COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY UTILITIES COMPANY FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE CONSTRUCTION OF TRANSMISSION FACILITIES IN HARDIN COUNTY, KENTUCKY	**)**	**CASE NO. 2022-00066**

RESPONSE OF KENTUCKY UTILITIES COMPANY TO WADE FAMILY FARM MANAGEMENT, LLC'S POST-HEARING DATA REQUESTS DATED JUNE 3, 2022

FILED: JUNE 10, 2022

VERIFICATION

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

The undersigned, **Elizabeth J. McFarland**, being duly sworn, deposes and says that she is Vice President, Transmission, for Kentucky Utilities Company and an employee of LG&E and KU Services Company, and that she has personal knowledge of the matters set forth in the responses for which she is identified as the witness, and the answers contained therein are true and correct to the best of her information, knowledge, and belief.

Elizabeth J. McFarland

Elizabeth J. McFarland

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7th day of June 2022.

Notary Public

Notary Public ID No. 603967

My Commission Expires:

July 11, 2022

KENTUCKY UTILITIES COMPANY

Response to Wade Family Farm Management, LLC's
Post-Hearing Data Requests
Dated June 3, 2022

Case No. 2020-00066

Question No. 1

Responding Witness: Elizabeth J. McFarland

Q-1. Please provide a detailed map of the portion of Route D on the Western 345 kV Transmission Line that identifies the two residential structures KU would have to purchase in order to construct the proposed Western 345 kV Transmission Line along Route D. Please make certain the map includes the proposed centerline, the 100' right-of-way boundaries and the 500' corridor boundaries on each side of the proposed centerline.

A-1. See attached. The two properties are identified as parcel ID's 205-00-01-049 and 205-00-01-056.

Attachment to Response to Wade Family Farm-PH-1 Question No. 1
Page 1 of 1
McFarland

KENTUCKY UTILITIES COMPANY

Response to Wade Family Farm Management, LLC's
Post-Hearing Data Requests
Dated June 3, 2022

Case No. 2020-00066

Question No. 2

Responding Witness: Elizabeth J. McFarland

Q-2. Please identify in detail the basis for having to purchase two residences in order to construct the proposed Western 345 kV Transmission Line along Route D, including the authority supporting your response.

A-2. See the response to Commission Staff's Post-Hearing Request for Information Question No. 7.

KENTUCKY UTILITIES COMPANY

Response to Wade Family Farm Management, LLC's
Post-Hearing Data Requests
Dated June 3, 2022

Case No. 2020-00066

Question No. 3

Responding Witness: Elizabeth J. McFarland

Q-3. Please provide any and all documentation of any kind that is in KU's custody, possession or control that arises from or relates to the determination of values and weights assigned to the perspectives, layers and features of the siting model used in this case.

A-3. As Ms. McFarland testified at the June 1, 2022 evidentiary hearing, the determination of values and weights assigned was made through a collaborative effort involving Team Spatial and KU in verbal discussions. Having said that, KU has identified the attached December 6, 2021 e-mail between Team Spatial and KU employee David Todd that speaks to the assignment of weights to be discussed at an upcoming meeting. For the West 345 kV line, the e-mail and its accompanying Excel file suggest a 40% weight for residences within 300' of the centerline, a 10% weight for commercial and government buildings within 300' of the centerline, and a 10% weighting for industrial buildings within 300' of the centerline in the Built Environment. Subsequent to that e-mail, the decision was made to use 50%, 5%, and 5%, respectively, as reflected at pages 55-58 of the Team Spatial Siting Study. Adjustments such as this are part of the normal process. KU has conferred with Team Spatial and has been informed that the minor weighting changes have no impact on the final recommendation that Route A is preferred over Route D in the Team Spatial Siting Study.

From: Jesse Glasgow
To: Todd, David
Cc: Nicholas Arjona
Subject: Re: Gleandale Alternative Routes
Date: Monday, December 06, 2021 1:29:38 PM
Attachments: [redacted].xlsx

EXTERNAL email. STOP and THINK before responding, clicking on links, or opening attachments.

Hi David,

We are making progress on the Glendale Alternative Route Analysis. I have two questions.

1. Are you and the team available to review the Alternative Route Evaluation next Monday, 12/13? We are available all day Monday except 11:45-1:15. We recommend scheduling this meeting for 2 hours. If Monday doesn't work, we can meet anytime Wednesday 12/15.
2. Attached are the updated siting criteria and preliminary weights we plan to use. Please review the weights and be prepared to discuss at the meeting next week. We can adjust the weights in the meeting. You will notice that in some cases the weights for the West Routes are different from the weights for the East Routes. This is because some criteria do not exist on one group of routes. For example, in the east none of the routes parallel a transmission line so that weight has been set to 0%. Please let me know if you have any questions or wish to discuss before the team meeting.

Thanks,

Jesse

Jesse Glasgow, PMP, GISP
770.508.4369
jesse@teamspatial.com
www.teamspatial.com

On Mon, Nov 22, 2021 at 1:48 PM Todd, David <David.Todd@lge-ku.com> wrote:

> Jesse,

I would like to make the following edits to your list of cost assumptions below. I have shown my edits in red below. If you have any questions, please feel free to let me know.

Thanks,

David Todd, P.E.

Team Leader | Transmission Lines Engineer | LG&E and KU

One Quality Street, Lexington, KY 40507

M: 859-351-2346 | **O:** 859-367-5626

lge-ku.com

From: Jesse Glasgow <jesse@teamspatial.com>
Sent: Thursday, November 18, 2021 3:00 PM
To: Todd, David <David.Todd@lge-ku.com>
Cc: Nicholas Arjona <nicholas@teamspatial.com>; Poston, Nicholas <Nicholas.Poston@lge-ku.com>
Subject: Gleandale Alternative Routes

Hi David,

We updated the alternative routes per our discussions. Please review in the web map. Please note that I shifted the westernmost route segment a little further than instructed to the west. This is to minimize the clearing around Valley Creek. Please LMK if this is not OK.

Below are the unit costs that we plan to use. Please LMK if this needs to be updated.

Unit Costs:
Construction Cost ($1.7M/mile) ($2.9M/mile)
0-45° Angle ($90K) 0-3° Tangent ($90K)
45-90° Angle ($240K) 3 – 26° ($500K)
>90° Angle ($300K) 26 – 60° ($750K) no angles greater that 60° for route. On Ford property max angle is 80° and cost would be ($400K)
Clearing Cost ($20K/Acre) ($40K/Acre)

Transmission Line Crossings ($400k/crossing) ($600k/crossing)

Below are the metrics we plan to use in the alternative route evaluation. Please let me know if this needs to be adjusted.

Alternative Route Evaluation Metrics:

Residences Within the ROW
Out Buildings Within the ROW
Residences Within 300' of the Centerline

Projected Residences Within 300' of the Centerline
Commercial and Government Buildings within 300' of the Centerline
Industrial Buildings within 300' of the Centerline
Agricultural Buildings within 300' of the Centerline
School, Daycare, Church, Cemetery, & Park within ~~50'~~ 100’ of the ROW Right-of-way width is 200’; 100’ either side of center line
Eligible or Listed Historic structures within 600' of the Centerline

Tree Clearing (Acres)
Stream / River Crossings
Wetlands (Acres)

% Parallel Railroads
% Parallel Existing Electric Transmission Lines
% Parallel Roads

Cost

Please let me know if you have any questions. Thanks for your help.

Jesse

Jesse Glasgow, PMP, GISP

770.508.4369

jesse@teamspatial.com

www.teamspatial.com

The attachment is being provided in a separate file in Excel format.

KENTUCKY UTILITIES COMPANY

Response to Wade Family Farm Management, LLC's
Post-Hearing Data Requests
Dated June 3, 2022

Case No. 2020-00066

Question No. 4

Responding Witness: Elizabeth J. McFarland

Q-4. Please provide any and all documentation of any kind that is in KU's custody, possession or control that arises from or relates to the determination of the categories and weights assigned to the expert judgment analysis used in this case.

A-4. KU has performed a good faith and diligent search for any responsive documents and believes there are not any.

KENTUCKY UTILITIES COMPANY

Response to Wade Family Farm Management, LLC's
Post-Hearing Data Requests
Dated June 3, 2022

Case No. 2020-00066

Question No. 5

Responding Witness: Elizabeth J. McFarland

Q-5. Please provide a copy of the application submitted to the U.S. Army Corps of Engineers for the project that is the subject of KU's application.

A-5. See attached which are the documents submitted to USACE as part of the May 4, 2022 Application and additional documents that have been submitted since that time in the ongoing USACE process.

BURNS McDONNELL

May 4, 2022

Ms. Sarah Atherton
U.S. Army Corps of Engineers, Louisville District
P.O. Box 59
Louisville, Kentucky
40202-0059

Re: Request for Approved Jurisdictional Determination &
Nationwide Permit Determination
Glendale 345kV & 138kV Transmission Lines Project
Hardin County, Kentucky

Ms. Atherton

On behalf of LG&E-KU Energy Services Company (LG&E-KU), Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) is submitting this request for an Approved Jurisdictional Determination (AJD) for two new 345kV transmission lines (LI-167000 and LI-167444) as well as a Nationwide Permit determination for the construction of the two 345kV transmission lines and two new 138kV transmission lines (Glendale 345kV & 138kV Transmission Lines Project). The Glendale 345kV & 138kV Transmission Lines Project is located south of the unincorporated community of Glendale in Hardin County, Kentucky. A pre-application meeting was held with the USACE on February 23, 2022 and a follow-up call to discuss the findings of the wetland delineation field survey for the two 345kV transmission lines was held on March 23, 2022.

Jurisdictional Determination Request
The Survey Area for the two new 345kV transmission lines consists of a 200-foot right-of-way (ROW), totaling approximately 8.2 miles, as well as approximately 12 miles of 15-foot-wide access routes. The Survey Area encompasses approximately 216-acres.

- Approximately 26-acres of the Survey Area are located within a 1,550-acre site which was delineated by Third Rock Consultants LLC (Third Rock). The USACE issued an AJD in January 2022 (LRL-2021-443-sea) for this area. Please note Burns & McDonnell did not complete delineations within the approximate 26 acres previously surveyed by Third Rock and included in LRL-2021-443-sea.
- Approximately 0.5-acre of the Survey Area was added after the site investigations were completed. This area was added to incorporate the planned stringing of new optical ground wire (OPGW) from the existing Hardin County Substation to Structure 4 of LI-167000. Installation of the new OPGW will be conducted by a bucket truck.

At this time, we are requesting an AJD jurisdictional determination of wetlands and surface waters located within the Survey Area for the two 345kV transmission lines that were identified outside of the AJD issued under LRL-2021-443-sea. An AJD request form is provided in Attachment A.

200 W. Adams St. \ Suite 2700 \ Chicago, IL 60606
O 312-223-0920 \ **F** 312-223-9664 \ burnsmcd.com

BURNS McDONNELL

Ms. Atherton
May 4, 2022
Page 2

Burns & McDonnell completed a wetland and surface water delineation on March 8-10, 2022 within the Survey Area. Wetlands and streams identified during the site investigation were delineated to the extent of the Survey Area. A summary on each identified aquatic resource is provided in the summary tables below and in the attached Wetland Delineation Report (Attachment B). In total, eight wetlands and 26 streams were identified within the Survey Area during the delineations. Streams S-3, S-14, and S-A are crossed at two separate locations within the Survey Area and each crossing is denoted with an A or B. Available mapping including topographic maps, soil, National Hydrology Dataset (NHD), Flood Insurance Rate Maps (FIRM), and a wetland and surface waters location maps are included in Appendix A of the Wetland Delineation Report. A photograph log of wetlands and streams delineated is included in Appendix C of the Wetland Delineation Report.

Table 1: Summary of Delineated Wetlands within the Survey Area

Wetland ID	Cowardin Classification[a]	Area of Wetland Delineated in Survey Area (acre)	Latitude	Longitude
W-1	PEMf	0.25+	37.61754364	-85.90528409
W-2	PFO	0.18+	37.62796815	-85.86308817
W-3	PEM	1.10+	37.62515079	-85.8642621
W-4	PEM	0.11+	37.62386544	-85.8649057
W-5	PEM	0.25	37.62122724	-85.86645586
W-6	PEMf	0.44	37.61245753	-85.87170138
W-7	PUB	--*	37.60680484	-85.87445849
W-8	PEM	0.72+	37.60204453	-85.87774261

(a) PEMf = farmed wetland, PEM = palustrine emergent, PUB = palustrine scrub shrub, PFO = palustrine forested
*W-7 is located immediately adjacent to the Survey Area
+ denotes feature extends outside the Survey Area

Table 2: Summary of Delineated Streams within the Survey Area

Stream ID	Stream Classification	Length of Delineated Stream in Survey Area (feet)	Latitude	Longitude
S-1	Ephemeral	73	37.65922755	-85.9011302
S-2	Perennial	498	37.65908821	-85.90150045
S-3A	Perennial	254	37.65876197	-85.90192817

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Stream ID	Stream Classification	Length of Delineated Stream in Survey Area (feet)	Latitude	Longitude
S-3B	Perennial	218	37.63279182	-85.91047425
S-4	Intermittent	350	37.65857028	-85.90264208
S-5	Intermittent	205	37.65288849	-85.90866861
S-6	Perennial	211	37.65055373	-85.90957588
S-7	Perennial	259	37.63480556	-85.91151284
S-8	Ephemeral	331	37.6261781	-85.90770036
S-9	Ephemeral	166	37.61055885	-85.9045597
S-10	Perennial	201	37.61039304	-85.90467282
S-11	Perennial	884	37.60630365	-85.90294896
S-12	Intermittent	421	37.6069834	-85.90316496
S-13	Ephemeral	37	37.60717235	-85.90379665
S-14A	Perennial	215	37.62571494	-85.90738987
S-14B	Perennial	220	37.6277901	-85.86337264
S-15	Intermittent	578	37.6222134	-85.90528614
S-16	Intermittent	271	37.5996297	-85.87996558
S-17	Ephemeral	67	37.60001332	-85.87975572
S-18	Intermittent	296	37.62776543	-85.86308846
S-19	Ephemeral	87	37.62513037	-85.86460494
S-20	Intermittent	239	37.62038994	-85.86704162
S-21	Ephemeral	71	37.6125027	-85.87163644
S-22	Ephemeral	50	37.61234247	-85.8714037
S-23	Intermittent	257	37.60822785	-85.87407341
S-24	Intermittent	37	37.60224089	-85.87796371
S-25	Intermittent	238	37.60189243	-85.87778148
S-AA	Ephemeral	15	37.667572	-85.901649
S-AB	Ephemeral	16	37.667549	-85.902507

Nationwide Permit Determination Request

Activities associated with the construction of electric utility lines, including access roads are authorized under Nationwide Permit 57 (NWP 57), Electric Utility Line and

Telecommunications Activities. At this time access routes and disturbance areas have been identified for the construction of the Project and avoidance and minimization measures have been identified for wetlands and surface waters. A summary of the proposed temporary and permanent impacts as well as avoidance or minimization efforts for wetlands and surface waters are summarized in Tables 3 and 4, respectively, and depicted on the Wetland Impact Map in Attachment C.

BURNS McDONNELL

Table 3: Summary of Wetland Disturbance

Wetland Number	Wetland Type[a]	Area of Wetland Delineated (acre)[b]	Temporary Wetland Disturbance Area (acre)	Permanent Wetland Disturbance Area (acre)	Latitude	Longitude	Wetland Impact Map Page	Description of Disturbance
W-1	PEMf	0.25	--	--	37.61754364	-85.90528409	23	None, avoided.
W-2	PFO	0.18	0.016	--	37.62796815	-85.86308817	50	Trees within W-2 will be cut by hand, no mechanized clearing is proposed. Temporary timber matting will be used for construction/line stringing access between Structures 24A and 25A. W-2 will be converted from a PFO to a PEM
W-3	PEM	1.10	0.092	--	37.62515079	-85.8642621	47	Temporary timber matting will be used for construction/line stringing access between Structures 23A and 24A.
W-4	PEM	0.11	--	--	37.62386544	-85.8649057	46	None, avoided.
W-5	PEM	0.25	--	--	37.62122724	-85.86645586	45-46	None, avoided.
W-6	PEMf	0.44	0.035	--	37.61245753	-85.87170138	42	Temporary timber matting will be used for construction/line stringing access between Structures 15A and 16A.
W-7	PUB	--*	--	--	37.60680484	-85.87445849	39	None, avoided.
W-8	PEM	0.72	0.07	--	37.60204453	-85.87774261	37-38	Temporary timber matting will be used for construction/line stringing access between Structures 10A and 11A.
Total		3.05	0.213	--	--	--	--	--

(a) PEMf = farmed wetland, PEM = palustrine emergent, PUB = palustrine scrub shrub, PFO = palustrine forested
(b) Within the Study Area only
*W-7 is located immediately adjacent to the Survey Area

BURNS McDONNELL

Table 4: Summary of Delineated Streams within the Survey Area

Stream ID	Stream Classification	Length of Delineated Stream in Survey Area (feet)	Temporary Air Bridge Installed above the OHWM (feet/acre)[a]	Temporary Timber Mat Installed below the OHWM (feet/acre)[b]	Latitude	Longitude	Wetland Impact Map Page	Description of Disturbance
S-1	Ephemeral	73	--	--	37.65922755	-85.9011302	3-4	None, avoided.
S-2	Perennial	498	31/0.001	--	37.65908821	-85.90150045	4	Temporary air bridge installed above the Ordinary High Water Mark (OHWM) at two locations for line stringing between Structures 5 and 6
S-3A	Perennial	254	15/0.021	--	37.65876197	-85.90192817	4	Temporary air bridge installed above the OHWM for line stringing between Structures 5 and 6
S-3B	Perennial	218	15/0.025	--	37.63279182	-85.91047425	19	Temporary air bridge installed above the OHWM for line stringing between Structures 20 and 21
S-4	Intermittent	350	30/0.009	--	37.65857028	-85.90264208	4	Temporary timber mat installed above the OHWM for construction access to Structure 6 and line stringing between Structures 5 and 6
S-5	Intermittent	205	--	--	37.65288849	-85.90866861	8	None, avoid.
S-6	Perennial	211	16/0.004	--	37.65055373	-85.90957588	9	Temporary timber mat installed above the OHWM for construction access/line stringing between Structures 10 and 11
S-7	Perennial	259	15/0.008	--	37.63480556	-85.91151284	16	Temporary air bridge installed above the OHWM for line stringing between Structures 19 and 20

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Stream ID	Stream Classification	Length of Delineated Stream in Survey Area (feet)	Temporary Air Bridge Installed above the OHWM (feet/acre)[a]	Temporary Timber Mat Installed below the OHWM (feet/acre)[b]	Latitude	Longitude	Wetland Impact Map Page	Description of Disturbance
S-8	Ephemeral	331	--	15/0.001	37.6261781	-85.90770036	21	Temporary air bridge installed above the OHWM for construction access/line stringing between Structures 23 and 24
S-9	Ephemeral	166	--	16/0.003	37.61055885	-85.9045597	28	Temporary timber mat installed below the OHWM for line stringing between Structures 32 and 33
S-10	Perennial	201	15/0.006	--	37.61039304	-85.90467282	28	Temporary air bridge installed above the OHWM for line stringing between Structures 32 and 33
S-11	Perennial	884	--	15/0.004	37.60630365	-85.90294896	29	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 34 and 35
S-12	Intermittent	421	--	12/0.0004	37.6069834	-85.90316496	29	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 34 and 35
S-13	Ephemeral	37	--	--	37.60717235	-85.90379665	29	None, avoided.
S-14A	Perennial	215	16/0.011	--	37.62571494	-85.90738987	21	Temporary timber mat installed above the OHWM for line stringing between Structures 22 and 23
S-14B	Perennial	220	17/0.010	--	37.6277901	-85.86337264	52	Temporary air bridge installed above the OHWM for construction access/line stringing between Structures 24A and 25A

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Stream ID	Stream Classification	Length of Delineated Stream in Survey Area (feet)	Temporary Air Bridge Installed above the OHWM (feet/acre)[a]	Temporary Timber Mat Installed below the OHWM (feet/acre)[b]	Latitude	Longitude	Wetland Impact Map Page	Description of Disturbance
S-15	Intermittent	578	30/0.002	--	37.6222134	-85.90528614	23-24	Temporary timber mat installed above the OHWM for line stringing between Structures 25 and 26 Temporary timber mat installed above the OHWM for construction access to 27
S-16	Intermittent	271	--	--	37.5996297	-85.87996558	38-39	None, avoided.
S-17	Ephemeral	67	--	--	37.60001332	-85.87975572	52	None, avoided.
S-18	Intermittent	296	150.001	--	37.62776543	-85.86308846	49-50	Temporary timber mat installed above the OHWM for construction access/line stringing between Structures 23A and 24A. An existing culverted access road will be used for the construction access road from Mud Splash Road to the ROW.
S-19	Ephemeral	87		15/0.001	37.62513037	-85.86460494	48	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 22A and 23A.
S-20	Intermittent	239	17/0.001	--	37.62038994	-85.86704162	47	Temporary timber mat installed above the OHWM for construction access/line stringing between Structures 20A and 21A.
S-21	Ephemeral	71	--	--	37.6125027	-85.87163644	44-45	None, avoided.
S-22	Ephemeral	50	--	--	37.61234247	-85.8714037	44	None, avoided.

BURNS McDONNELL

Stream ID	Stream Classification	Length of Delineated Stream in Survey Area (feet)	Temporary Air Bridge Installed above the OHWM (feet/acre)[a]	Temporary Timber Mat Installed below the OHWM (feet/acre)[b]	Latitude	Longitude	Wetland Impact Map Page	Description of Disturbance
S-23	Intermittent	257	--	15/0.001	37.60822785	-85.87407341	42-43	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 23A and 24A. An existing culverted access road will be used for the construction access road from Glenwood Drive to the ROW.
S-24	Intermittent	37	--	--	37.60224089	-85.87796371	39-40	None, avoided.
S-25	Intermittent	238	--	16/0.004	37.60189243	-85.87778148	39-40	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 23A and 24A.
S-AA	Ephemeral	15	--	15/0.003	37.667572	-85.901649	1	Temporary timber mat installed below the OHWM for construction access to string OPGW between Structures 1 and 2.
S-AB	Ephemeral	16	--	16/0.003	37.667549	-85.902507	1	Temporary timber mat installed below the OHWM for construction access to string OPGW between Structures 1 and 2.
Total				135/0.024	--	--	--	--

(a) Temporary timber mats or bridges will be installed above the Ordinary High Water Mark (OHWM). No structures are anticipated to be placed below the OHWM at these stream crossings.
(b) Temporary timber mats or bridges will be placed across the stream as the bank height is not anticipated to provide a span across the stream above the OHWM. The OHWM bank height is provided in the attached Wetland Delineation Report.

Additional characteristics of the proposed project are detailed below.

- No Outstanding State Resource Waters, National Resource Waters, Cold Water Aquatic Habitat, Exceptional Waters, or identified as candidate Outstanding State Resource Waters or candidate Exceptional Waters are located within the Project.

- The Project requires the conversion of a forested wetland to emergent wetland and therefore, does not meet general condition #16 for NWP 57 under the Kentucky Department for Environmental Protection (KYDEP) *§401 Water Quality Certification, Nationwide Permits 2020, AI No.: 35050; Activity ID: APE20200005, USACE ID No.: LRL-2020-0006* dated December 18, 2020. An individual Section 401 Water Quality Certification will be obtained from KYDEP.

- Erosion control measures will be implemented during construction and will generally include silt fence or alternative perimeter control, as appropriate as well as erosion control blankets will be placed in areas prone to erosion, including slopes 3:1 or greater, and disturbed areas will be seeded and mulched upon completion of construction activities. A Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Stormwater Discharges Associated with Construction Activities will likely be required and obtained for this Project.

- An official species list was obtained from the U.S. Fish and Wildlife Service (USFWS) for threatened and endangered species. The official species list identified records for three bat species, one freshwater clam, and the candidate monarch butterfly (*Danaus plexippus*). No impacts to the freshwater mussel are anticipated due to implementation of erosion control measures and the use of timber mats or air bridges placed above the OHWM of stream crossings. LGE-KU has a Memorandum of Understanding (MOU) with the USFWS (MOU No. F17MU00018) for the Indiana bat (*Myotis sodalis*) and Northern long-eared bat (*Myotis septentrionalis*) anticipates tree clearing to be covered under the existing MOU. Habitat for the grey bat (*Myotis grisescens*) is limited to caves or cave like habitat which are not present within the Project.

- All wetlands and stream crossings will be restored to pre-construction contours and seeded with native vegetation following construction activities.

At this time, we are requesting an AJD for the wetland and surface water features identified by Burns & McDonnell and requesting a determination of a pre-construction notification (PCN) under a Nationwide Permit for the proposed project and anticipated impacts.

Sincerely,

Evan Markowitz
Senior Environmental Scientist
Burns & McDonnell
(331) 205-8911
ejmarkowitz@burnsmcd.com

Enclosures
- Attachment A – Jurisdictional Determination Request Form
- Attachment B – Wetland Delineation Report
- Attachment C – Wetland Impacts Map

cc: David Todd, LGE & KU Services Company
Nate Beckman, LGE & KU Services Company
Michael Kern, LGE & KU Services Company
Gretchen Henderson, LGE & KU Services Company
Stephanie Vernon, LGE & KU Services Company
Lori Ferry, Burns & McDonnell

Appendix 1 - REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD)

To: District Name Here

- I am requesting a JD on property located at: _____
  (Street Address)
  City/Township/Parish: Unnincorporated County: Hardin State: KY
  Acreage of Parcel/Review Area for JD: 186
  Section: N/A Township: N/A Range: N/A
  Latitude (decimal degrees): 37.627458; 37.611283 Longitude (decimal degrees): -85.908474; -85.872238
  (For linear projects, please include the center point of the proposed alignment.)
- Please attach a survey/plat map and vicinity map identifying location and review area for the JD.
- ☐ I currently own this property. ☐ I plan to purchase this property.
  ☑ I am an agent/consultant acting on behalf of the requestor.
  ☐ Other (please explain): _____.
- Reason for request: (check as many as applicable)
  ☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
  ☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
  ☑ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
  ☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
  ☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
  ☐ A Corps JD is required in order to obtain my local/state authorization.
  ☐ I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
  ☐ I believe that the site may be comprised entirely of dry land.
  ☐ Other: _____
- Type of determination being requested:
  ☑ I am requesting an approved JD.
  ☐ I am requesting a preliminary JD.
  ☐ I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.
  ☐ I am unclear as to which JD I would like to request and require additional information to inform my decision.

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

*Signature: _____ Date: _____

- Typed or printed name: Chris Wheeldon, Transmission Lines – Manager
  Company name: LGE & KU Services Company
  Address: 820 West Broadway
  Louisville, KY 40202
  Daytime phone no.: 502-627-3159
  Email address: chris.wheeldon@lge-ku.com

***Authorities:** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

Wetland Delineation Report for the Glendale 345kV Transmission Lines Project

LG&E-KU Energy Services Company

Glendale 345kV Transmission Lines
Project No. 144025

5/4/2022

Wetland Delineation Report for the Glendale 345kV Transmission Lines Project

prepared for

LG&E-KU Energy Services Company
Glendale 345kV Transmission Lines Project
Lexington, KY

Project No. 144025

5/4/2022

prepared by

Burns & McDonnell Engineering Company, Inc.
Chicago, Illinois

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
APT	Antecedent Precipitation Tool
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
CWA	Clean Water Act
E	Ephemeral
EPA	Environmental Protection Agency
FAC	Facultative plants
FACU	Facultative upland plants
FACW	Facultative wetland plants
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GPS	Global Positioning System
I	Intermittent
kV	Kilovolt
LRR	Land Resource Regions
LG&E-KU	LG&E-KU Energy Services Company
NFHL	National Flood Hazard Layer
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NRPW	Non-Relatively Permanent Water
NTCHS	National Technical Committee for Hydric Soils
NWI	National Wetlands Inventory

Abbreviation	Term/Phrase/Name
OBL	Obligate wetland plants
OHWM	Ordinary High Water Mark
P	Perennial
PEM	Palustrine Emergent wetland
PFO	Palustrine Forested wetland
Project Area	Glendale 345kV transmission lines (LI-167000 and LI-167444) right-of-way and proposed access routes
Project	Glendale 345kV Transmission Lines Project
PUB	Palustrine Unconsolidated Bottom wetland
Regional Supplement	Regional supplements to the 1987 Wetlands Delineation Manual
RPW	Relatively Permanent Water
S	Stream
SDA	Soil Data Access
SP	Sample Plot
SSURGO	Soil Survey Geographic
SWANCC	Solid Waste Agency of Northern Cook County
Survey Area	216 acres including transmission lines right-of-way and proposed access routes
TNW	Traditional Navigable Waterway
UPL	Upland plants
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Abbreviation	Term/Phrase/Name
WOTUS	Waters of the U.S.

1.0 INTRODUCTION

Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) was retained by LG&E-KU Energy Services Company (LG&E-KU) to provide wetland delineation and permitting services for the proposed Glendale 345kV Transmission Lines Project (Project) that is located in Hardin County, Kentucky (Figure 1, Appendix A). The Project consists of two new 345kV transmission lines (LI-167000 and LI-167444) totaling approximately 8.2 miles as well as the use of access routes totaling approximately 12 miles. LI-167000 is approximately 4.8 miles totaling 35 structures. LI-167444 is approximately 3.4 miles totaling 27 structures. The Project will be located with a new 200-foot right-of-way (ROW). The Project Area encompasses a total of 216 acres, which includes the 200-foot ROW, 5-foot-wide access roads and potential pull pad locations that extend outside of the ROW, and approximately 0.5 acre access and work area for stringing new OPGW wires from the existing Hardin County Substation to Structure 4 of LI-167000. The Survey Area for the wetland delineation consists of the entire 216 acre Project Area, with approximately 26 acres of the Survey Area being previously delineated by Third Rock Consultants LLC in November and December 2021. The results of the delineation conducted by Third Rock Consultants LLC is not included in this Wetland Delineation Report.

The purpose of this assessment was to identify wetlands and surface waters present within the Survey Area that may be considered "Waters of the United States" (WOTUS, 40 CFR 230.3[s]) and subject to regulation under the federal Clean Water Act (CWA) by the U.S. Army Corps of Engineers (USACE). The USACE and the U.S. Environmental Protection Agency (EPA) jointly define wetlands as: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (42 Fed. Reg. 37128-29). According to 40 CFR 230.3(s), WOTUS include all waters that may be used for interstate or foreign commerce, all interstate wetlands and waterways, intrastate wetlands and waterways of which the use, degradation, or destruction could affect interstate or foreign commerce, impoundments of waters, territorial seas, and wetlands adjacent to waters not including waste treatment systems, including their treatment ponds or lagoons designed to meet the requirements of the CWA.

Burns & McDonnell conducted a wetland and surface water delineation on March 8 through 10, 2022 to identify the location and extent of wetlands and surface waters present within the Survey Area. This report documents the methods and results of the desktop and field investigations conducted to identify wetlands and surface waters for the Project.

2.0 METHODS

The following sections summarize the methods used to complete the desktop review of existing data and to conduct the field investigations within the Project Area.

2.1 Existing Data Review

Burns & McDonnell reviewed available background information for the Survey Area prior to conducting the site visit. Available background information included the following:

- U.S. Geological Survey (USGS) 7.5-minute topographic map (Elizabethtown 2019, Cecilia 2019, Sonora 2019, Tonieville 2019 quadrangles);
- U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) map (USFWS 2022);
- USGS National Hydrography Dataset (NHD);
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), National Flood Hazard Layer (NFHL 2007); and
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO 2021) digital data for Hardin County.

Background data helps in identifying locations of potential wetland and surface waters. However, as these features may not have been field verified or modified since the data was published, the field analyses supersedes the mapped data.

2.2 Wetland Delineation

Identification of wetlands is based on a three-factor approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology, originally set forth by the USACE in the 1987 Environmental Laboratory publication entitled "*Corps of Engineers Wetlands Delineation Manual: Technical Report Y-87-1*", commonly referred to as the 1987 Wetlands Delineation Manual (Environmental Laboratory 1987).

The USACE released regional supplements to the 1987 Wetlands Delineation Manual outlining updated technical guidance and procedures for identifying and delineating wetlands that may be subject to regulatory jurisdiction under Section 404 of the CWA or Section 10 of the Rivers and

Harbors Act. The Survey Area is located within the following regional supplement(s) (Regional Supplements):

- 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)*

This wetland delineation used the hydrophytic vegetation, hydric soil, and wetland hydrology indicators as outlined in the applicable Regional Supplement for each sample point. A general overview of hydrophytic vegetation, hydric soil, and wetland hydrology indicators are provided below. Detailed information for each indicator can be found in the applicable Regional Supplement. In addition, methodology for determining wetland quality (where applicable), surface water boundaries, and farmed wetland determinations are provided below.

2.2.1 Hydrophytic Vegetation

To evaluate the presence of hydrophytic vegetation, data are gathered using a graduated series of plots, one for each vegetation stratum. Plot shape and size are dictated by vegetation type, as well as the shape and size of the plant community being evaluated.

The indicator status and percent absolute cover for plants within plots for all vegetation strata are recorded. The indicator status for plant species are based on an estimated probability of occurring in wetlands. This rating system, published by the USACE in 2020 under the title "The National Wetland Plant List, version 3.5" (USACE 2020), consists of obligate wetland plants (OBL), facultative-wet plants (FACW), facultative plants (FAC), facultative upland plants (FACU), and upland plants (UPL). Obligate plant species generally grow in water. Facultative plant species can exist in saturated or dry soil conditions, and upland plants typically require dry soil conditions to exist.

2.2.2 Hydric Soil

A description of the soil profile is used to evaluate the presence of hydric soil. The USDA recognizes 28 Land Resource Regions (LRRs) based on soil, climate, and land use. Hydric soil indicators for LRRs presented in the Regional Supplements are a subset of the National Technical Committee for Hydric Soils (NTCHS) Field Indicators of Hydric Soils in the United States and are regularly modified. The most recent version of Field Indicators of Hydric Soils is Version 8.2 (USDA NRCS 2018) and was used for this delineation.

2.2.3 Wetland Hydrology

Wetland hydrology indicators are separated into four groups and divided into a primary or secondary category based on their estimated reliability in the applicable region. Primary indicators provide stand-alone evidence of a current or recent hydrological event. Secondary indicators provide evidence of recent inundation or saturation when supported by one or more other primary indicators or secondary wetland hydrology indicators but should not be used alone.

2.2.4 Surface Water Assessment

Surface waters may only have one or two of the wetland criteria listed above. The USACE defines the ordinary high water mark (OHWM) as the boundary of surface waters (33 CFR 328.3[F]). The USACE issued an OHWM Identification regulatory guidance letter (USACE, 2005) which defines "the OHWM [as] the line on the shore established by fluctuations of water and is indicated by physical characteristics such as:

- A clear, natural line impressed on the bank;
- Shelving;
- Changes in the character of soil;
- Destruction of terrestrial vegetation;
- The presence of litter and debris; or
- Other appropriate means that consider the characteristics of the surrounding areas."

During low streamflow or drought conditions, the OHWM is used to determine the boundary of a surface water. During extremely high streamflow conditions or flood conditions the boundaries of surface waters cannot accurately be determined. Therefore, surface water boundaries should be delineated when normal streamflow conditions are present.

To differentiate boundaries between surface waters and adjacent wetlands, evidence of the OHWM is utilized. Changes in vegetation can also be evaluated to determine where true hydrophytic (FAC and FACW) plant species are present versus aquatic or OBL species; however, it should be noted that in many cases vegetation is not present within the channels of surface waters. Vegetation adjacent to surface waters may be limited to species overhanging the banks and channel.

If the presence of a surface water is questionable, the USACE will typically conduct a review of historic aerial photographs and historic USGS topographic maps to confirm the current or

historic presence of a surface water. This can include segments of streams that are entirely enclosed.

3.0 RESULTS

The following sections summarize the desktop evaluation and field investigations.

3.1 Existing Data Review

Burns & McDonnell reviewed available background information for the Survey Area prior to conducting the site visit. These sources provide an indication of areas where wetlands and surface waters potentially occur and certain characteristics. A summary of the available background information is presented below and mapped on Figures in Appendix A.

3.1.1 USGS 7.5-minute Topographic Maps

The USGS topographic map indicates the Survey Area crosses generally flat areas (≤ 5%) consisting of agricultural and pastureland with some gently rolling hills of 15-20% slopes (Figure 2 in Appendix A).

3.1.2 FEMA FIRM

The FEMA FIRM (Figure 2 in Appendix A) depicts the Survey Area crossing six floodplains associated with Valley Creek, East Rhudes Creek, and Rose Run as well as multiple tributaries (Figure 2 in Appendix A).

3.1.3 USFWS NWI

The digital format NWI maps were developed by USFWS in collaboration with the USGS, Water Resource Division using data from 1987 and are periodically updated. The maps are prepared primarily by stereoscopic analysis of high-altitude aerial photographs to produce reconnaissance level information on the location, type and size of wetlands and deepwater habitats. All wetlands are identified based on vegetation, visible hydrology, and geography in accordance with the Cowardin System (Cowardin 1979). According to the USFWS, the aerial photographs reflect conditions during the year and season they were taken; however, there is a margin of error inherent in the use of aerial photographs to delineate wetlands. Therefore, wetland boundaries established through interpretation of aerial photographs may be revised based upon detailed ground survey and historical analysis of an individual site.

The NWI map (Figure 3 in Appendix A) indicates two palustrine forested broad-leaved deciduous temporary flooded (PFO1A) wetlands, three palustrine unconsolidated bottom

permanently flooded (PUBH) wetlands, one palustrine unconsolidated shore seasonally flooded (PUSC) wetland, one riverine lower perennial unconsolidated bottom permanently flooded (R2UBH) wetland, 14 riverine intermittent streambed seasonally flooded (R4SBC) wetlands, and three riverine unknown perennial unconsolidated bottom permanently flooded (R5UBH) wetlands are located within the Survey Area.

3.1.4 USGS NHD

The NHD represents the water drainage network of the United States with features such as rivers, streams, canals, lakes, ponds, coastline, dams, and streamgages. NHD is updated and maintained through partnerships with states and other collaborative bodies. The NHD dataset (Figure 3 in Appendix A) shows that fifteen unnamed streams and three named streams cross the Survey Area. Named waterbodies include East Rhudes Creek, Valley Creek, and Rose Run.

3.1.5 USDA NRCS SSURGO

The NRCS Web Soil Survey (USDA NRCS 2022a) is generated from the USDA-NRCS certified data (Figure 4 in Appendix A). The NRCS Soil Data Access (SDA) Hydric Soils List (USDA NRCS 2022b) contains a compilation of all map units with either a major or minor component that is at least in part hydric. As the list includes both major and minor (small) percentages for map units, in some cases most of the map unit may not be hydric. The list is useful in identifying map units that may contain hydric soils.

The NRCS SSURGO digital data indicates that portions of 22 soil map units are located in the Survey Area. One soil map unit, Melvin silt loam (Mv), is included on local and national hydric soil lists.

3.2 Site Investigation Results

A total of eight wetlands and 26 surface waters were delineated. The Antecedent Precipitation Tool (APT) results indicated the Survey Area was experiencing wetter than normal conditions at the time of the survey (Appendix B). The wetlands and surface waters are summarized in Tables 1 and 3, respectively, and are mapped on Figure 5 in Appendix A. Wetland Determination Data Forms from the applicable Regional Supplement were completed for each wetland and are included in Appendix B. Natural color photographs of sample plots, wetland and surface waters, and other identified features are included in Appendix C. Locations of sample plots, wetland and

surface water boundaries, and other identified features were surveyed using a sub-meter accurate Global Positioning System (GPS) unit.

Approximately 0.5 acre of the approximate 216 acre Survey Area was added after the site investigations were completed. A desktop determination was conducted to identify wetlands and other water bodies within this area. Both the information gathered in the existing data review and knowledge from the previous site investigations were utilized to identify potential wetlands and waterbodies. These features were not field verified.

3.2.1 Wetlands

A total of eight wetlands were delineated within the Survey Area. Refer to Table 1 below for details for each wetland.

Table 1: Summary of Wetlands within the Survey Area

Wetland Number	Wetland Type[a]	Dominant Vegetation[b]	Hydric Soil Indicator(s)[c]	Wetland Hydrology Indicator(s)[d]	Area of Wetland Delineated in Survey Area (acre)	Figure 5 Page Number	WOTUS (Y/N)[e]
W-1	PEMf	Wing-pod purslane, common panic grass, Kentucky blue grass	F3	A1, A2, A3, C9, D1, D2	0.25	21	N
W-2	PFO	Green ash, American elm, river birch, black elder	F6	A2, A3, B3, B9, B10, D2, D5	0.18	46	Y
W-3	PEM	Deer-tongue rosette grass, lamp rush	F3	A2, A3, B10, D2, D5	1.10	44	Y
W-4	PEM	Silver maple, Dudley's rush, sedge species	F3	A2, A3, B9, C3, D2, D5	0.11	43	Y
W-5	PEM	Creeping buttercup, lamp rush	F3	A2, A3, D2, D5	0.25	42	N
W-6	PEMf	Common panic grass, Kentucky blue grass	F3	A3, C9, D2	0.44	39	Y
W-7	PUB	--	--	--	--	36	N
W-8	PEM	Sedge species, wand panic grass, dark-green bulrush	F3	A2, A3, C3, C9, D2, D5	0.72	35	Y
Total					**3.05**	--	--

(a) Symbols for wetland type: PEMf = farmed wetland, PEM = palustrine emergent, PFO = palustrine forested, PUB = palustrine unconsolidated bottom

(b) Winged-pod purslane (*Portulaca umbraticola*), common panic grass (*Panicum capillare*), Kentucky blue grass (*Poa pratensis*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), river birch (*Betula nigra*), black elder (*Sambucus nigra*), deer-tongues rosette grass (*Dichanthelium clandestinum*), lamp rush (*Juncus effusus*), Silver maple (*Acer saccharinum*), Dudley's rush (*Juncus dudleyi*), sedge species (*Carex sp.*), creeping buttercup (*Ranunculus repens*), wand panic grass (*Panicum virgatum*), and dark-green bulrush (*Scirpus atrovirens*).

(c) Indicator code for hydric soil: F3 = Depleted Matrix, F6 = Redox Dark Surface

(d) Indicator code for wetland hydrology: A1 = Surface Water, A2 = High Water Table, A3 = Saturation, B3 = Drift Deposits, B9 = Water-Stained Leaves, B10 = Drainage Patterns, C3 = Oxidized Rhizospheres on Living Roots, C9 = Saturation Visible on Aerial Imagery, D1 = Stunted or Stressed Plants, D2 = Geomorphic Position, D5 = FAC-Neutral Test

(e) Jurisdiction is based on professional judgement using the using the definition of WOTUS under Solid Waste Agency of Northern Cook County (SWANNCC) v. U.S. Army Corps of Engineers, and Rapanos v. United States. The USACE makes the final determination of jurisdictional status.

Areas Determined to not Meet Wetland Criteria

Table 2: Sample Plots Not Determined to Meet Wetland Criteria

Sample Plot (SP)	Dominant Vegetation[a]	Hydric Soil Indicator(s)	Wetland Hydrology Indicator(s)[b]	Figure 5 Page Number
SP-1	Kentucky blue grass	None	A1, C9	9
SP-2	Common panic grass, Kentucky blue grass	None	A2, A3	25
SP-5	Sycamore, black cherry, giant cane	None	D5	18
SP-16	Common panic grass, Kentucky blue grass	None	None	38

(a) Kentucky blue grass (*Poa pratensis*), common panic grass (*Panicum capillare*), sycamore (*Platanus occidentalis*), black cherry (*Prunus serotina*) giant cane (*Arundinaria gigantea*)
(b) Indicator code for wetland hydrology: A1 = Surface Water, A2 = High Water Table, A3 = Saturation, C9 = Saturation Visible on Aerial Imagery, D5 = FAC-Neutral Test

3.2.2 Streams

A total of 26 surface waters were delineated within the Survey Area. Refer to Table 3 below for details for each stream.

Table 3: Type and Length of Streams Delineated

Stream Number[a]	Flow Regime/ Stream Type[b]	WOTUS (Y/N)[c]	Stream Name[d]	Substrate	OHWM Width (feet)	OHWM Bank Height (feet)	Surface Water Depth (feet)	Length of Delineated Stream in Survey Area (feet)	Figure 5 Page
S-1	E/NRPW	Y	UNT to Valley Creek	Silt	3	4	0	73	3
S-2	P/RPW	Y	UNT to Valley Creek	Gravel, silt	8	8	1	498	3
S-3A	P/RPW	Y	Valley Creek	Cobble, gravel, silt	70	15	5	254	3
S-3B	P/RPW	Y	Valley Creek	Cobble, gravel, silt	70	20	8	218	15
S-4	I/RPW	Y	UNT to Valley Creek	Cobble, silt	5	6	0.5	350	3
S-5	I/RPW	Y	UNT to Valley Creek	Silt	8	1	0.5	205	5
S-6	P/RPW	Y	UNT to Valley Creek	Gravel, Silt	4	1	0.75	211	6
S-7	P/RPW	Y	UNT to Valley Creek	Silt, detritus	25	4	3	259	15
S-8	E/NRPW	Y	UNT to East Rhodes Creek	Silt	2.5	2	0.1	331	18
S-9	E/NRPW	Y	UNT to Rose Run	Silt	7	0.25	0.5	166	23
S-10	P/RPW	Y	Rose Run	Cobble, gravel, sand, silt	10	4	1	201	23
S-11	P/RPW	Y	UNT to Rose Run	Cobble, gravel, silt	8	0.25	0.5	884	24, 25
S-12	I/RPW	Y	UNT to Rose Run	Gravel, silt	2	1	0.2	421	24, 25
S-13	E/NRPW	Y	UNT to Rose Run	Gravel, silt	1	2.5	0.1	37	24
S-14A	P/RPW	Y	East Rhodes Creek	Cobble, gravel, sand, silt	35	6	5	215	18
S-14B	P/RPW	Y	East Rhodes Creek	Cobble, gravel, sand, silt	25	10	4	220	46
S-15	I/RPW	Y	UNT to East Rhodes Creek	Gravel, sand, detritus	4	4	2	578	19
S-16	I/RPW	Y	UNT to Nolin River	Silt	3	0.5	0.3	271	34
S-17	E/NRPW	Y	UNT to East Rhodes Creek	Silt, detritus	2.5	6	0.1	67	46
S-18	I/RPW	Y	UNT to East Rhodes Creek	Silt, detritus	3	4	0.4	296	44
S-19	E/NRPW	Y	UNT to East Rhodes Creek	Silt, detritus	4	0.25	0.1	87	43

Stream Number[a]	Flow Regime/ Stream Type[b]	WOTUS (Y/N)[c]	Stream Name[d]	Substrate	OHWM Width (feet)	OHWM Bank Height (feet)	Surface Water Depth (feet)	Length of Delineated Stream in Survey Area (feet)	Figure 5 Page
S-20	I/RPW	Y	UNT to East Rhodes Creek	Gravel, sand, silt	3	7	0.75	239	42
S-21	E/NRPW	Y	UNT to Rose Run	Silt	2	0.5	0.2	71	39
S-22	E/NRPW	Y	UNT to Rose Run	Silt	1.5	1.5	0	50	39
S-23	I/RPW	Y	UNT to Nolin River	Detritus, silt	2	3	0.3	257	38
S-24	I/RPW	Y	UNT to Nolin River	Gravel, silt	1.5	0.5	0.2	37	35
S-25	I/RPW	Y	UNT to Nolin River	Silt	1.5	0.5	0.5	238	35
S-AA*	E/NRP	Y	UNT to Valley Creek	UNK	9**	UNK	UNK	15**	
S-AB*	E/NRP	Y	UNT to Valley Creek	UNK	9**	UNK	UNK	16**	
							Total:	**6,765**	

(a) Assigned by Burns & McDonnell staff during the site investigation; S = stream
(b) Stream name follows USGS topographic map, NHD, or state/local data source; P = Perennial, I = Intermittent, E = Ephemeral; TNW = Traditional Navigable Waterway; RPW= Relatively Permanent Water, NRPW= Non-Relatively Permanent Water
(c) Jurisdiction is based on professional judgement using the using the definition of WOTUS under Solid Waste Agency of Northern Cook County (SWANNCC) v. U.S. Army Corps of Engineers, and Rapanos v. United States. The USACE makes the final determination of jurisdictional status.
(d) UNT = Unnamed Tributary
* Stream identified based on desktop review and not verified with a field survey.
** Value based on desktop review.

