | 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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland sample plot adjacent to PEM W-03. The USACE Antecedent Precipitation Tool indicates normal climatic conditions three months prior to survey. Vegetation, soils, and hydrology is disturbed due to being adjacent to a farmed crop field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus americana	15	✔	FACW
2. Morus alba	10	✔	FAC
3.			
4.			
5.			
	25	= 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. Solidago altissima	45	✔	FACU
2. Setaria faberi	20	✔	FACU
3. Lamium amplexicaule	10		UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	75	= 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: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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	15	x 2 =	30
FAC species	10	x 3 =	30
FACU species	65	x 4 =	260
UPL species	10	x 5 =	50
Column Totals:	100 (A)		370 (B)

Prevalence Index = B/A = 3.70

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.)

No indicators are met. Vegetation is disturbed due to being adjacent to a farmed crop field. See Photo C-4.

SOIL

Sampling Point: SP-04

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/1	95	5YR 3/4	5	C	M	Sandy 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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compact soil

Depth (inches): 18

Hydric Soil Present? Yes ✔ No ___

Remarks:

Indicator F6 is met. Excavation below 18" was prevented due to compact soil. Multiple locations attempted. Soil is disturbed due to being adjacent to a farmed crop field.

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:

No indicators are met. Hydrology is disturbed due to being adjacent to a farmed crop field.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-04-25

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-05

Investigator(s): J.Ramirez, C. Rogers | Section, Township, Range: S36 T56N R31W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex

Slope (%): 1 | Lat: 39.615667 | Long: -94.333342 | Datum: NAD 83

Soil Map Unit Name: 30087 - Grundy silt loam, 5 to 9 percent slopes | NWI classification: R5UBH

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:

Upland sample plot. The USACE Antecedent Precipitation Tool indicates normal climatic conditions three months prior to survey.

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. Cornus drummondii	40	✔	FAC
2. Ulmus americana	10	✔	FACW
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Poa pratensis	40	✔	FACU
2. Solidago altissima	15	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	55 = 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: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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	10	x 2 =	20
FAC species	40	x 3 =	120
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	105 (A)		360 (B)

Prevalence Index = B/A = 3.42

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.)

No indicators are met. See Photo C-5.

SOIL

Sampling Point: SP-05

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 18	10YR 2/2	90	7.5YR 5/8	10	C	M	Clay	
-								
-								
-								
-								
-								
-								

[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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compact soil

Depth (inches): 18

Hydric Soil Present? Yes ✔ No ___

Remarks:

Indicator F6 is met. Excavation below 18" was prevented by compact soil. Multiple locations attempted

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:

No indicators are met.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-04-25

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-06

Investigator(s): J.Ramirez, C. Rogers | Section, Township, Range: S01 T55N R31W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 39.615151 | Long: -94.324743 | Datum: NAD 83

Soil Map Unit Name: 30087 - Grundy silt loam, 5 to 9 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:

Wetland sample plot with PEM W-05. The USACE Antecedent Precipitation Tool indicates that normal climatic conditions three months prior to survey. Vegetation, soils, and hydrology is disturbed due to being in a farmed crop field.

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. Alopecurus carolinianus	40	✔	FACW
2. Persicaria maculosa	20	✔	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	60 = 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: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 2.00

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.)

Rapid test for hydrophytic vegetation is passed. See Photo C-6. Vegetation is disturbed due to being in a farmed crop field.

SOIL

Sampling Point: SP-06

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 2/2	90	5YR 3/4	10	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								

[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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: High water table

Depth (inches): 16

Hydric Soil Present? Yes ✔ No ___

Remarks:

Indicator F6 is met. Excavation below 16" was prevented by high water table. Soil is disturbed due to being in a farmed crop field.

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): 10

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Indicators A2, A3, D2, and D5 are met. Hydrology is disturbed due to being in a farmed crop field.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-04-25

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-07

Investigator(s): J.Ramirez, C. Rogers | Section, Township, Range: S01 T55N R31W

Landform (hillslope, terrace, etc.): Side Slope | Local relief (concave, convex, none): None

Slope (%): 1 | Lat: 39.615012 | Long: -94.324621 | Datum: NAD 83

Soil Map Unit Name: 30087 - Grundy silt loam, 5 to 9 percent slopes | NWI classification:

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

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

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

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

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

Remarks:

Upland sample plot adjacent to PEM W-05. The USACE Antecedent Precipitation Tool indicates normal climatic conditions three months prior to survey. Vegetation, soils, and hydrology is disturbed due to being in a farmed crop field.

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. Lamium amplexicaule	40	✔	UPL
2. Thlaspi arvense	20	✔	FACU
3. Alopecurus aequalis	10		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70 = 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	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	20	x 4 =	80
UPL species	40	x 5 =	200
Column Totals:	70 (A)		290 (B)

Prevalence Index = B/A = 4.14

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.)

No indicators are met. See Photo C-7. Vegetation is disturbed due to being in a farmed crop field.

SOIL

Sampling Point: SP-07

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 16	10YR 2/1	97	10YR 3/6	3	C	M	Silty Clay	
-								
-								
-								
-								
-								
-								

[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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compact soil

Depth (inches): 16

Hydric Soil Present? Yes ✔ No ___

Remarks:

Indicator F6 is met. Excavation below 16" was prevented by compact soil. Multiple locations attempted.

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:

No indicators are met. Hydrology is disturbed due to being in a farmed crop field.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-08-06

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-08

Investigator(s): J. Ramirez, S. Glaeser | Section, Township, Range: S34 T56N R31W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 39.61558 | Long: -94.359576 | Datum: NAD 83

Soil Map Unit Name: 30062 - Gara loam, 9 to 14 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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Upland sample plot adjacent to PEM W-07. The USACE Antecedent Precipitation Tool indicates drier than normal climatic conditions three months prior to survey. Vegetation, soils, and hydrology is disturbed due to being in a drainage area along an active agriculture field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus americana	10	✔	FACW
2.			
3.			
4.			
5.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Platanus occidentalis	5	✔	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Bromus inermis	40	✔	FACU
2. Solidago canadensis	20	✔	FACU
3. Solanum carolinense	15		FACU
4. Verbesina alternifolia	15		FACW
5. Urtica dioica	5		FACW
6.			
7.			
8.			
9.			
10.			
	95 = 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: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (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	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	110 (A)		370 (B)

Prevalence Index = B/A = 3.36

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.)

No test is passed. Vegetation is disturbed due to being in a drainage area along an active agriculture field. See Photo C-8.

SOIL

Sampling Point: SP-08

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/3	100					Clay Loam	
4 - 10	10YR 3/2	95	7.5YR 5/8	5	C	M	Clay Loam	
10 - 14	10YR 2/2	98	7.5YR 4/6	2	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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compact soil

Depth (inches): 14

Hydric Soil Present? Yes ✔ No ___

Remarks:

Indicator F6 is met. Excavation below 14 inches was prevented by compact soil. Multiple locations attempted. Soil is disturbed due to being in a drainage area along an active agriculture field.

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:

Indicators D2 and D5 are met. Hydrology is disturbed due to being in a drainage area along an active agriculture field.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-08-06

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-09

Investigator(s): J. Ramirez, S. Glaeser | Section, Township, Range: S34 T56N R31W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 39.615589 | Long: -94.359533 | Datum: NAD 83

Soil Map Unit Name: 30062 - Gara loam, 9 to 14 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:

Wetland sample plot within PEM W-07. The USACE Antecedent Precipitation Tool indicates drier than normal climatic conditions three months prior to survey. Vegetation, soils, and hydrology is disturbed due to being in a drainage area along an active agriculture field.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus americana	10	✔	FACW
2.			
3.			
4.			
5.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Platanus occidentalis	5	✔	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Urtica dioica	30	✔	FACW
2. Verbesina alternifolia	25	✔	FACW
3. Solidago canadensis	20	✔	FACU
4. Bromus inermis	10		FACU
5. Verbena urticifolia	10		FAC
6.			
7.			
8.			
9.			
10.			
	95 = 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: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	10	x 3 =	30
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	110 (A)		290 (B)

Prevalence Index = B/A = 2.63

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.)