4.0 SUMMARY

Burns & McDonnell conducted a wetland delineation of the Survey Area to identify wetlands and other waterbodies. A total of eight wetlands and 26 surface waters were identified. Avoidance of wetlands and surface waters should be considered in Project planning. If avoidance is not possible, permits for impacts and alterations may be required. Permits for impacts to jurisdictional waterways and wetlands within Kentucky are regulated by the USACE in compliance with Section 404 of the CWA. Jurisdictional surface waters and wetlands are defined by the pre-2015 regulatory definition using guidance from Rapanos and SWANCC.

In addition, the Survey Area crossed floodplains associated with Valley Creek, East Rudes Creek, Rose Run, and several of their unnamed tributaries. Floodplains in Kentucky are regulated by Kentucky Department of Environmental Protection and the counties. The Project may be covered under the General Permit KY FPGP, but consultation with the state and counties is recommended.

5.0 REFERENCES

Cowardin, L. M., Carter, V., Golet, F. C., and LaRoe, E. T. 1979. Classification of wetlands and deepwater habitats of the United States, FWS/OBS-79/31, Reprinted 1992, U.S. Fish and Wildlife Service, Washington, DC

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

Federal Emergency Management Agency. 2007. Flood Insurance Rate Map, Hardin County, Kentucky.

Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.

Federal Register, 2020. "85 FR Part 29689 National Wetland Plant List," U.S. Government Printing Office, Washington, DC.

U.S. Army Corps of Engineers. 2005. Ordinary High Water Mark Identification. https://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-05.pdf. No. 05-05

U.S. Army Corps of Engineers 2020. National Wetland Plant List, version 3.5. http://wetland-plants.usace.army.mil/. U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS).2018. Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 8.2, 2018.

U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS). 2022a. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/.

U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS). 2022b. List of Hydric Soils, Washington D.C., http://soils.usda.gov/use/hydric.

U.S. Fish and Wildlife Service. 2022. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. http://www.fws.gov/nwi/.

U.S. Geological Survey (USGS). 2019. 7.5-minute topographic map. Elizabethtown, Cecilia, Sonora, and Tonieville Quadrangles

APPENDIX A – FIGURES

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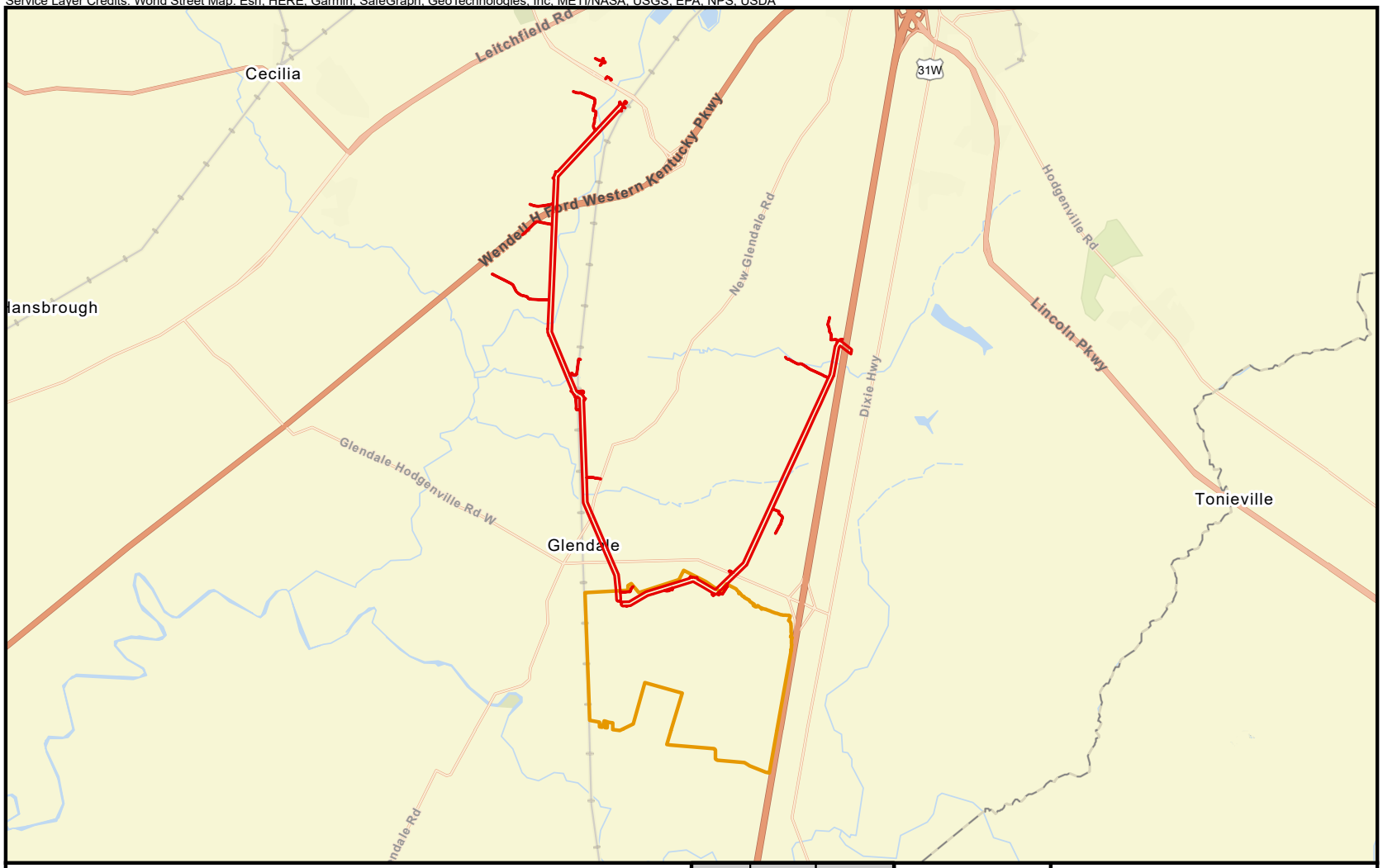

Figure 1
Overview Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky

Source: Esri and Burns & McDonnell Engineering Company

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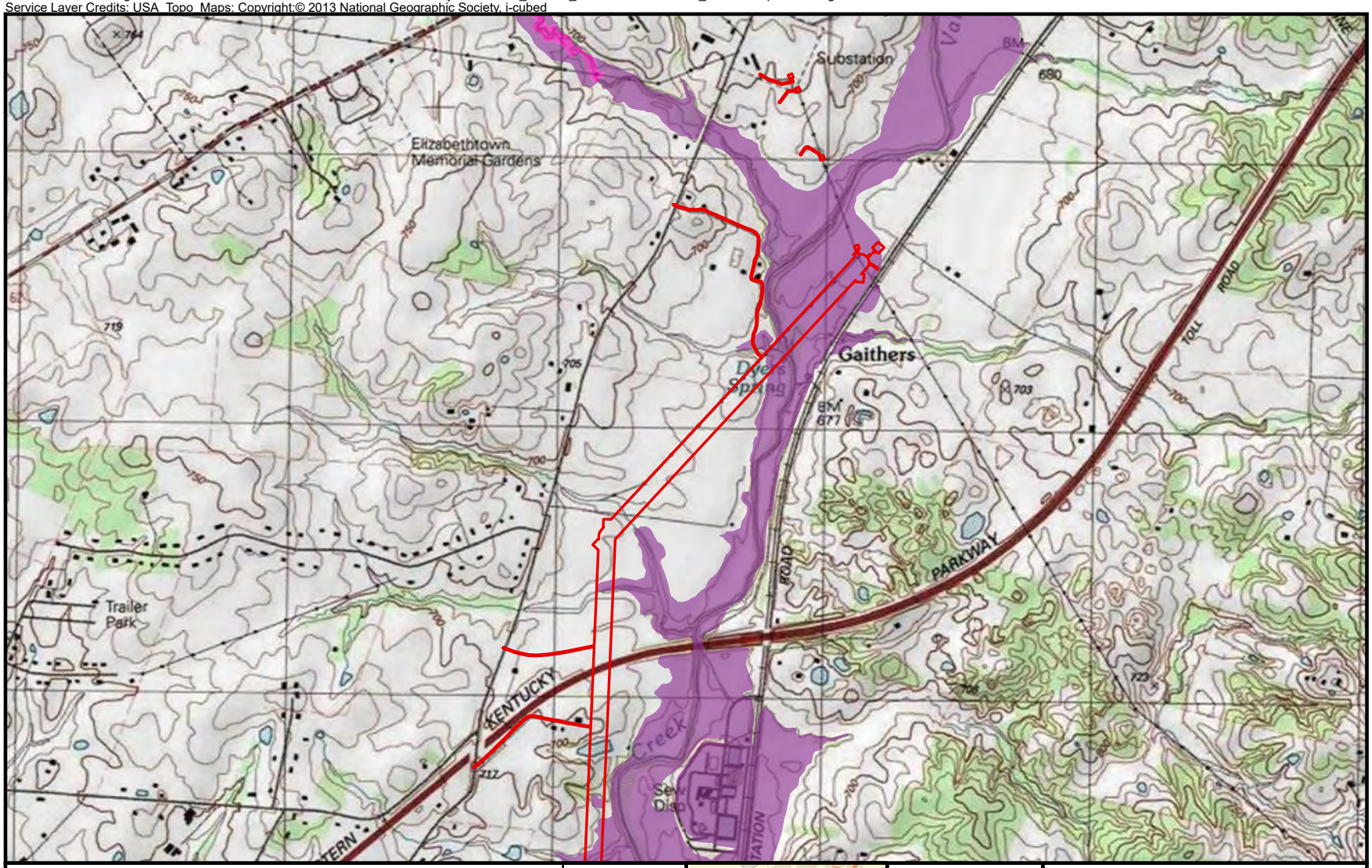

Figure 2
Topographic and FEMA FIRM Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 1 of 3

Source: Esri, FEMA FIRM and Burns & McDonnell Engineering Company

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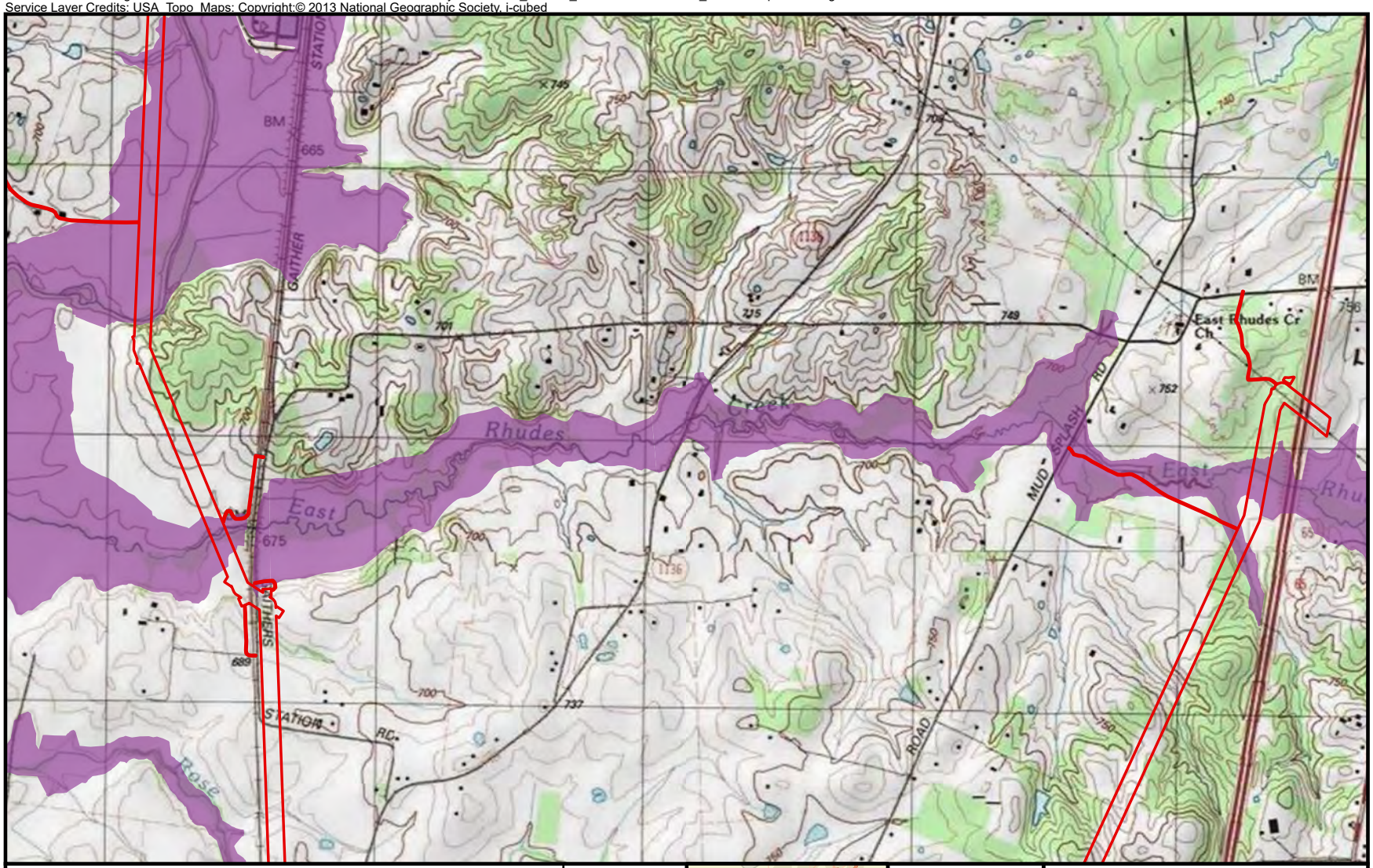

Survey Area
Third Rock LLC Survey Area
FEMA Floodplain
FEMA Floodway

NORTH

0 1,000 2,000
Scale in Feet

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Figure 2
Topographic and FEMA FIRM Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 2 of 3

Source: Esri, FEMA FIRM and Burns & McDonnell Engineering Company

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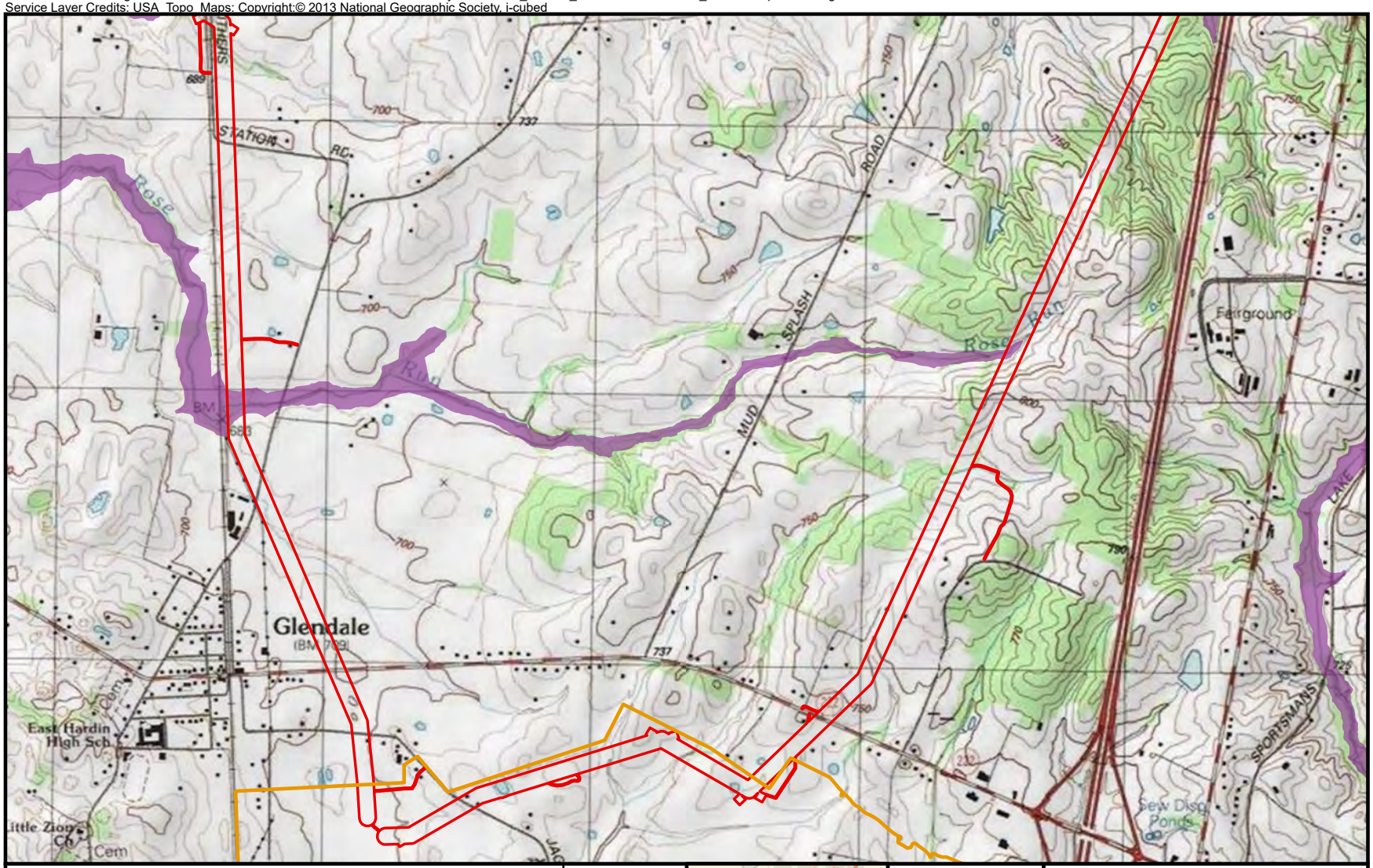

Figure 2
Topographic and FEMA FIRM Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 3 of 3

Source: Esri, FEMA FIRM and Burns & McDonnell Engineering Company

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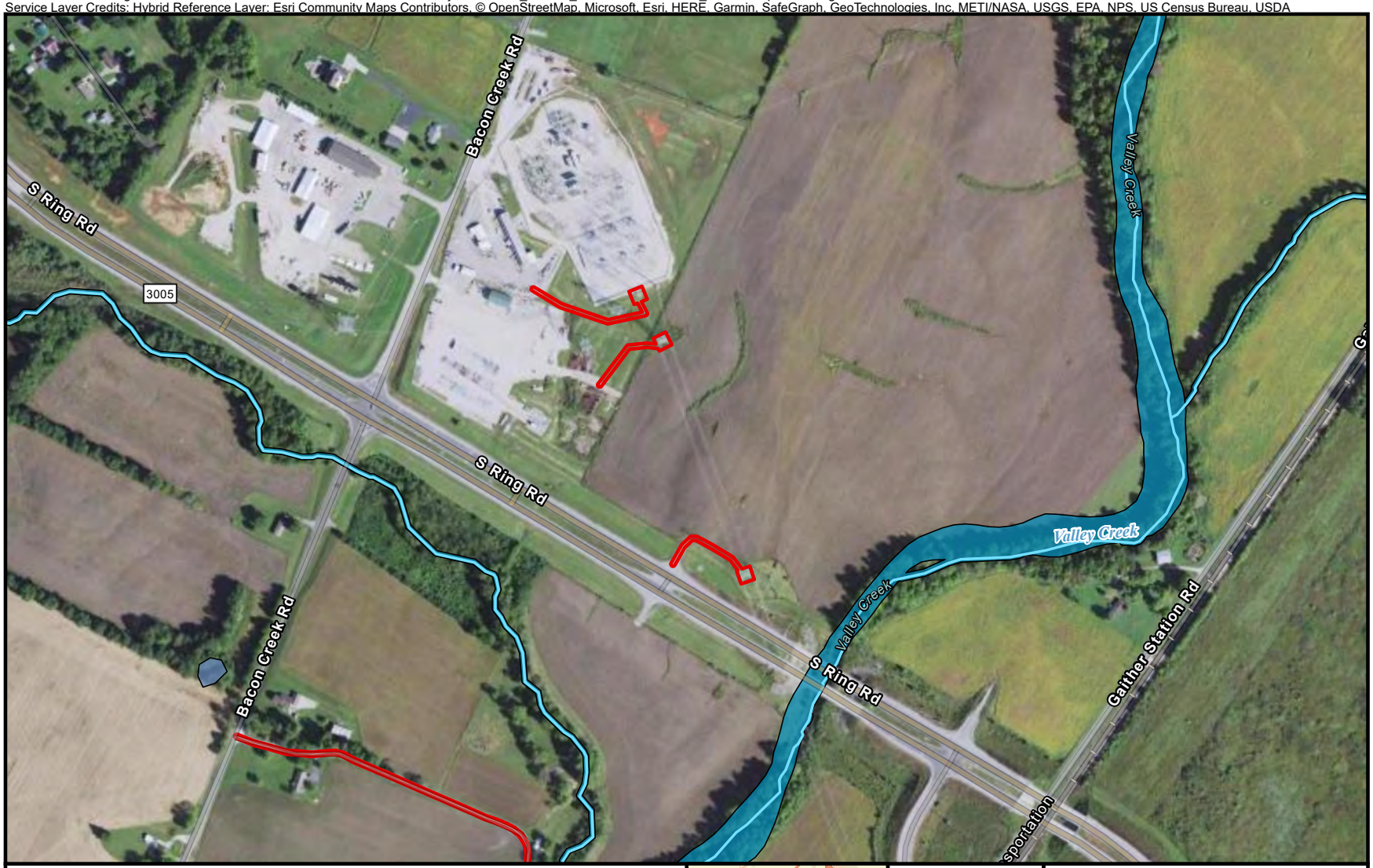

Survey Area
Third Rock LLC Survey Area
NHD Flowline

NWI Wetland
Freshwater Emergent Wetland
Freshwater Forested/ Shrub Wetland
Freshwater Pond
Lake
Riverine

NORTH
0 250 500
Scale in Feet

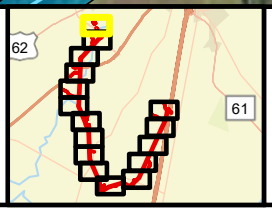

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 1 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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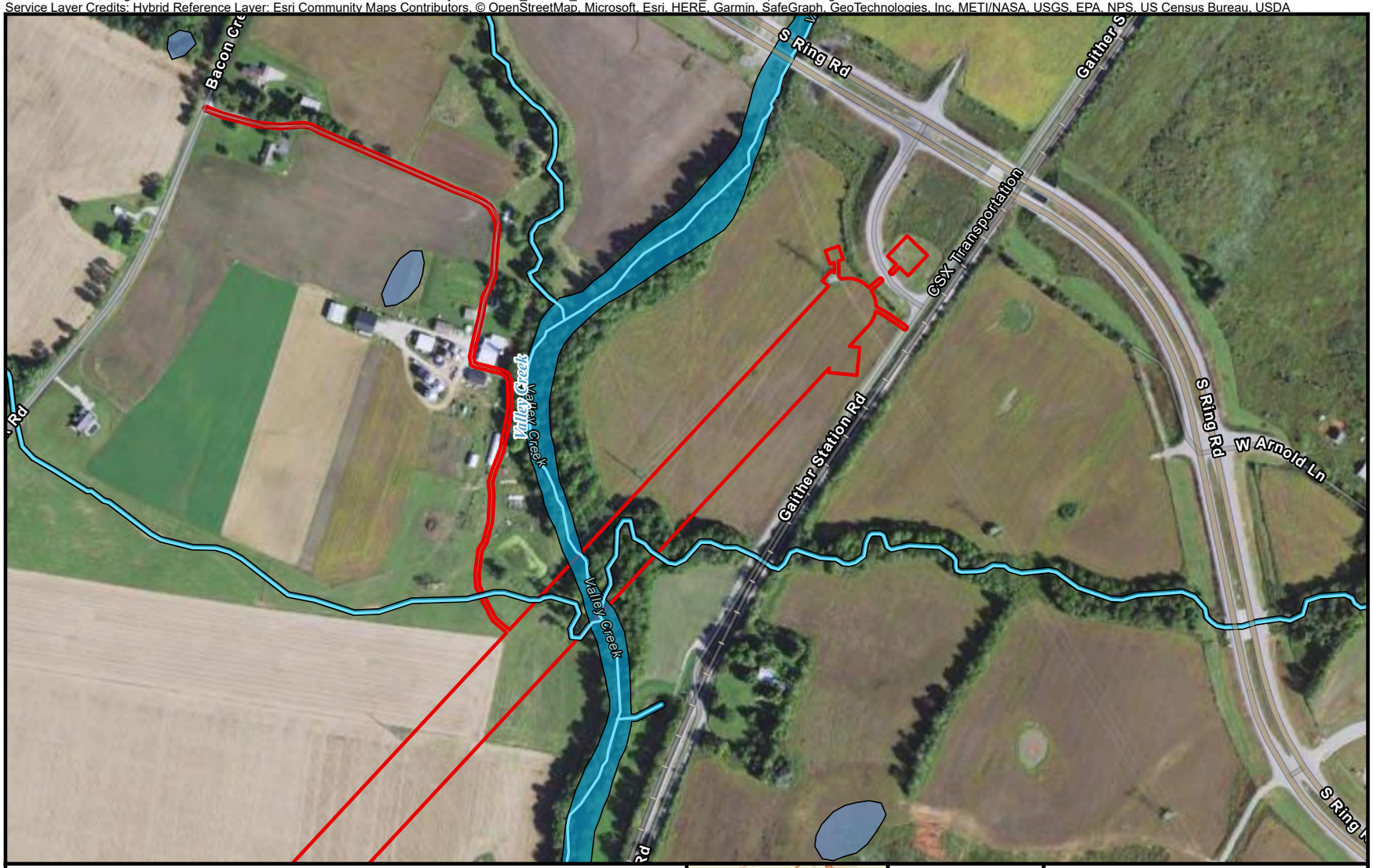

Survey Area
Third Rock LLC Survey Area
NHD Flowline

NWI Wetland
Freshwater Emergent Wetland
Freshwater Forested/ Shrub Wetland
Freshwater Pond
Lake
Riverine

NORTH
0 250 500
Scale in Feet

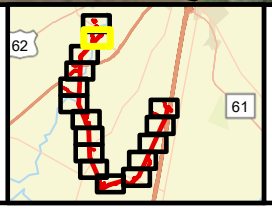

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 2 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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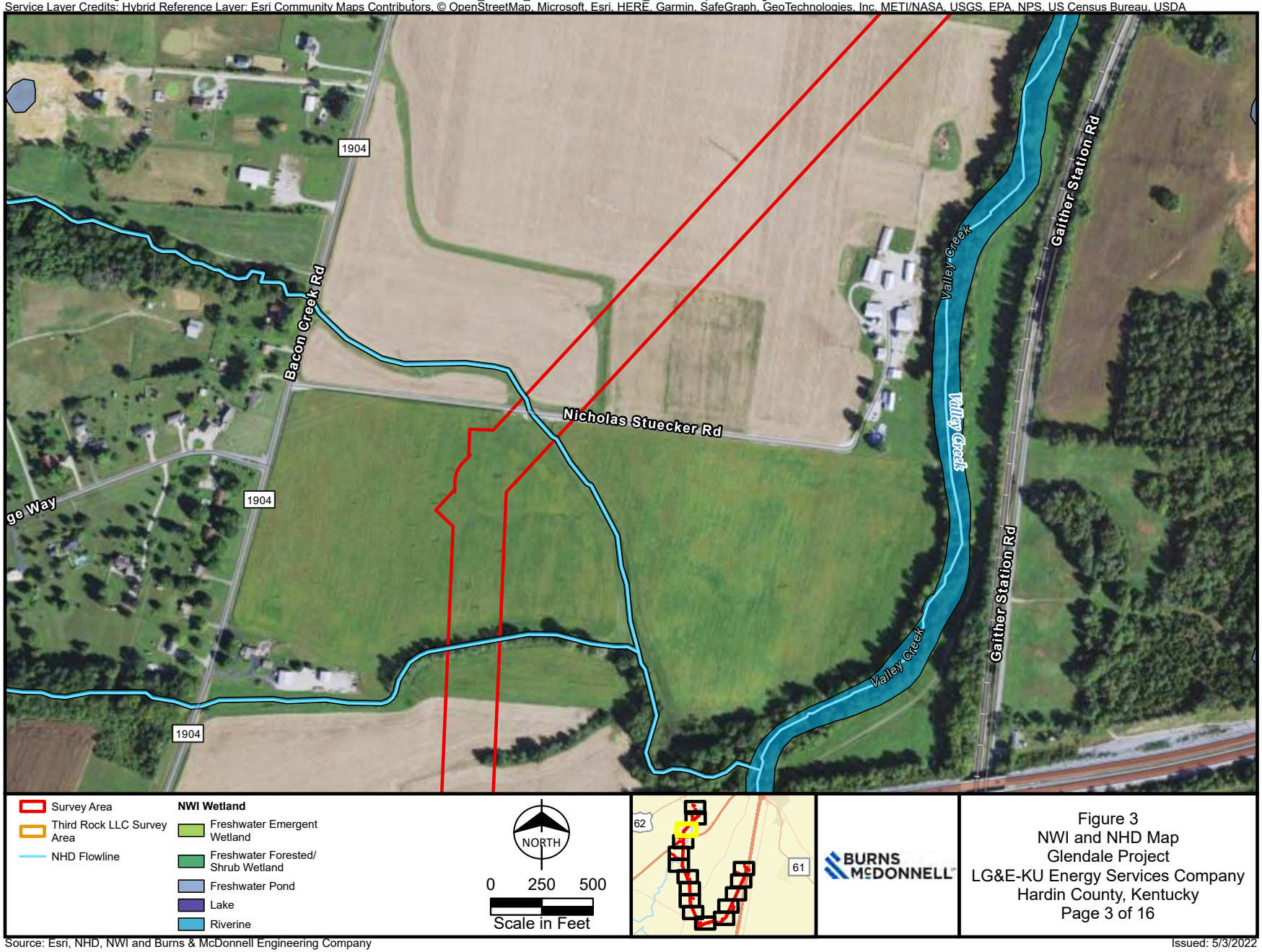

Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 3 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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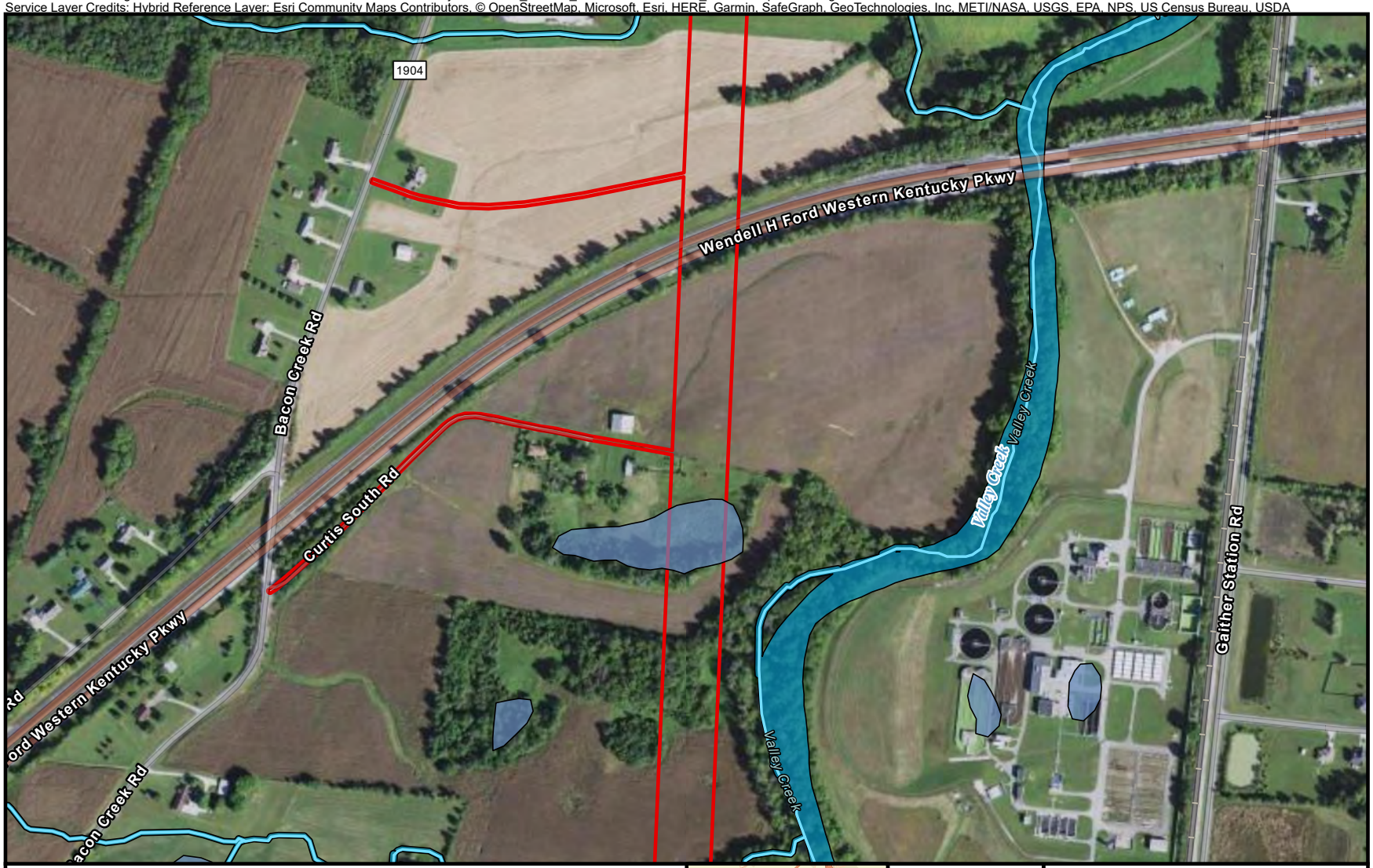

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 4 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 5 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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Survey Area
Third Rock LLC Survey Area
NHD Flowline

NWI Wetland
Freshwater Emergent Wetland
Freshwater Forested/ Shrub Wetland
Freshwater Pond
Lake
Riverine

NORTH
0 250 500
Scale in Feet

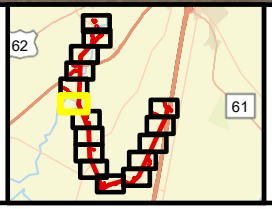

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 6 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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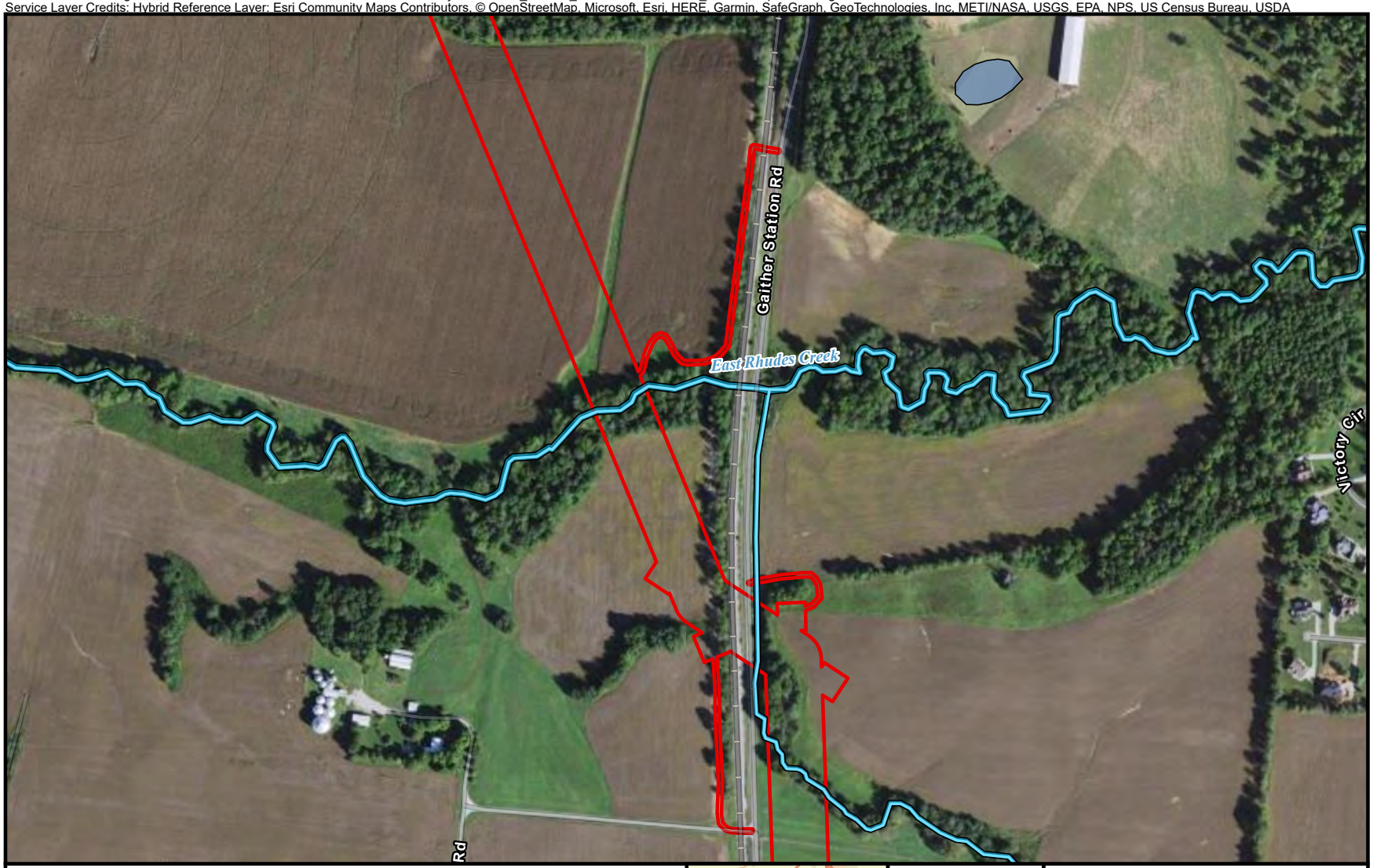

Survey Area
Third Rock LLC Survey Area
NHD Flowline

NWI Wetland
Freshwater Emergent Wetland
Freshwater Forested/ Shrub Wetland
Freshwater Pond
Lake
Riverine

NORTH
0 250 500
Scale in Feet

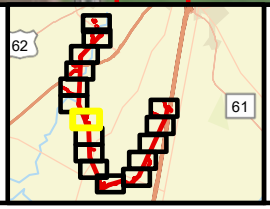

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 7 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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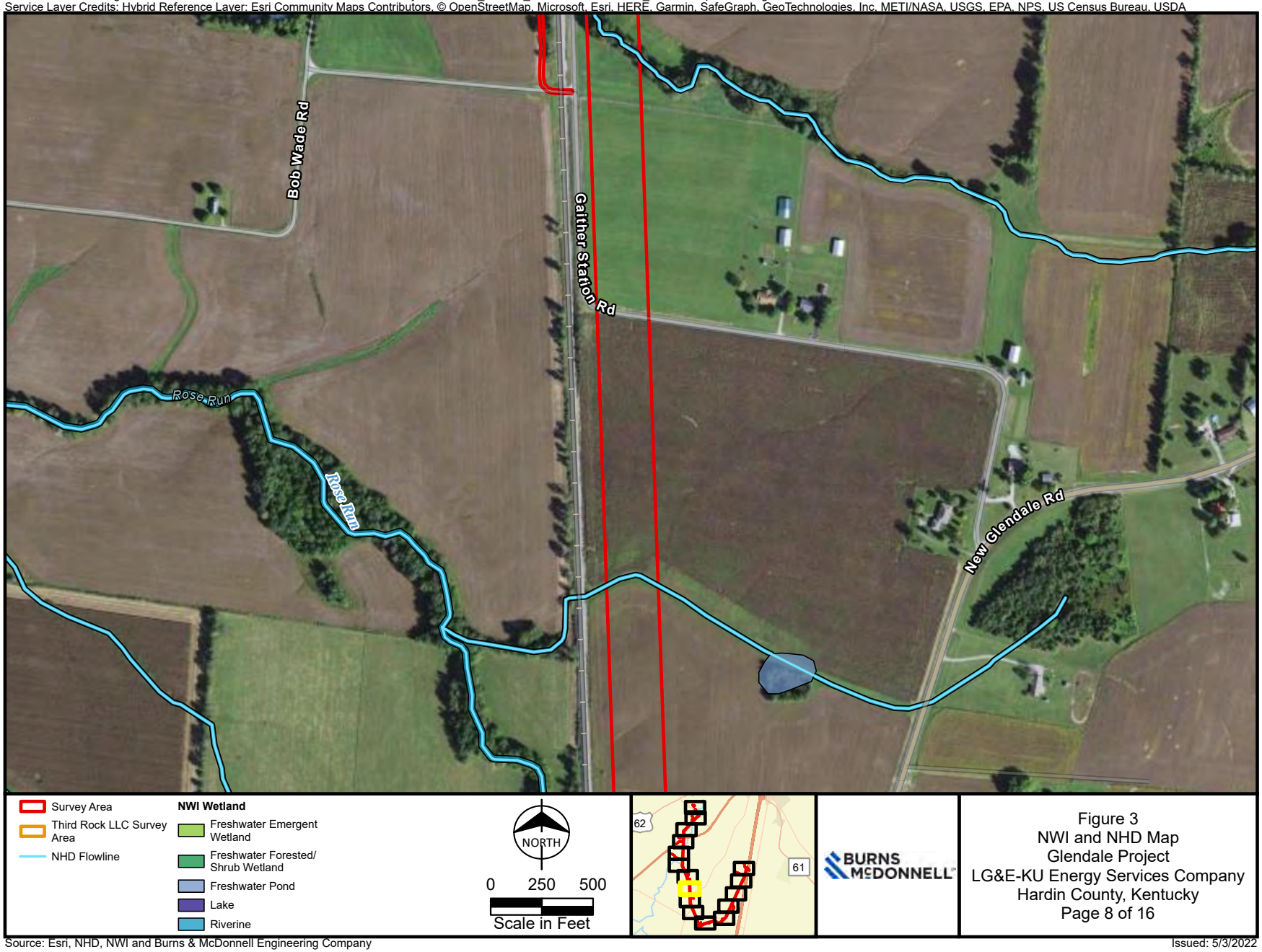

Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 8 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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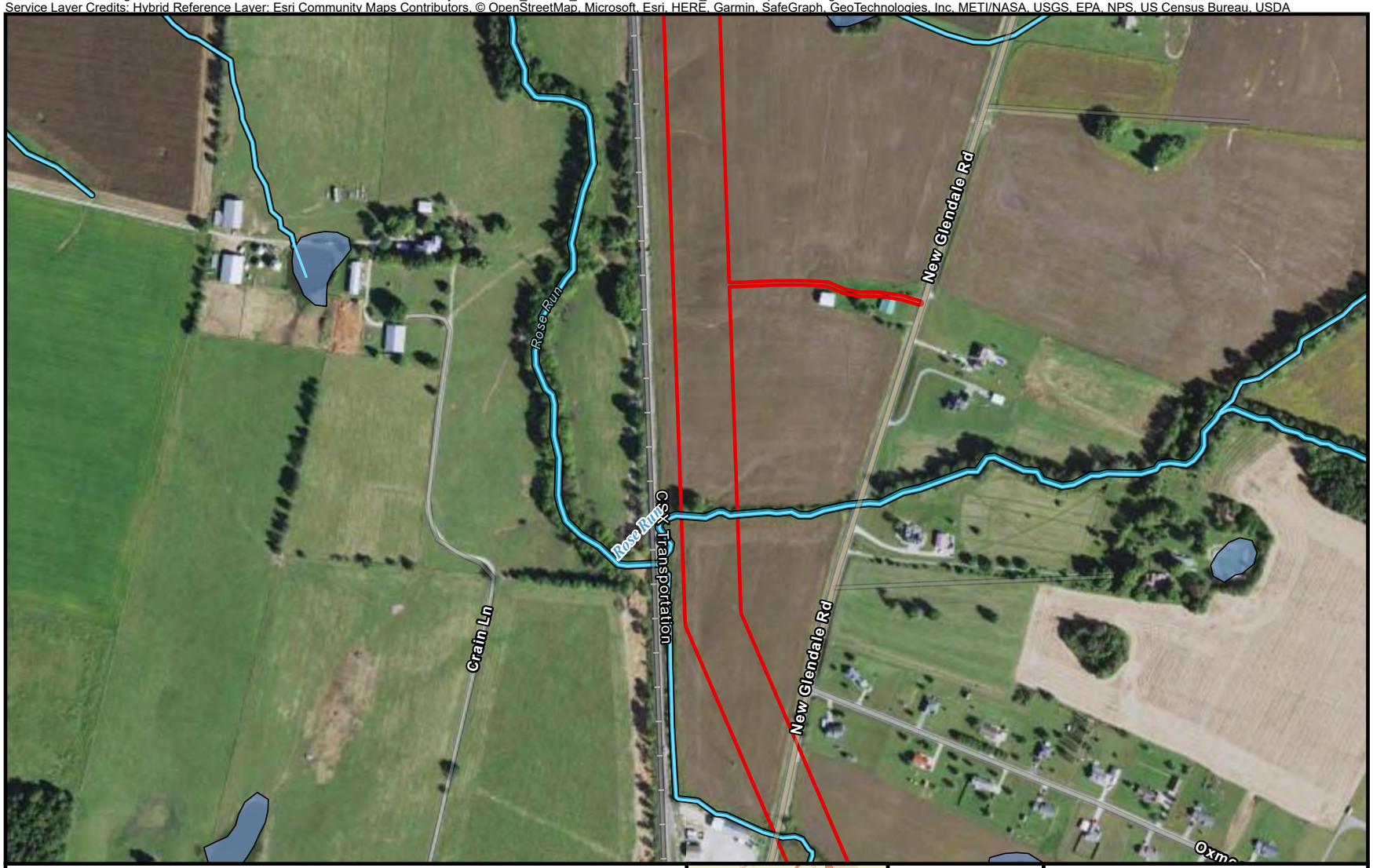

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 9 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 10 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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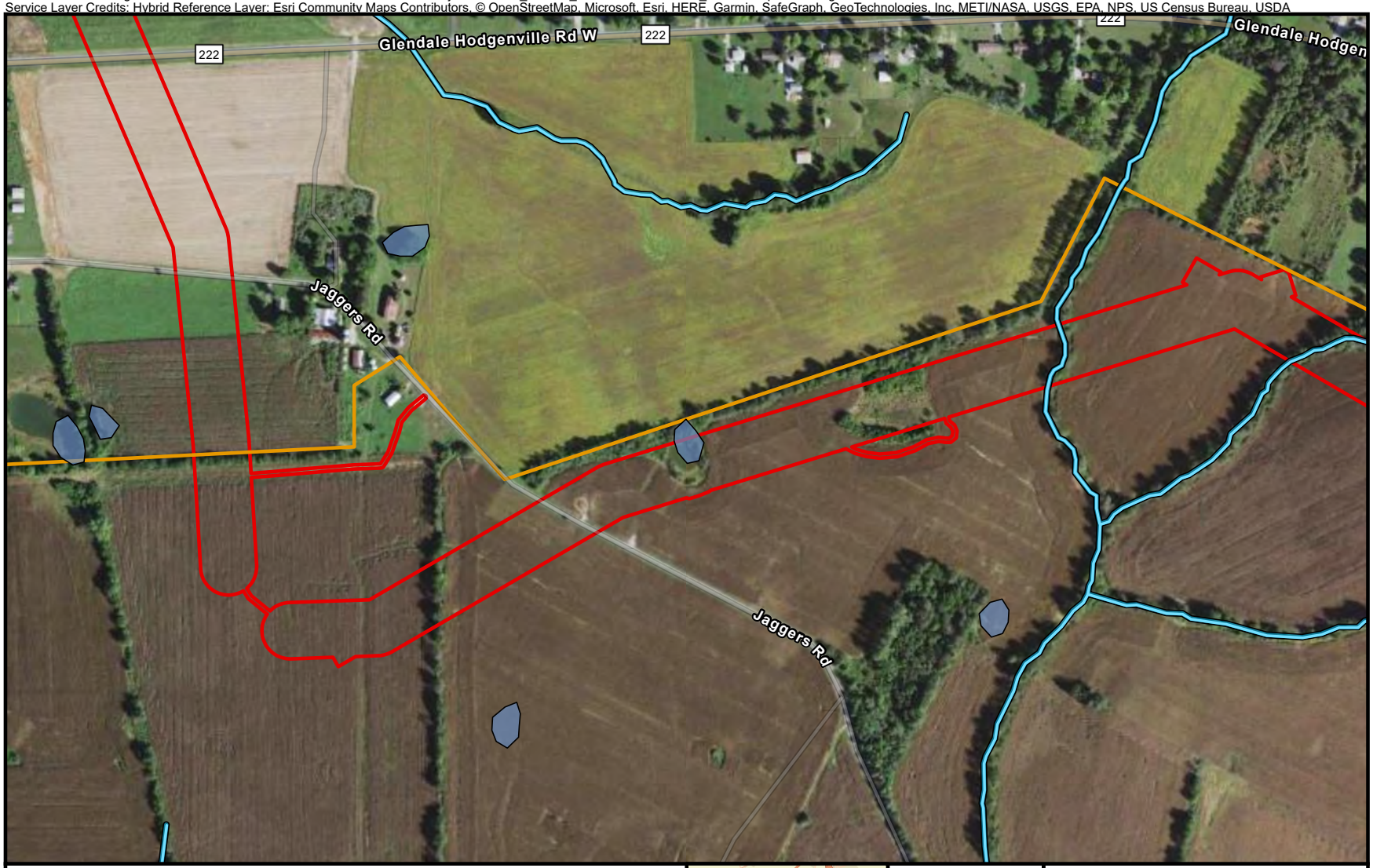