Dominance test is passed. Vegetation is disturbed due to being in a drainage area along an active agriculture field. See Photo C-9.

SOIL

Sampling Point: SP-09

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2	100					Clay Loam	
6 - 16	10YR 3/2	95	10YR 6/2	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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Compact soil

Depth (inches): 16

Hydric Soil Present? Yes ✔ No ___

Remarks:

Indicator F6 is met. Soil is disturbed due to being in a drainage area along an active agriculture field.

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:

Indicator D2 and D5 are met. Hydrology is disturbed due to being in a drainage area along an active agriculture field.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-08-06

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-10

Investigator(s): J. Ramirez, S. Glaeser | Section, Township, Range: S03 T55N R31W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 39.615456 | Long: -94.361188 | Datum: NAD 83

Soil Map Unit Name: 30062 - Gara loam, 9 to 14 percent slopes | NWI classification: PFO1A

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:

Wetland sample plot within PFO W-08. The USACE Antecedent Precipitation Tool indicates drier than normal climatic conditions three months prior to survey.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juniperus virginiana	10	✔	FACU
2. Platanus occidentalis	10	✔	FACW
3. Celtis occidentalis	5		FAC
4. Ulmus americana	5		FACW
5.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Celtis occidentalis	5	✔	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Laportea canadensis	40	✔	FACW
2. Ribes aureum	10		FAC
3. Symphoricarpos orbiculatus	10		FACU
4. Campanulastrum americanum	2		FAC
5.			
6.			
7.			
8.			
9.			
10.			
	62	= 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: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	55	x 2 =	110
FAC species	22	x 3 =	66
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	97 (A)		256 (B)

Prevalence Index = B/A = 2.63

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.)

Dominance test is passed. See Photo C-10.

SOIL

Sampling Point: SP-10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/1	100					Silt Loam	
4 - 12	10YR 4/2	98	10YR 6/8	2	C	M	Silt 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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 12

Hydric Soil Present? Yes ✔ No ___

Remarks:

Indicator F3 is met. Excavation below 12" was prevented by gravel. Multiple locations attempted.

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:

Indicators D2 and D5 are met.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-08-06

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-11

Investigator(s): J. Ramirez, S. Glaeser | Section, Township, Range: S03 T55N R31W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex

Slope (%): 1 | Lat: 39.615377 | Long: -94.361208 | Datum: NAD 83

Soil Map Unit Name: 30062 - Gara loam, 9 to 14 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:

Upland sample plot adjacent to PFO W-08. The USACE Antecedent Precipitation Tool indicates drier than normal climatic conditions three months prior to survey.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juniperus virginiana	15	✔	FACU
2. Celtis occidentalis	10	✔	FAC
3.			
4.			
5.			
	25 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Celtis occidentalis	20	✔	FAC
2. Cornus drummondii	5	✔	FAC
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Campanulastrum americanum	15	✔	FAC
2. Ageratina altissima	10	✔	FACU
3. Phlox divaricata	10	✔	FACU
4. Ribes aureum	10	✔	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	45 = 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: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	95 (A)		320 (B)

Prevalence Index = B/A = 3.36

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.)

Dominance test is passed. See Photo C-11.

SOIL

Sampling Point: SP-11

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 6	2.5Y 3/3	70	2.5Y 5/6	30	C	M	Silt Loam	
6 - 20	2.5Y 6/6	100					Silt 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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

No indicators are met.

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:

No indicators are met.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-08-06

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-12

Investigator(s): J. Ramirez, S. Glaeser | Section, Township, Range: S34 T56N R31W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 39.615598 | Long: -94.362286 | Datum: NAD 83

Soil Map Unit Name: 36020 - Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded | 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:

Wetland sample plot within PEM W-09. The USACE Antecedent Precipitation Tool indicates drier than normal climatic conditions three months prior to survey. Wetland is outside of survey area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Celtis occidentalis	5	✔	FAC
2. Maclura pomifera	5	✔	FACU
3.			
4.			
5.			
	10	= 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. Phalaris arundinacea	60	✔	FACW
2. Persicaria pensylvanica	10		FACW
3. Acalypha virginica	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	75	= 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: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	5	x 3 =	15
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	85 (A)		195 (B)

Prevalence Index = B/A = 2.29

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Dominance test is passed. See Photo C-12.