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 11 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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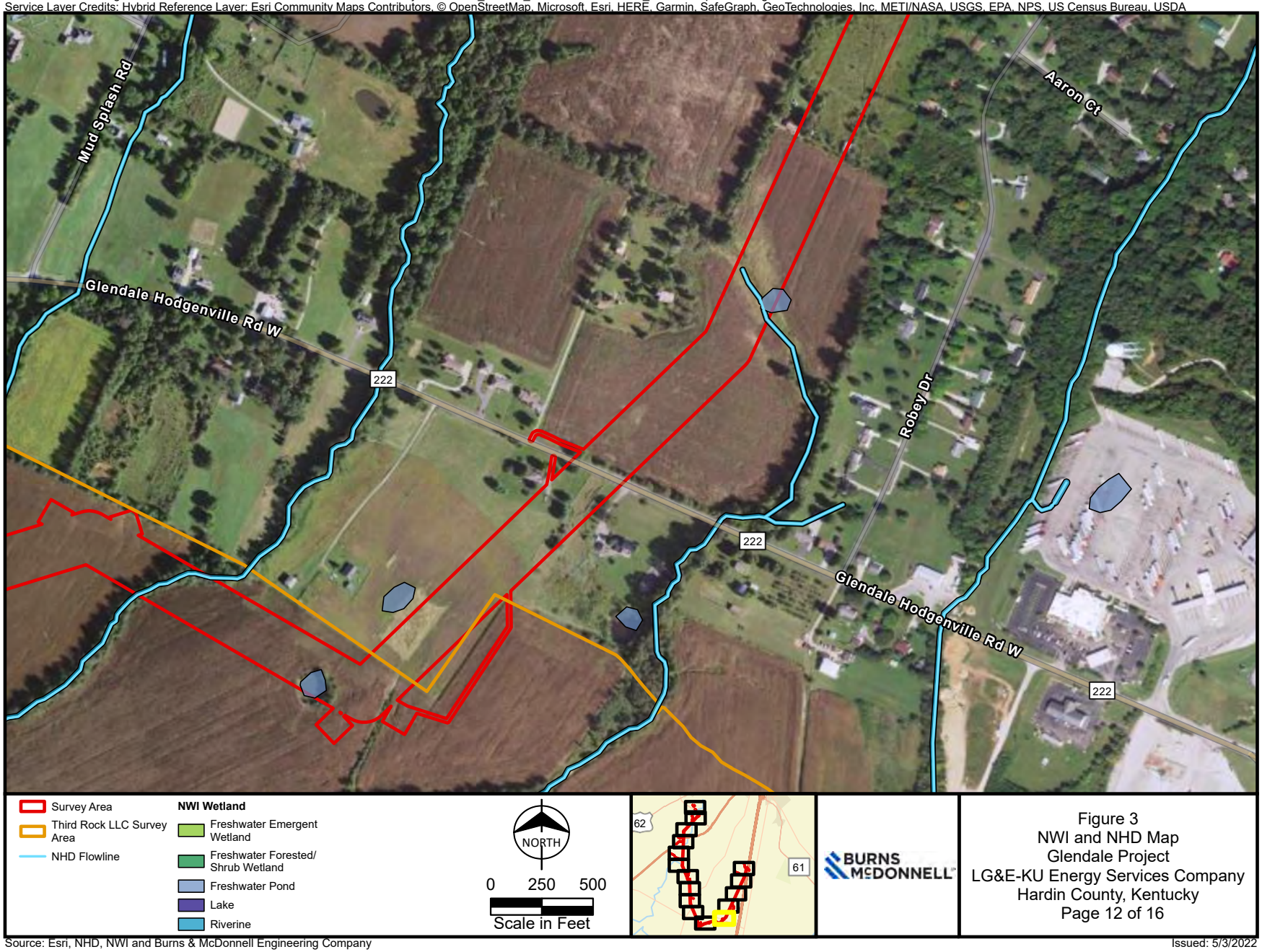

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 12 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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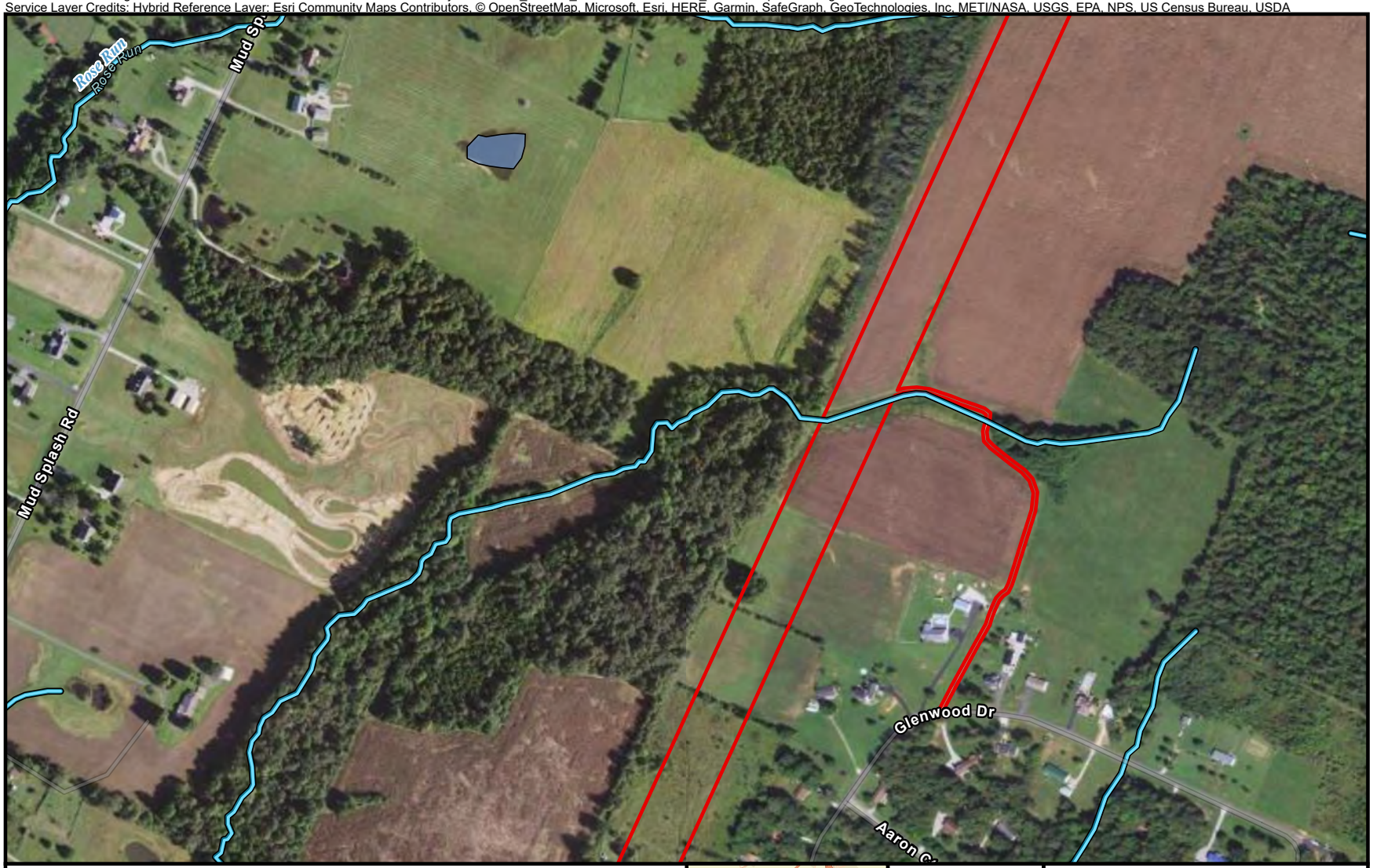

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 13 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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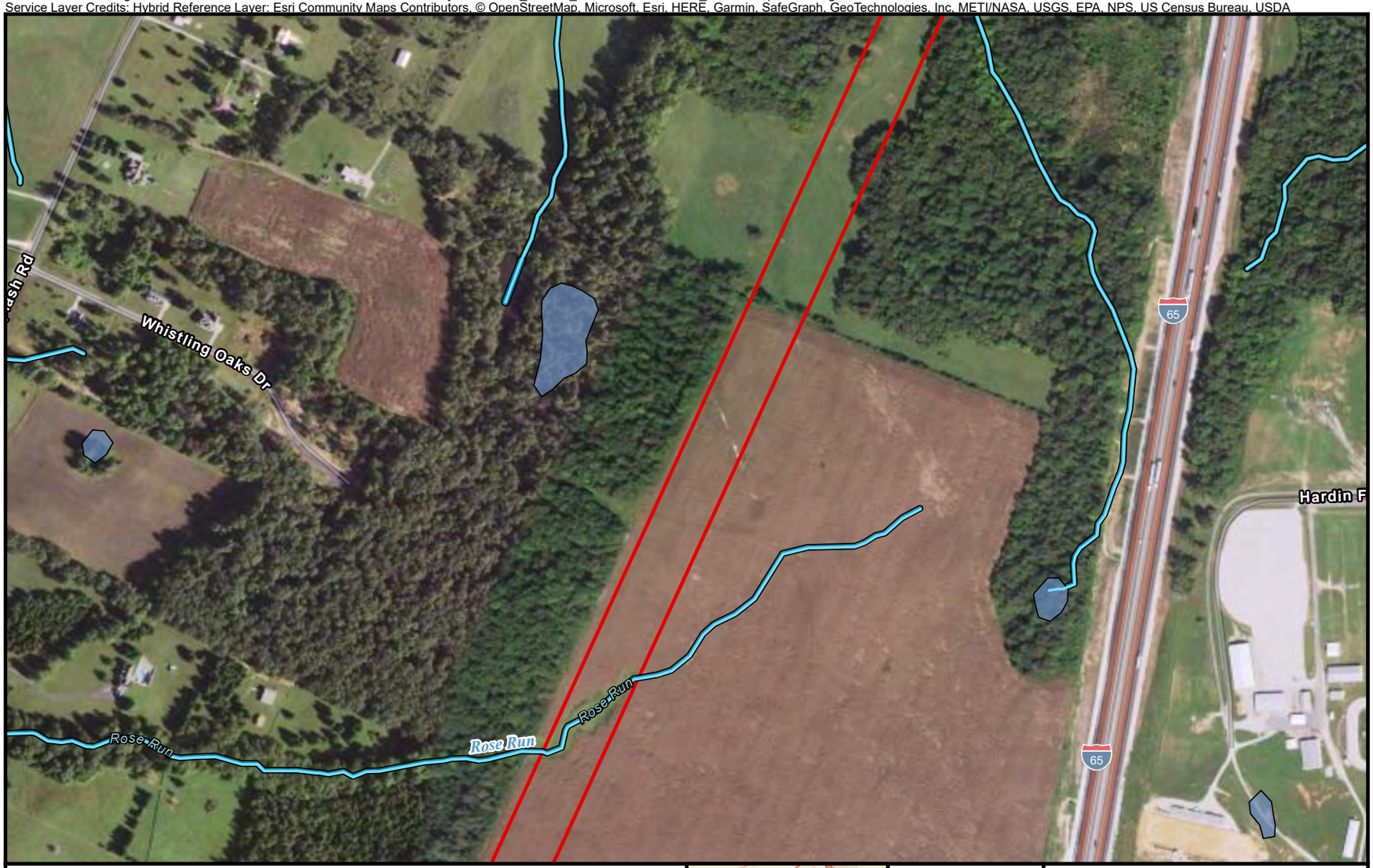

Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 14 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

Issued: 5/3/2022

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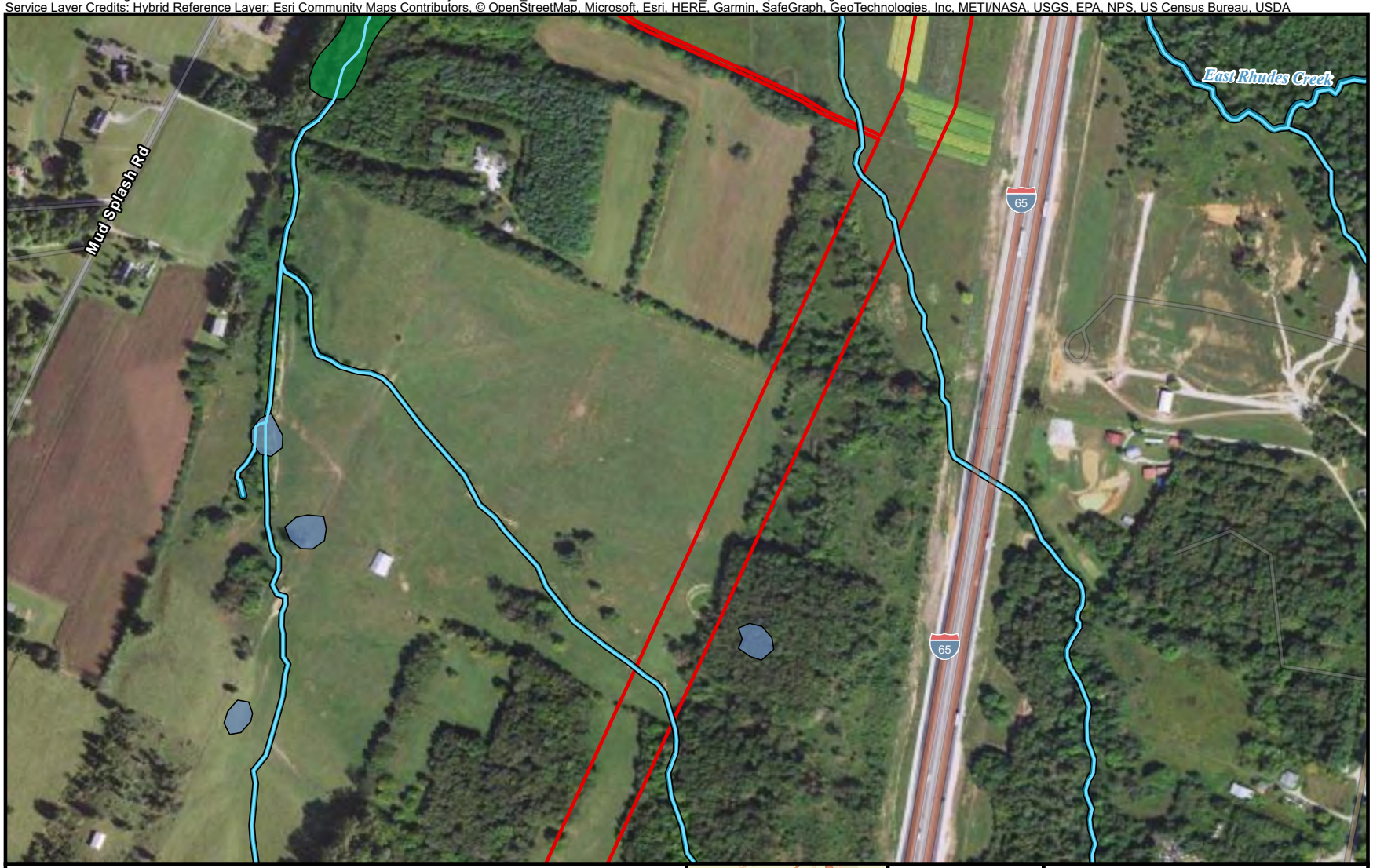

Survey Area
Third Rock LLC Survey Area
NHD Flowline

NWI Wetland
Freshwater Emergent Wetland
Freshwater Forested/ Shrub Wetland
Freshwater Pond
Lake
Riverine

NORTH
0 250 500
Scale in Feet

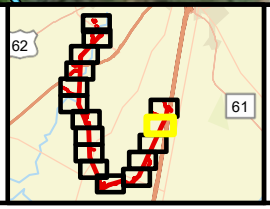

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Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 15 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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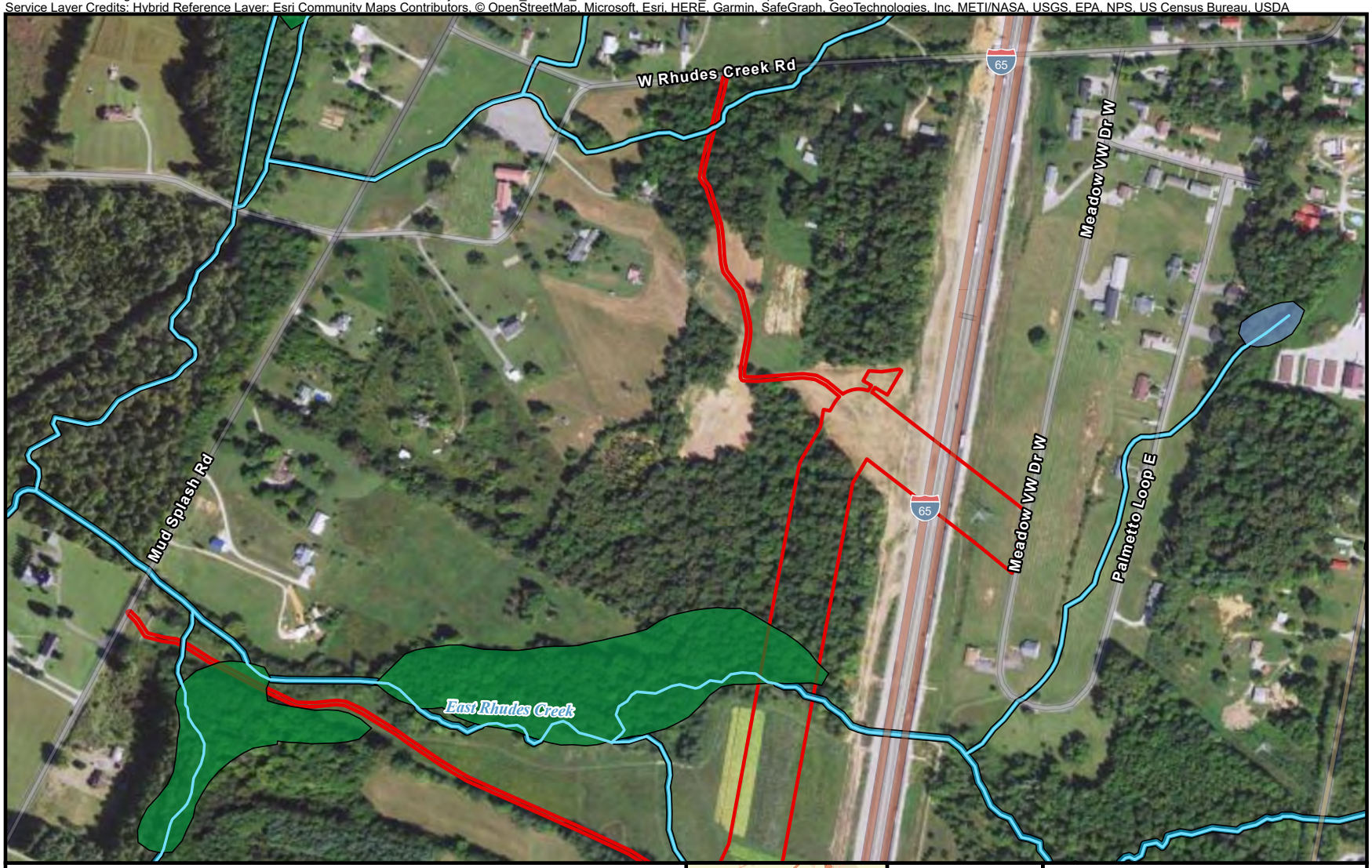

Figure 3
NWI and NHD Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 16 of 16

Source: Esri, NHD, NWI and Burns & McDonnell Engineering Company

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Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 1 of 16

Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 2 of 16

Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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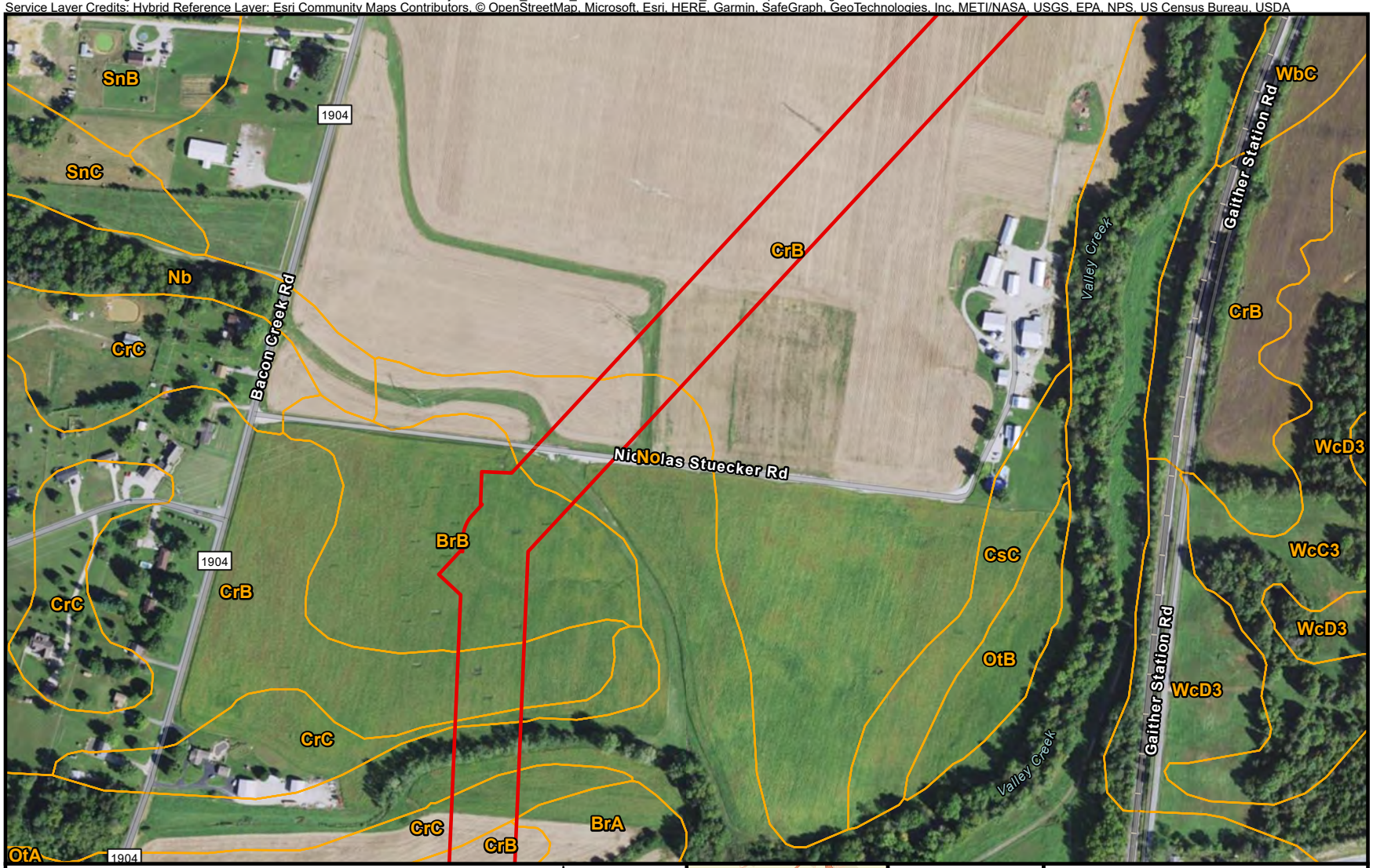

Survey Area
Third Rock LLC Survey Area
SSURGO Soils Map Unit (Symbol)

Hydric Rating by Map Unit
SSURGO Soils Map Unit (Non-Hydric)
SSURGO Soils Map Unit (Hydric)

NORTH
0 250 500
Scale in Feet

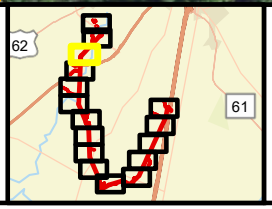

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Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 3 of 16

Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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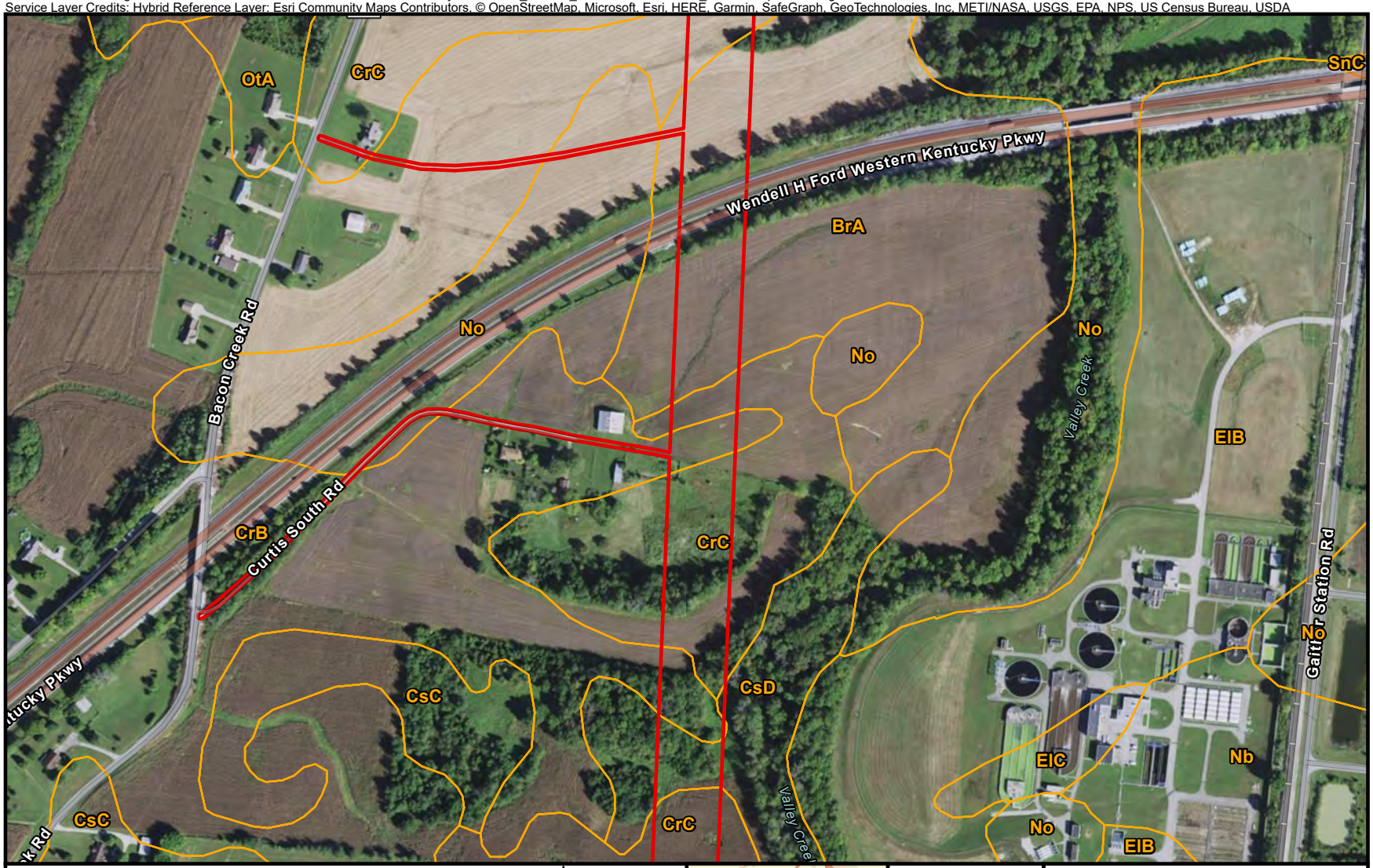

Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 4 of 16

Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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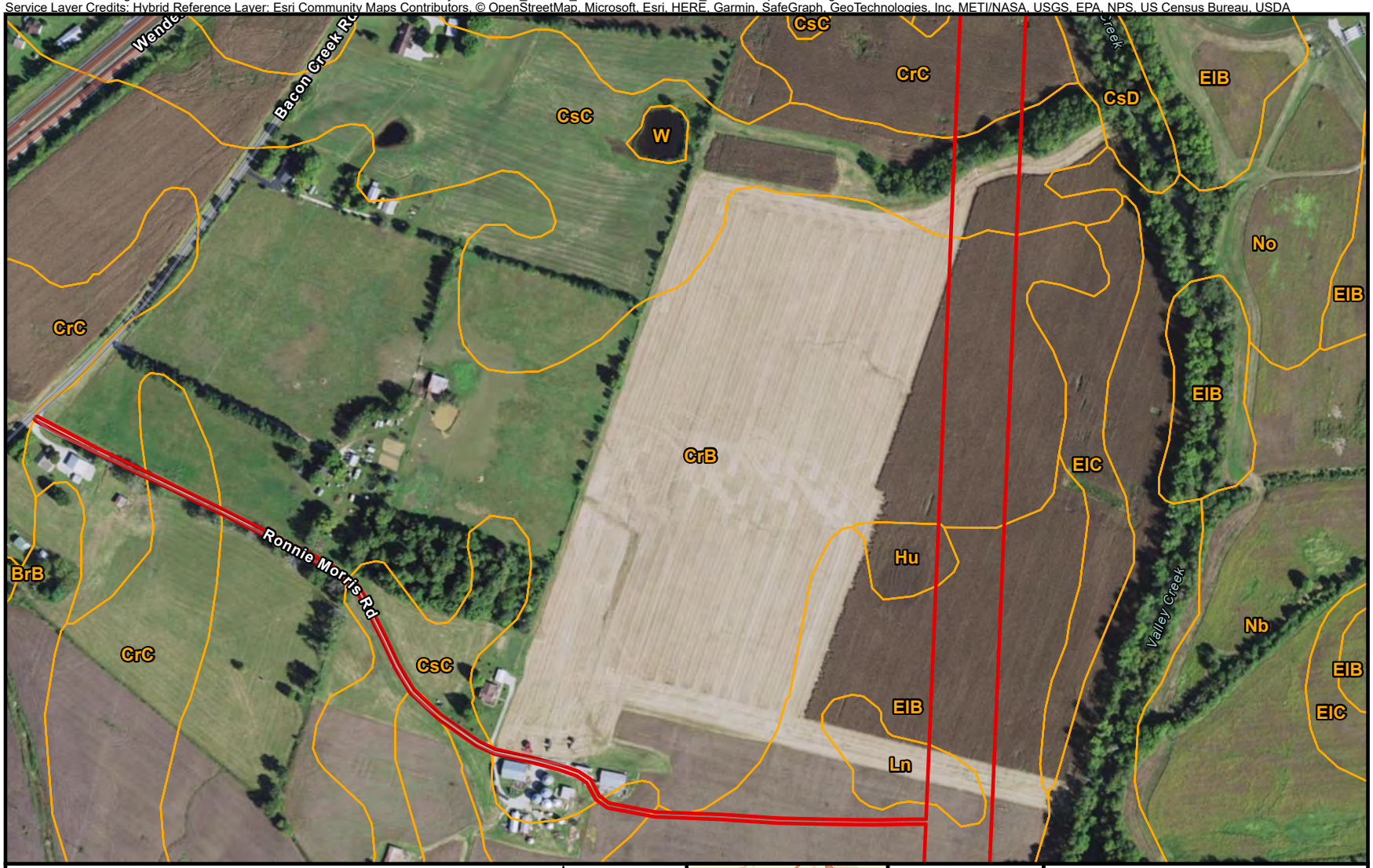

Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 5 of 16

Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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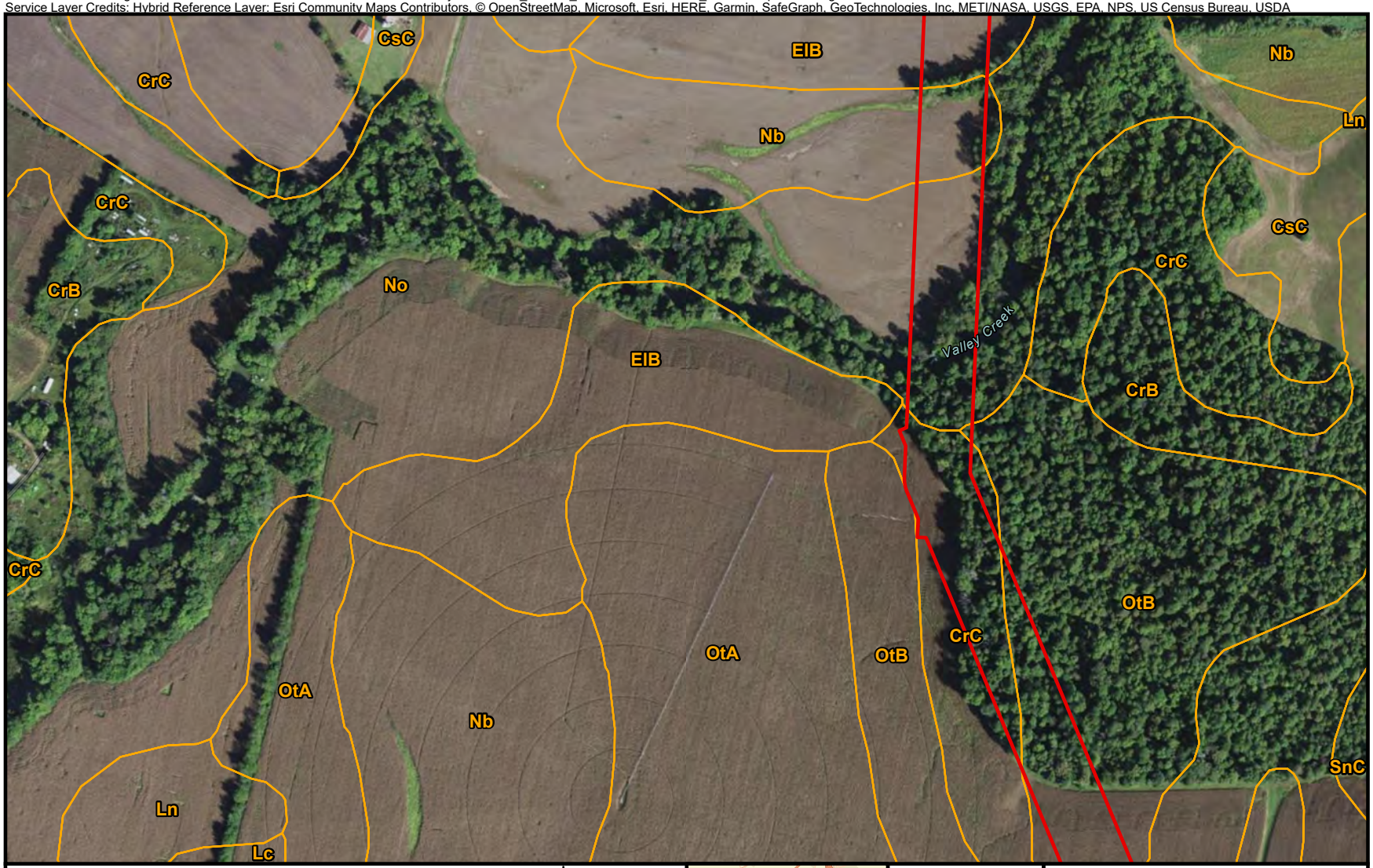

Survey Area
Third Rock LLC Survey Area
SSURGO Soils Map Unit (Symbol)

Hydric Rating by Map Unit
SSURGO Soils Map Unit (Non-Hydric)
SSURGO Soils Map Unit (Hydric)

NORTH
0 250 500
Scale in Feet

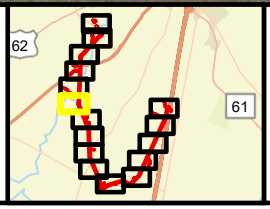

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Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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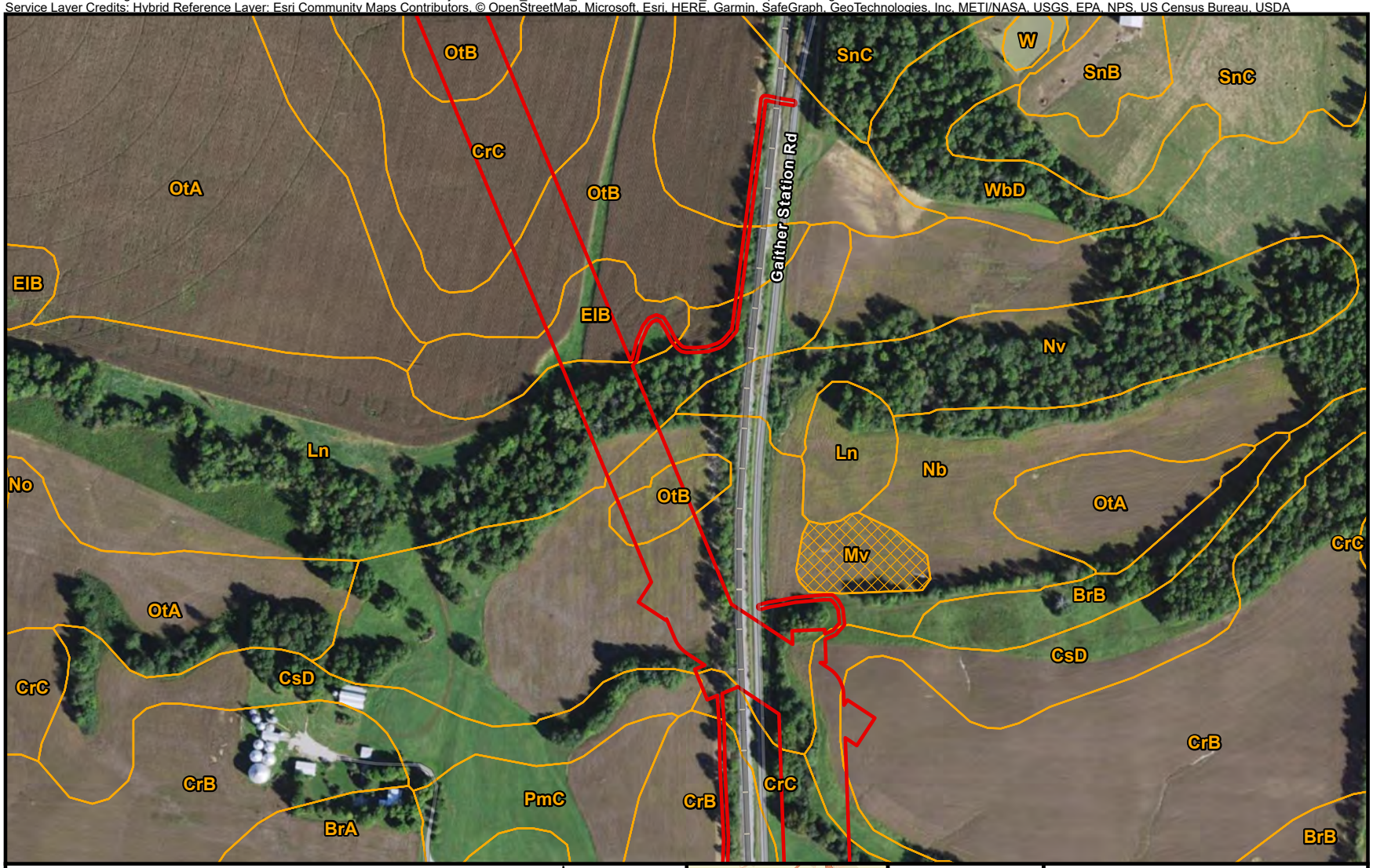

Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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Survey Area
Third Rock LLC Survey Area
SSURGO Soils Map Unit (Symbol)

Hydric Rating by Map Unit
SSURGO Soils Map Unit (Non-Hydric)
SSURGO Soils Map Unit (Hydric)

NORTH
0 250 500
Scale in Feet

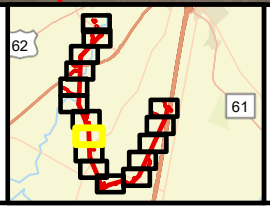

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Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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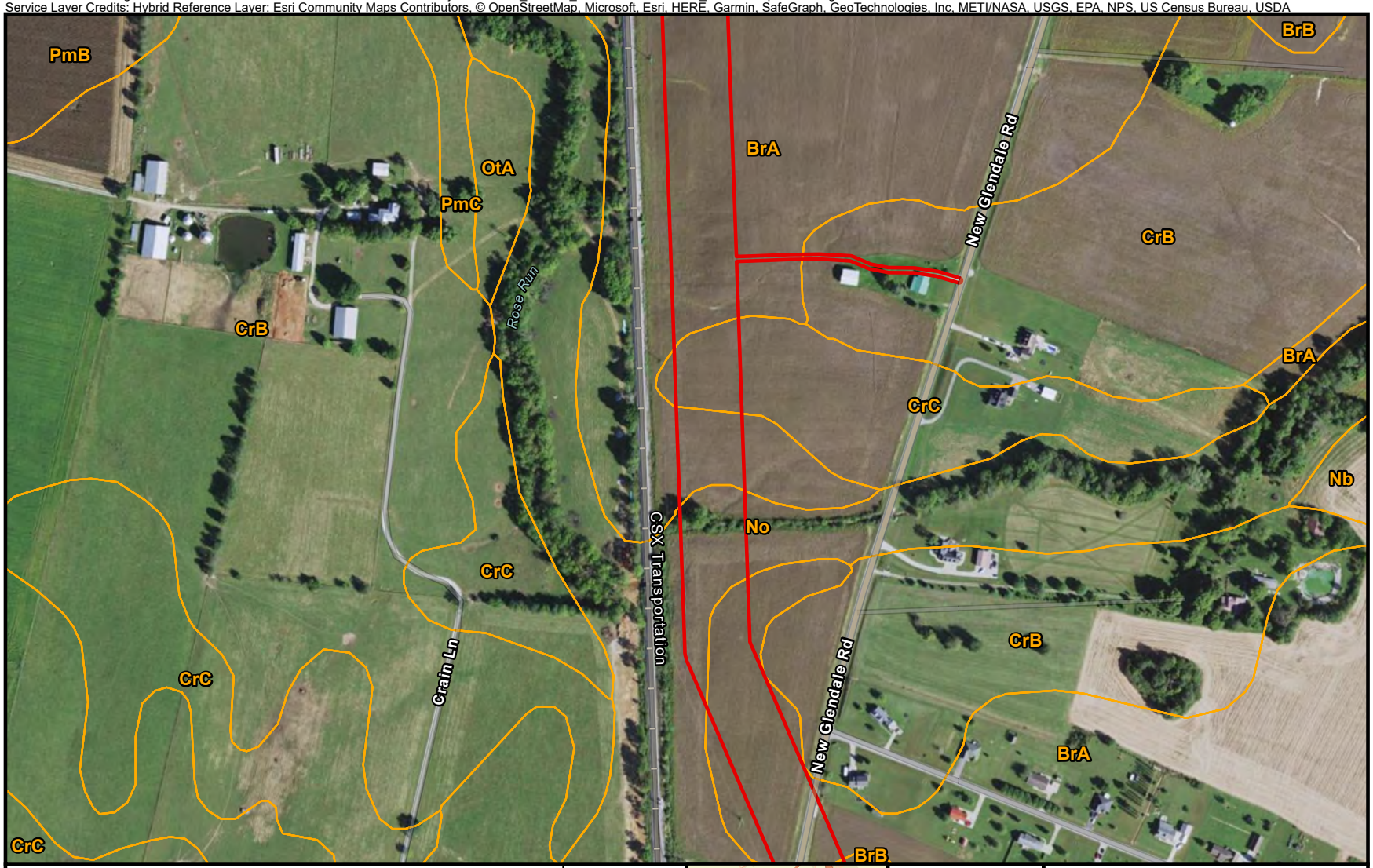

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Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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Survey Area
Third Rock LLC Survey Area
SSURGO Soils Map Unit (Symbol)

Hydric Rating by Map Unit
SSURGO Soils Map Unit (Non-Hydric)
SSURGO Soils Map Unit (Hydric)

NORTH

0 250 500
Scale in Feet

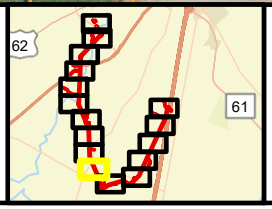

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Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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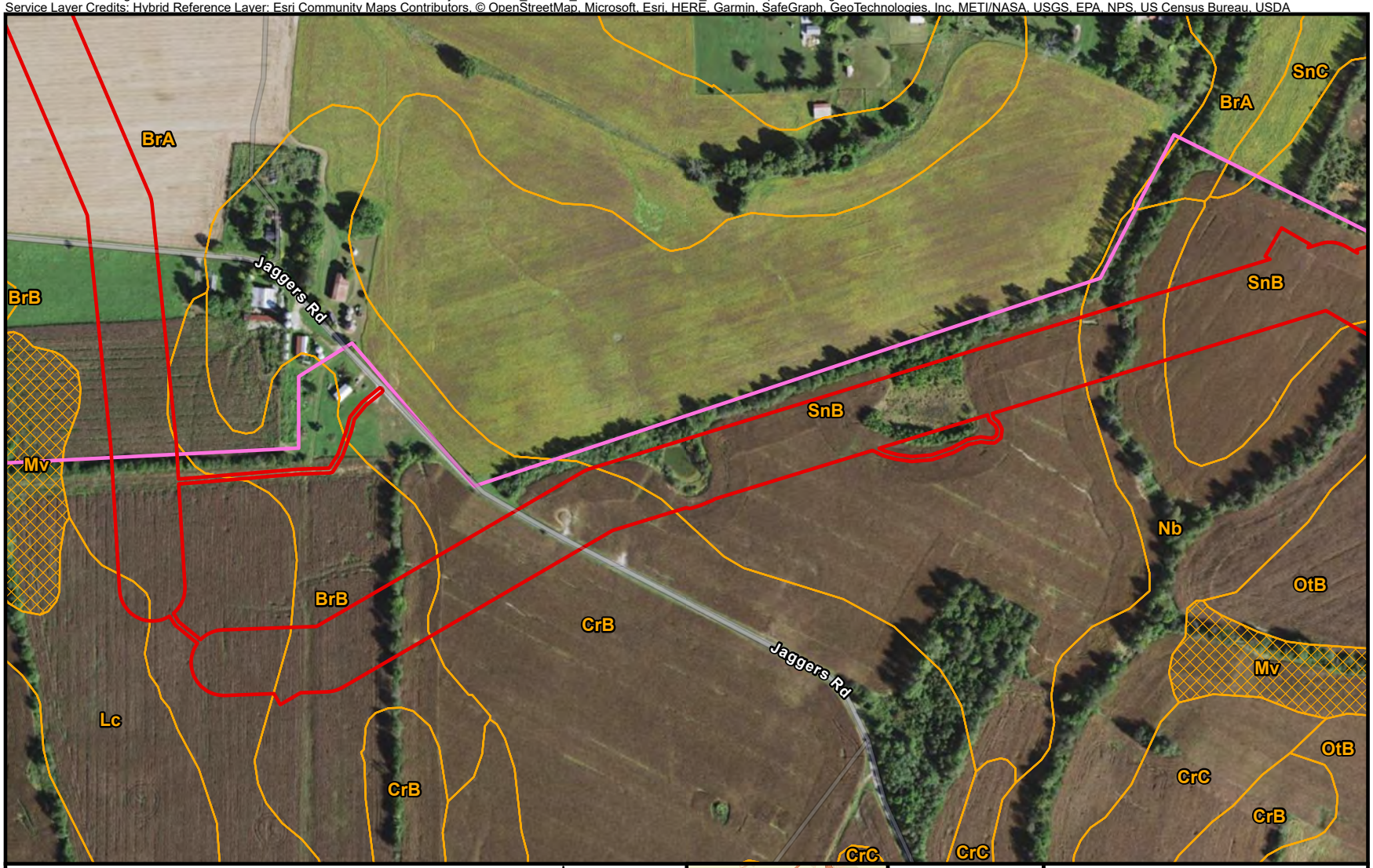

Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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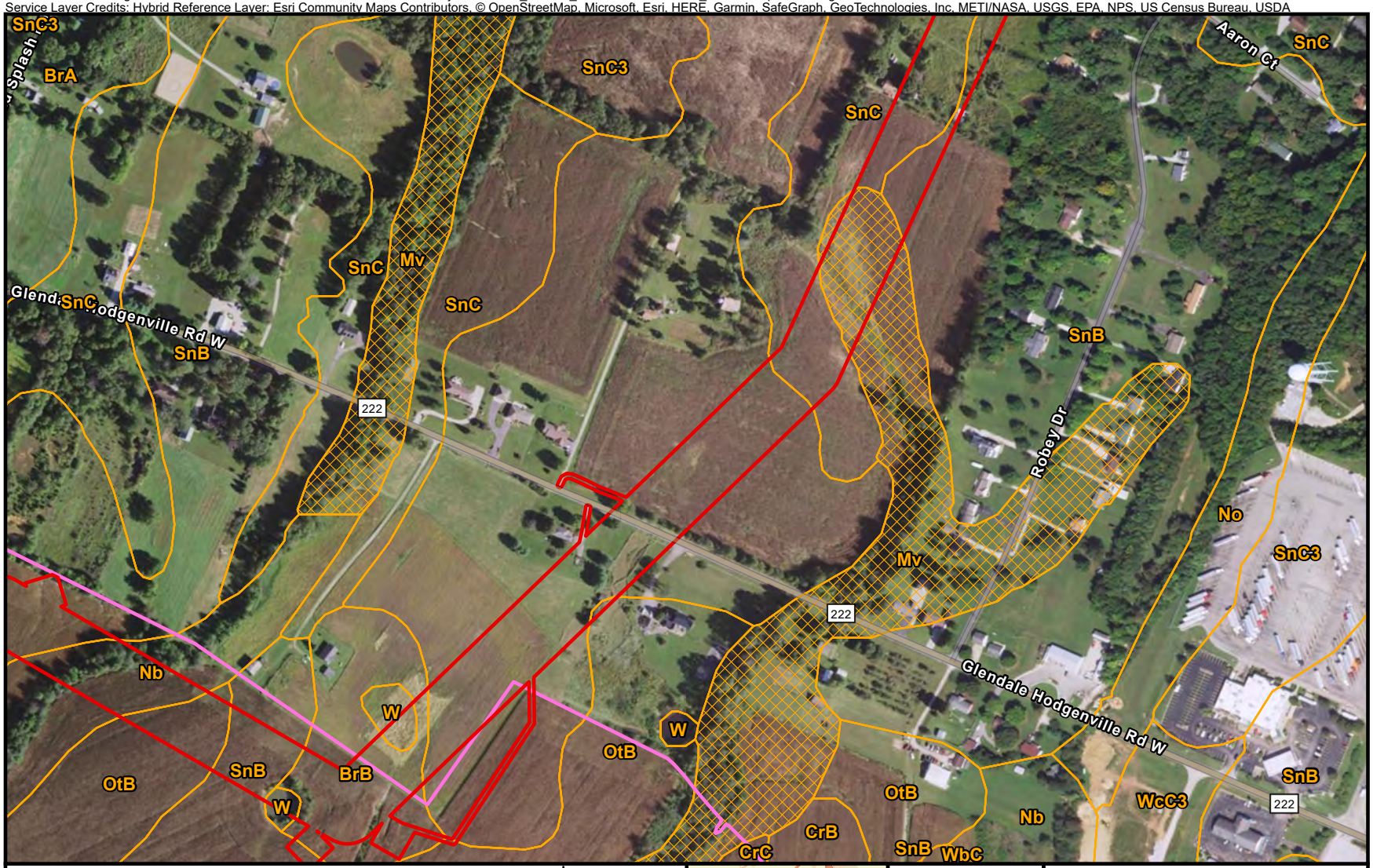

Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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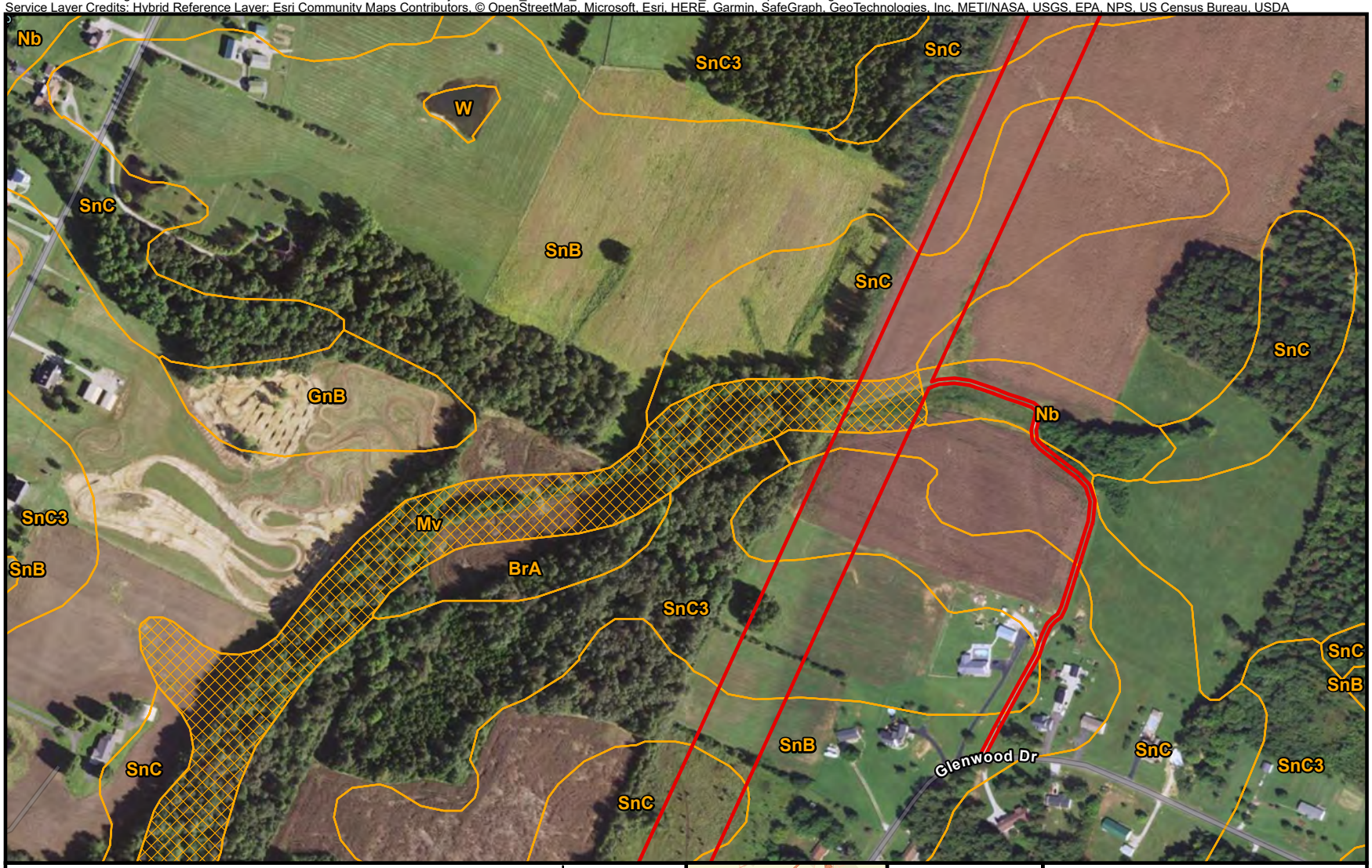

Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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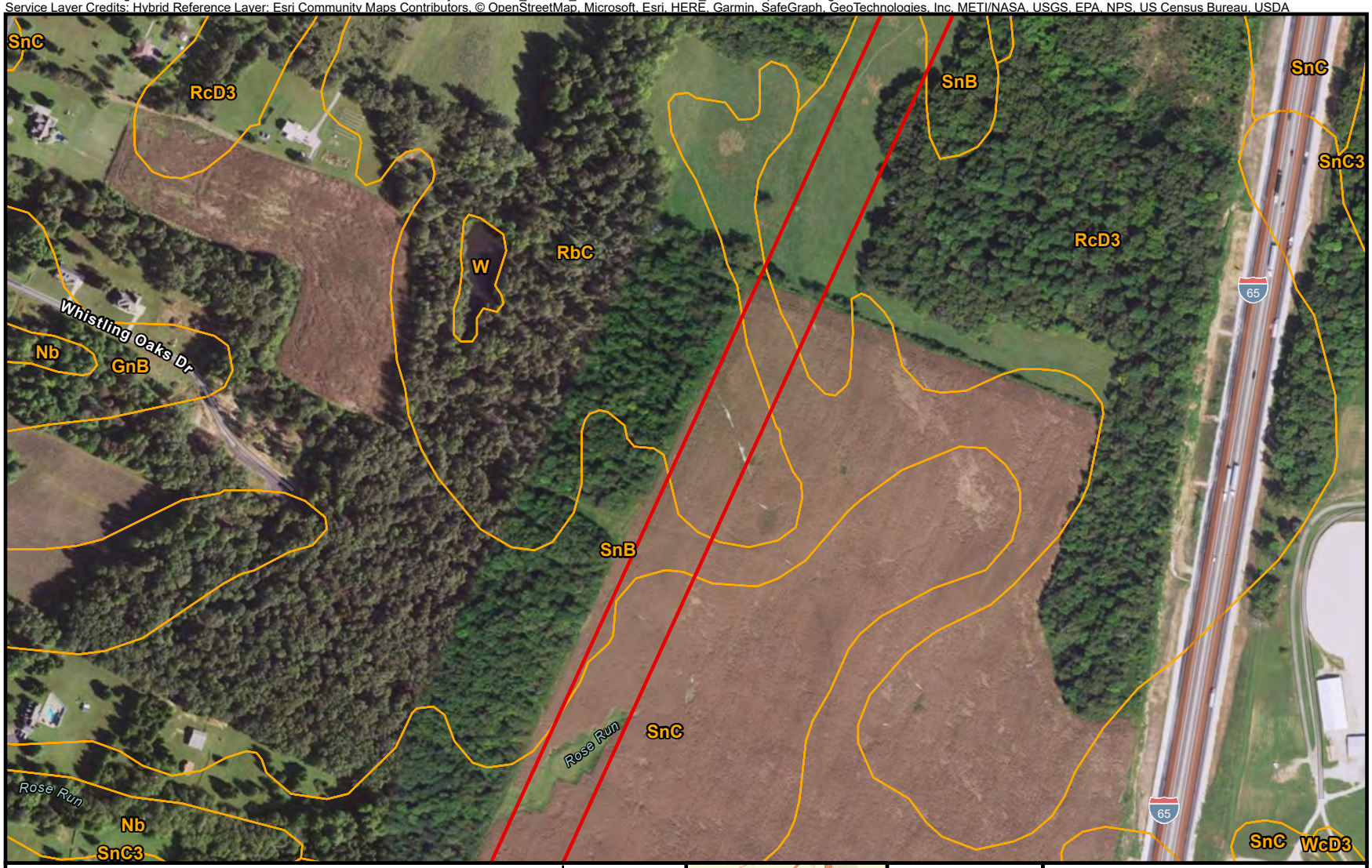

Survey Area
Third Rock LLC Survey Area
SSURGO Soils Map Unit (Symbol)

Hydric Rating by Map Unit
SSURGO Soils Map Unit (Non-Hydric)
SSURGO Soils Map Unit (Hydric)

NORTH

0 250 500
Scale in Feet

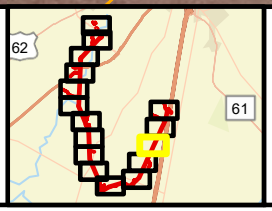

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Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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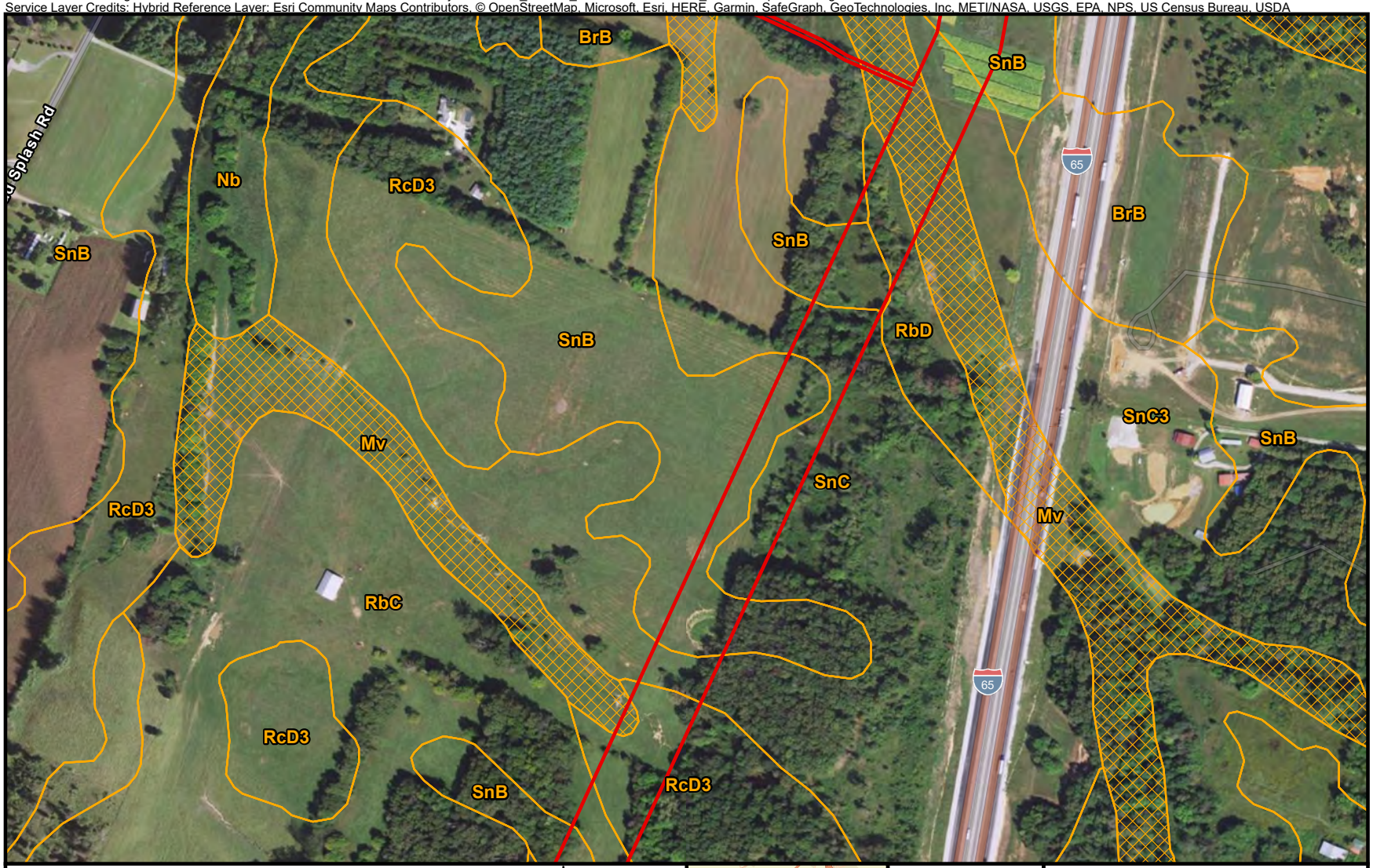

Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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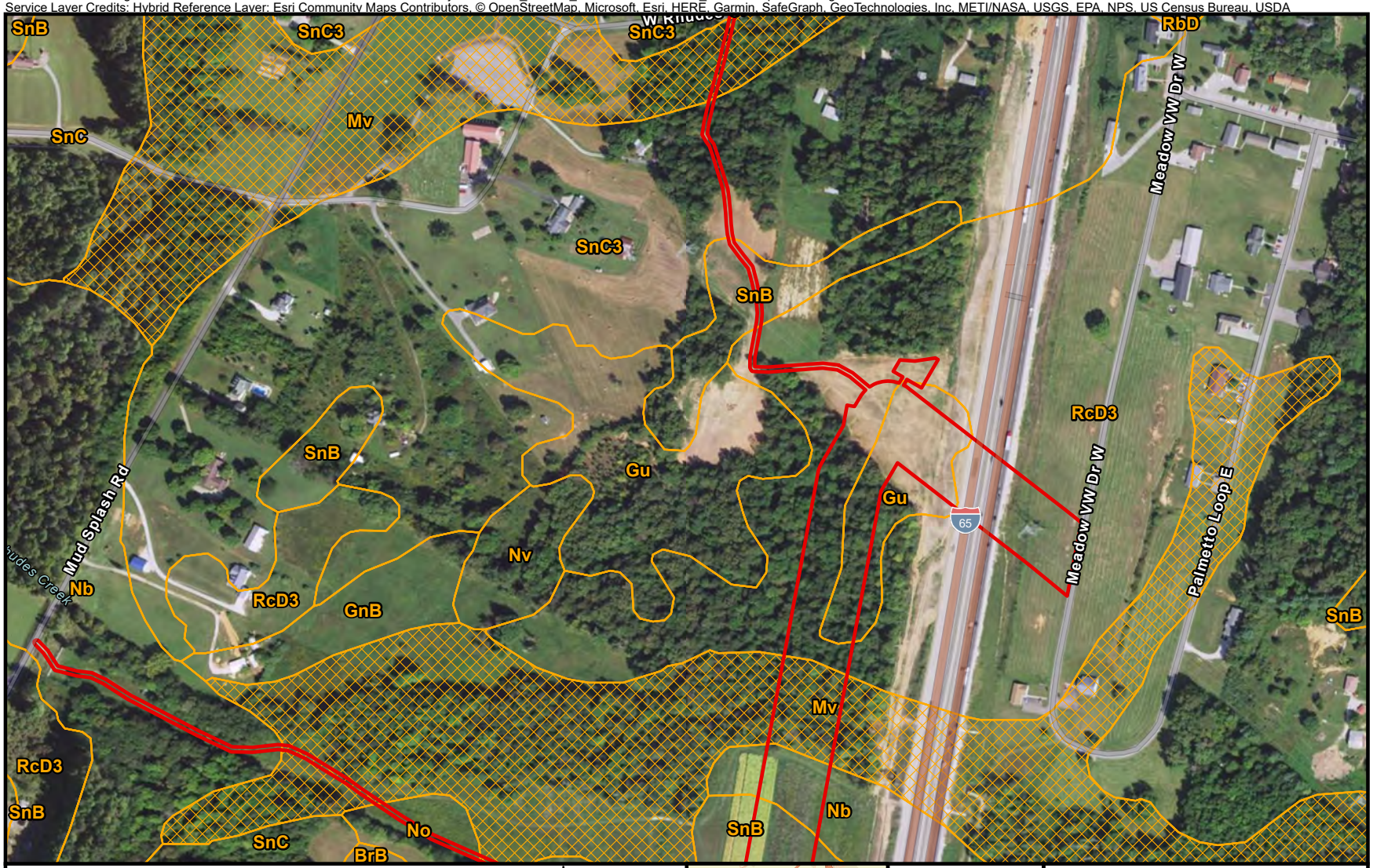

Figure 4
Soil Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 16 of 16

Source: Esri, SSURGO, and Burns & McDonnell Engineering Company

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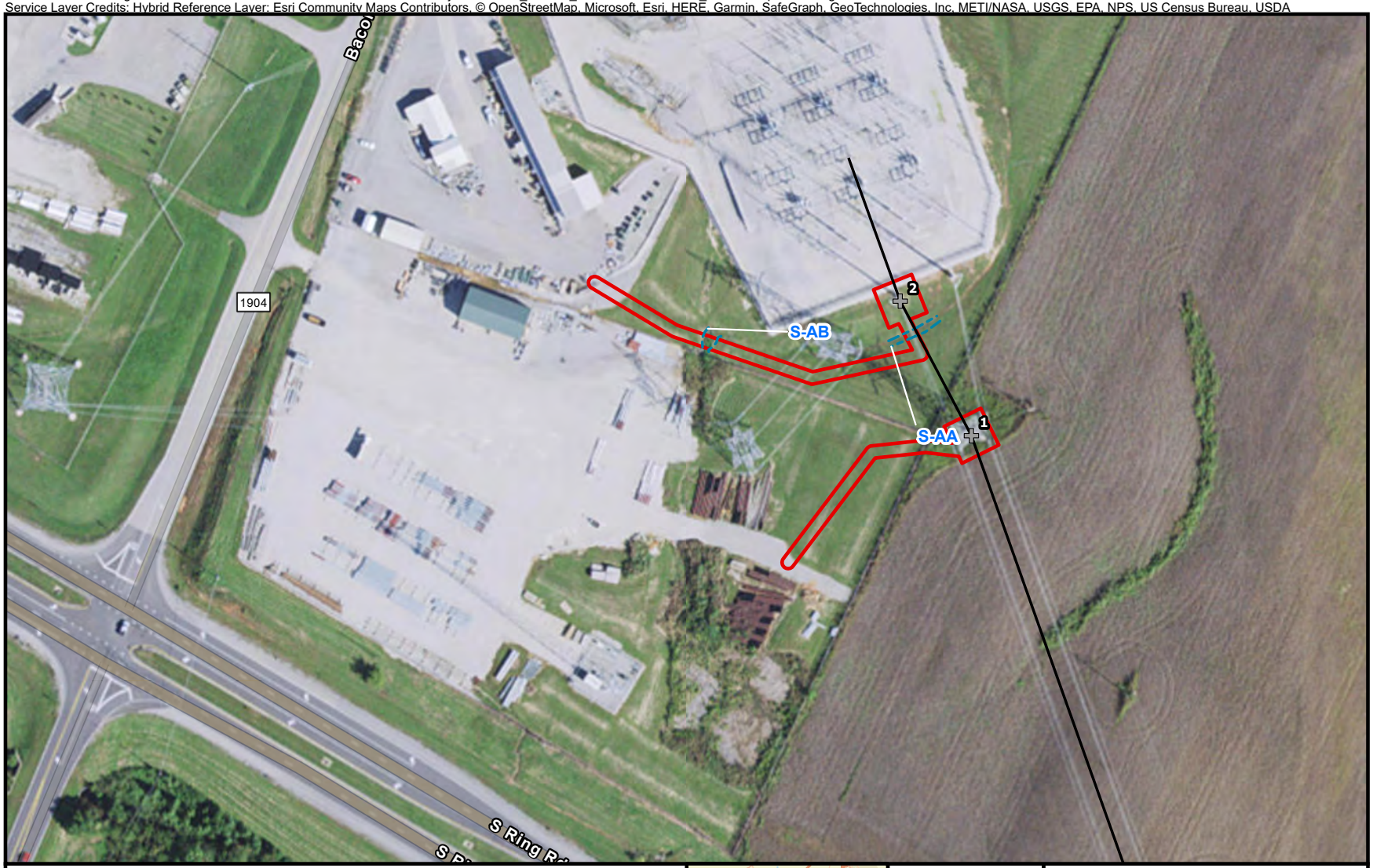

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

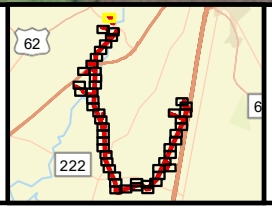

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 1 of 49

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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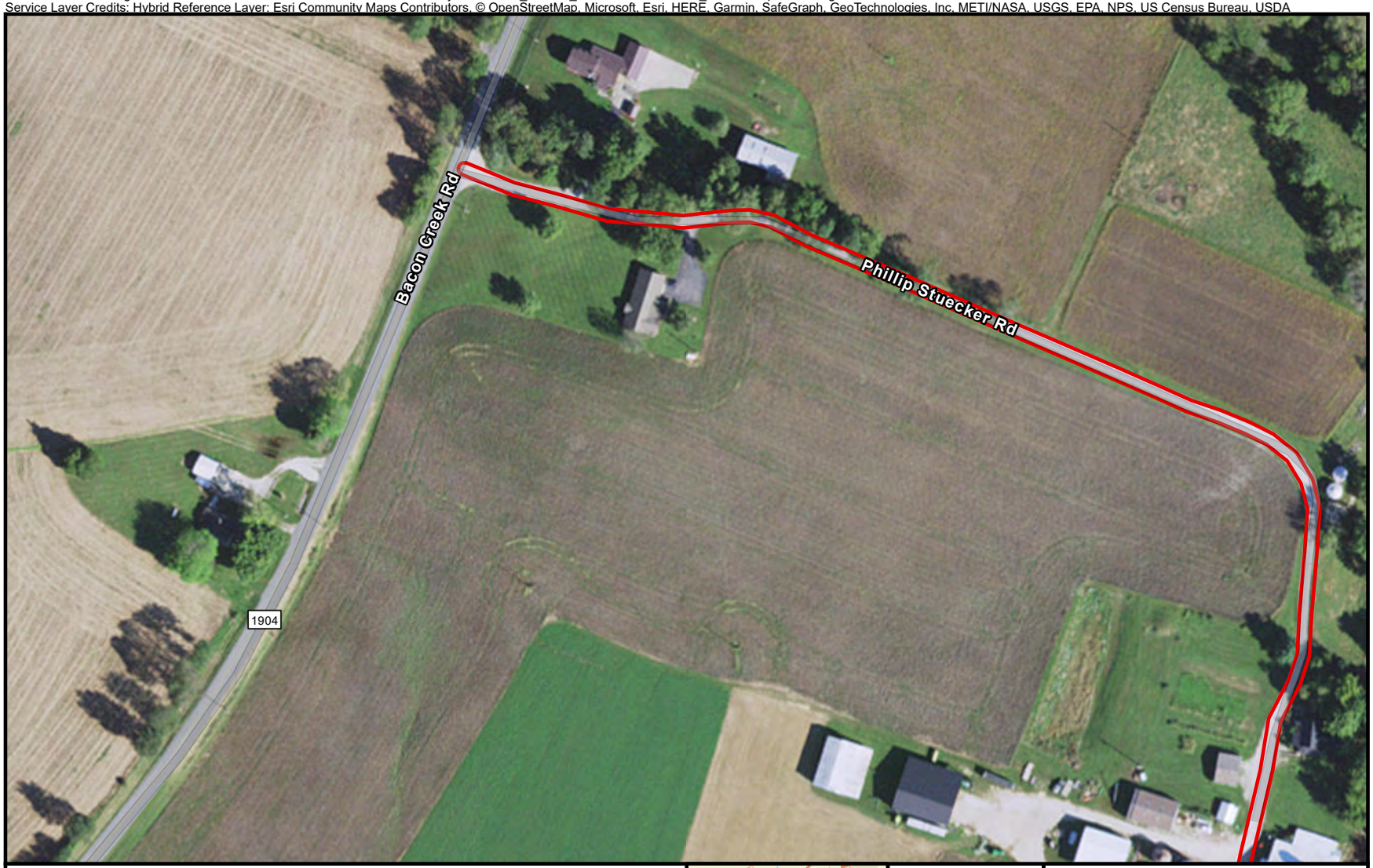

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

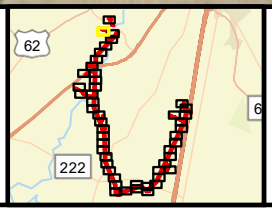

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 2 of 49

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
Source: Esri and Burns & McDonnell Engineering Company
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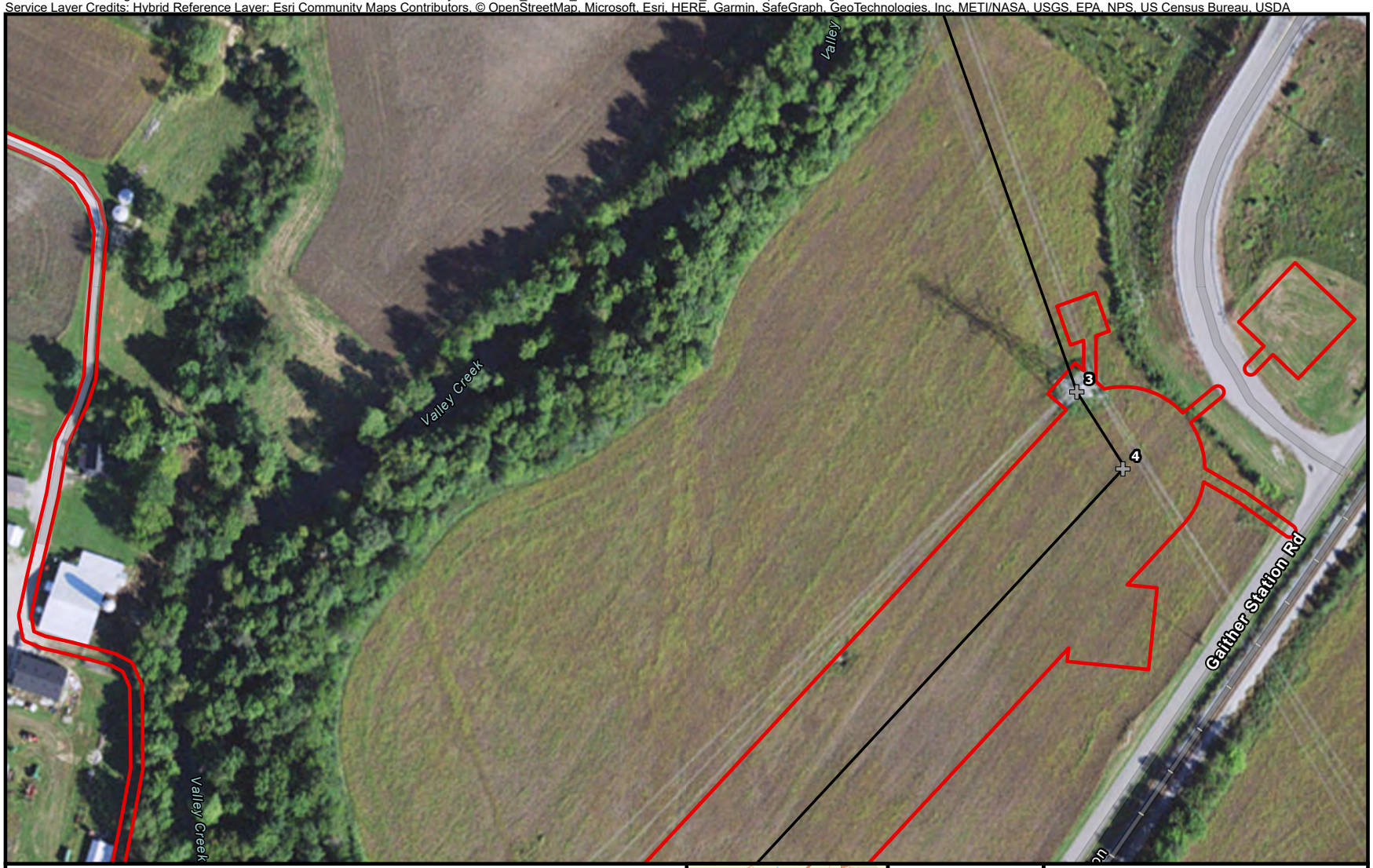

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

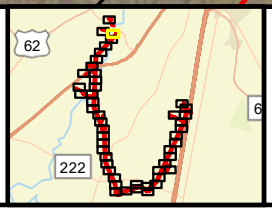

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
Source: Esri and Burns & McDonnell Engineering Company
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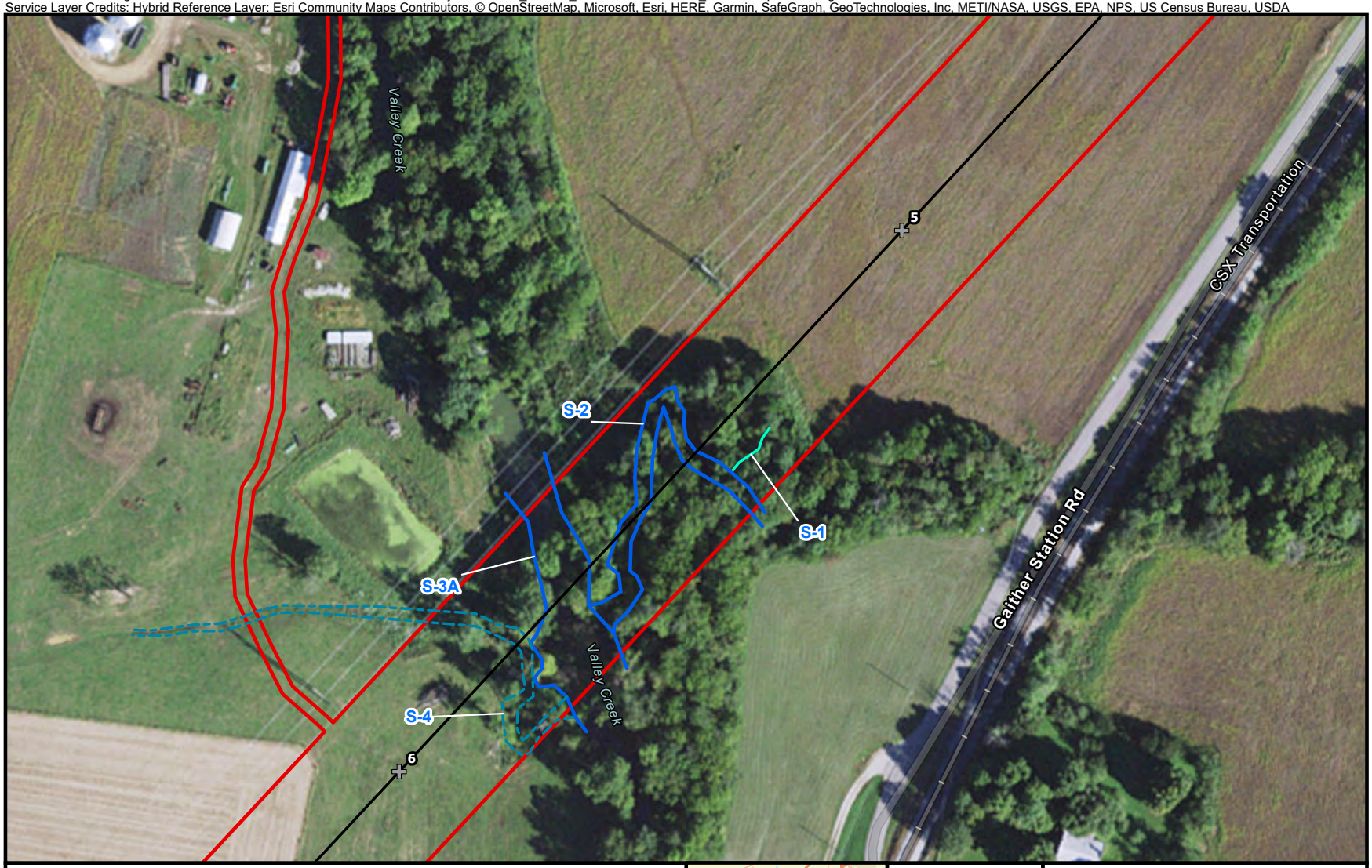

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 4 of 49

Source: Esri and Burns & McDonnell Engineering Company

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Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

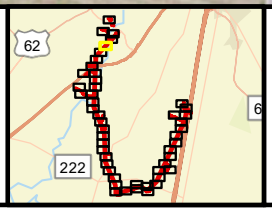

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
Source: Esri and Burns & McDonnell Engineering Company
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Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

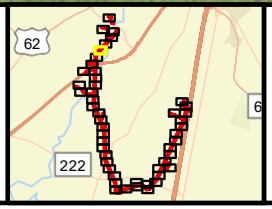

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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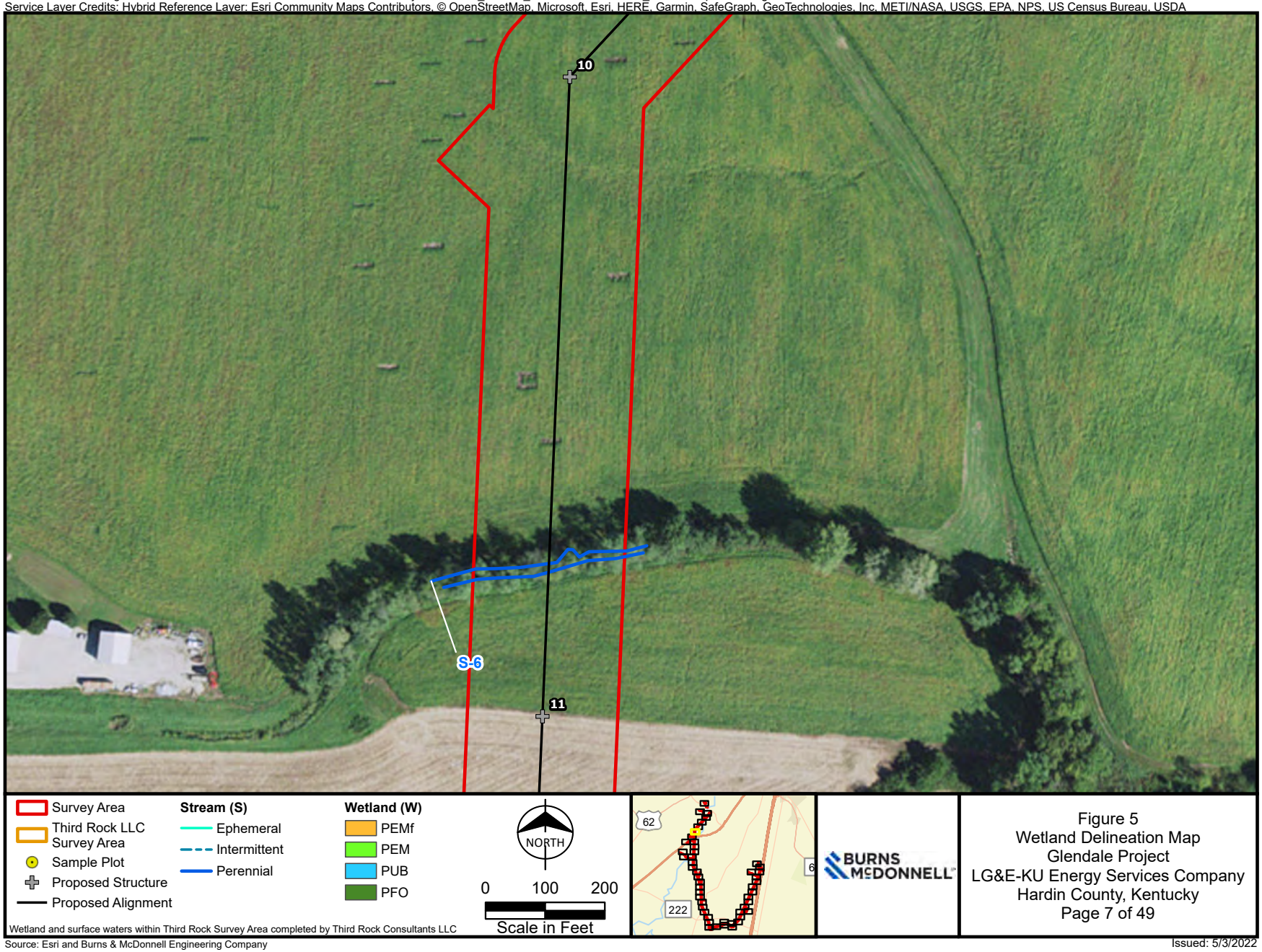

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 7 of 49

Source: Esri and Burns & McDonnell Engineering Company

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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri and Burns & McDonnell Engineering Company

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Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

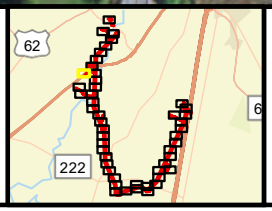

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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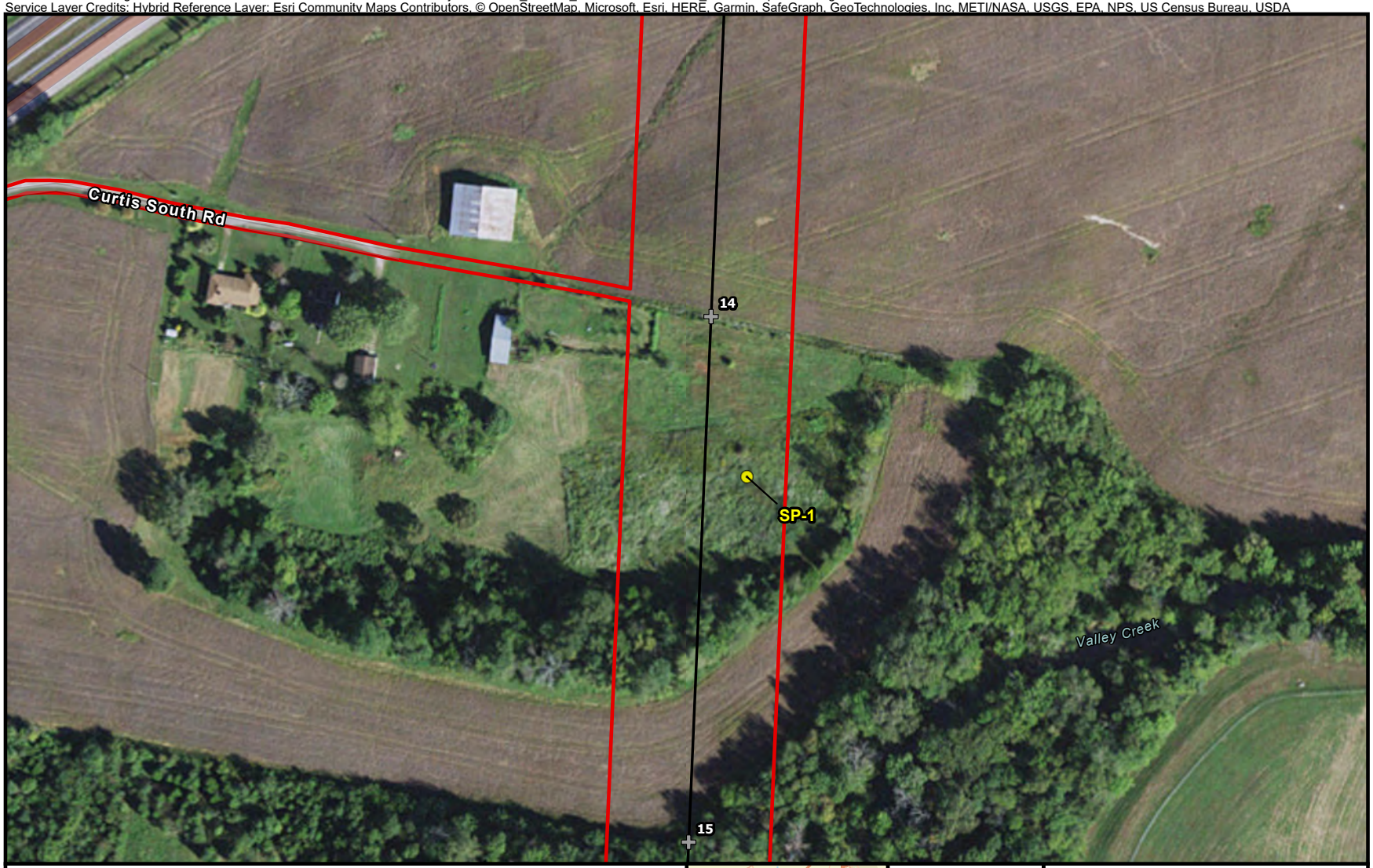

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

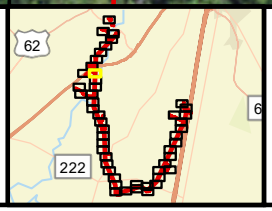

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
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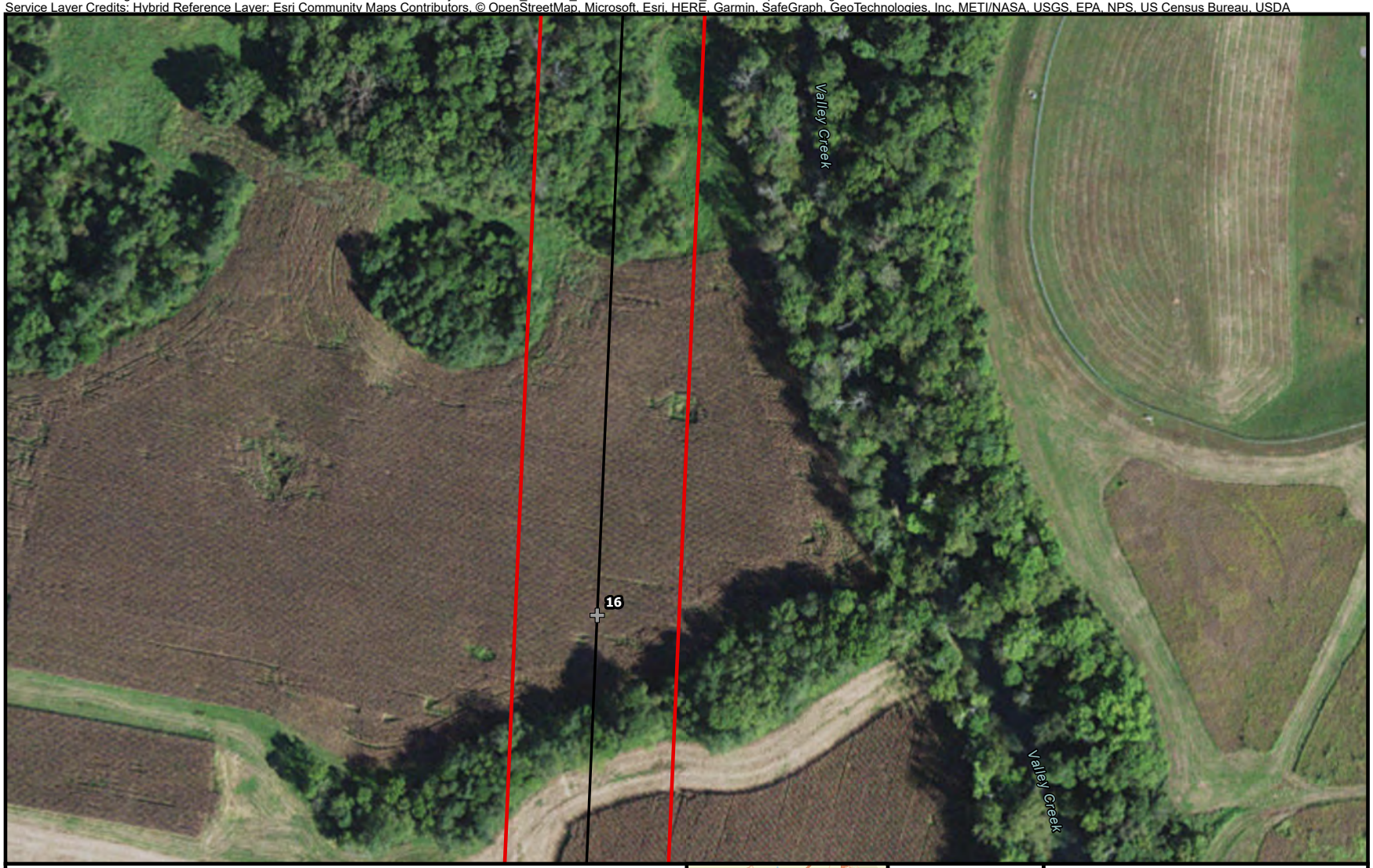