SOIL

Sampling Point: SP-12

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 - 20	10YR 2/1	90	10YR 4/6	10	C	M	Clay	
-								
-								
-								
-								
-								
-								

[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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

Indicator F6 is met.

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:

Indicators B10 and D2 are met.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-08-06

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-13

Investigator(s): J. Ramirez, S. Glaeser | Section, Township, Range: S34 T56N R31W

Landform (hillslope, terrace, etc.): Hill Top | Local relief (concave, convex, none): Convex

Slope (%): 1 | Lat: 39.615559 | Long: -94.362593 | Datum: NAD 83

Soil Map Unit Name: 36028 - Nevin silt loam, 0 to 2 percent slopes, rarely flooded | 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:

Upland sample plot adjacent to PEM W-09. The USACE Antecedent Precipitation Tool indicates drier than normal climatic conditions three months prior to survey. Wetland is outside of survey area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Maclura pomifera	5	✔	FACU
2.			
3.			
4.			
5.			
	5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Maclura pomifera	20	✔	FACU
2. Gleditsia triacanthos	5	✔	FACU
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Rosa multiflora	10	✔	FACU
2. Desmodium paniculatum	5	✔	FACU
3. Solidago canadensis	5	✔	FACU
4. Verbesina alternifolia	5	✔	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	25 = 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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.28 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	55 (A)		210 (B)

Prevalence Index = B/A = 3.81

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

No test is passed. See Photo C-13.

SOIL

Sampling Point: SP-13

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 - 20	10YR 4/1	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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

No indicators are met.

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:

No indicators are met.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Turney Energy Center | City/County: Clinton County | Sampling Date: 2024-08-06

Applicant/Owner: Associated Electric Cooperative, Inc. | State: Missouri | Sampling Point: SP-14

Investigator(s): J. Ramirez, S. Glaeser | Section, Township, Range: S34 T56N R31W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): N/A | Lat: 39.615627 | Long: -94.364005 | Datum: NAD 83

Soil Map Unit Name: 36020 - Kennebec silt loam, 0 to 2 percent slopes, occasionally flooded | 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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland confirmation sample plot. The USACE Antecedent Precipitation Tool indicates drier than normal climatic conditions three months prior to survey.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	10	✔	FACU
2. Maclura pomifera	10	✔	FACU
3. Gleditsia triacanthos	5	✔	FACU
4.			
5.			
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Symphoricarpos orbiculatus	10	✔	FACU
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Laportea canadensis	30	✔	FACW
2. Elymus virginicus	30	✔	FACW
3. Impatiens pallida	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70	= 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: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	105 (A)		280 (B)

Prevalence Index = B/A = 2.66

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.)

No test is passed. See Photo C-14.

SOIL

Sampling Point: SP-14

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 - 20	10YR 3/1	100					Silt 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)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ 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]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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:

No indicators are met.

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:

No indicators are met.

APPENDIX C – GROUND PHOTOGRAPHS

Photograph C-1: View of Sample plot (SP)-01 within PEM W-02, facing east.

Photograph C-2: View of upland SP-02 adjacent to PEM W-02, facing west.

Photograph C-3: View of SP-03 within PEM W-03, facing southeast.

Photograph C-4: View of upland SP-04 adjacent to PEM W-03, facing west.

Associated Electric Cooperative, Inc. Turney Energy Center	BURNS McDONNELL	Ground Photographs April 22 and August 6, 2024 Clinton County. Missouri

Photograph C-5: View of upland SP-05, facing south.

Photograph C-6: View of SP-06 within PEM W-05, facing northwest.

Photograph C-7: View of upland SP-07 adjacent to PEM W-05, facing northwest.

Photograph C-8: View of upland SP-08 adjacent to PEM W-07, facing northwest.