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

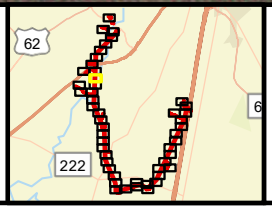

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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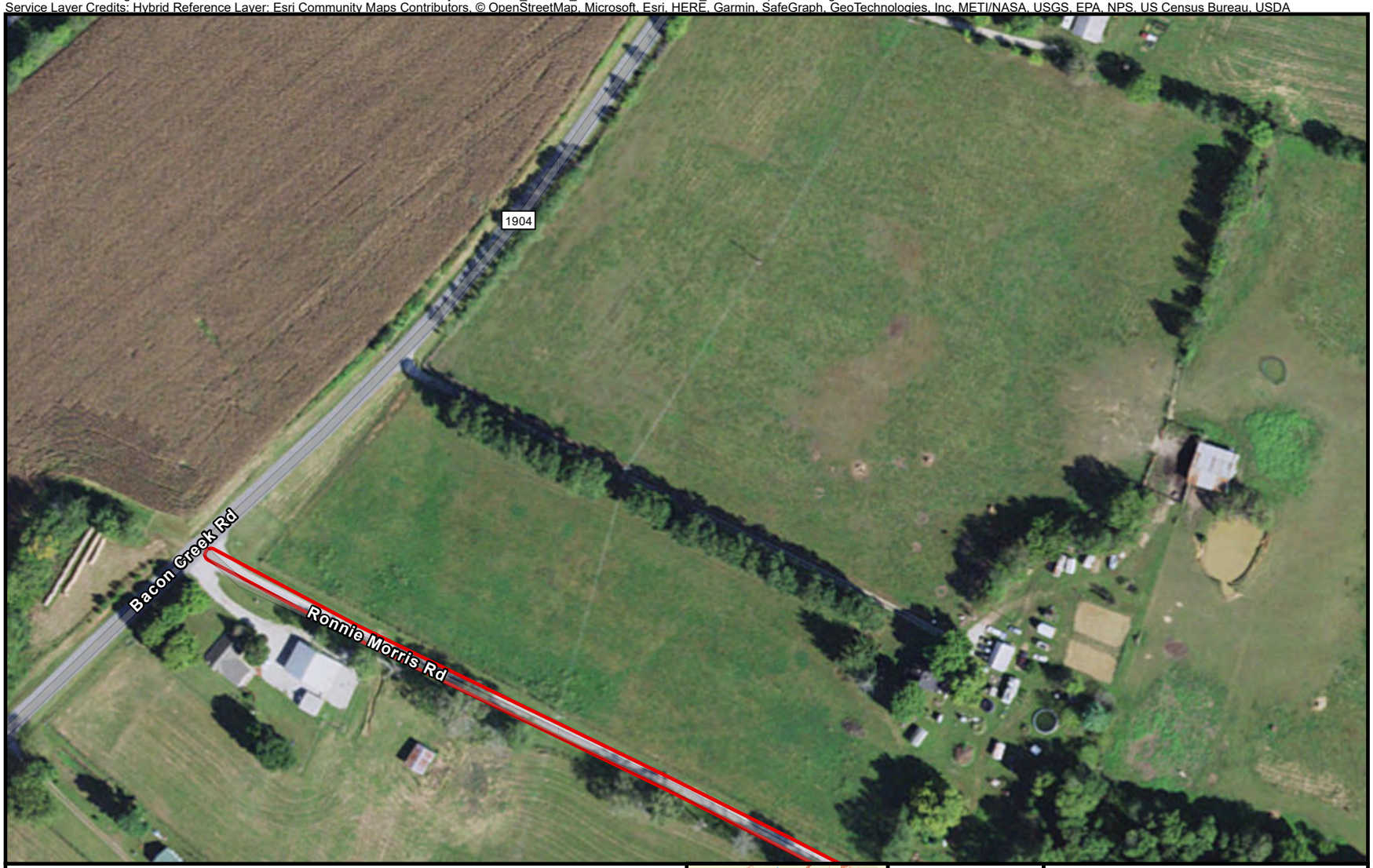

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

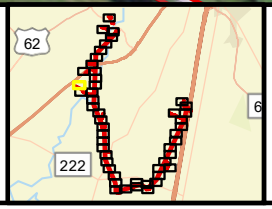

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
Source: Esri and Burns & McDonnell Engineering Company
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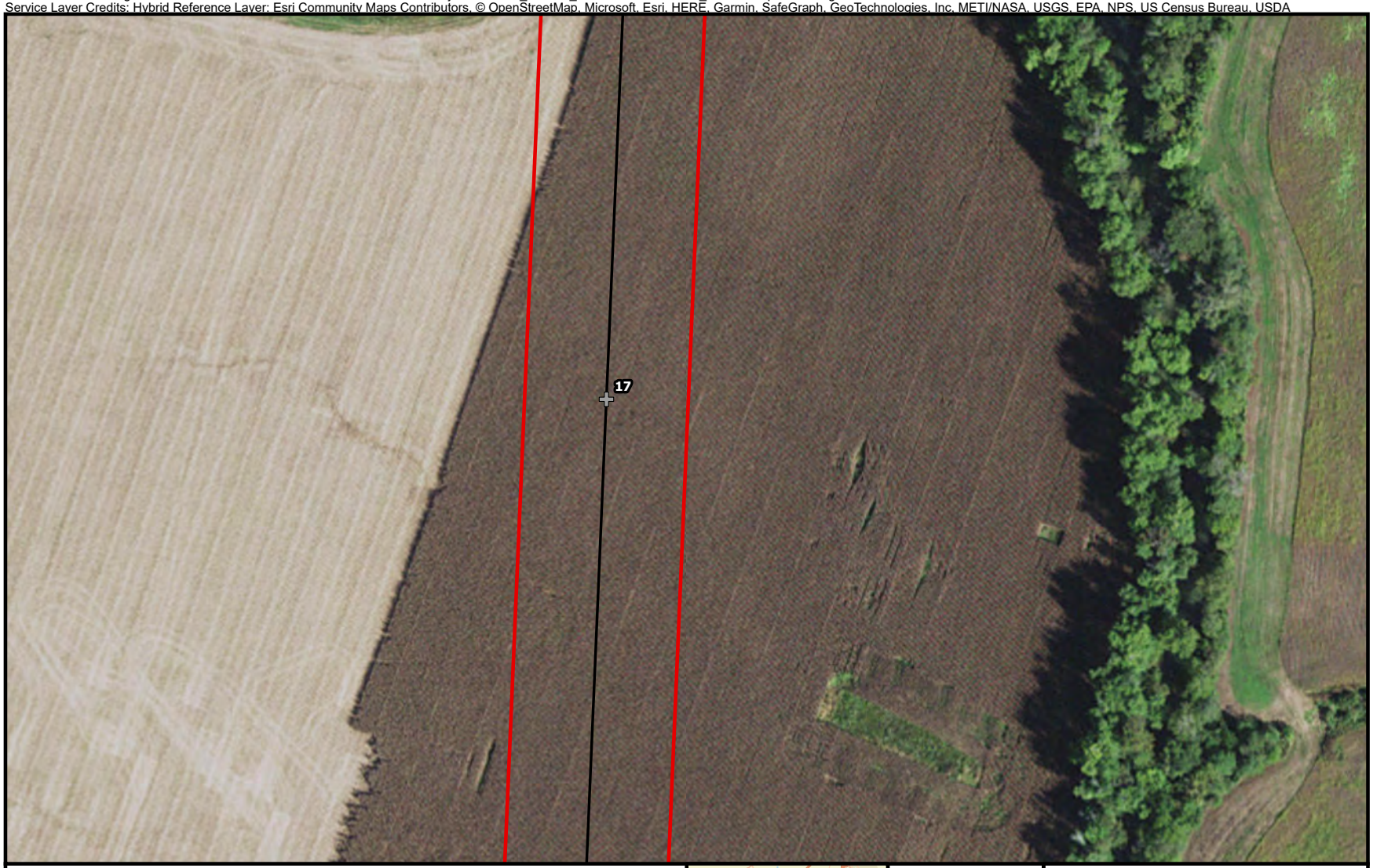

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

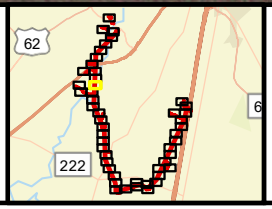

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Figure 5
Wetland Delineation Map
Glendale Project
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Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
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Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

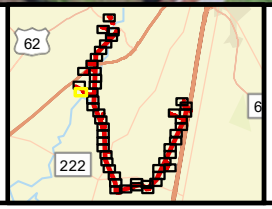

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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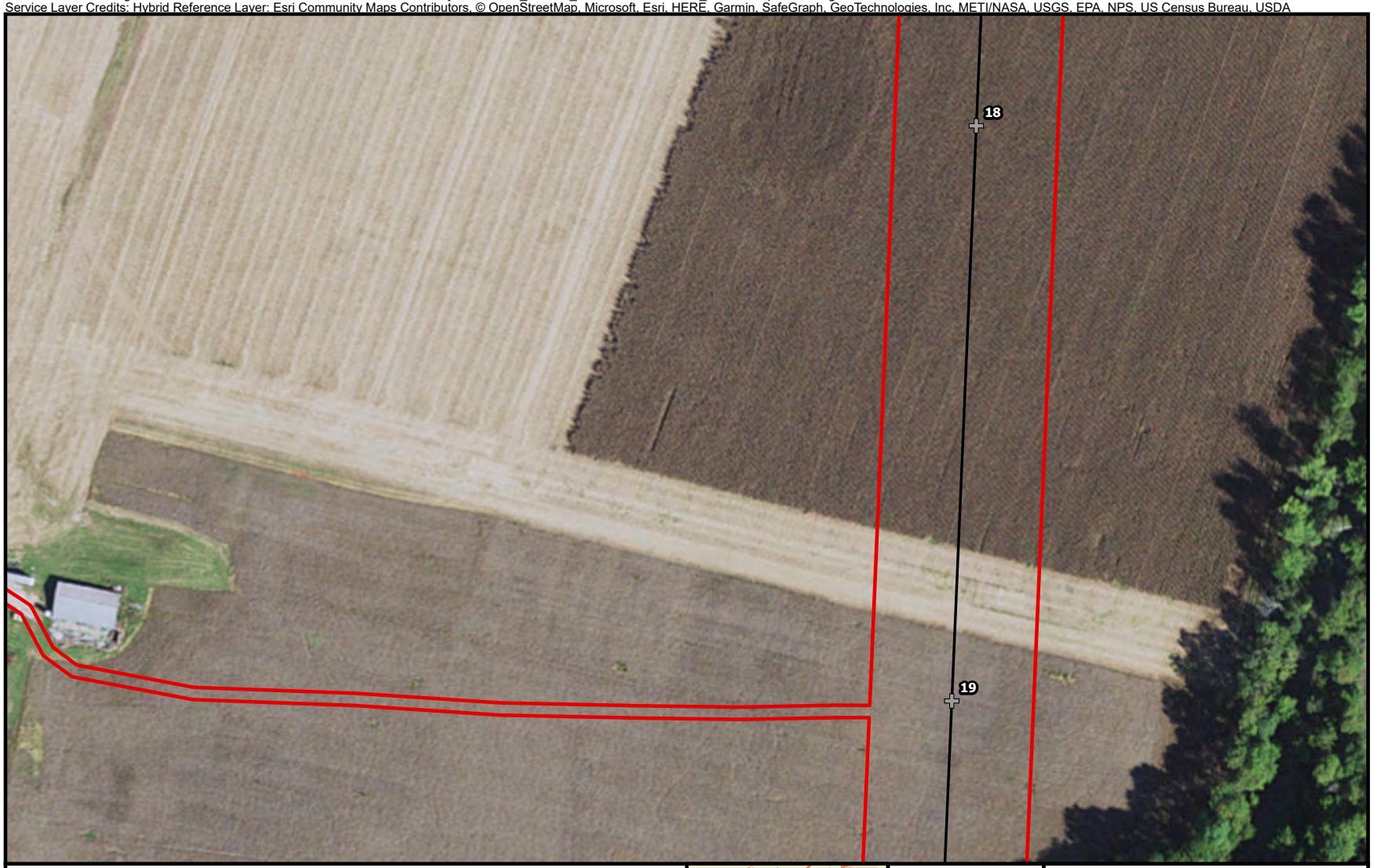

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

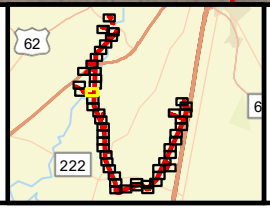

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
Source: Esri and Burns & McDonnell Engineering Company
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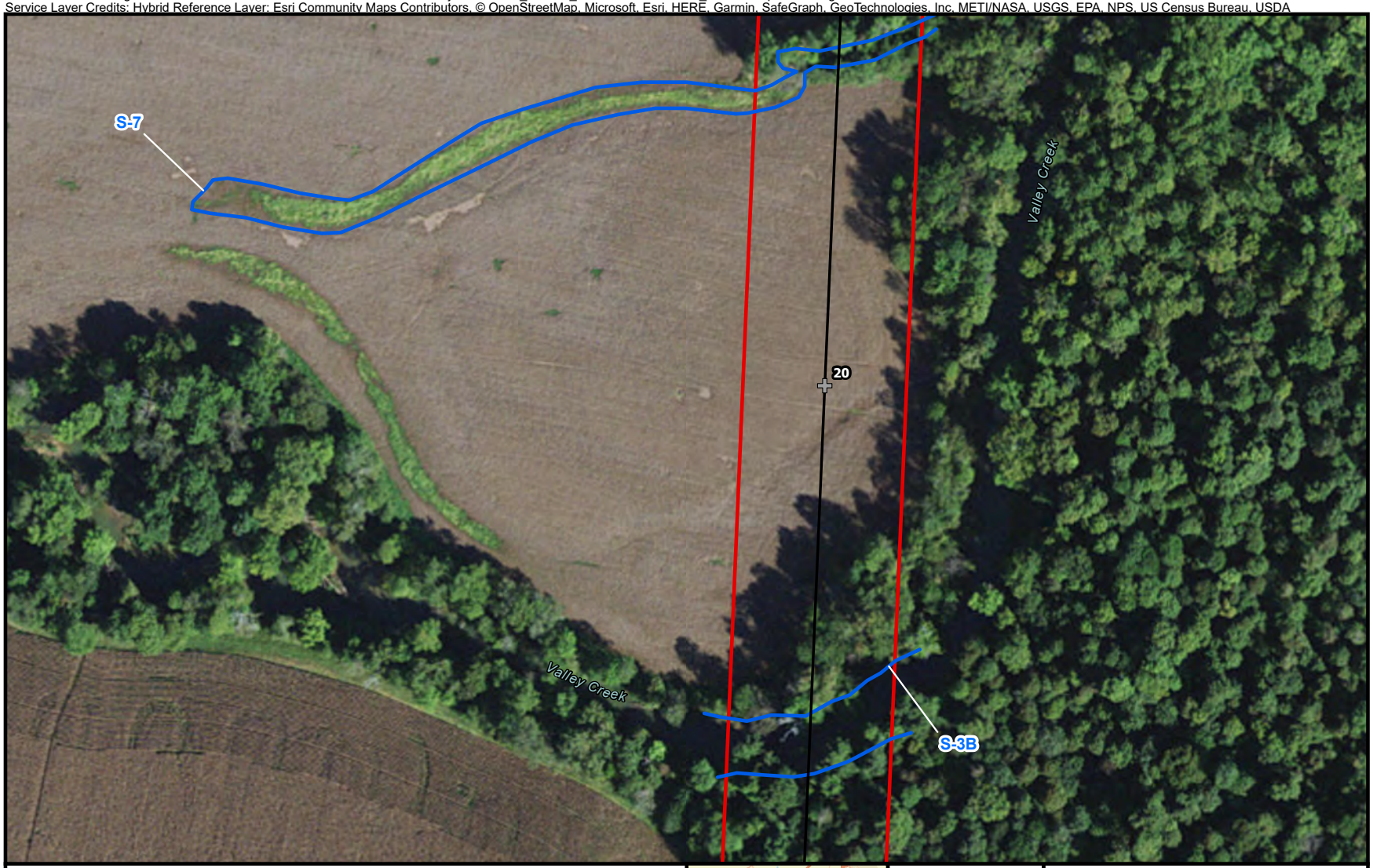

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

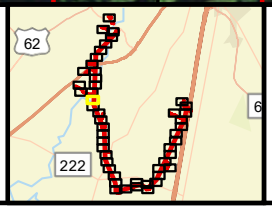

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

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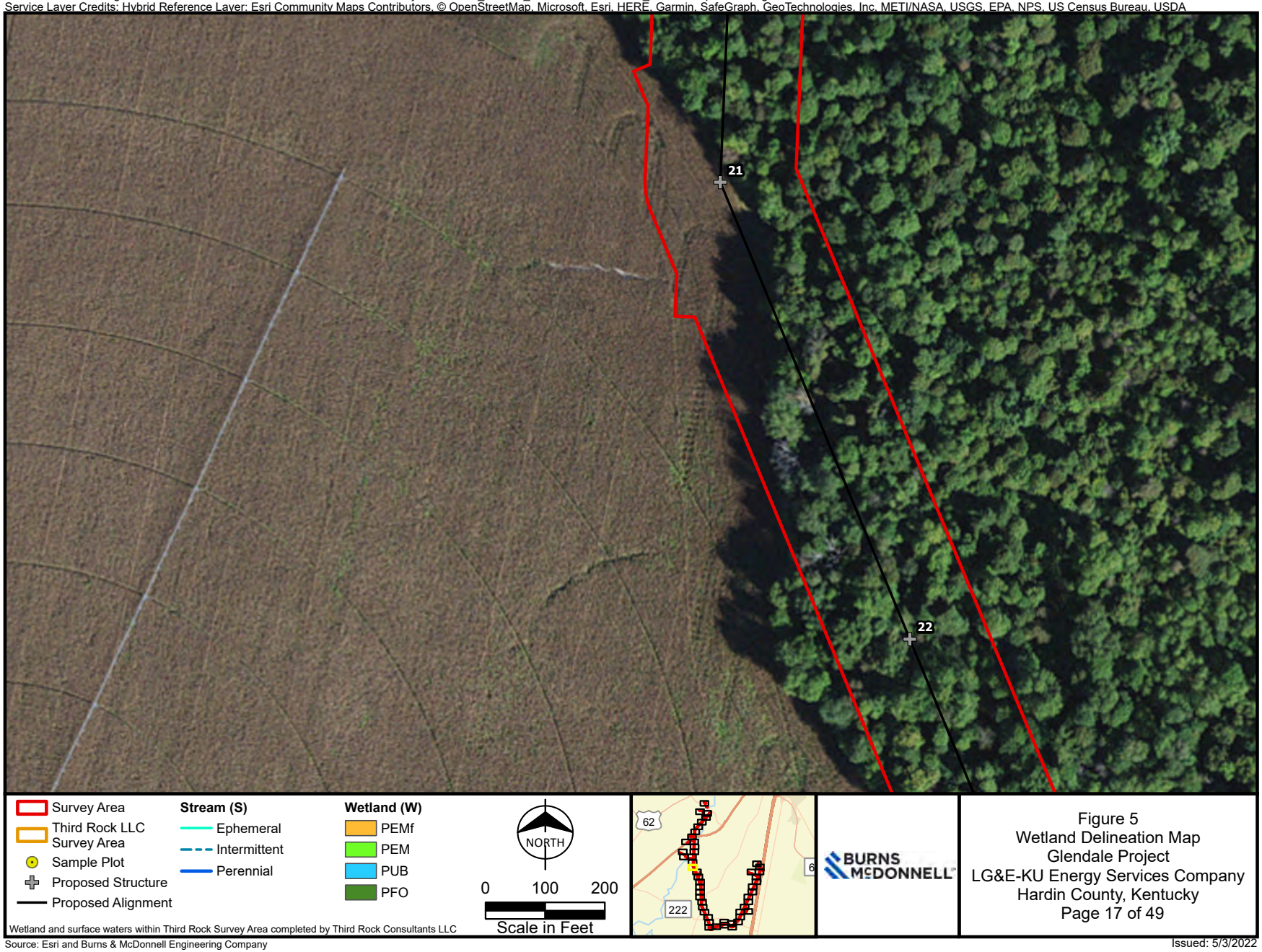

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 17 of 49

Source: Esri and Burns & McDonnell Engineering Company

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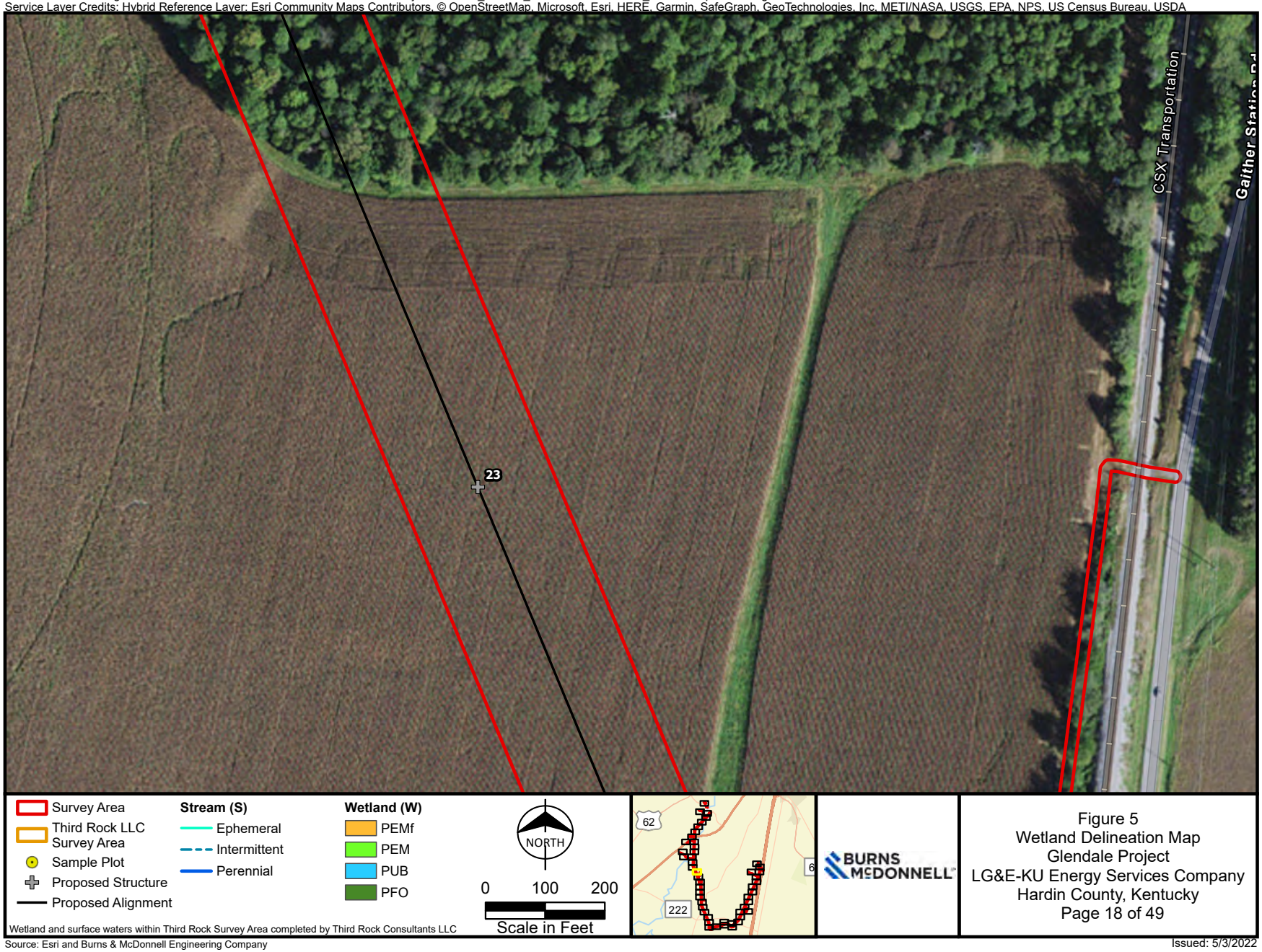

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri and Burns & McDonnell Engineering Company

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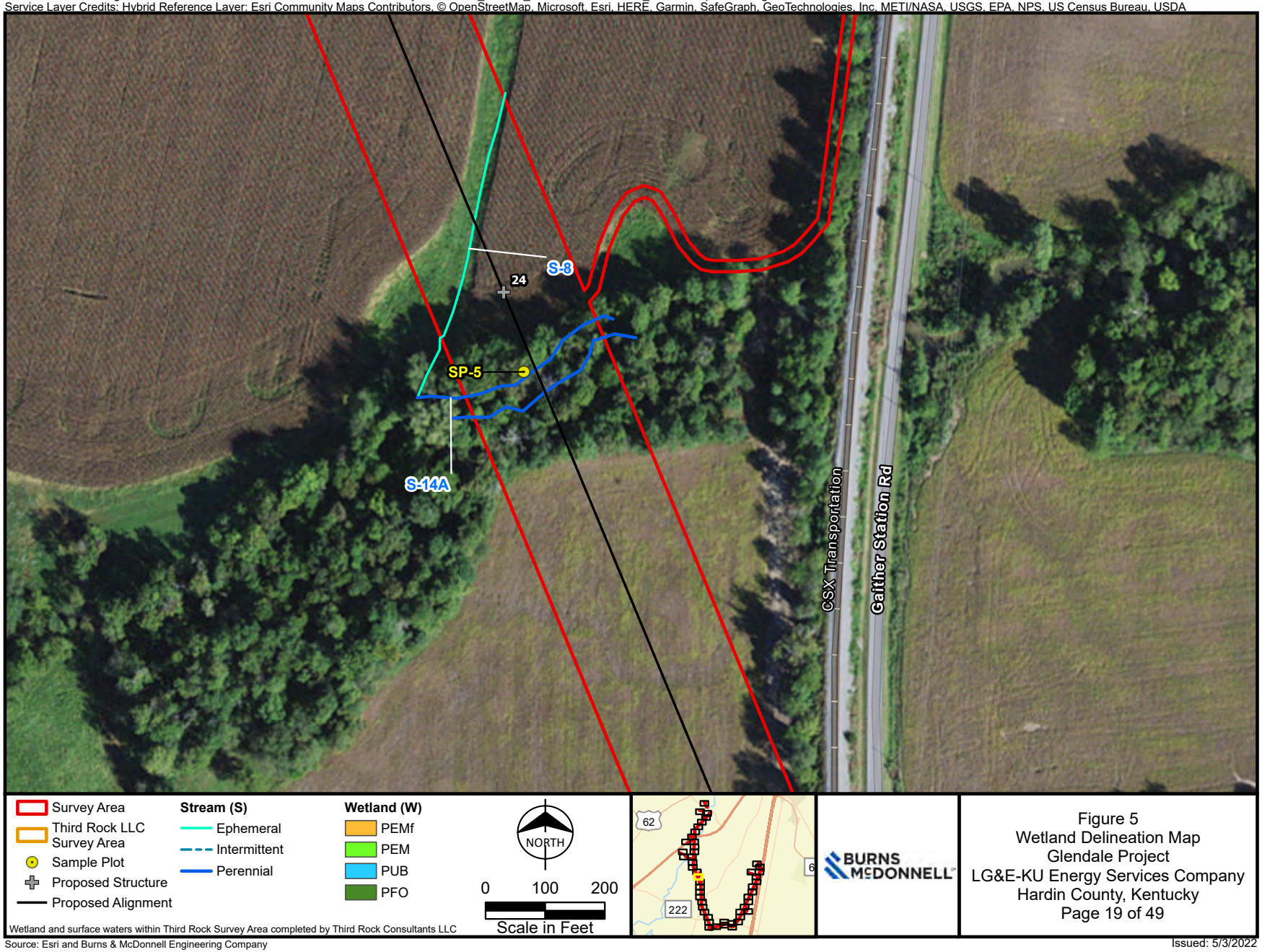

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri and Burns & McDonnell Engineering Company

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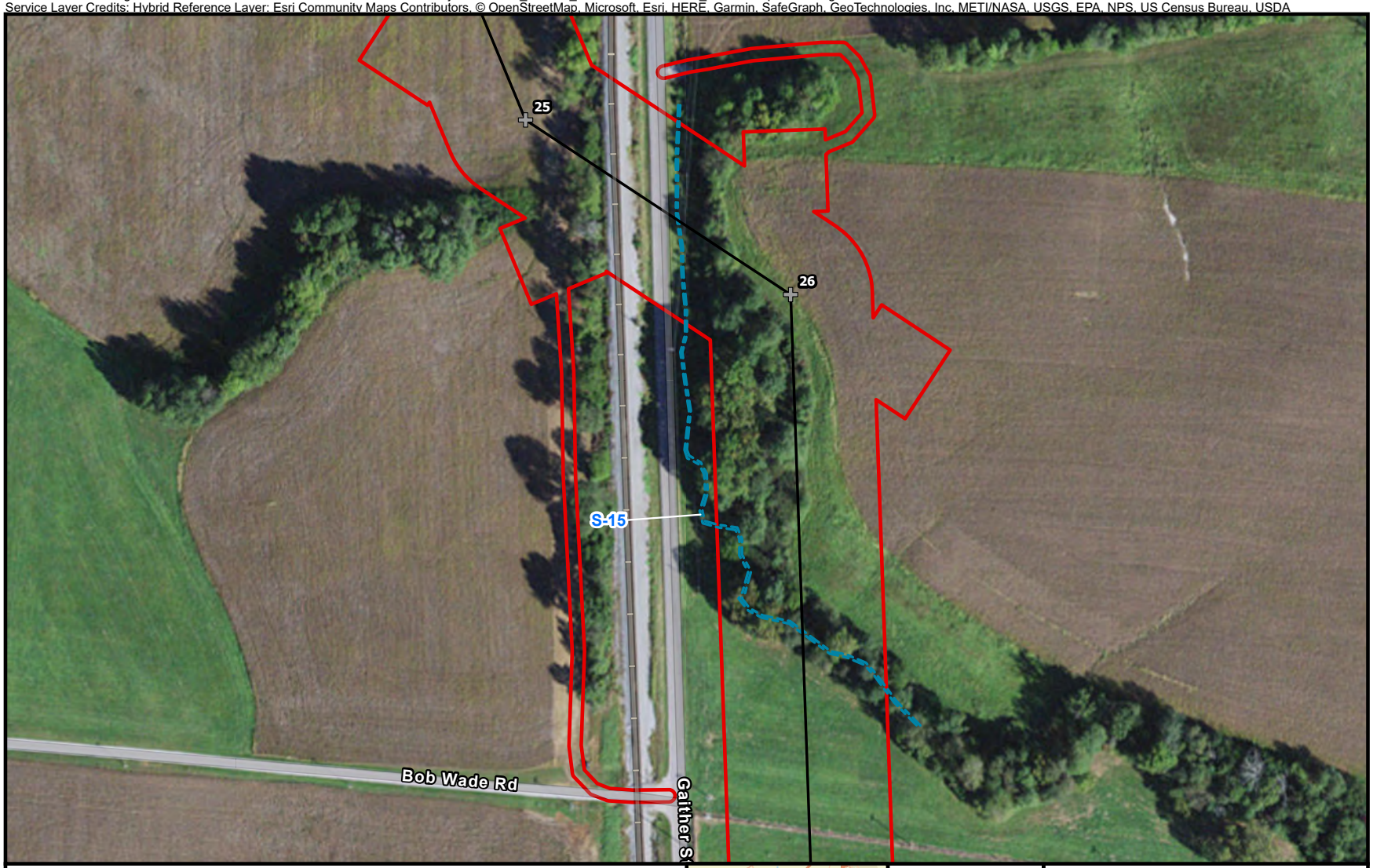

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

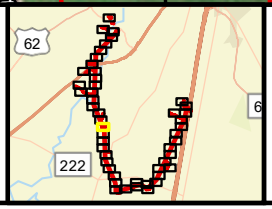

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
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Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

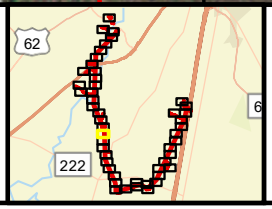

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
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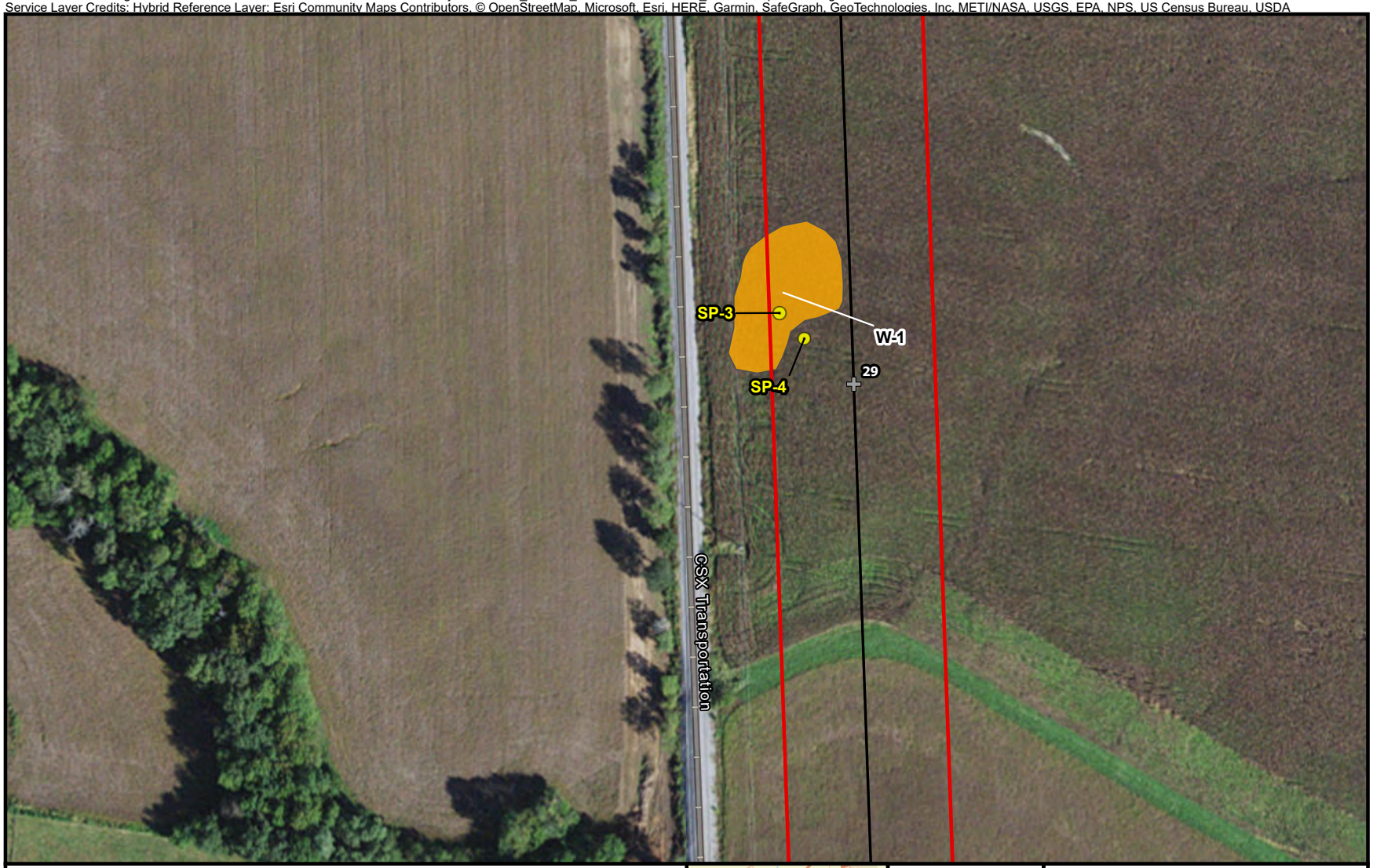


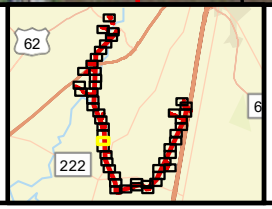
Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet



Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
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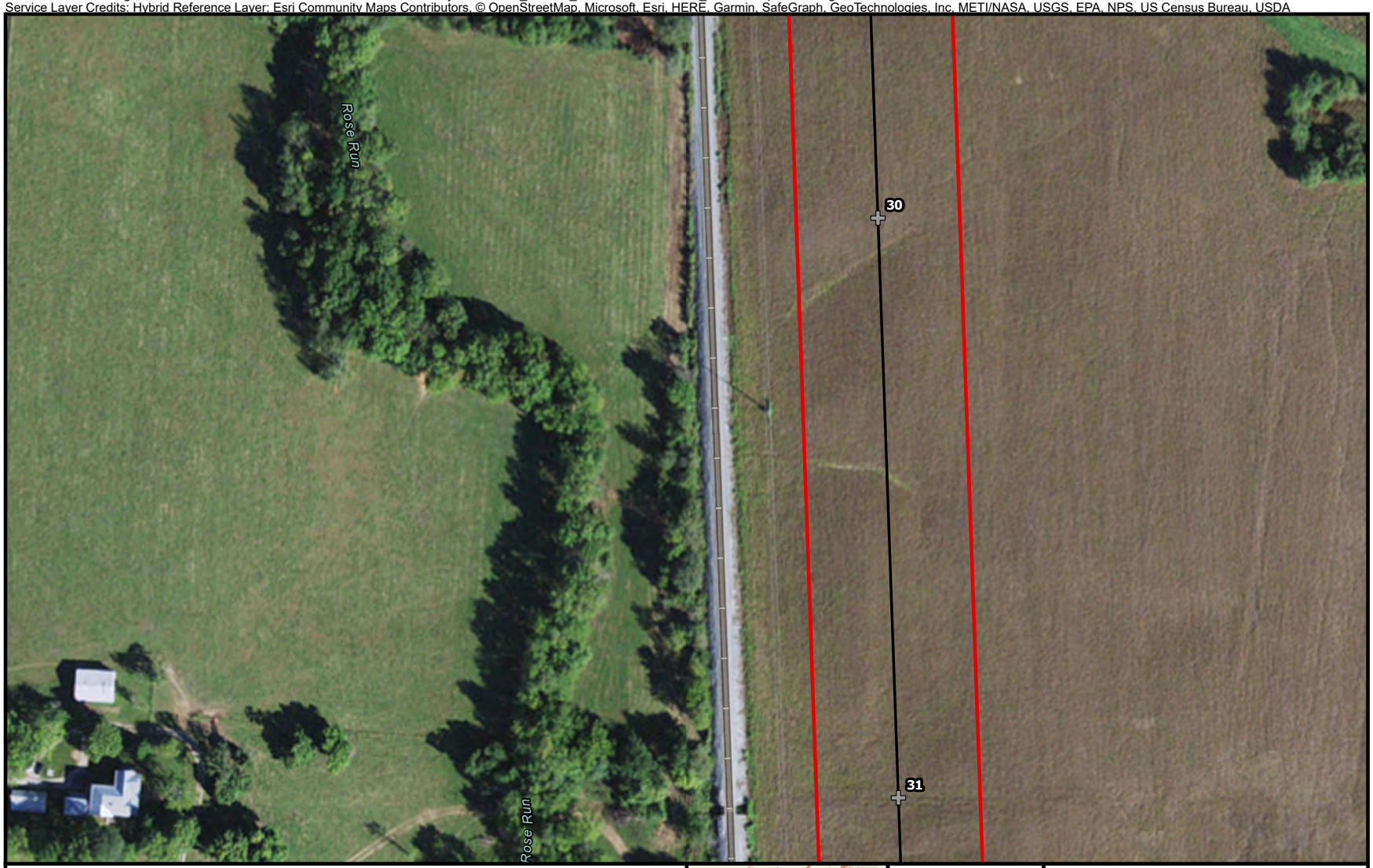


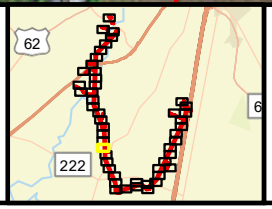
Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet



Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

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Figure 5
Wetland Delineation Map
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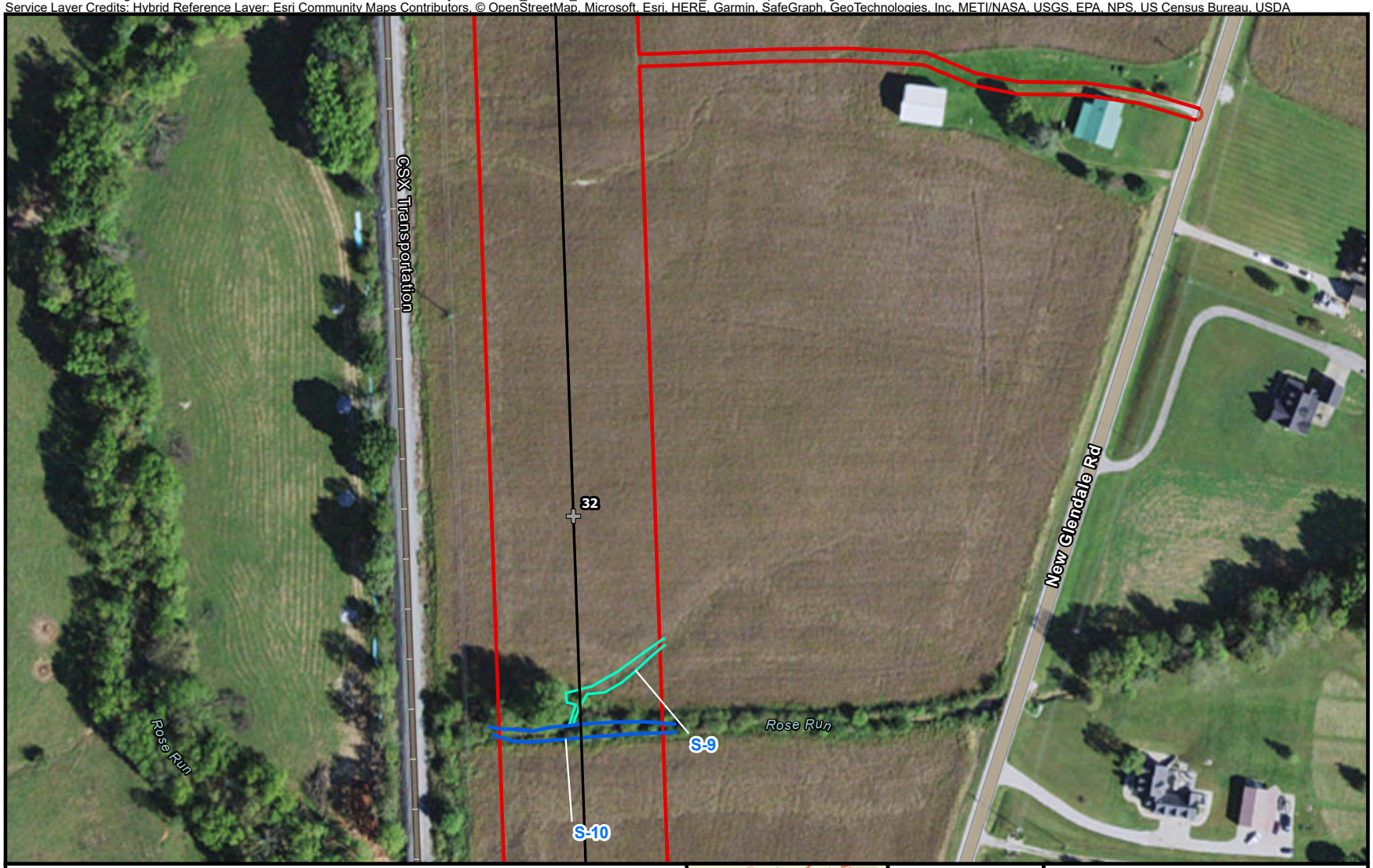

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

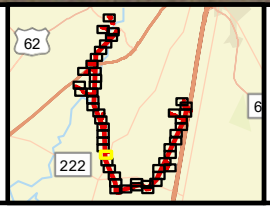

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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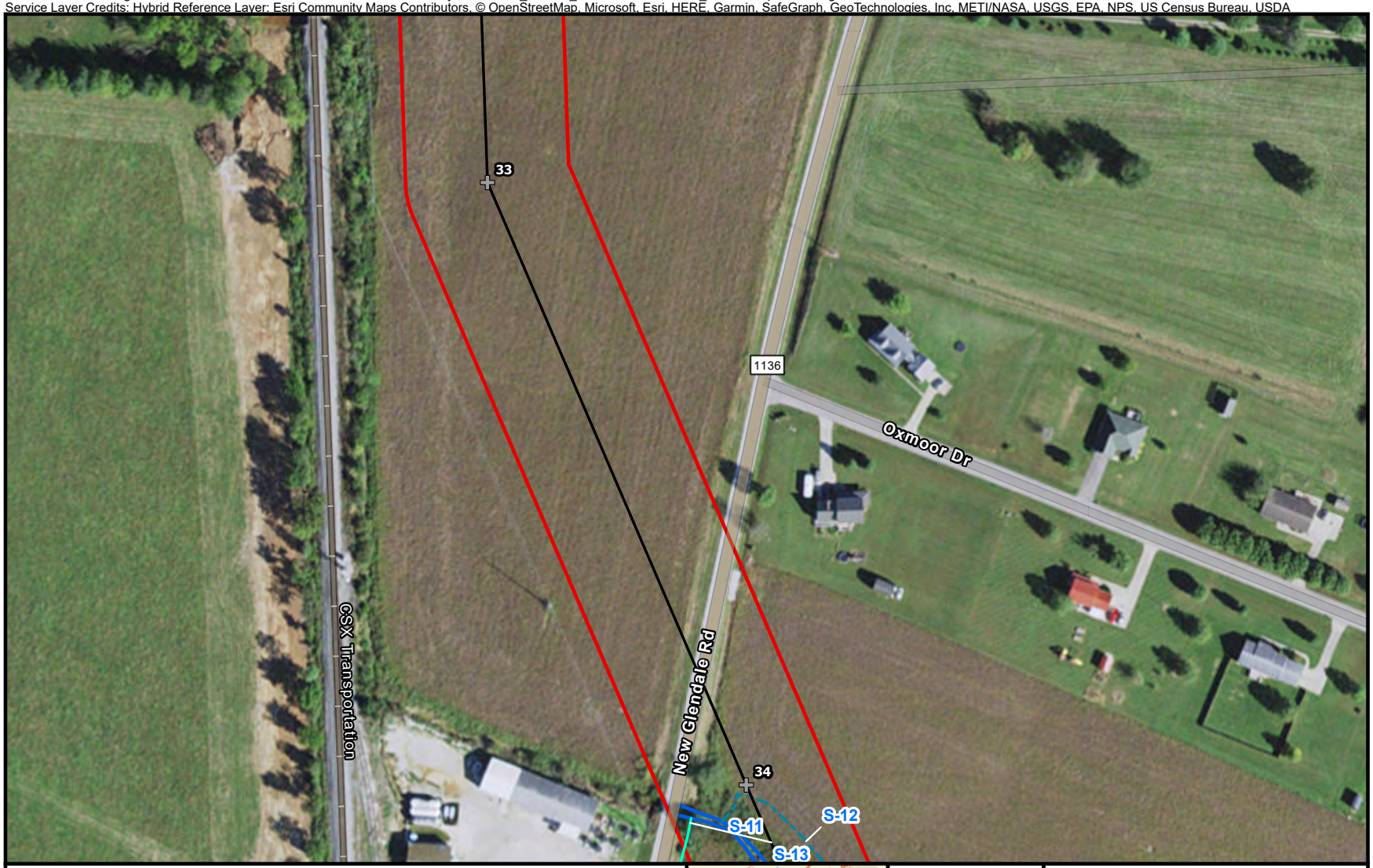


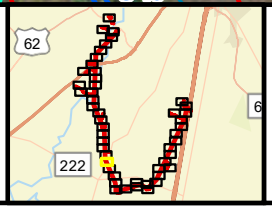
Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet



Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 25 of 49

Source: Esri and Burns & McDonnell Engineering Company

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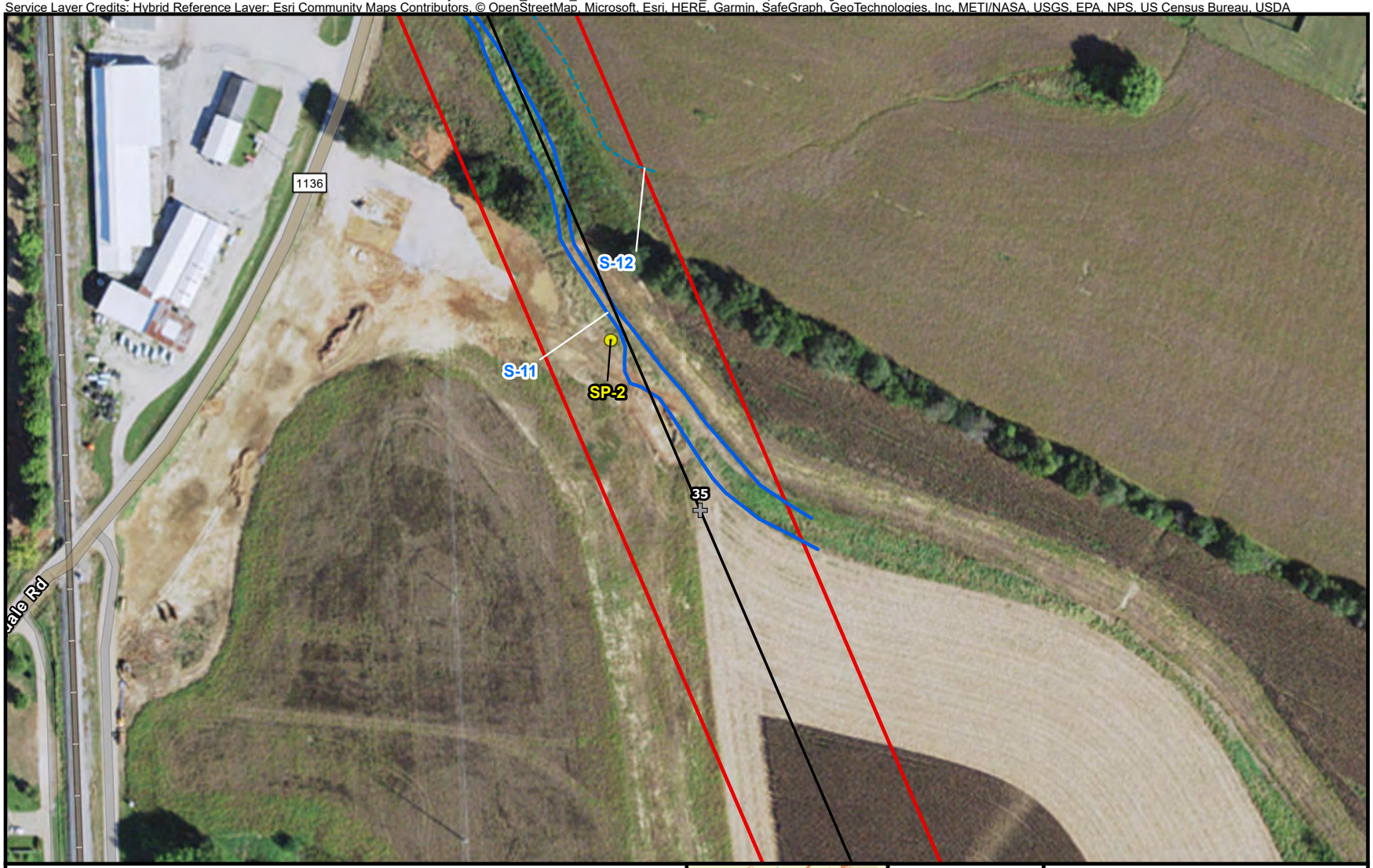

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

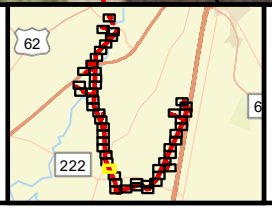

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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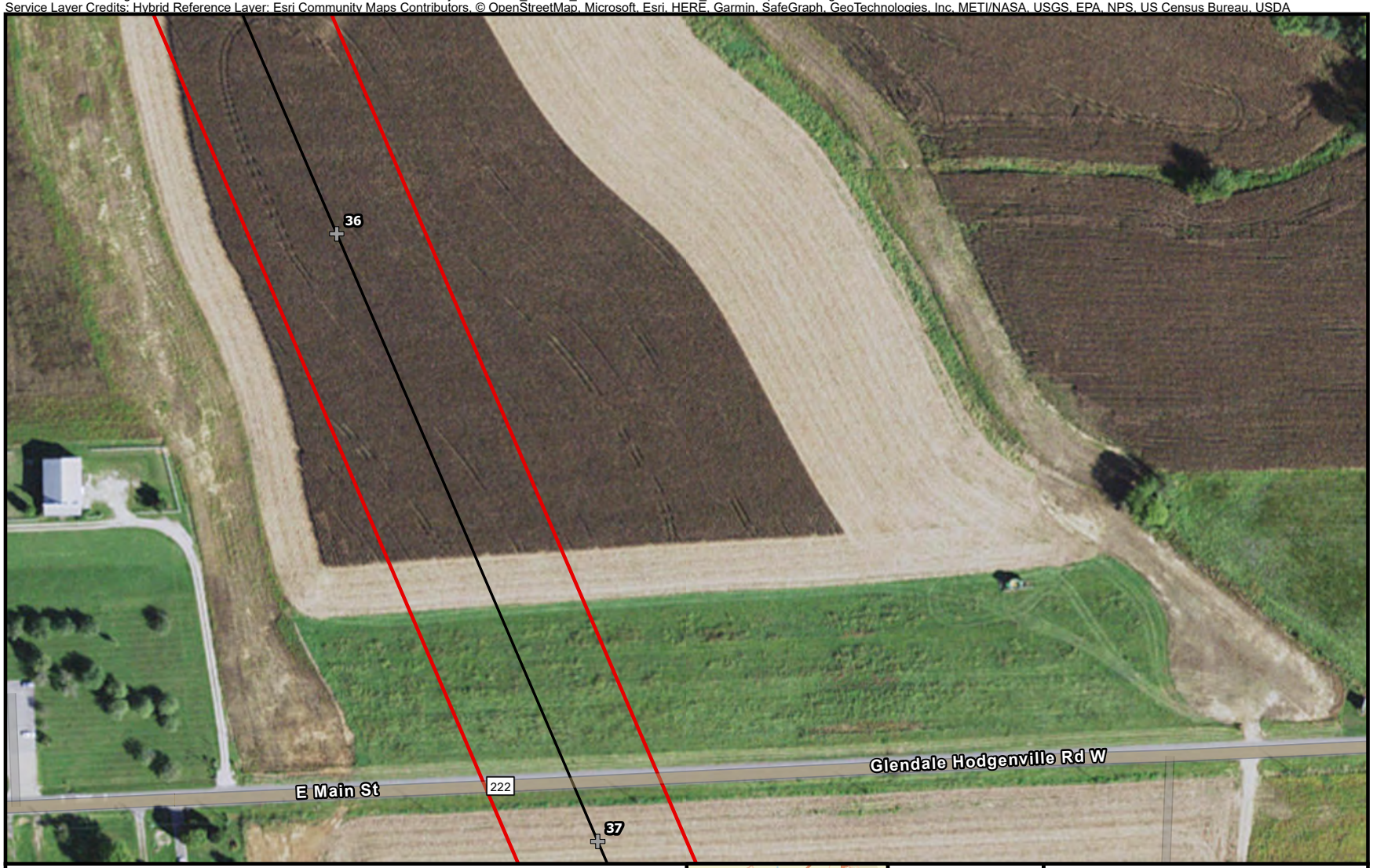

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

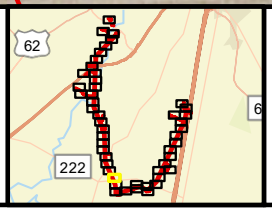

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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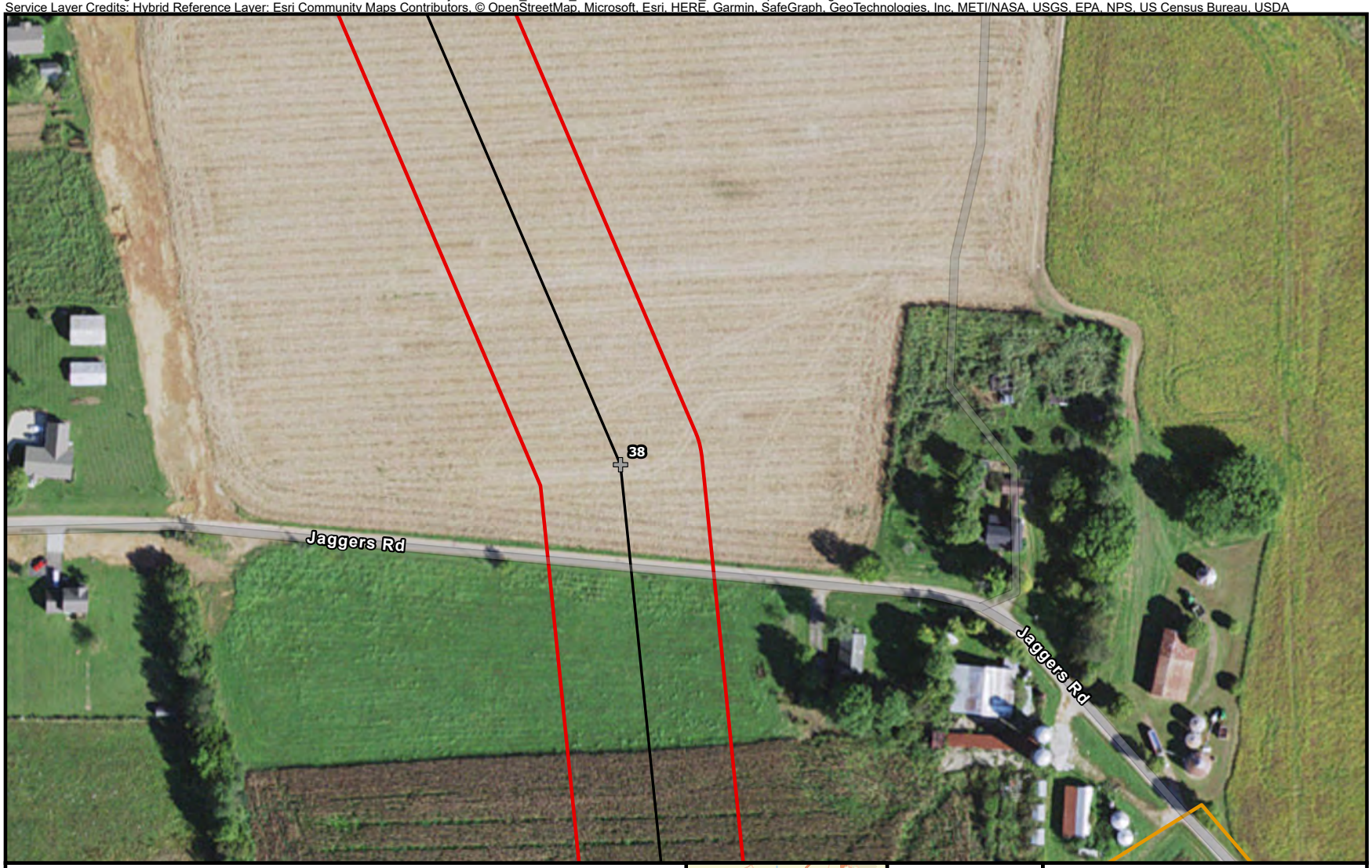

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

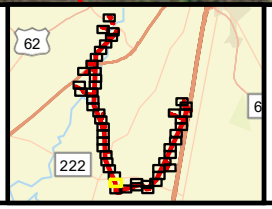

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
Source: Esri and Burns & McDonnell Engineering Company
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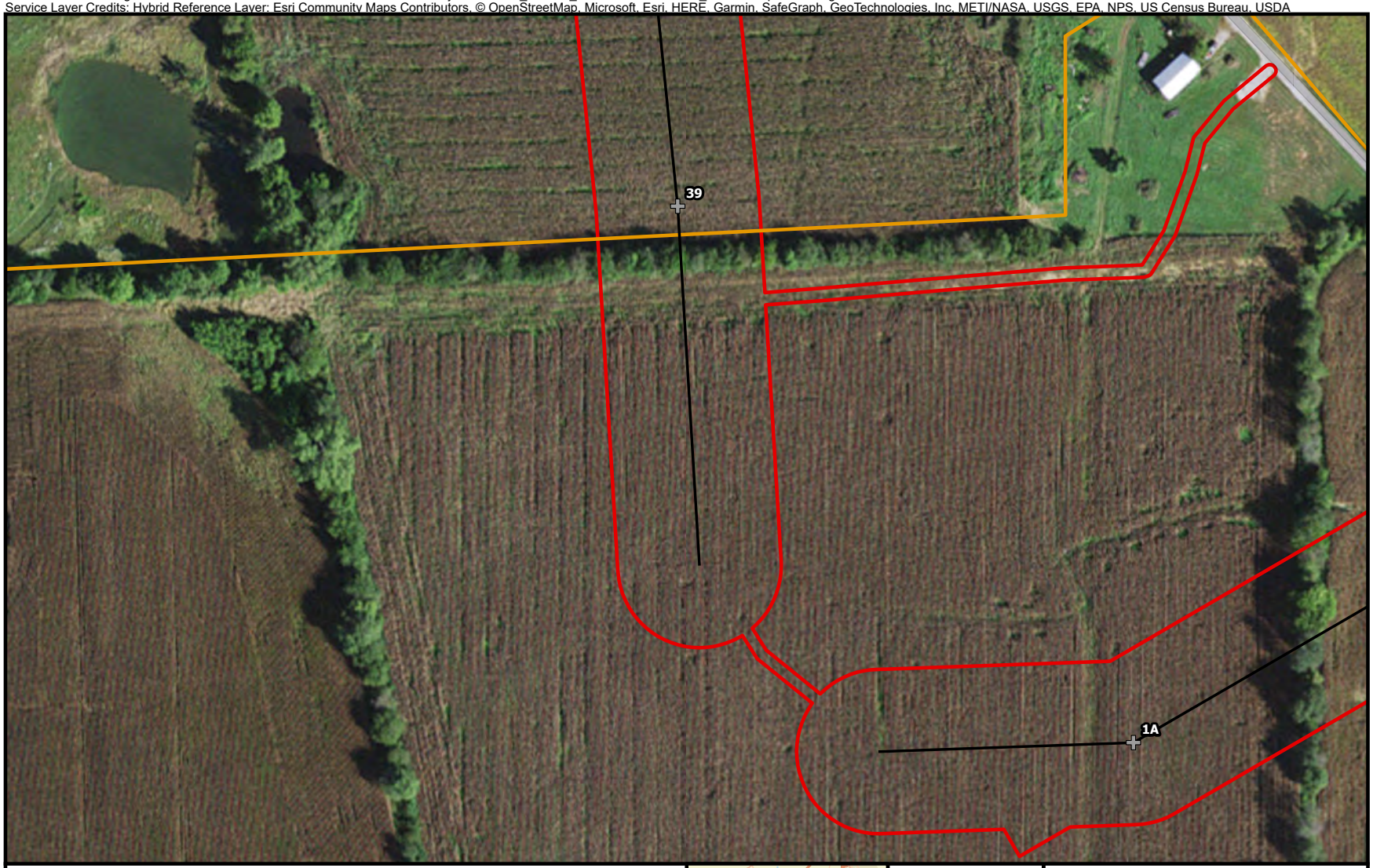

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

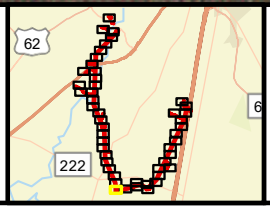

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 29 of 49

Source: Esri and Burns & McDonnell Engineering Company

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Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

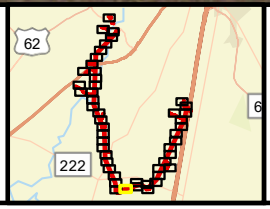

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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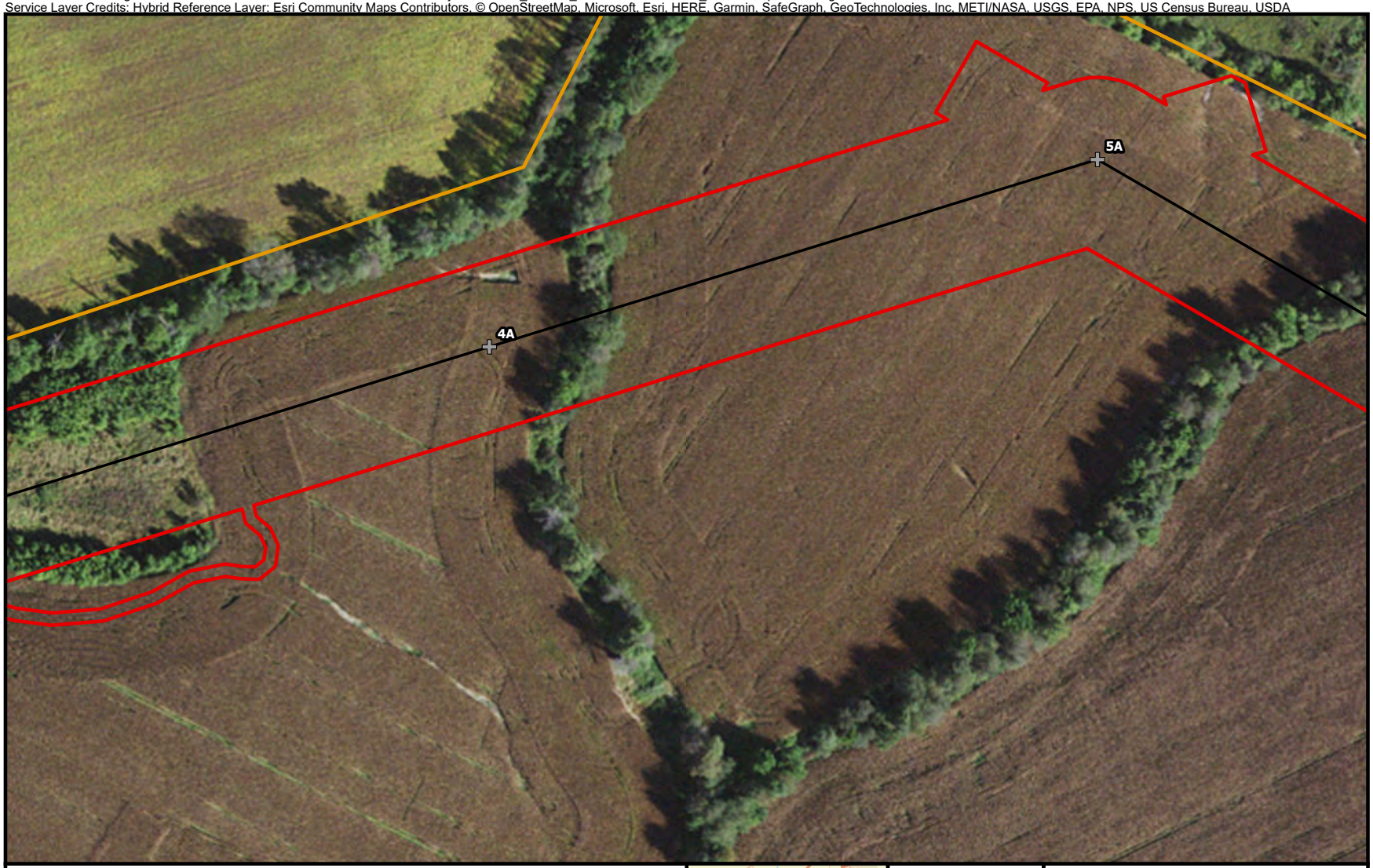

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

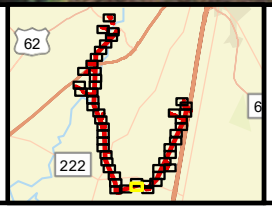

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
Source: Esri and Burns & McDonnell Engineering Company
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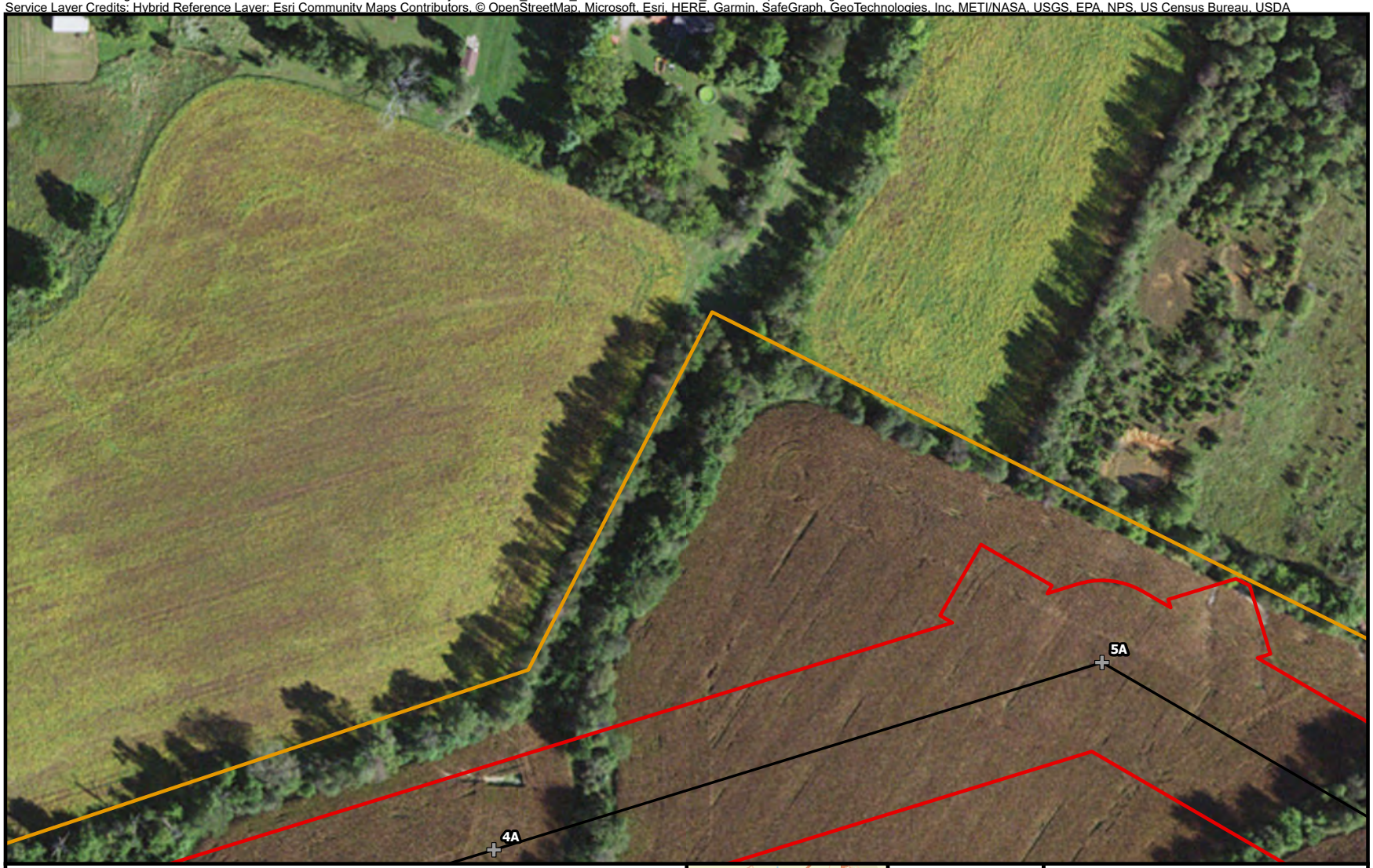


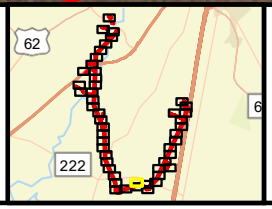
Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet



Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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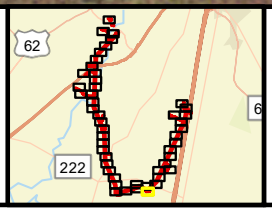
Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet



Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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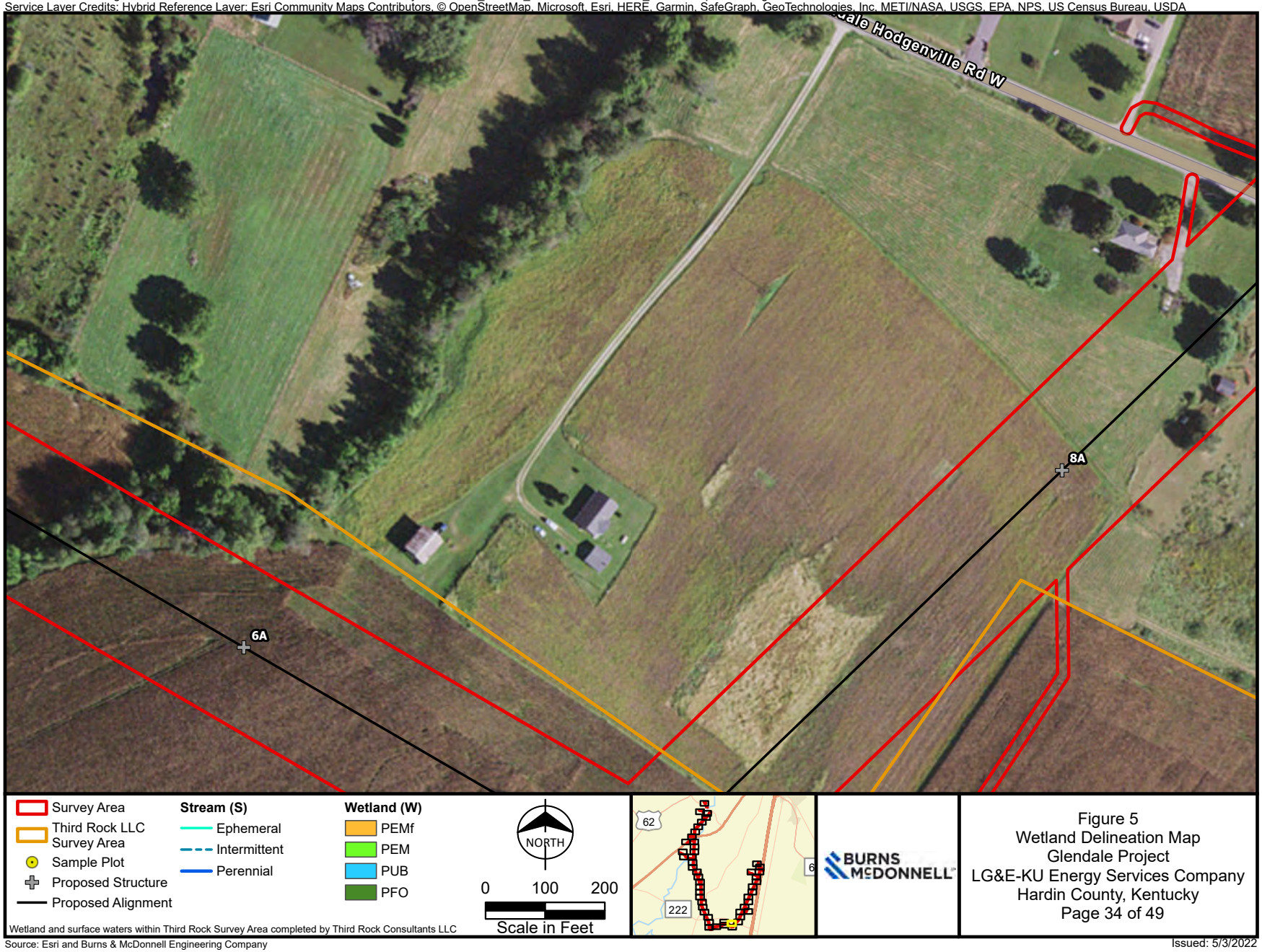

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 34 of 49

Source: Esri and Burns & McDonnell Engineering Company

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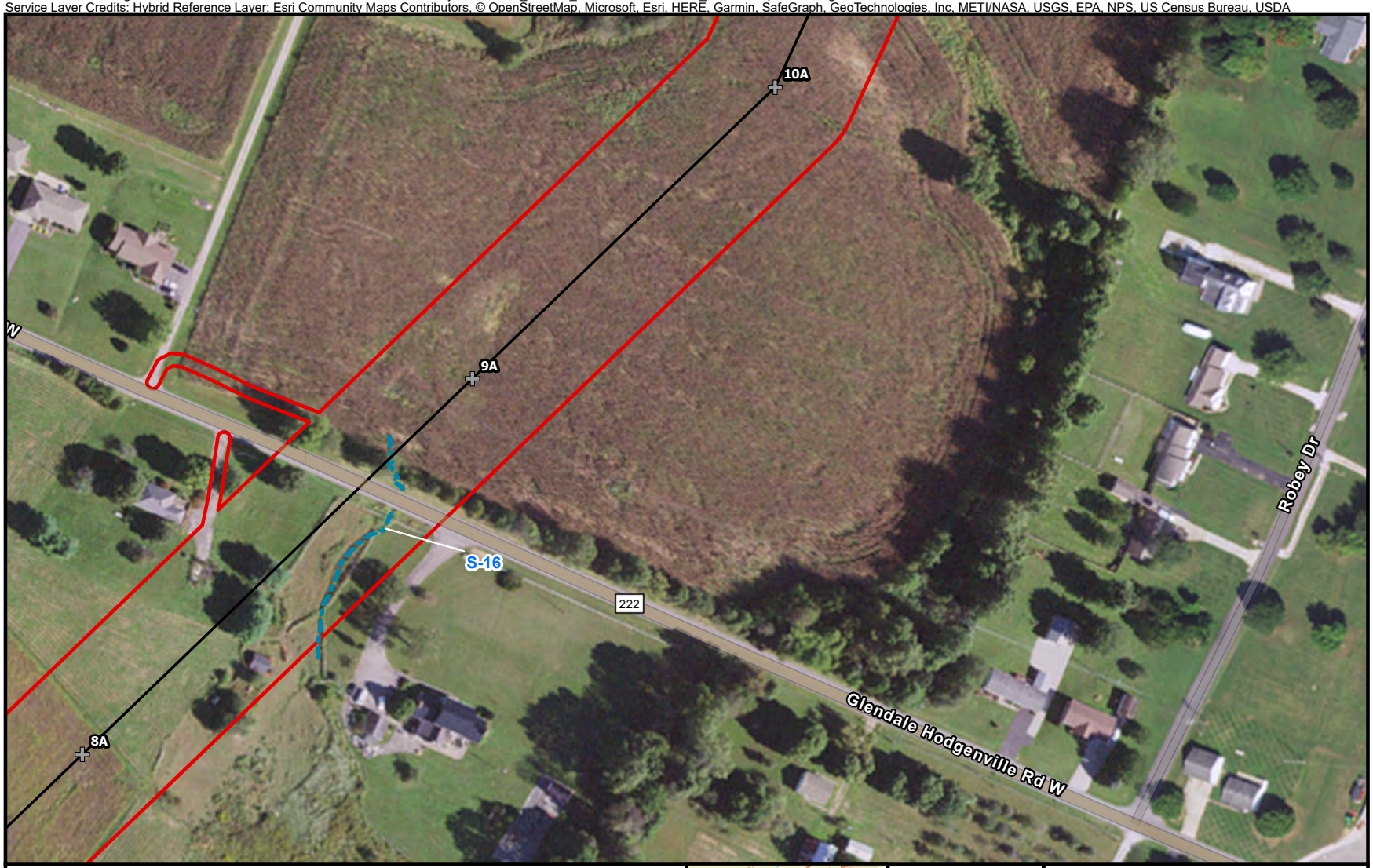

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH
0 100 200
Scale in Feet

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

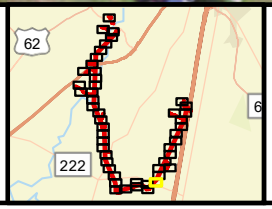

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri and Burns & McDonnell Engineering Company

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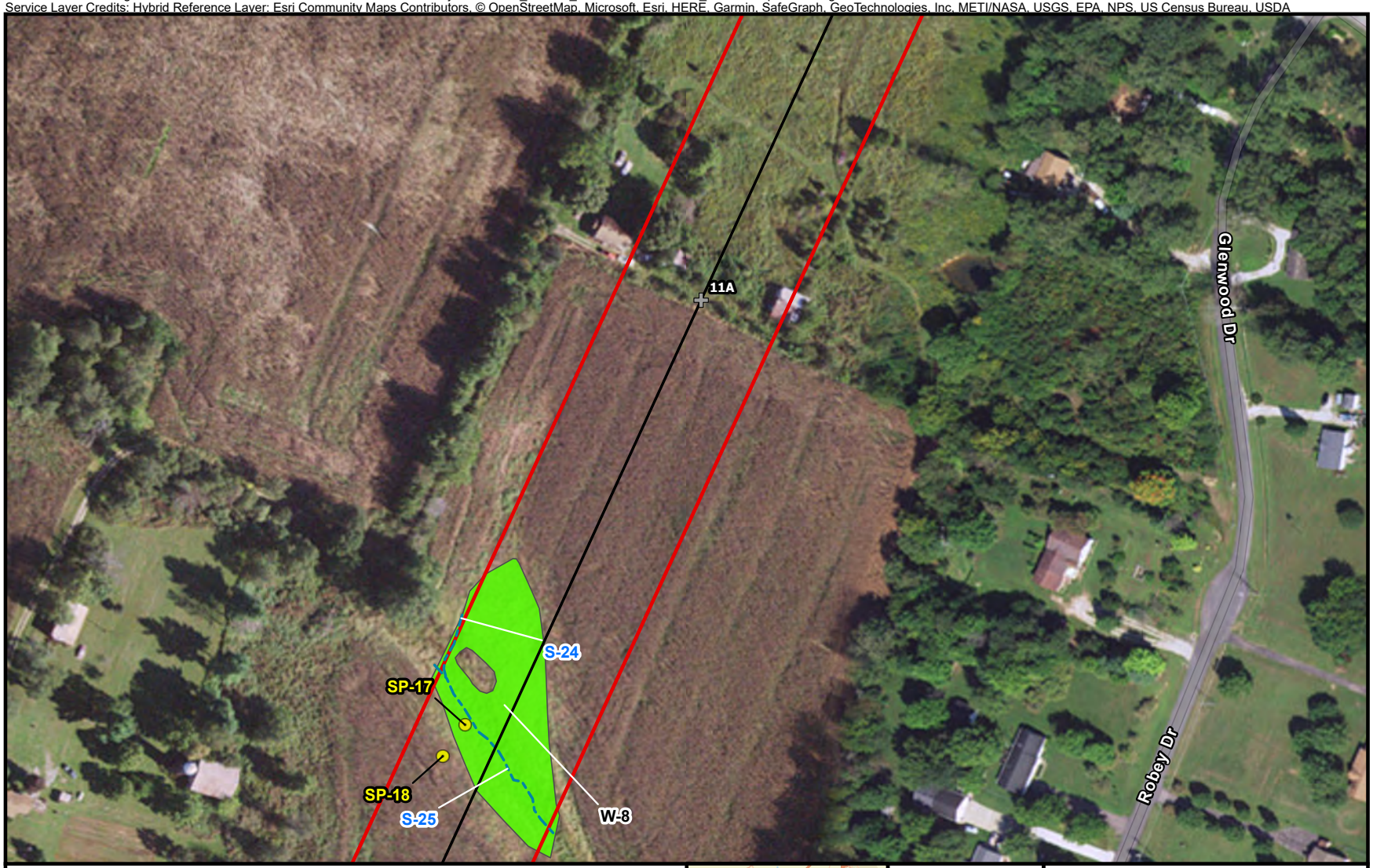

Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 36 of 49

Source: Esri and Burns & McDonnell Engineering Company

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Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

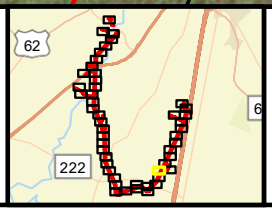

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

Source: Esri and Burns & McDonnell Engineering Company

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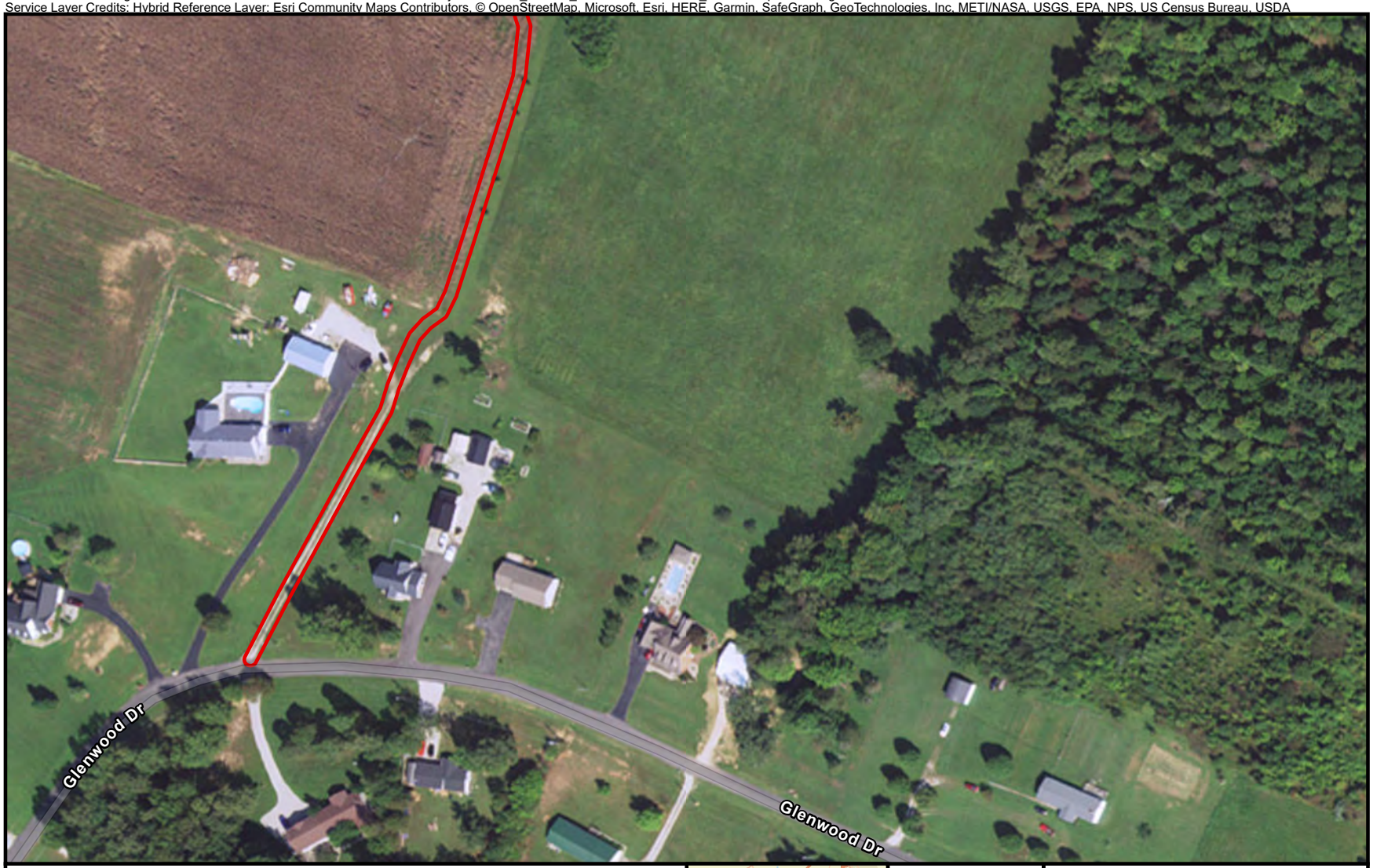

Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

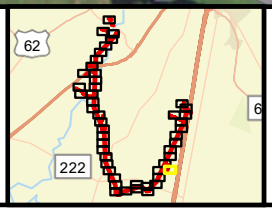

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
Source: Esri and Burns & McDonnell Engineering Company
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Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

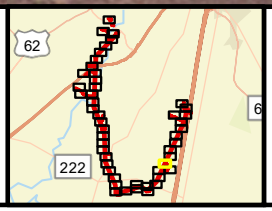

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Figure 5
Wetland Delineation Map
Glendale Project
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC
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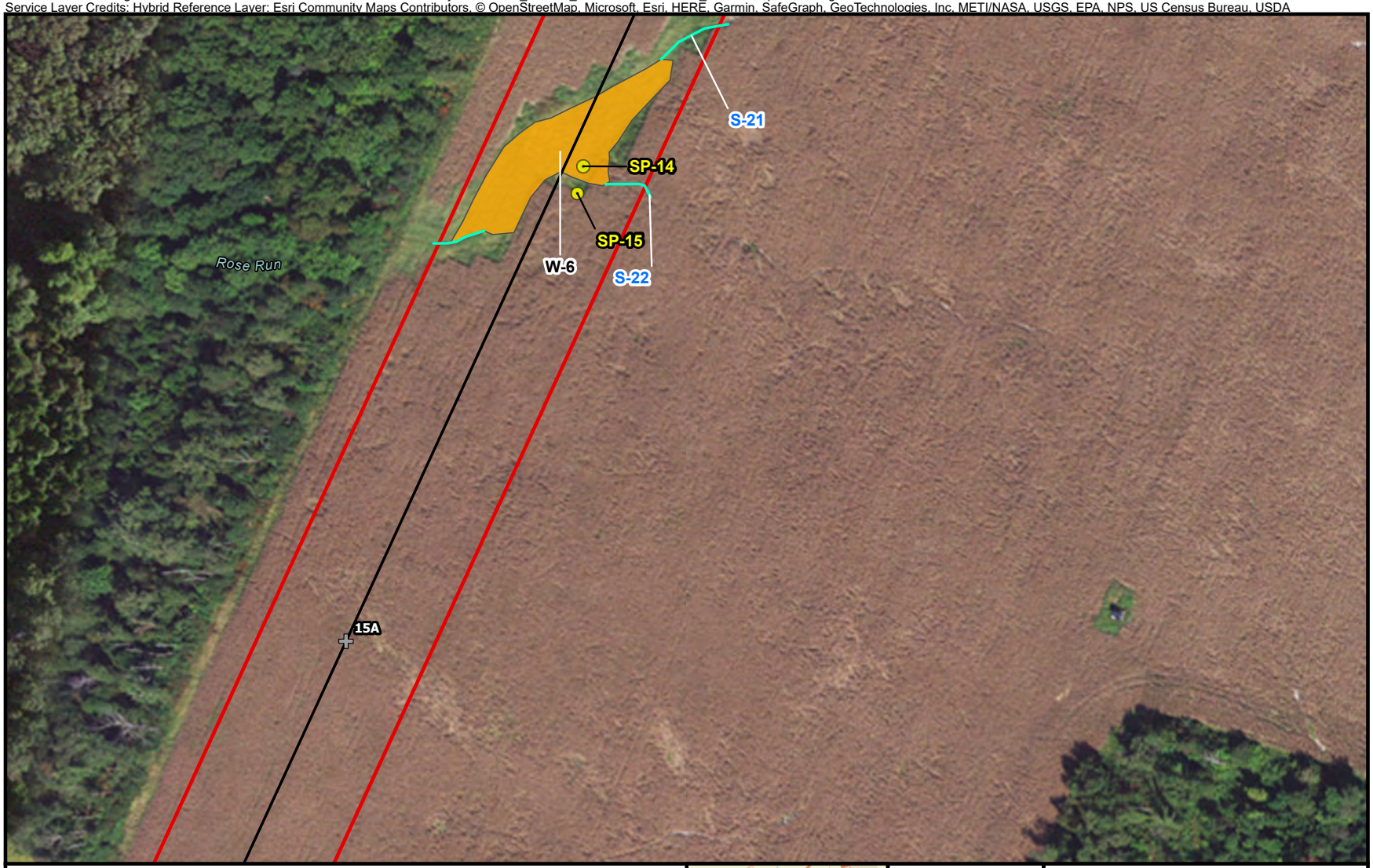

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Figure 5
Wetland Delineation Map
Glendale Project
LG&E-KU Energy Services Company
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Survey Area
Third Rock LLC Survey Area
Sample Plot
Proposed Structure
Proposed Alignment

Stream (S)
Ephemeral
Intermittent
Perennial

Wetland (W)
PEMf
PEM
PUB
PFO

NORTH

0 100 200
Scale in Feet

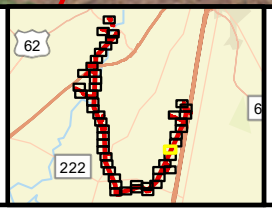

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Figure 5
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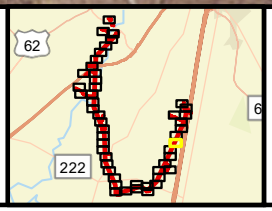

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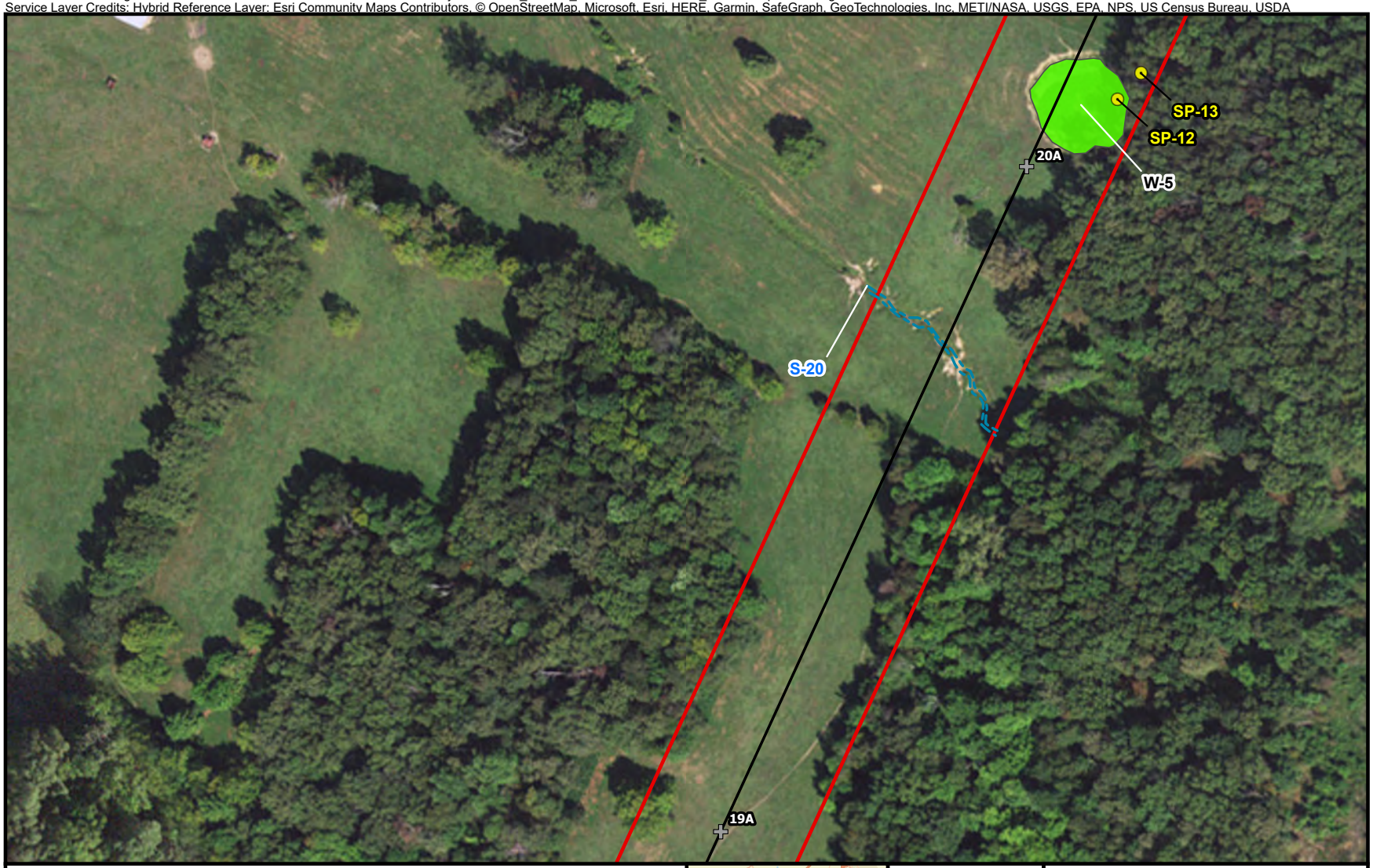

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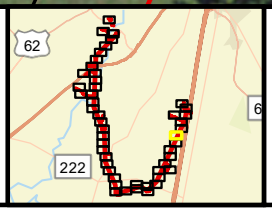