Photograph C-9: View of SP-09 within PEM W-07, facing west.

Photograph C-10: View of SP-10 within PFO W-08, facing northwest.

Photograph C-11: View of upland SP-11 adjacent to PFO W-08, facing northwest.

Photograph C-12: View of SP-12 within PEM W-09, facing west. Wetland is outside of survey area.

Photograph C-13: View of upland SP-13 adjacent to PEM W-09, facing west. Wetland is outside of survey area.

Photograph C-14: View of upland confirmation SP-14, facing east.

Photograph C-15: View of PUB Wetland (W)-01, facing south.

Photograph C-16: View of PUB W-04, facing south. Wetland is outside of survey area.

Photograph C-17: View of PUB W-06, facing northeast.

Photograph C-18: View of intermittent Stream (S)-01, facing northeast.

Photograph C-19: View of intermittent S-02, facing east.

Photograph C-20: View of ephemeral S-03, facing east.

Photograph C-21: View of intermittent S-04, facing west.

Photograph C-22: View of intermittent S-05, facing northeast.

Photograph C-23: View of ephemeral S-06, facing north.

Photograph C-24: View of intermittent S-07, facing south.

Photograph C-25: View of intermittent S-08, facing south.

Photograph C-26: View of intermittent S-09, facing east.

Photograph C-27: View of ephemeral S-10, facing south.

Photograph C-28: View of ephemeral S-11, facing east.

Photograph C-29: View of ephemeral S-12, facing east.

Photograph C-30: View of intermittent S-13, facing west.

Photograph C-31: View of intermittent S-14, facing south.

Photograph C-32: View of ephemeral S-15, facing south.

Photograph C-33: View of ephemeral S-16, facing south.

Photograph C-34: View of ephemeral S-17, facing west.

Photograph C-35: View of ephemeral S-18, facing south.

Photograph C-36: View of ephemeral S-19, facing southeast.

Photograph C-1: View of intermittent S-20, facing northwest.

Photograph C-2: View of ephemeral S-21, facing south.

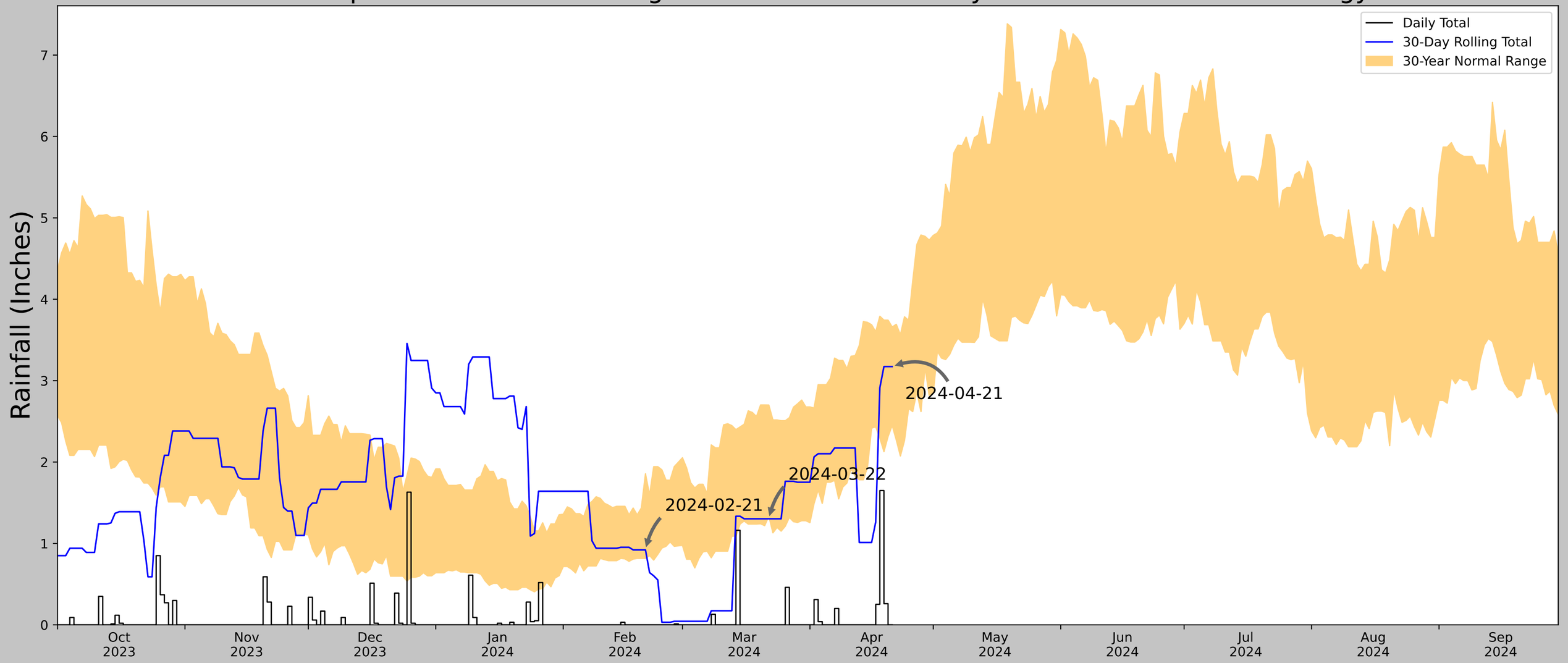
Photograph C-3: View of perennial S-22, facing south.