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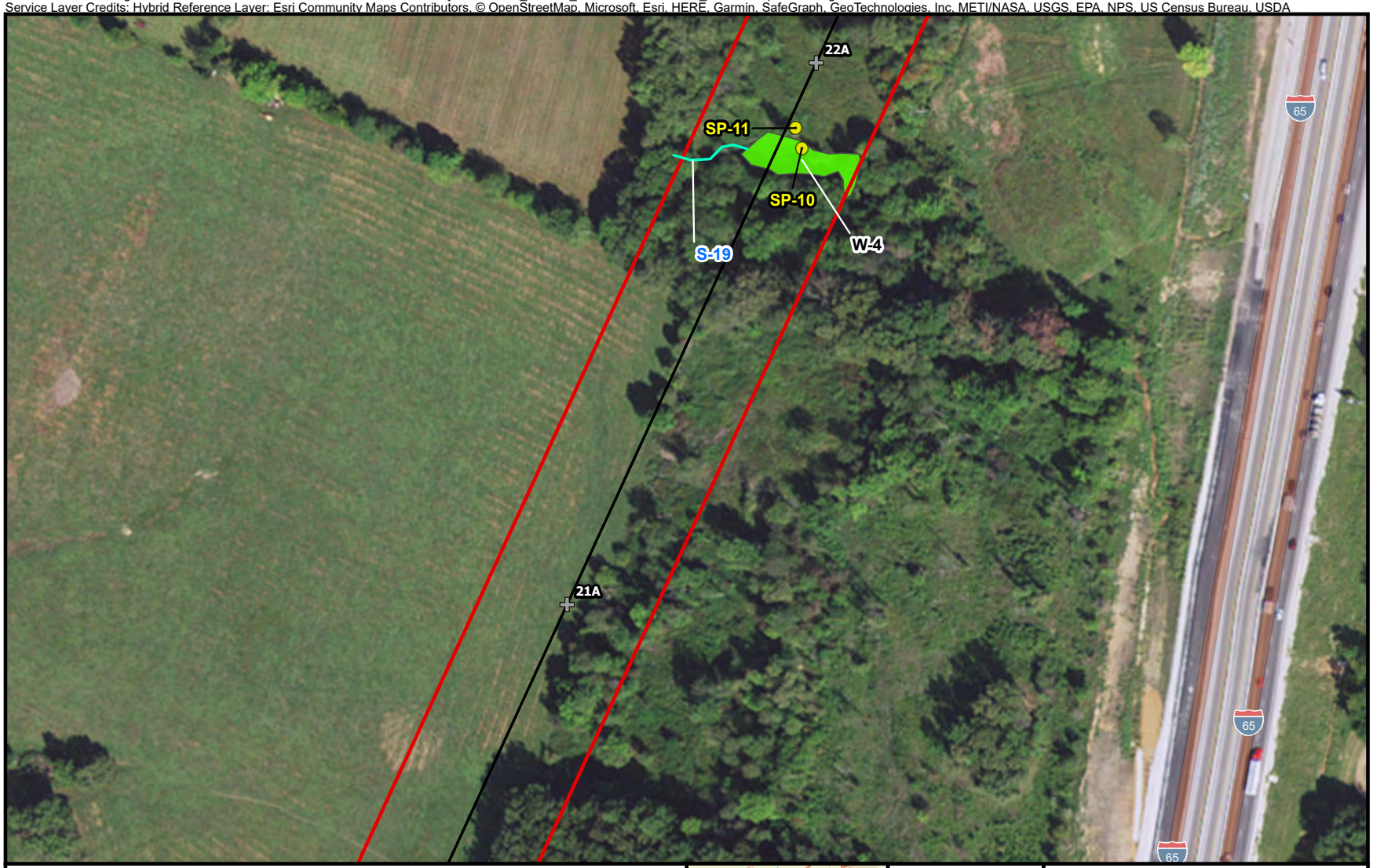

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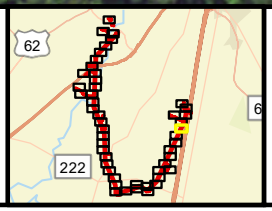

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Wetland Delineation Map
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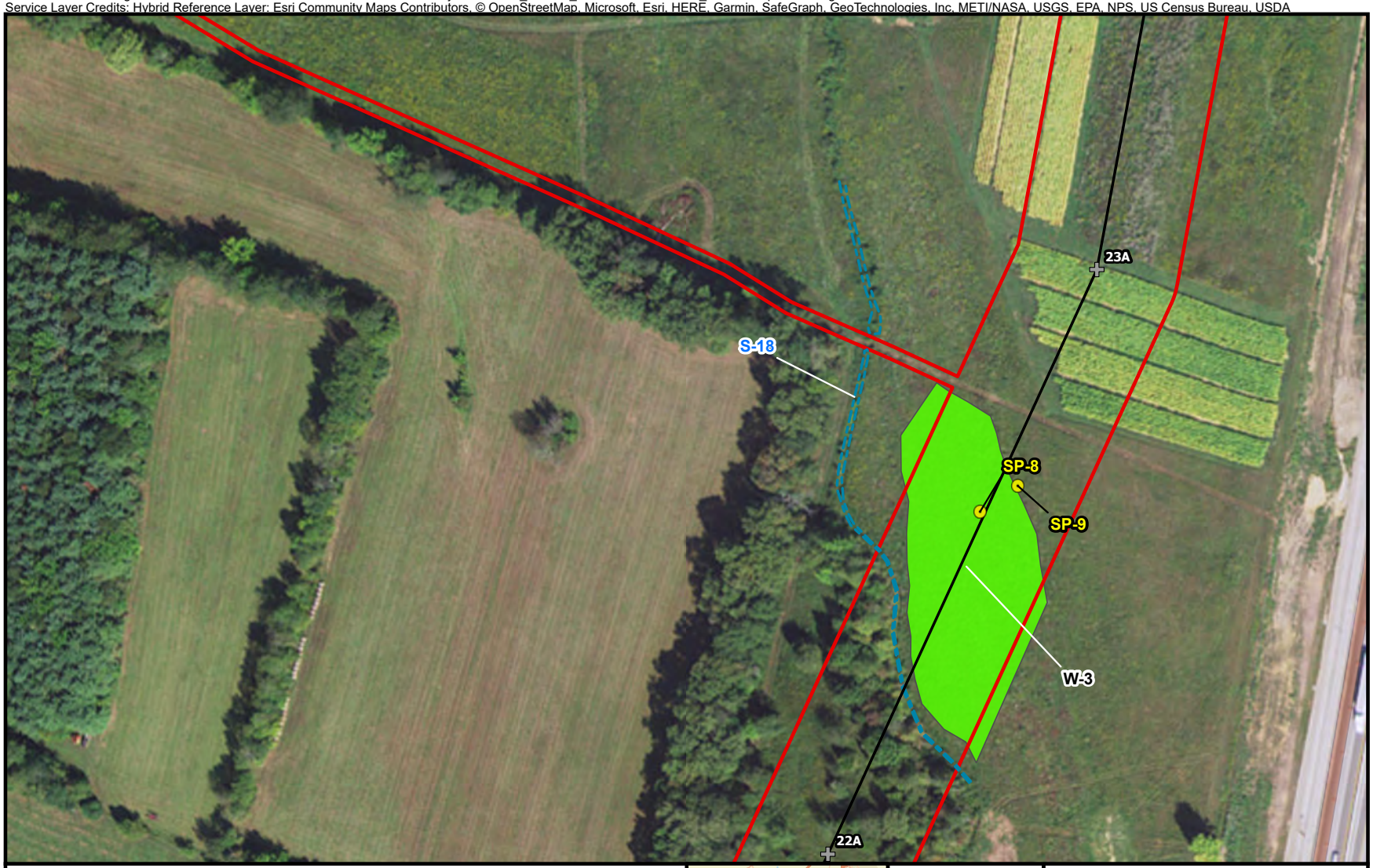

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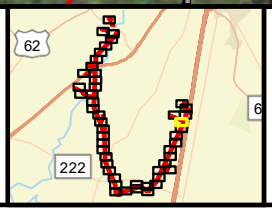

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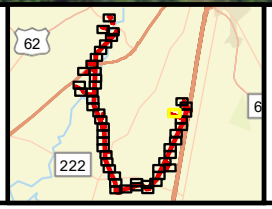

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Figure 5
Wetland Delineation Map
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Wetland and surface waters within Third Rock Survey Area completed by Third Rock Consultants LLC

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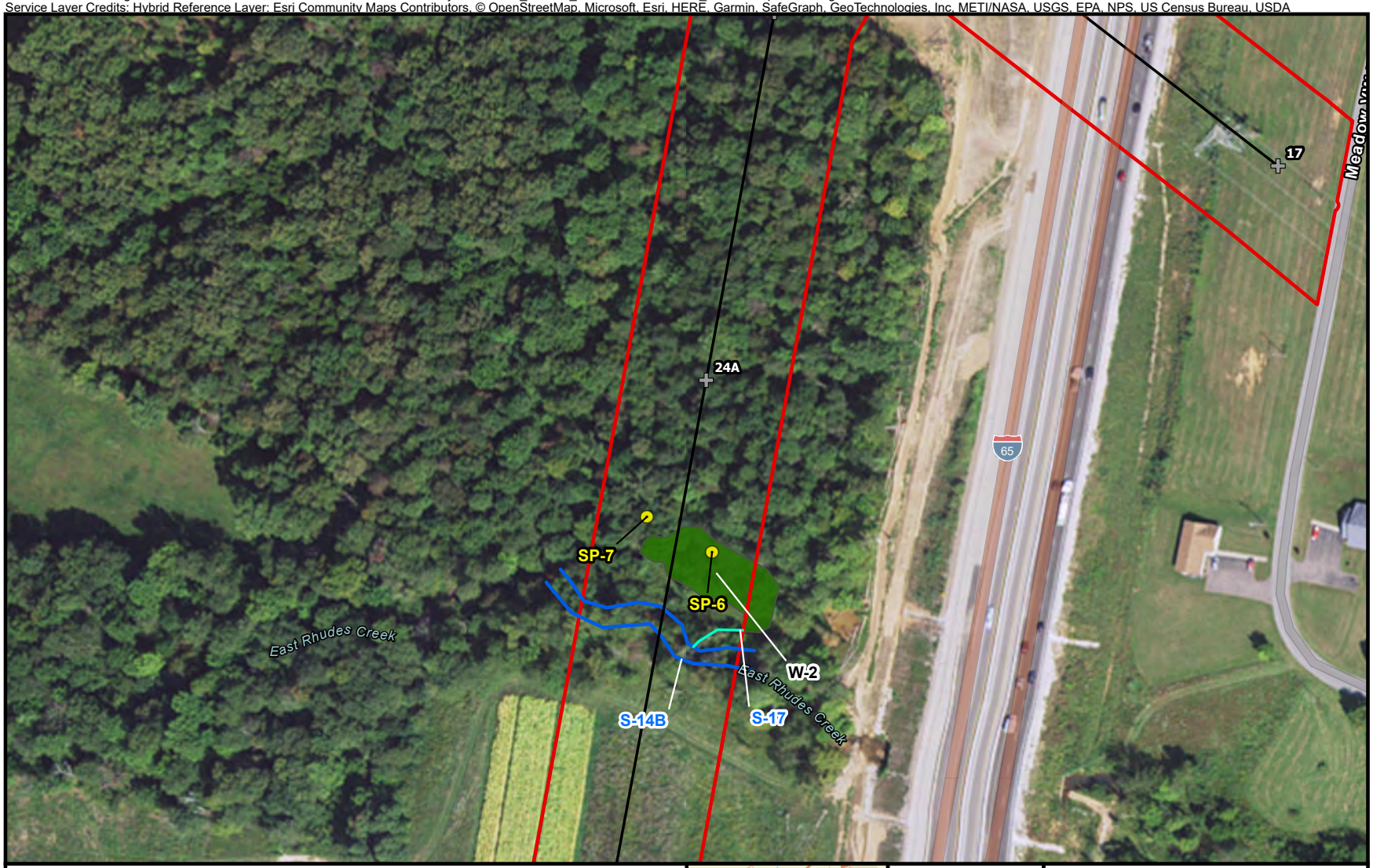

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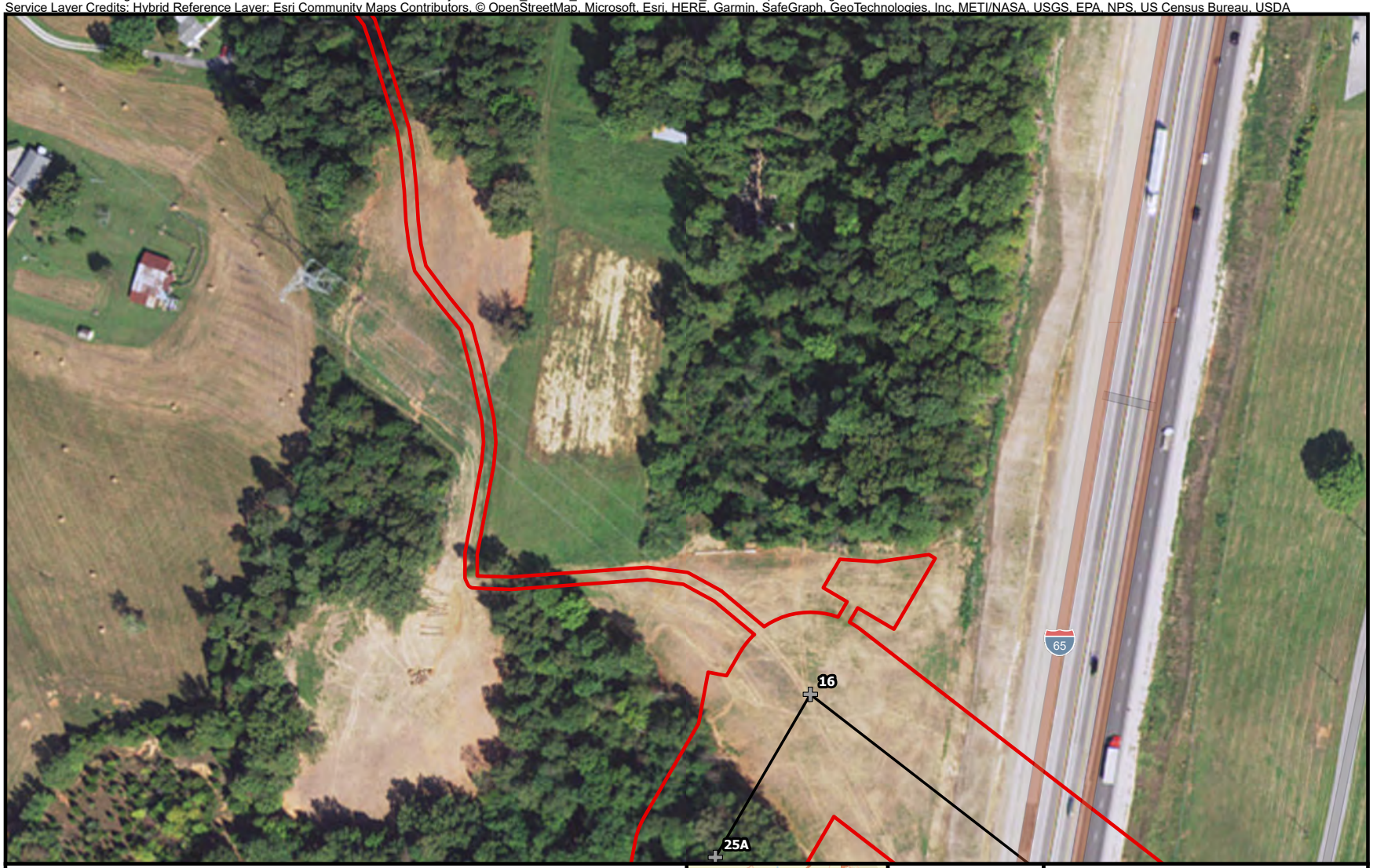

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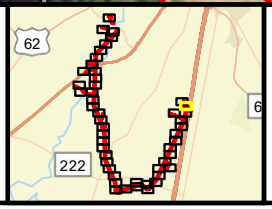

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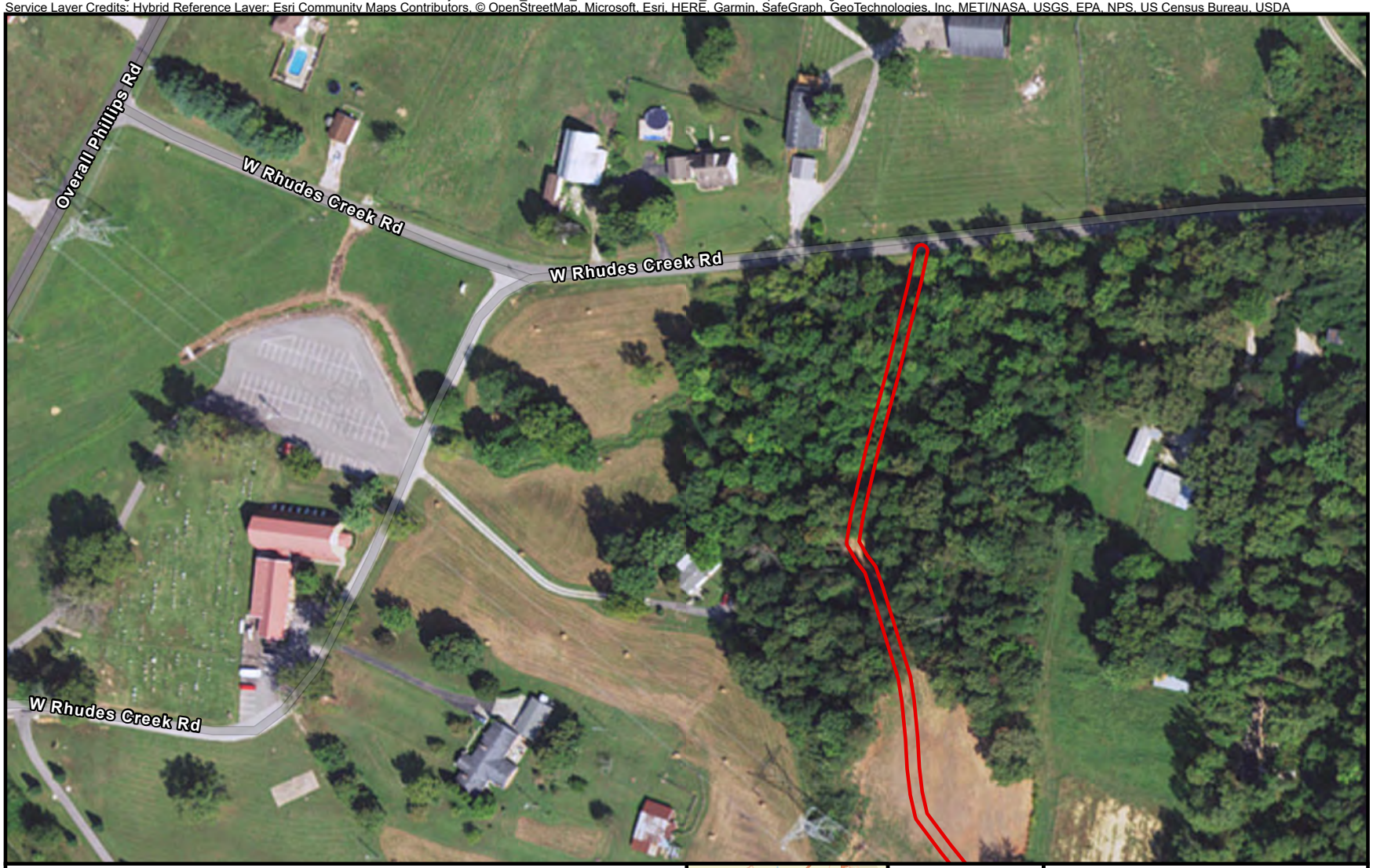

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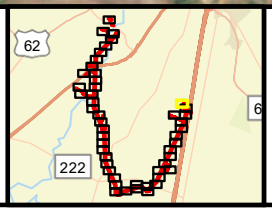

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Figure 5
Wetland Delineation Map
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Hardin County, Kentucky
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Source: Esri and Burns & McDonnell Engineering Company

Issued: 5/3/2022

APPENDIX B – WETLAND DETERMINATION DATA FORMS & ANTECEDENT PRECIPITATION TOOL

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-08

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-1

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 10

Subregion (LRR or MLRA): N 122 Lat: 37.6453248 Long: -85.9096418 Datum: WGS 84

Soil Map Unit Name: Crider silt loam, 6 to 12 percent slopes NWI classification: PUBH

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

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

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

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

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

Remarks:

Sample Plot (SP)-1 is a test pit within a PUBH NWI feature. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ✔ No ____ Depth (inches): 6

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:

One primary and one secondary indicator confirmed wetland hydrology.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. ***Poa pratensis***	70	✔	FACU
2. ***Rosa multiflora***	15		FACU
3. ***Rumex crispus***	2		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	87% = Total Cover		
50% of total cover: 43.5	20% of total cover: 17.4		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No ✔

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

No indicators of hydrophytic vegetation were present at the time of the site visit.

SOIL Sampling Point: SP-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 20	7.5YR 5/6	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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-09

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-2

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): N 122 Lat: 37.6060007 Long: -85.9028756 Datum: WGS 84

Soil Map Unit Name: Melvin silt loam NWI classification: R4SBC

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:

SP-2 is a test pit adjacent to a perennial stream with wetland hydrology present and located within a R4SBC NWI feature. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Water Table Present? Yes ✔ No ____ Depth (inches): 1

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:

Two primary indicators confirmed wetland hydrology. The water table was likely higher due to flooded conditions from recent rainfall.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. ***Panicum capillare***	40	✔	FAC
2. ***Poa pratensis***	30	✔	FACU
3. ***Rumex crispus***	5		FAC
4. ***Andropogon virginicus***	1		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	76% = Total Cover		
50% of total cover: 38.0	20% of total cover: 15.2		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No ✔

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

No indicators of hydrophytic vegetation were present at the time of the site visit.

SOIL Sampling Point: SP-2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	2.5Y 5/3	97	7.5YR 5/8	1	C	M	Clay Loam	
0 - 12	10YR 2/2	2					Clay Loam	
12 - 20	2.5Y 6/3	93	7.5YR 4/6	5	C	M	Clay Loam	
12 - 20	10YR 2/1	2					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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-09

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-3

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

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

Subregion (LRR or MLRA): N 122 Lat: 37.6174093 Long: -85.9052026 Datum: WGS 84

Soil Map Unit Name: Bedford silt loam, 0 to 2 percent slopes NWI classification: No

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 (W)-1 is a farmed wetland. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ✔	No ____	Depth (inches): 4
Water Table Present?	Yes ✔	No ____	Depth (inches): 0
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:

Three primary and three secondary indicators confirmed wetland hydrology. The water table was likely higher due to flooded conditions from recent rain.

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum (Plot size: 5 ft r)			
1. ***Portulaca umbraticola***	10	✔	FAC
2. ***Panicum capillare***	5	✔	FAC
3. ***Poa pratensis***	5	✔	FACU
4. ***Sonchus oleraceus***	2		UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
22% = Total Cover			
50% of total cover: 11.0 20% of total cover: 4.4			
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ✔ **No** ____

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

The Dominance Test confirmed hydrophytic vegetation. Sample plot location had standing water present with minimal vegetation growing. Vegetation displayed stressed growth.

SOIL Sampling Point: SP-3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5Y 5/2	100					Clay Loam	
4 - 16	2.5Y 5/2	98	10YR 6/6	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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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:

Depleted Matrix (F3) confirmed hydric soil.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-09

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-4

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): N 122 Lat: 37.61739 Long: -85.9051949 Datum: WGS 84

Soil Map Unit Name: Pembroke silt loam, 2 to 6 percent slopes NWI classification: No

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:

SP-4 is located adjacent to W-1. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Water Table Present? Yes ✔ No ____ Depth (inches): 6

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:

Two primary indicators confirmed wetland hydrology. The water table was likely higher due to flooded conditions from recent rainfall.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum (Plot size: 5 ft r)			
1. ***Lamium amplexicaule***	80	✔	UPL
2. ***Lepidium campestre***	5		FACU
3. ***Allium schoenoprasum***	2		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
87% = Total Cover			
50% of total cover: 43.5 20% of total cover: 17.4			
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ____ No ✔

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

No indicators of hydrophytic vegetation were present at the time of the site visit.

SOIL Sampling Point: SP-4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 12	2.5Y 5/3	100					Clay Loam	
12 - 20	2.5Y 5/3	30					Clay Loam	
12 - 20	2.5Y 6/6	70					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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-09

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-5

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

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

Subregion (LRR or MLRA): N 122 Lat: 37.6257315 Long: -85.9074639 Datum: WGS 84

Soil Map Unit Name: Lindside silt loam, 0 to 2 percent slopes, frequently flooded NWI classification: No

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:

SP-5 is a test pit adjacent to a perennial stream. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No ✔	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:

One secondary indicator of wetland hydrology was present at the time of the site visit.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Platanus occidentalis***	30	✔	FACW
2. ***Prunus serotina***	20	✔	FACU
3. ***Celtis occidentalis***	10		FACU
4. ***Fraxinus pennsylvanica***	10		FACW
5.			
6.			
7.			
	70% = Total Cover		
50% of total cover: 35.0	20% of total cover: 14.0		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. ***Arundinaria gigantea***	50	✔	FACW
2. ***Poa pratensis***	5		FACU
3. ***Alliaria petiolata***	2		FACU
4. ***Euonymus fortunei***	2		
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	59% = Total Cover		
50% of total cover: 29.5	20% of total cover: 11.8		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

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

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

The Dominance Test confirmed hydrophytic vegetation.

SOIL Sampling Point: SP-5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 2	10YR 3/2	100					Sandy Loam	
2 - 20	10YR 4/4	100					Sand	
-								
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-09

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-6

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

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

Subregion (LRR or MLRA): N 122 Lat: 37.6280346 Long: -85.8631266 Datum: WGS 84

Soil Map Unit Name: Melvin silt loam 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 (W)-2 is a palustrine forested (PFO) wetland. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No ✔	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:

Four primary indicators and three secondary indicators confirmed wetland hydrology.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	15	✔	FACW
2. *Ulmus americana*	15	✔	FACW
3. *Betula nigra*	10	✔	FACW
4.			
5.			
6.			
7.			
	40% = Total Cover		
50% of total cover: 20.0	20% of total cover: 8.0		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. *Ulmus americana*	15	✔	FACW
2. *Sambucus nigra*	5	✔	FAC
3. *Rosa multiflora*	2		FACU
4.			
5.			
6.			
7.			
8.			
9.			
	22% = Total Cover		
50% of total cover: 11.0	20% of total cover: 4.4		
Herb Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Four Vegetation Strata:

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

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

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

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

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

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

The Dominance Test confirmed hydrophytic vegetation.

SOIL Sampling Point: SP-6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	10YR 3/2	75	5YR 4/6	5	C	M	Clay Loam	
0 - 4	10YR 6/8	20					Sand	
4 - 20	10YR 6/8	70	5YR 4/6	10	C	M	Sandy Clay Loa	
4 - 20	10YR 3/2	20					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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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:

Redox Dark Surface (F6) confirmed hydric soil.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-09

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-7

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

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

Subregion (LRR or MLRA): N 122 Lat: 37.6281534 Long: -85.8633960 Datum: WGS 84

Soil Map Unit Name: Melvin silt loam 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:

SP-7 is located adjacent to W-2. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No ✔	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:

One secondary indicator of wetland hydrology was present at the time of the site visit.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus serotina*	40	✔	FACU
2. *Acer saccharinum*	10		FACW
3. *Celtis occidentalis*	5		FACU
4.			
5.			
6.			
7.			
	55% = Total Cover		
50% of total cover: 27.5	20% of total cover: 11.0		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. *Celtis occidentalis*	10	✔	FACU
2. *Fraxinus pennsylvanica*	2		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	12% = Total Cover		
50% of total cover: 6.0	20% of total cover: 2.4		
Herb Stratum (Plot size: 5 ft r)			
1. *Lonicera maackii*	5	✔	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5% = Total Cover		
50% of total cover: 2.5	20% of total cover: 1.0		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No ✔

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

No indicators of hydrophytic vegetation were present at the time of the site visit.

SOIL Sampling Point: SP-7

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 - 2	10YR 3/2	80					Silty Clay Loam	
0 - 2	5YR 5/8	20					Silty Clay Loam	
2 - 20	7.5YR 5/8	100					Sandy Clay Loa	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-8

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): N 122 Lat: 37.6253245 Long: -85.8642004 Datum: WGS 84

Soil Map Unit Name: Melvin silt loam NWI classification: No

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 (W)-3 is a palustrine emergent (PEM) wetland. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Water Table Present? Yes ✔ No ____ Depth (inches): 8

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:

Two primary indicators and three secondary indicators confirmed wetland hydrology.

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum (Plot size: 5 ft r)			
1. ***Dichanthelium clandestinum***	55	✔	FAC
2. ***Juncus effusus***	30	✔	FACW
3. ***Carex sp.***	10		UNK
4. ***Rumex crispus***	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
100% = Total Cover			
50% of total cover: 50.0 20% of total cover: 20.0			
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ✔ **No** ____

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

The Dominance Test confirmed hydrophytic vegetation. Carex sp. could not be identified to the species level during the site investigation. Vegetation was disturbed from mowing. Due to the presence of hydric soil, wetland hydrology, and other hydrophytic vegetation, it is assumed to be FACW. The wetland indicator status of this species does not change outcome for hydrophytic vegetation.

SOIL Sampling Point: SP-8

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 - 3	2.5Y 4/2	100					Silty Clay Loam	
3 - 10	2.5Y 5/2	88	5YR 4/6	2	C	M	Sandy Clay Loa	
3 - 10	10YR 7/8	10					Sandy Clay Loa	
10 - 20	2.5Y 6/4	70	5YR 5/6	30	C	M	Sandy 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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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:

Depleted Matrix (F3) confirmed hydric soil.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-9

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

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

Subregion (LRR or MLRA): N 122 Lat: 37.6254211 Long: -85.8640463 Datum: WGS 84

Soil Map Unit Name: Melvin silt loam NWI classification: No

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:

SP-9 is located adjacent to W-3. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No ✔	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 of wetland hydrology were present at the time of the site visit.

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum (Plot size: 5 ft r)			
1. ***Dichanthelium clandestinum***	60	✔	FAC
2. ***Poa pratensis***	15		FACU
3. ***Rosa multiflora***	10		FACU
4. ***Allium schoenoprasum***	5		FACU
5. ***Solidago canadensis***	2		FACU
6.			
7.			
8.			
9.			
10.			
11.			
92% = Total Cover			
50% of total cover: 46.0 20% of total cover: 18.4			
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

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

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ✔ **No** ____

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

The Dominance Test confirmed hydrophytic vegetation. Vegetation was disturbed from mowing.

SOIL Sampling Point: SP-9

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 4/4	100					Silty Clay Loam	
4 - 10	10YR 5/4	100					Silty Clay Loam	
10 - 20	2.5Y 5/4	98	7.5YR 5/6	2	C	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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-10

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): N 122 Lat: 37.6239090 Long: -85.8649320 Datum: WGS 84

Soil Map Unit Name: Sonora silt loam, 6 to 12 percent slopes NWI classification: No

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 (W)-4 is a palustrine emergent (PEM) wetland. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes ✔	No _____	Depth (inches): 8
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:

Four primary indicators and two secondary indicators confirmed wetland hydrology. The water table was likely higher due to flooded conditions from recent rainfall.

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft r)			
1. ***Acer saccharinum***	15	✔	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15% = Total Cover		
50% of total cover: 7.5	20% of total cover: 3.0		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. Juncus dudleyi	30	✔	FACW
2. ***Carex sp.***	25	✔	FACW
3. ***Dichanthelium clandestinum***	15		FAC
4. ***Juncus effusus***	15		FACW
5. ***Ludwigia alternifolia***	10		FACW
6. ***Panicum capillare***	5		FAC
7.			
8.			
9.			
10.			
11.			
	100% = Total Cover		
50% of total cover: 50.0	20% of total cover: 20.0		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

__ 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

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

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ✔ **No** __

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

The Rapid Test for Hydrophytic Vegetation confirmed hydrophytic vegetation. Carex sp. could not be identified to the species level during the site investigation. Due to the presence of hydric soil, wetland hydrology, and other hydrophytic vegetation, it is assumed to be FACW.

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	2.5Y 6/2	95	5YR 4/6	5	C	PL / M	Silty Clay Loam	
4 - 20	2.5Y 6/2	80	5YR 4/6	20	C	PL / M		
-								
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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:

Depleted Matrix (F3) confirmed hydric soil.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-11

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR or MLRA): N 122 Lat: 37.6239715 Long: -85.8649404 Datum: WGS 84

Soil Map Unit Name: Sonora silt loam, 2 to 6 percent slopes NWI classification: No

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:

SP-11 is located adjacent to W-4. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No ✔	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 of wetland hydrology were present at the time of the site visit.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	15	✔	FACW
2. *Prunus serotina*	2		FACU
3.			
4.			
5.			
6.			
7.			
	17% = Total Cover		
50% of total cover: 8.5	20% of total cover: 3.4		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. *Dichanthelium clandestinum*	50	✔	FAC
2. *Poa pratensis*	20	✔	FACU
3. *Panicum capillare*	10		FAC
4. *Geum canadense*	5		FACU
5. *Juncus effusus*	5		FACW
6. *Rumex crispus*	5		FAC
7.			
8.			
9.			
10.			
11.			
	95% = Total Cover		
50% of total cover: 47.5	20% of total cover: 19.0		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

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

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

The Dominance Test confirmed hydrophytic vegetation.

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 - 4	10YR 3/2	90					Silty Clay Loam	
0 - 4	10YR 6/6	10					Silty Clay Loam	
4 - 20	2.5Y 5/4	100					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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-12

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Closed Depression Local relief (concave, convex, none): Concave Slope (%): 6

Subregion (LRR or MLRA): N 122 Lat: 37.6212417 Long: -85.8663058 Datum: WGS 84

Soil Map Unit Name: Sonora silt loam, 2 to 6 percent slopes NWI classification: No

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 (W)-5 is a palustrine emergent (PEM) wetland. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes ✔	No ____	Depth (inches): 4

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

Two primary indicators and two secondary indicators confirmed wetland hydrology.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. ***Ranunculus repens***	30	✔	FAC
2. ***Juncus effusus***	25	✔	FACW
3. ***Poa pratensis***	10		FACU
4. ***Trifolium campestre***	10		UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75% = Total Cover		
50% of total cover: 37.5	20% of total cover: 15.0		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

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

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

The Dominance Test confirmed hydrophytic vegetation.

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)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	2.5Y 4/2	70	5YR 4/6	5	C	M	Sandy Clay Loa	
0 - 3	10YR 4/3	25					Sandy Clay Loa	
3 - 8	2.5Y 5/2	80	5YR 4/6	20	C	M	Sandy Clay Loa	
8 - 16	2.5Y 5/2	60	5YR 4/6	40	C	M	Sandy Clay Loa	
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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: Bedrock

Depth (inches): 16

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

Depleted Matrix (F3) confirmed hydric soil.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-13

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 8

Subregion (LRR or MLRA): N 122 Lat: 37.6213373 Long: -85.8662083 Datum: WGS 84

Soil Map Unit Name: Sonora silt loam, 2 to 6 percent slopes NWI classification: No

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:

SP-13 is located adjacent to W-5. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No ✔	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 of wetland hydrology were present at the time of the site visit.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. ***Juniperus virginiana***	20	✔	FACU
2. ***Quercus falcata***	5	✔	FACU
3.			
4.			
5.			
6.			
7.			
	25% = Total Cover		
50% of total cover: 12.5	20% of total cover: 5.0		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. ***Ranunculus repens***	35	✔	FAC
2. ***Trifolium campestre***	30	✔	UPL
3. ***Poa pratensis***	20	✔	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85% = Total Cover		
50% of total cover: 42.5	20% of total cover: 17.0		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No ✔

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

No indicators of hydrophytic vegetation were present at the time of the site visit.

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)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	90					Silty Clay Loam	
0 - 3	10YR 5/6	10					Silty Clay Loam	
3 - 8	10YR 5/4	100					Silty Clay Loam	
8 - 20	7.5YR 5/8	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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-14

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 20

Subregion (LRR or MLRA): N 122 Lat: 37.6124020 Long: -85.8716079 Datum: WGS 84

Soil Map Unit Name: Sonora silt loam, 6 to 12 percent slopes NWI classification: No

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 (W)-6 is a farmed wetland. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Water Table Present? Yes ✔ No ____ Depth (inches): 14

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 10

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

One primary and two secondary indicators confirmed wetland hydrology.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. ***Panicum capillare***	25	✔	FAC
2. ***Poa pratensis***	15	✔	FACU
3. ***Rumex crispus***	5		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45% = Total Cover		
50% of total cover: 22.5	20% of total cover: 9.0		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	45 (A)		150 (B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ✔ No ___

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

Vegetation was disturbed from farming, dead soybeans from the previous year present. Due to the position in the landscape and the presence of hydric soil and wetland hydrology, we assume the vegetation would be hydrophytic if not disturbed.

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)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 4	2.5Y 5/3	99	7.5YR 5/6	1	C	M	Sandy Clay Loa	
4 - 10	2.5Y 5/2	90	5YR 4/6	10	C	M	Clay Loam	
10 - 20	2.5Y 5/2	85	10YR 6/8	10	C	M	Clay Loam	
10 - 20			5YR 4/6	5	C	M		
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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:

Depleted matrix (F3) confirmed hydric soil.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-15

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR or MLRA): N 122 Lat: 37.6123179 Long: -85.8716343 Datum: WGS 84

Soil Map Unit Name: Sonora silt loam, 6 to 12 percent slopes NWI classification: No

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:

SP-15 is located adjacent to W-6. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No ✔	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 of wetland hydrology were present at the time of the site visit.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. ***Poa pratensis***	80	✔	FACU
2. ***Rumex crispus***	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85% = Total Cover		
50% of total cover: 42.5	20% of total cover: 17.0		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No ✔

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

No indicators of hydrophytic vegetation were present at the time of the site visit. Vegetation was disturbed from farming, dead soybeans from the previous year were present.

SOIL Sampling Point: SP-15

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 20	2.5Y 4/3	100					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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-16

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10

Subregion (LRR or MLRA): N 122 Lat: 37.6088454 Long: -85.8734014 Datum: WGS 84

Soil Map Unit Name: Sonora silt loam, 2 to 6 percent slopes NWI classification: No

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:

SP-16 is a test pit adjacent to standing water. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No ✔	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 of wetland hydrology were present at the time of the site visit.

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum (Plot size: 5 ft r)			
1. ***Panicum capillare***	30	✔	FAC
2. ***Poa pratensis***	20	✔	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = Total Cover			
50% of total cover: 25.0 20% of total cover: 10.0			
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ____ No ✔

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

No indicators of hydrophytic vegetation were present at the time of the site visit. Vegetation was disturbed due to farming.

SOIL Sampling Point: SP-16

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 - 2	10YR 4/4	100					Silty Clay Loam	
2 - 20	10YR 5/4	90	7.5YR 5/6	5	C	M	Silty Clay Loam	
2 - 20			10YR 7/4	5	D	M		
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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 of hydric soil were present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-17

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 4

Subregion (LRR or MLRA): N 122 Lat: 37.6019887 Long: -85.8779142 Datum: WGS 84

Soil Map Unit Name: Melvin silt loam NWI classification: R4SBC

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 (W)-8 is a palustrine emergent (PEM) wetland. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No ✔	Depth (inches): ____
Water Table Present?	Yes ✔	No ____	Depth (inches): 1
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:

Three primary indicators and three secondary indicators confirmed wetland hydrology.

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

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 ft r)			
1. ***Carex sp.***	30	✔	FACW
2. ***Panicum virgatum***	25	✔	FAC
3. ***Scirpus atrovirens***	20	✔	OBL
4. ***Ludwigia alternifolia***	15		FACW
5. ***Poa pratensis***	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
	95% = Total Cover		
50% of total cover: 47.5	20% of total cover: 19.0		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

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

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

The Dominance Test confirmed hydrophytic vegetation. Carex sp. could not be identified to the species level. Due to the presence of hydric soil, wetland hydrology, and other hydrophytic vegetation, it is assumed to be FACW.

SOIL Sampling Point: SP-17

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 - 2	10YR 6/2	98	10YR 5/8	2	C	PL / M	Silty Clay Loam	
2 - 16	2.5Y 6/1	90	10YR 6/8	10	C	PL / M	Silty Clay Loam	
16 - 20	2.5Y 6/1	50	7.5YR 5/6	10	C	PL / M	Clay Loam	
16 - 20	5Y 2.5/1	40					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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✔ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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:

Depleted Matrix (F3) confirmed hydric soil.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: LGEKU Glendale City/County: Glendale/Hardin Sampling Date: 2022-03-10

Applicant/Owner: LG&E-KU State: Kentucky Sampling Point: SP-18

Investigator(s): Burns & McDonnell (SB & CK) Section, Township, Range: N/A

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 5

Subregion (LRR or MLRA): N 122 Lat: 37.6018793 Long: -85.8780115 Datum: WGS 84

Soil Map Unit Name: Sonora silt loam, 6 to 12 percent slopes NWI classification: No

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:

SP-18 is located adjacent to W-8. Flooded conditions were observed at the time of the site visit due to recent rainfall.

According to the Antecedent Precipitation Tool (APT), the area was experiencing wet conditions at the time of the survey.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Water Table Present? Yes ✔ No ____ Depth (inches): 14

Saturation Present? (includes capillary fringe) Yes ✔ No ____ Depth (inches): 10

Wetland Hydrology Present? Yes ✔ No ____

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

Remarks:

One primary indicator confirmed wetland hydrology.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: SP-18

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum (Plot size: 5 ft r)			
1. ***Poa pratensis***	30	✔	FACU
2. ***Sonchus oleraceus***	10	✔	UPL
3. ***Trifolium campestre***	10	✔	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% = Total Cover			
50% of total cover: 25.0 20% of total cover: 10.0			
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
50% of total cover: ____ 20% of total cover: ____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ____ No ✔

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

No indicators of hydrophytic vegetation were present at the time of the site visit. Vegetation was disturbed from farming. Dead soybeans from the previous year were present.

SOIL Sampling Point: SP-18

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 - 5	2.5Y 5/3	100					Silty Clay Loam	
5 - 12	2.5Y 5/3	98	10YR 5/8	2	C	M	Silty Clay Loam	
12 - 20	2.5Y 5/3	95	10YR 5/8	5	C	PL / 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) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ 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):

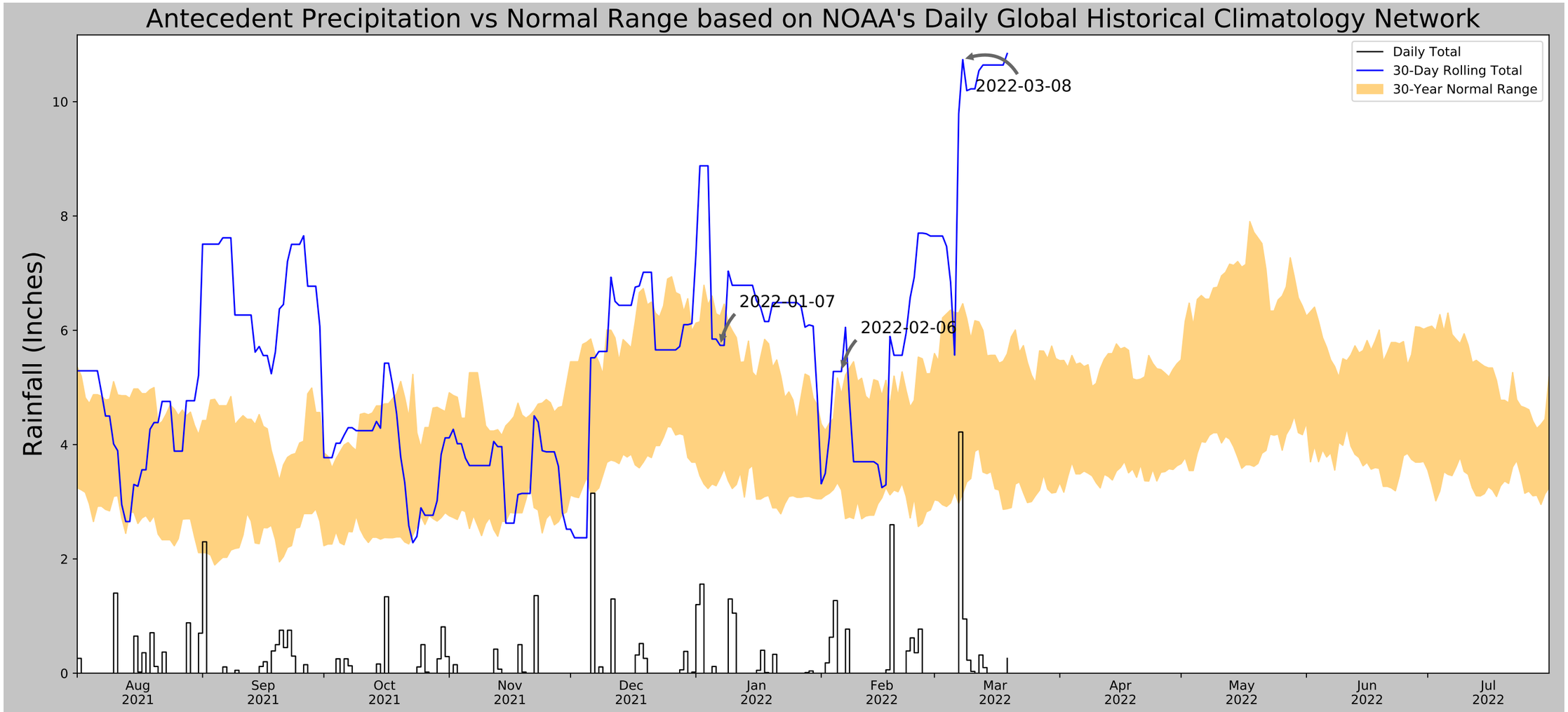
Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** ✔

Remarks:

No indicators of hydric soil were present at the time of the site visit.