Photograph C-4: View of ephemeral S-23, facing southwest.

Photograph C-5: View of ephemeral S-24, facing south.

APPENDIX D – ANTECEDENT PRECIPITATION TOOL RESULTS

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



Coordinates	39.61375, -94.3353023
Observation Date	2024-04-21
Elevation (ft)	1034.616
Drought Index (PDSI)	Moderate drought (2024-03)
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
2024-04-21	2.45	3.659055	3.173228	Normal	2	3	6
2024-03-22	1.336614	2.700394	1.30315	Dry	1	2	2
2024-02-21	0.816535	1.856299	0.92126	Normal	2	1	2
Result							Normal Conditions - 10

US Army Corps of Engineers

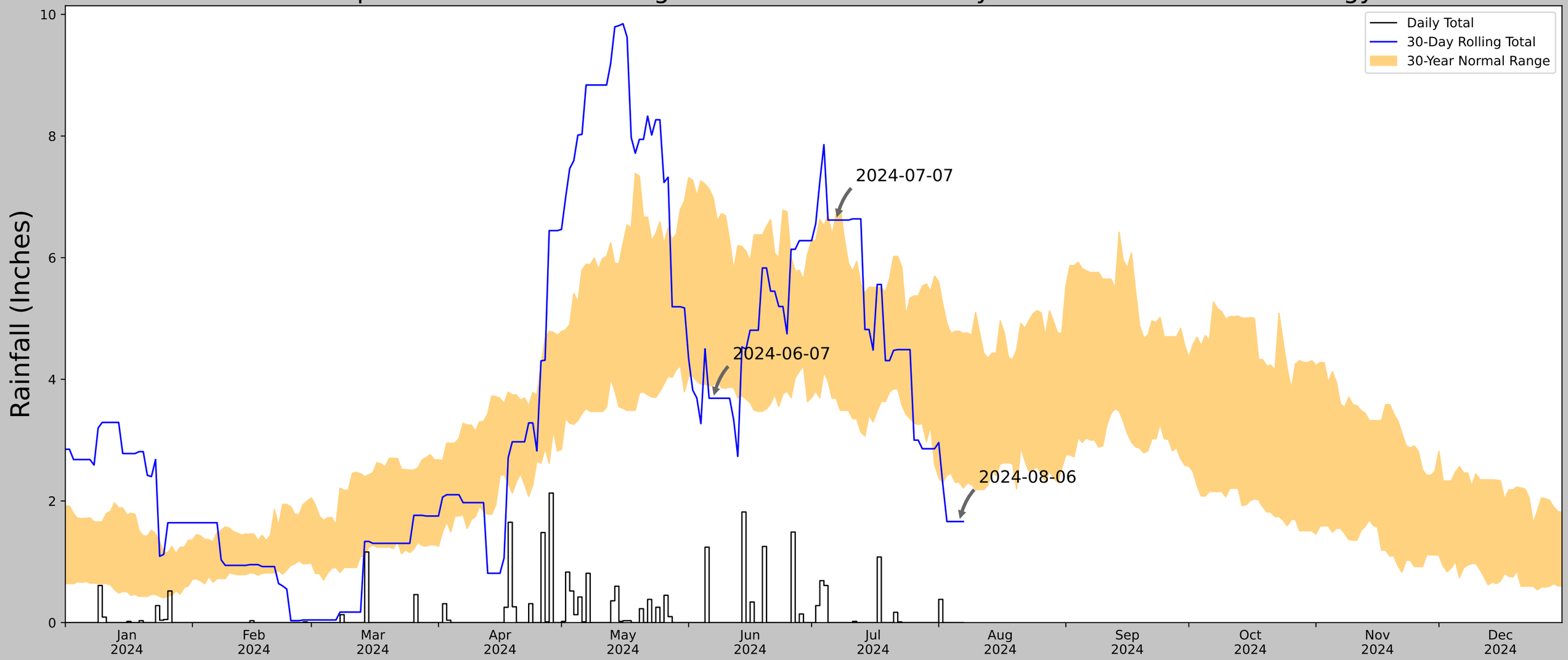
ERDC

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
PLATTSBURG 0.6 W	39.5647, -94.474	944.882	8.126	89.734	4.386	6122	87
PLATTSBURG	39.5669, -94.4544	904.856	1.055	40.026	0.517	3325	0
PLATTSBURG 3.5 S	39.5143, -94.4689	986.877	3.493	41.995	1.719	147	2
PLATTSBURG 5.7 S	39.4847, -94.4417	974.081	5.789	29.199	2.774	26	0
GOWER 2.7 S	39.5729, -94.6013	858.924	6.804	85.958	3.647	67	1
EDGERTON	39.5075, -94.6328	839.895	9.339	104.987	5.183	1316	0
SMITHVILLE LAKE	39.3903, -94.5497	903.871	12.708	41.011	6.24	330	0
KEARNEY 3E	39.3667, -94.3294	839.895	15.705	104.987	8.716	10	0
CAMERON	39.7469, -94.2531	1009.843	17.221	64.961	8.868	3	0
AMITY 4 NE	39.8914, -94.36	974.081	23.372	29.199	11.2	6	0

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



Coordinates	39.61558, -94.359576
Observation Date	2024-08-06
Elevation (ft)	978.783
Drought Index (PDSI)	Incipient wetness (2024-07)
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
2024-08-06	2.30748	4.790551	1.661417	Dry	1	3	3
2024-07-07	3.688189	6.720866	6.61811	Normal	2	2	4
2024-06-07	3.895276	6.98504	3.688976	Dry	1	1	1
Result							Drier than Normal - 8

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
PLATTSBURG 0.6 W	39.5647, -94.474	944.882	7.034	33.901	3.404	6122	69
PLATTSBURG	39.5669, -94.4544	904.856	1.055	40.026	0.517	3325	0
PLATTSBURG 3.5 S	39.5143, -94.4689	986.877	3.493	41.995	1.719	147	21
PLATTSBURG 5.7 S	39.4847, -94.4417	974.081	5.789	29.199	2.774	26	0
GOWER 2.7 S	39.5729, -94.6013	858.924	6.804	85.958	3.647	67	0
EDGERTON	39.5075, -94.6328	839.895	9.339	104.987	5.183	1316	0
SMITHVILLE LAKE	39.3903, -94.5497	903.871	12.708	41.011	6.24	330	0
KEARNEY 3E	39.3667, -94.3294	839.895	15.705	104.987	8.716	10	0
CAMERON	39.7469, -94.2531	1009.843	17.221	64.961	8.868	3	0
AMITY 4 NE	39.8914, -94.36	974.081	23.372	29.199	11.2	6	0