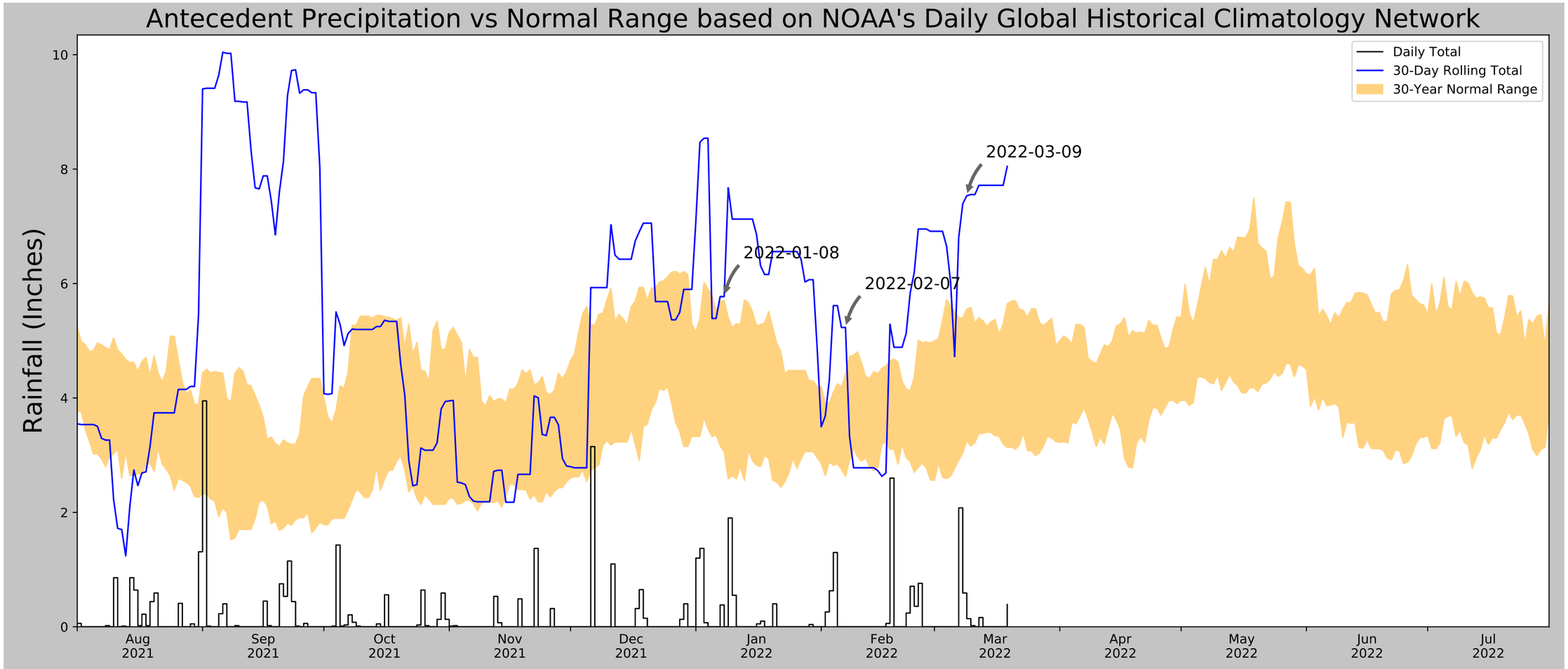
Coordinates	37.599659, -85.879601
Observation Date	2022-03-08
Elevation (ft)	738.25
Drought Index (PDSI)	Severe wetness (2022-02)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-03-08	3.148032	6.466142	10.736221	Wet	3	3	9
2022-02-06	3.206693	4.879921	5.279528	Wet	3	2	6
2022-01-07	3.420866	6.251969	5.736221	Normal	2	1	2
Result							Wetter than Normal - 17

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
NOLIN RVR LAKE	37.2814, -86.2497	623.032	29.929	115.218	16.917	11188	63
BEE SPRING 4.3 NE	37.3305, -86.2267	583.005	3.62	40.027	1.774	0	21
LEITCHFIELD 2 N	37.5108, -86.2892	620.079	15.998	2.953	7.246	165	0
MILLERSTOWN 4E	37.4336, -86.0089	600.066	16.896	22.966	7.991	0	6



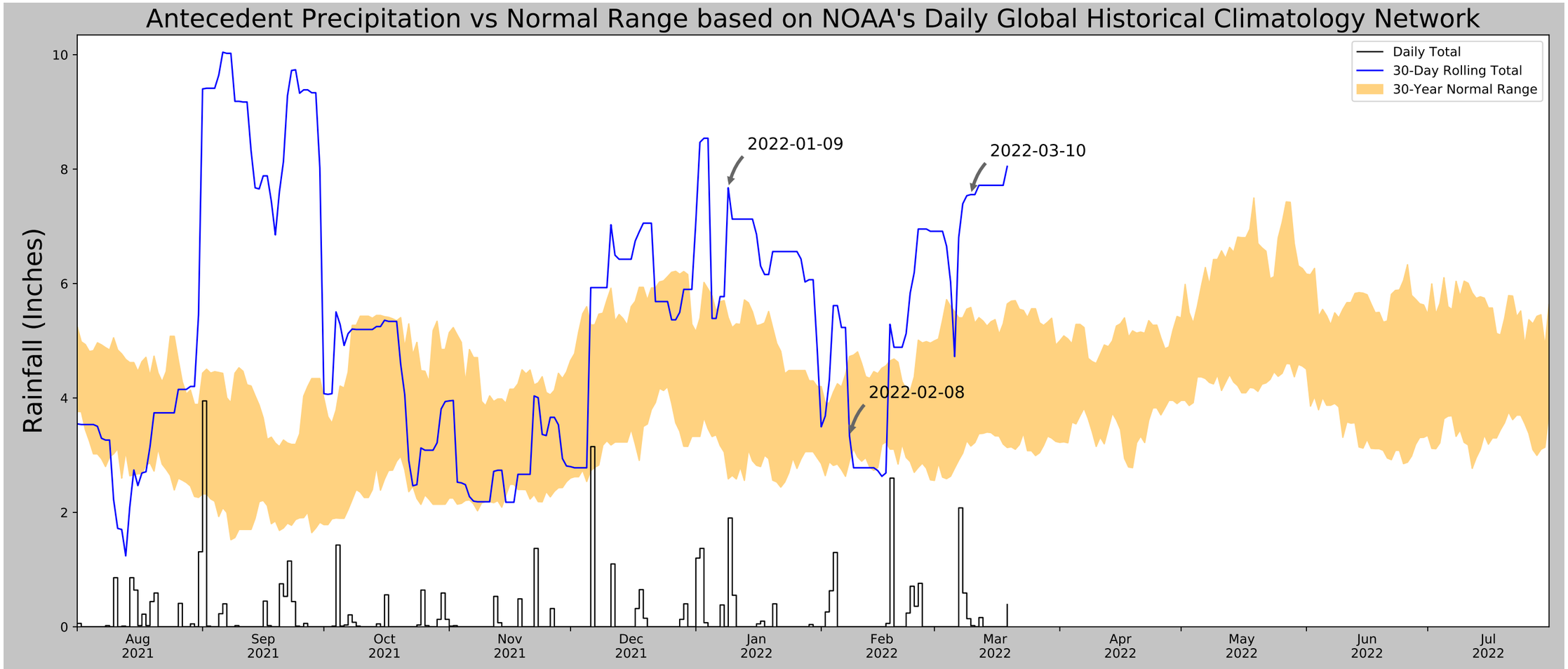
Coordinates	37.599659, -85.879601
Observation Date	2022-03-09
Elevation (ft)	738.25
Drought Index (PDSI)	Severe wetness (2022-02)
WebWIMP H_2O Balance	Wet Season

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-03-09	3.254331	5.55315	7.535433	Wet	3	3	9
2022-02-07	2.629528	4.409055	5.232284	Wet	3	2	6

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
RINEYVILLE 1 S	37.735, -85.9696	742.126	10.568	3.876	4.797	164	0
IRVINGTON 9.8 S	37.7385, -86.2581	807.087	22.815	68.837	11.837	894	0
GREENSBURG 3.5 W	37.262, -85.5576	743.11	29.264	4.86	13.311	571	0
BEE SPRING 4.3 NE	37.3305, -86.2267	583.005	26.612	155.245	16.107	28	82
RINEYVILLE 2.0 SE	37.7242, -85.9536	821.85	9.509	83.6	5.074	6	0
ELIZABETHTOWN 0.7 NW	37.71, -85.88	784.121	7.624	45.871	3.781	285	0
RADCLIFF 1.4 S	37.8068, -85.9524	752.953	14.855	14.703	6.903	113	0
ELIZABETHTOWN 7.9 ENE	37.7518, -85.7413	789.042	12.95	50.792	6.485	510	8
RADCLIFF 1.2 SSE	37.8089, -85.932	775.919	14.738	37.669	7.187	164	0
RINEVYILLE 2.0 NW	37.7731, -85.992	753.937	13.468	15.687	6.272	59	0
MAGNOLIA .7 NNW	37.4528, -85.749	854.003	12.417	115.753	7.025	22	0
BUFFALO 0.8 ESE	37.5078, -85.6858	829.068	12.368	90.818	6.689	243	0
ELIZABETHTOWN 1.8 SE	37.687, -85.845	714.895	6.325	23.355	2.994	1922	0
HODGENVILLE 1.1 N	37.5844, -85.7389	769.029	7.775	30.779	3.738	23	0
EKRON 2.6 ESE	37.9101, -86.1364	651.903	25.63	86.347	13.747	29	0
NEW HAVEN 6.4 NE	37.7327, -85.5174	613.845	21.839	124.405	12.544	1	0



Coordinates	37.599659, -85.879601
Observation Date	2022-03-10
Elevation (ft)	738.25
Drought Index (PDSI)	Severe wetness (2022-02)
WebWIMP H_2O Balance	Wet Season

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-03-10	3.158662	5.582284	7.555118	Wet	3	3	9
2022-02-08	2.905512	4.726378	3.330709	Normal	2	2	4

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
RINEYVILLE 1 S	37.735, -85.9696	742.126	10.568	3.876	4.797	164	0
IRVINGTON 9.8 S	37.7385, -86.2581	807.087	22.815	68.837	11.837	894	0
GREENSBURG 3.5 W	37.262, -85.5576	743.11	29.264	4.86	13.311	571	0
BEE SPRING 4.3 NE	37.3305, -86.2267	583.005	26.612	155.245	16.107	28	81
RINEYVILLE 2.0 SE	37.7242, -85.9536	821.85	9.509	83.6	5.074	6	0
ELIZABETHTOWN 0.7 NW	37.71, -85.88	784.121	7.624	45.871	3.781	285	0
RADCLIFF 1.4 S	37.8068, -85.9524	752.953	14.855	14.703	6.903	113	0
ELIZABETHTOWN 7.9 ENE	37.7518, -85.7413	789.042	12.95	50.792	6.485	510	9
RADCLIFF 1.2 SSE	37.8089, -85.932	775.919	14.738	37.669	7.187	164	0
RINEVYILLE 2.0 NW	37.7731, -85.992	753.937	13.468	15.687	6.272	59	0
MAGNOLIA .7 NNW	37.4528, -85.749	854.003	12.417	115.753	7.025	22	0
BUFFALO 0.8 ESE	37.5078, -85.6858	829.068	12.368	90.818	6.689	243	0
ELIZABETHTOWN 1.8 SE	37.687, -85.845	714.895	6.325	23.355	2.994	1922	0
HODGENVILLE 1.1 N	37.5844, -85.7389	769.029	7.775	30.779	3.738	23	0
EKRON 2.6 ESE	37.9101, -86.1364	651.903	25.63	86.347	13.747	29	0
NEW HAVEN 6.4 NE	37.7327, -85.5174	613.845	21.839	124.405	12.544	1	0

APPENDIX C – PHOTOGRAPH LOG

Photograph C-1: View of Sample Plot (SP)-1, located in a test pit facing south.

Photograph C-2: View of SP-2, located in a test pit facing northeast.

Photograph C-3: View of SP-3, facing northwest towards farmed Wetland (W)-1.

Photograph C-4: View of SP-4, in upland, facing northwest.

Photograph C-5: View of SP-5, located in a test pit facing east.

Photograph C-6: View of SP-6, facing southeast towards PFO W-2.

Photograph C-7: View of SP-7, in upland, facing southeast.

Photograph C-8: View of SP-8, facing west towards PEM W-3.

Photograph C-9: View of SP-9, in upland, facing southwest.

Photograph C-10: View of SP-10, facing west towards PEM W-4.

Photograph C-11: View of SP-11, in upland, facing southeast.

Photograph C-12: View of SP-12, facing southwest towards PEM W-5.

Photograph C-13: View of SP-13, in upland, facing southwest.

Photograph C-14: View of SP-14, facing north towards farmed W-6.

Photograph C-15: View of SP-15, in upland, facing north.

Photograph C-16: View of SP-16, located in a test pit facing east.

Photograph C-17: View of PUB W-7, facing southeast.

Photograph C-18: View of SP-17, facing northeast towards PEM W-8.

Photograph C-19: View of SP-18, in upland, facing northeast.

Photograph C-20: View of ephemeral Stream (S)-1, facing south.

Photograph C-21: View of perennial S-2, facing east.

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

Photograph C-23: View of intermittent S-4, facing northeast.

Photograph C-24: View of intermittent S-5, facing northwest.

Photograph C-25: View of perennial S-6, facing east.

Photograph C-26: View of perennial S-7, facing west.

Photograph C-27: View of ephemeral S-8, facing northeast.

Photograph C-28: View of ephemeral S-9, facing southwest.

Photograph C-29: View of perennial S-10, facing west.

Photograph C-30: View of perennial S-11, facing west.

Photograph C-31: View of intermittent S-12, facing east.

Photograph C-32: View of ephemeral S-13, facing north.

Photograph C-33: View of perennial S-14, facing east.

Photograph C-34: View of intermittent S-15, facing south.

Photograph C-35: View of intermittent S-16, facing north.

Photograph C-36: View of ephemeral S-17, facing southwest.

Photograph C-37: View of intermittent S-18, facing southeast.

Photograph C-38: View of ephemeral S-19, facing west.

Photograph C-39: View of intermittent S-20, facing west.

Photograph C-40: View of ephemeral S-21, facing southwest.

Photograph C-41: View of ephemeral S-22, facing east.

Photograph C-42: View of intermittent S-23, facing west.

Photograph C-43: View of intermittent S-24, facing south.

Photograph C-44: View of intermittent S-25, facing east.

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200 W. Adams; Suite 2700
Chicago, Illinois 60606
O 312-223-0920
F 312-223-9664
www.burnsmcd.com

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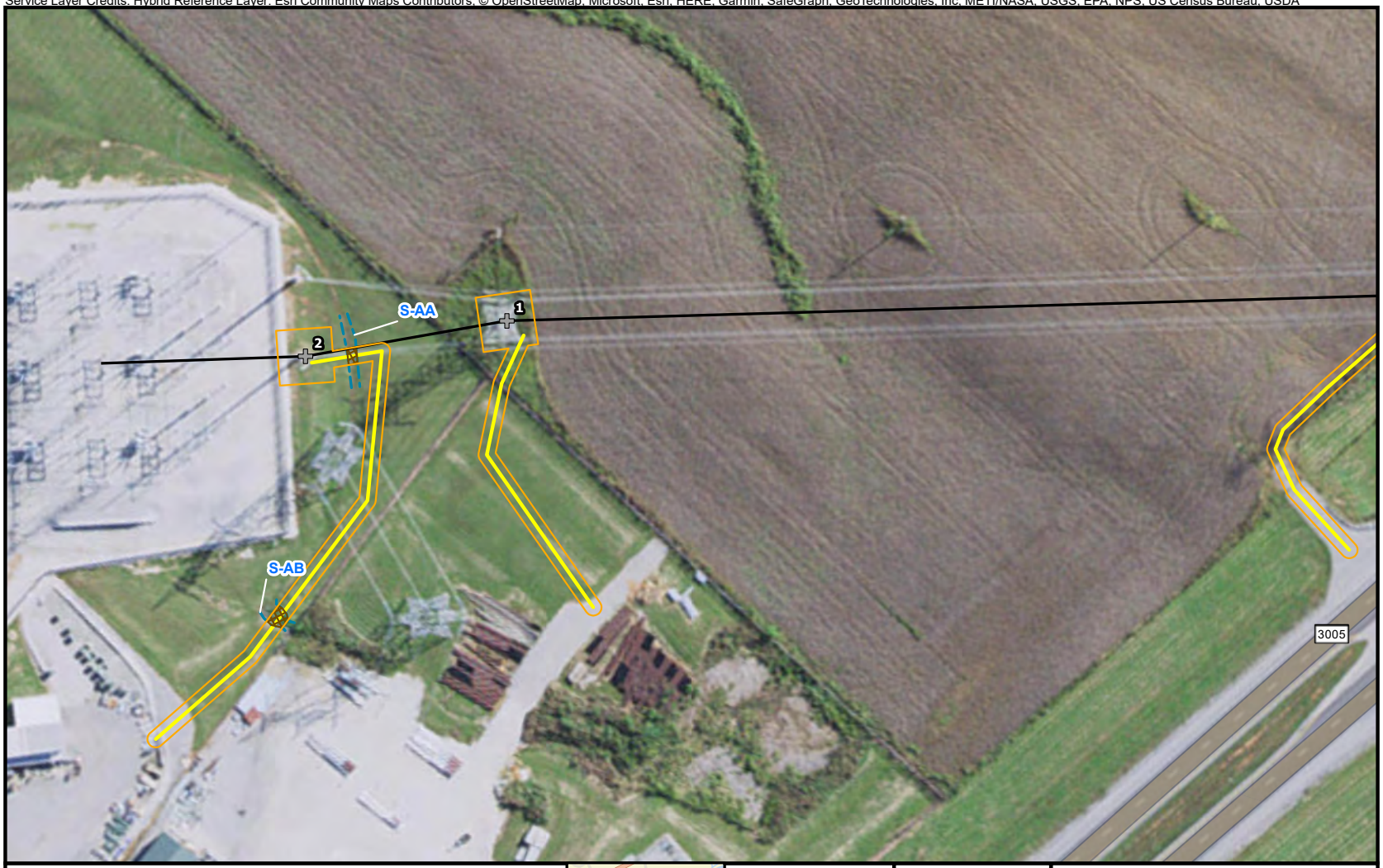

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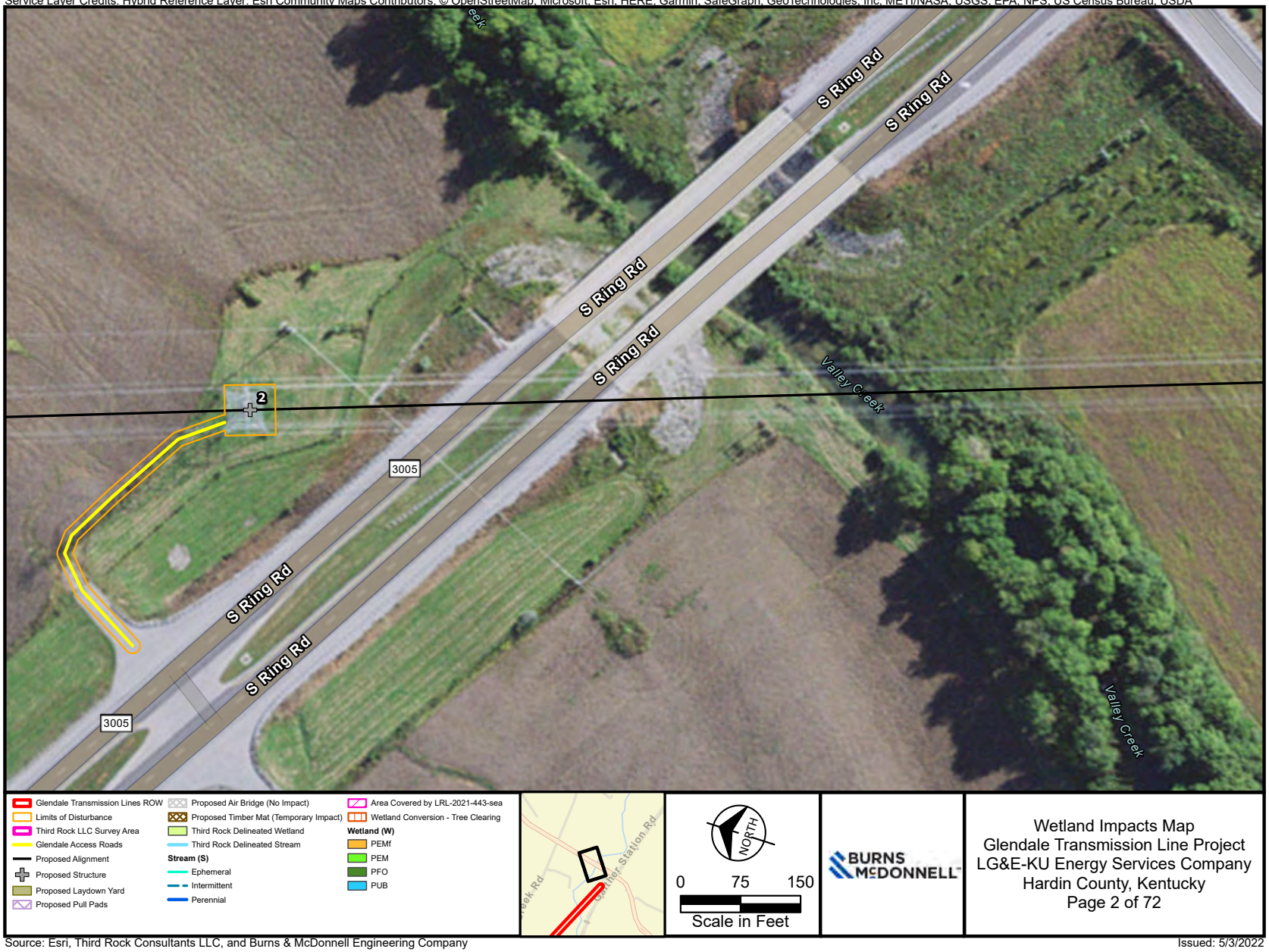

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Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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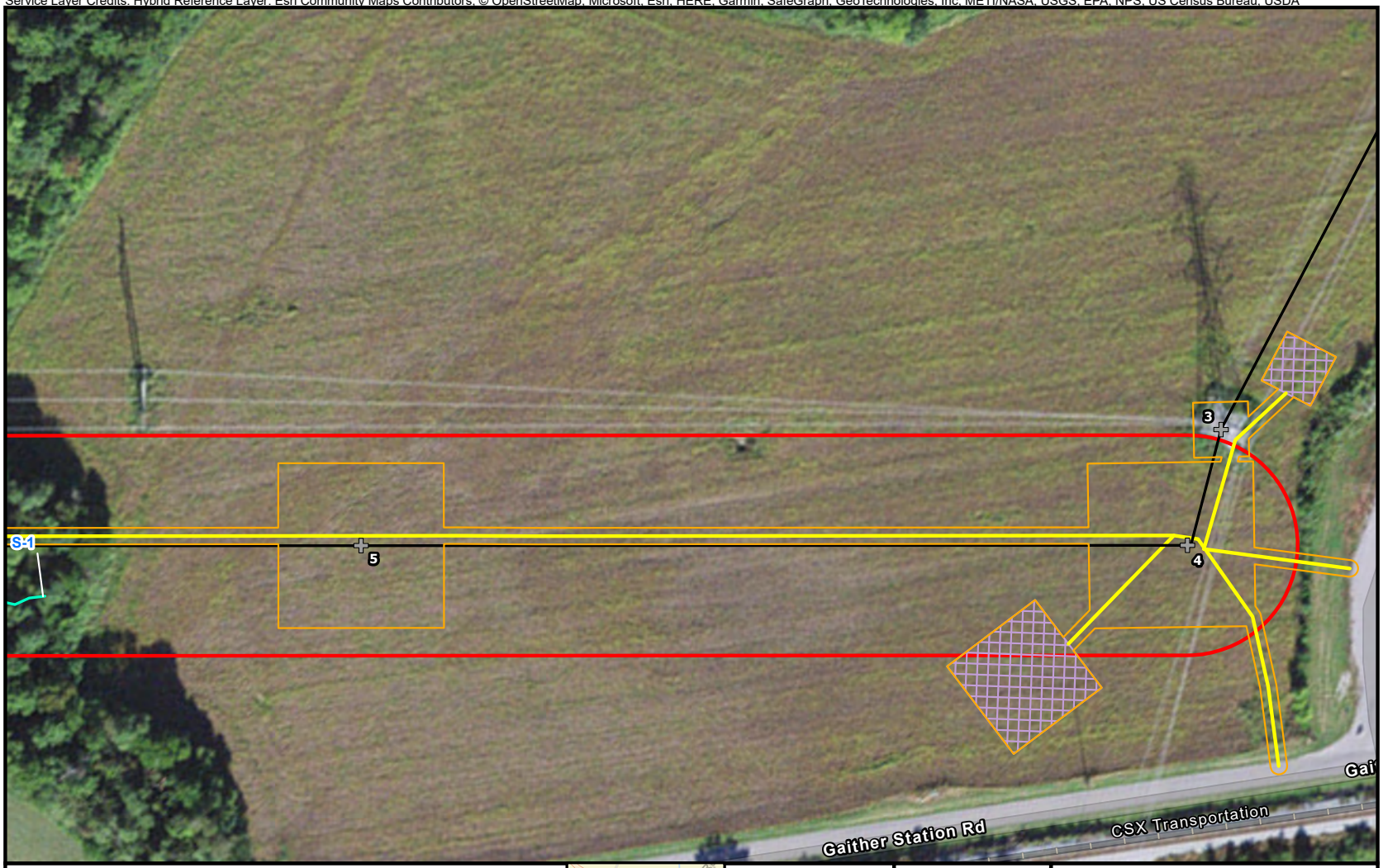

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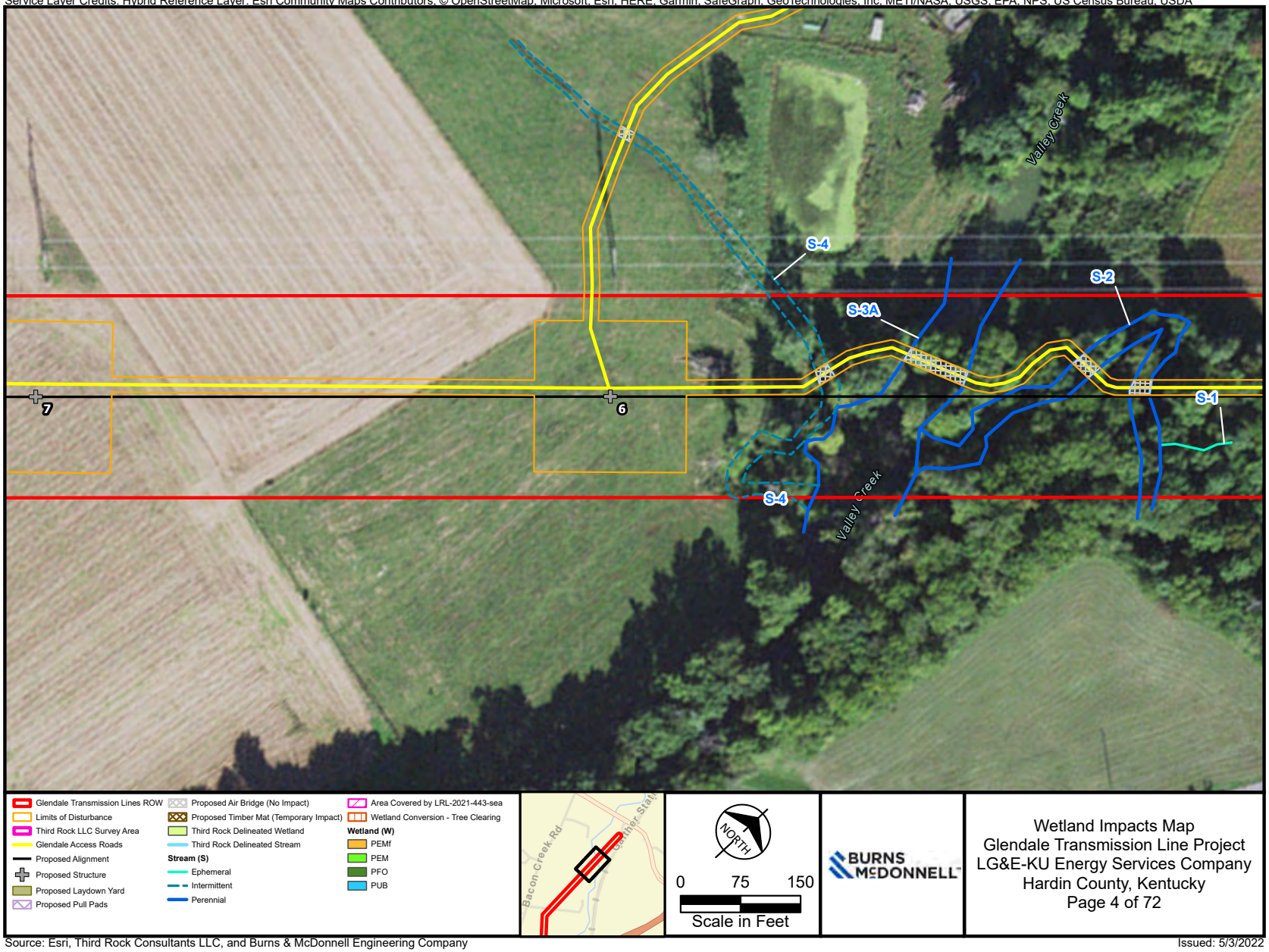

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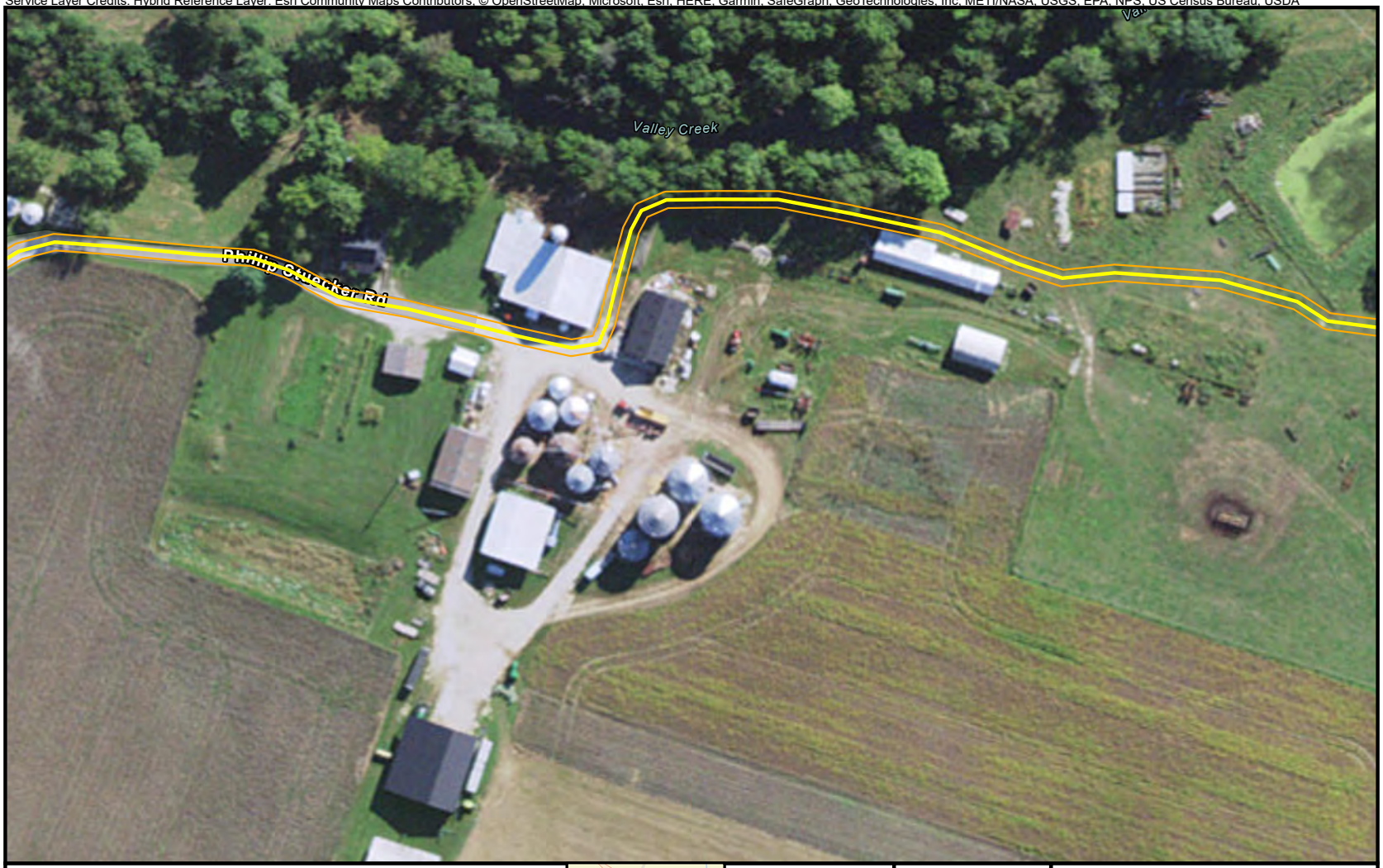

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Hardin County, Kentucky
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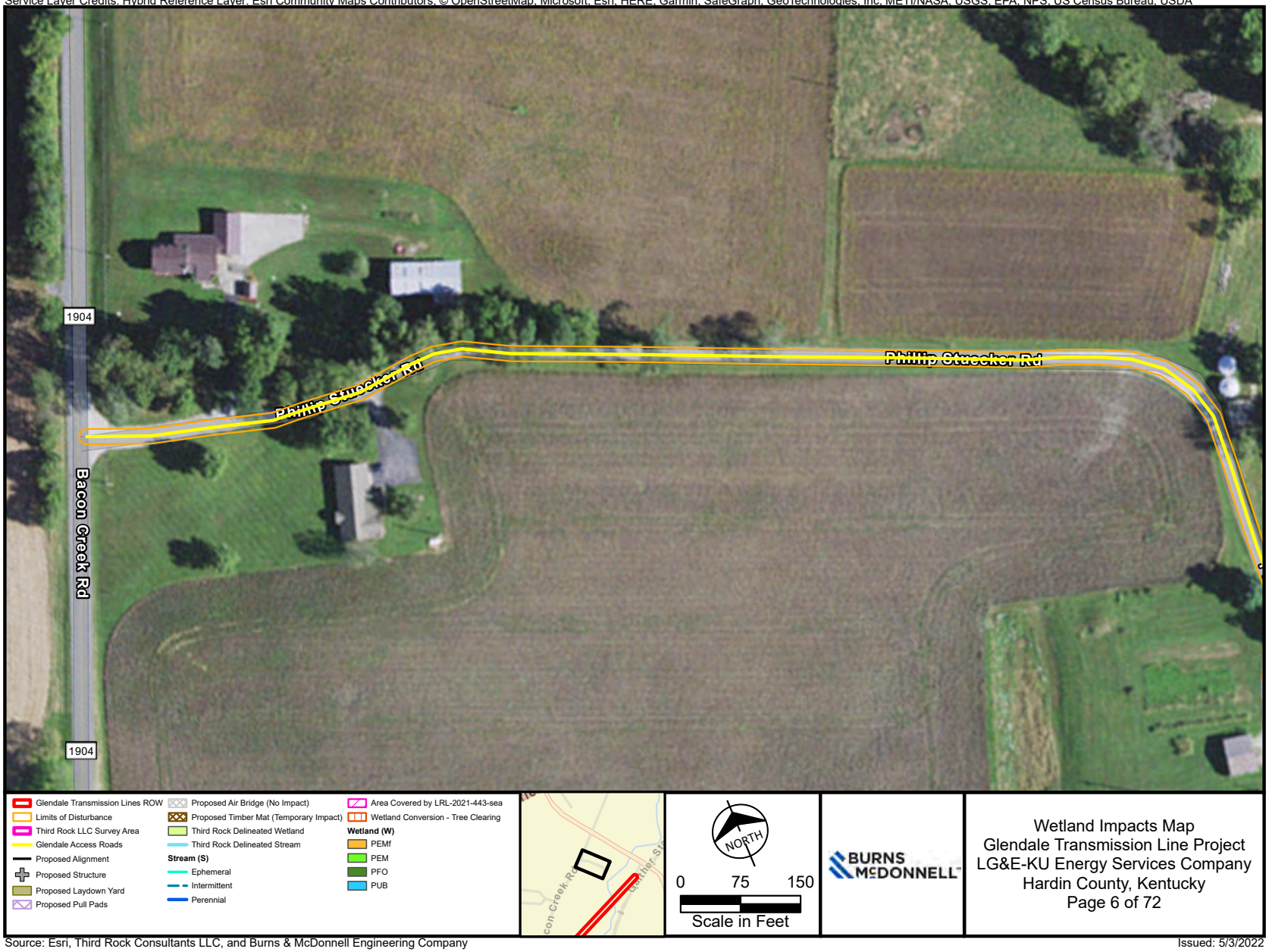

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Glendale Transmission Lines ROW
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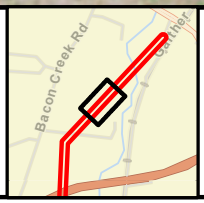
Proposed Air Bridge (No Impact)
Proposed Timber Mat (Temporary Impact)
Third Rock Delineated Wetland
Third Rock Delineated Stream
Stream (S)
Ephemeral
Intermittent
Perennial
Area Covered by LRL-2021-443-sea
Wetland Conversion - Tree Clearing
Wetland (W)
PEMf
PEM
PFO
PUB



NORTH
0 75 150
Scale in Feet

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Glendale Transmission Line Project
LG&E-KU Energy Services Company
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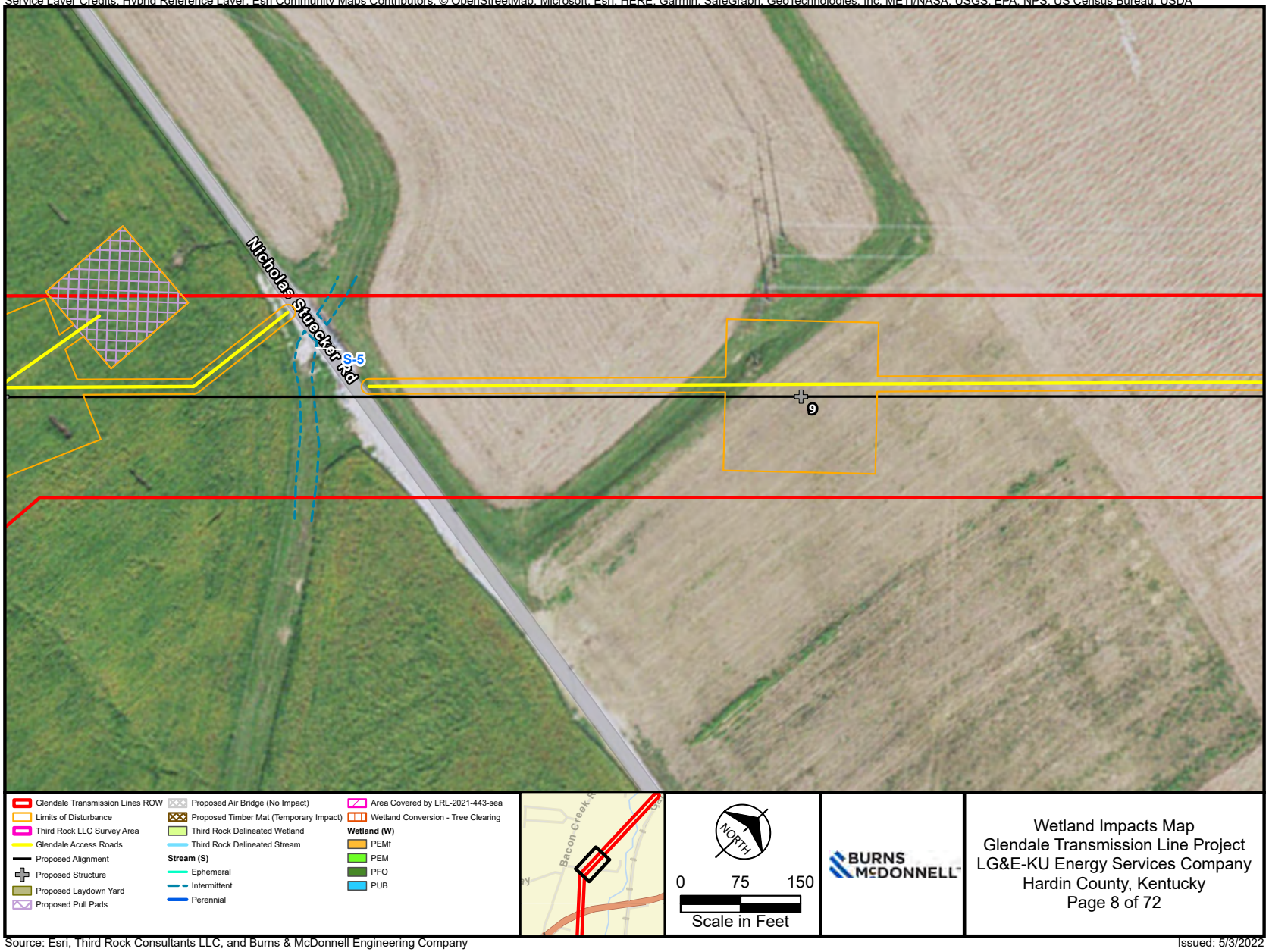

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Glendale Transmission Line Project
LG&E-KU Energy Services Company
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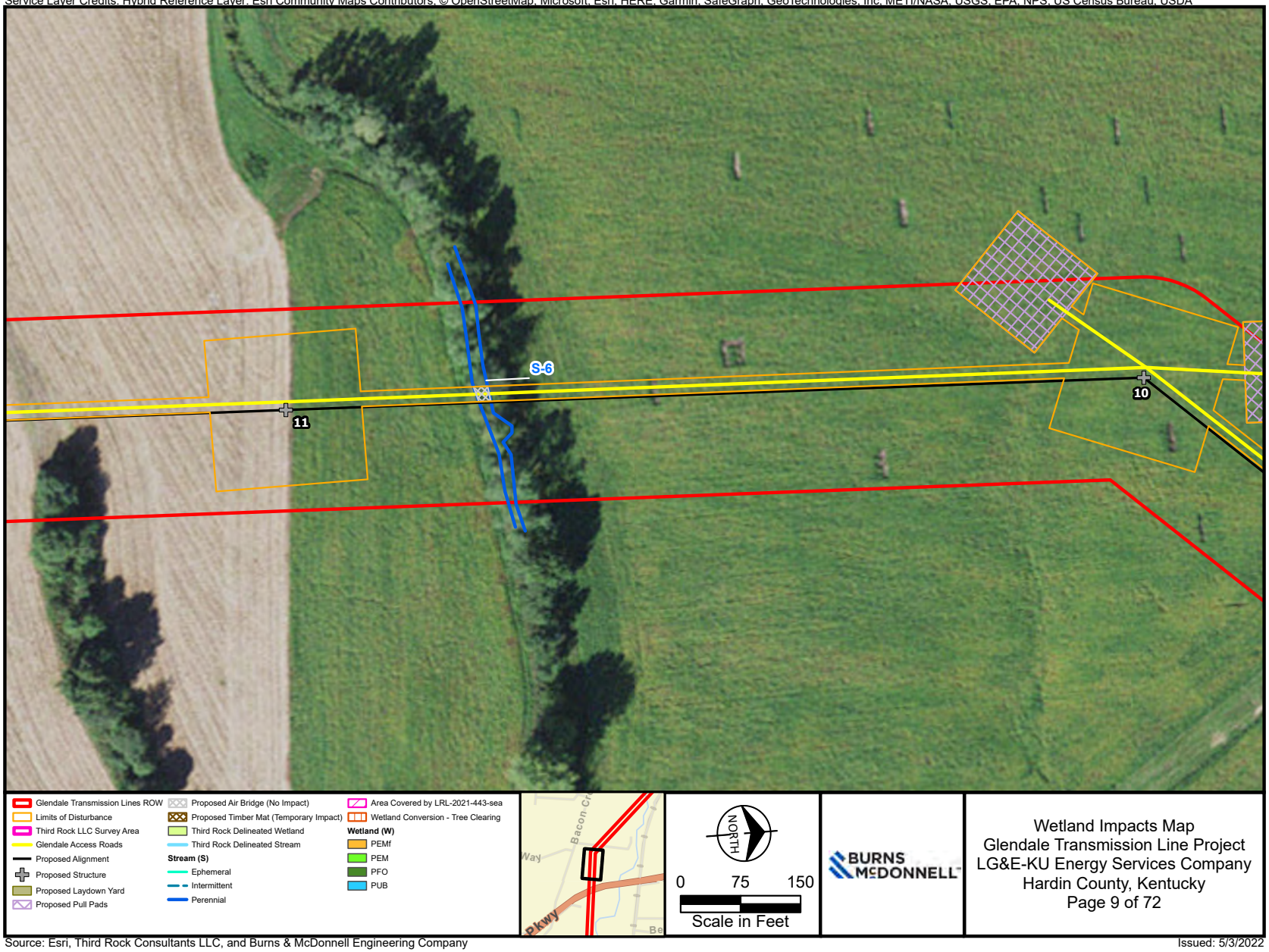

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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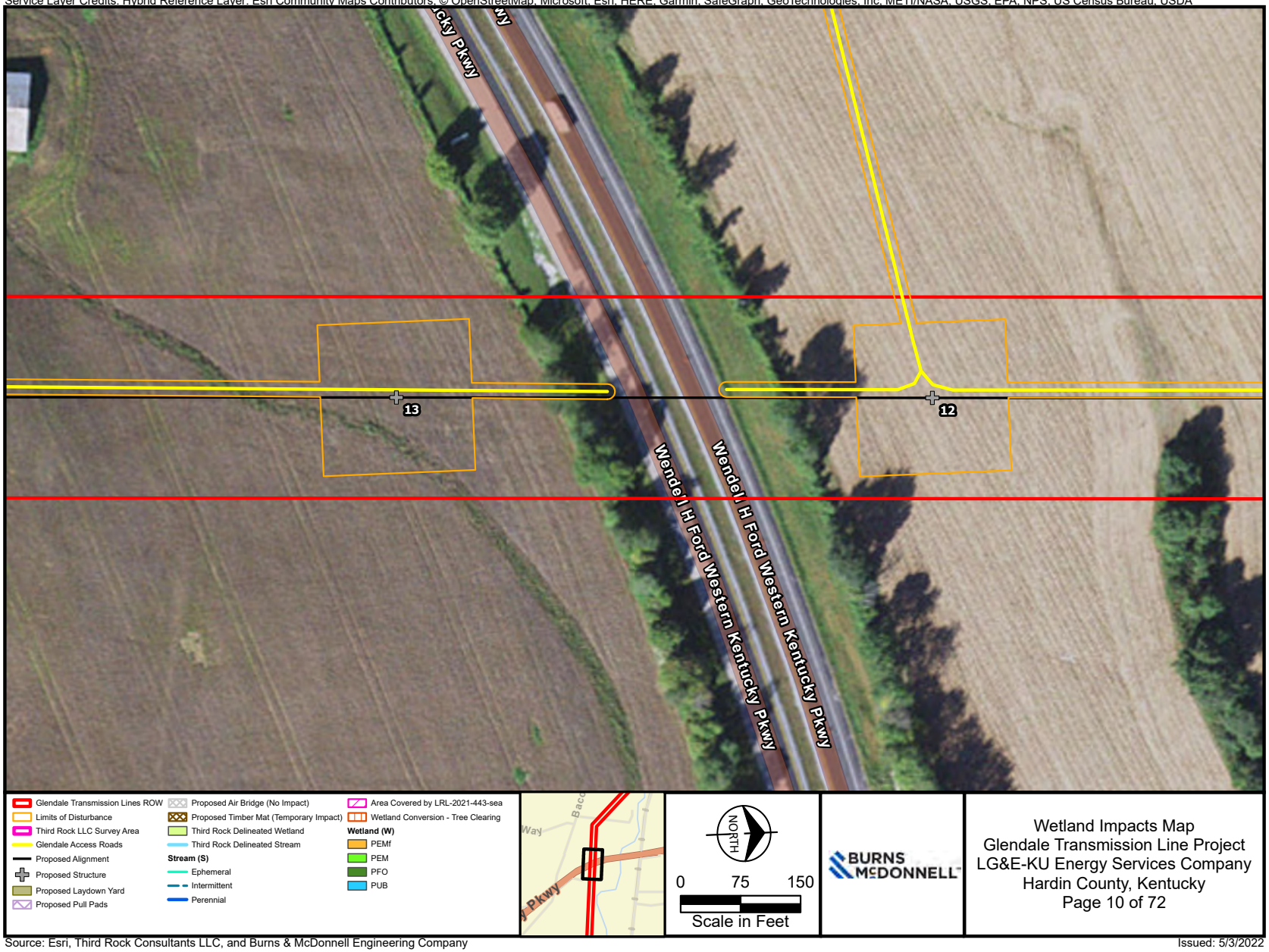

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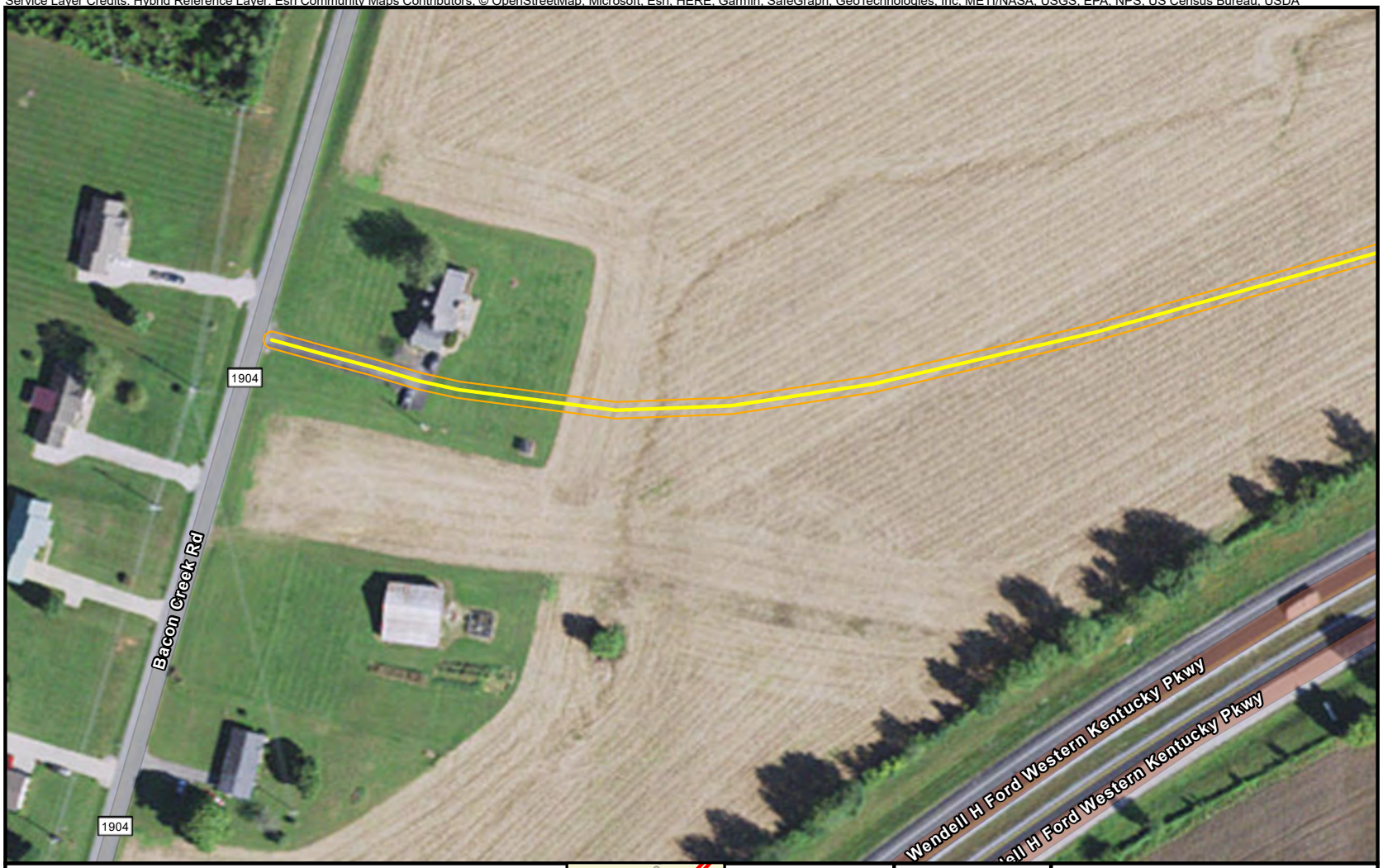

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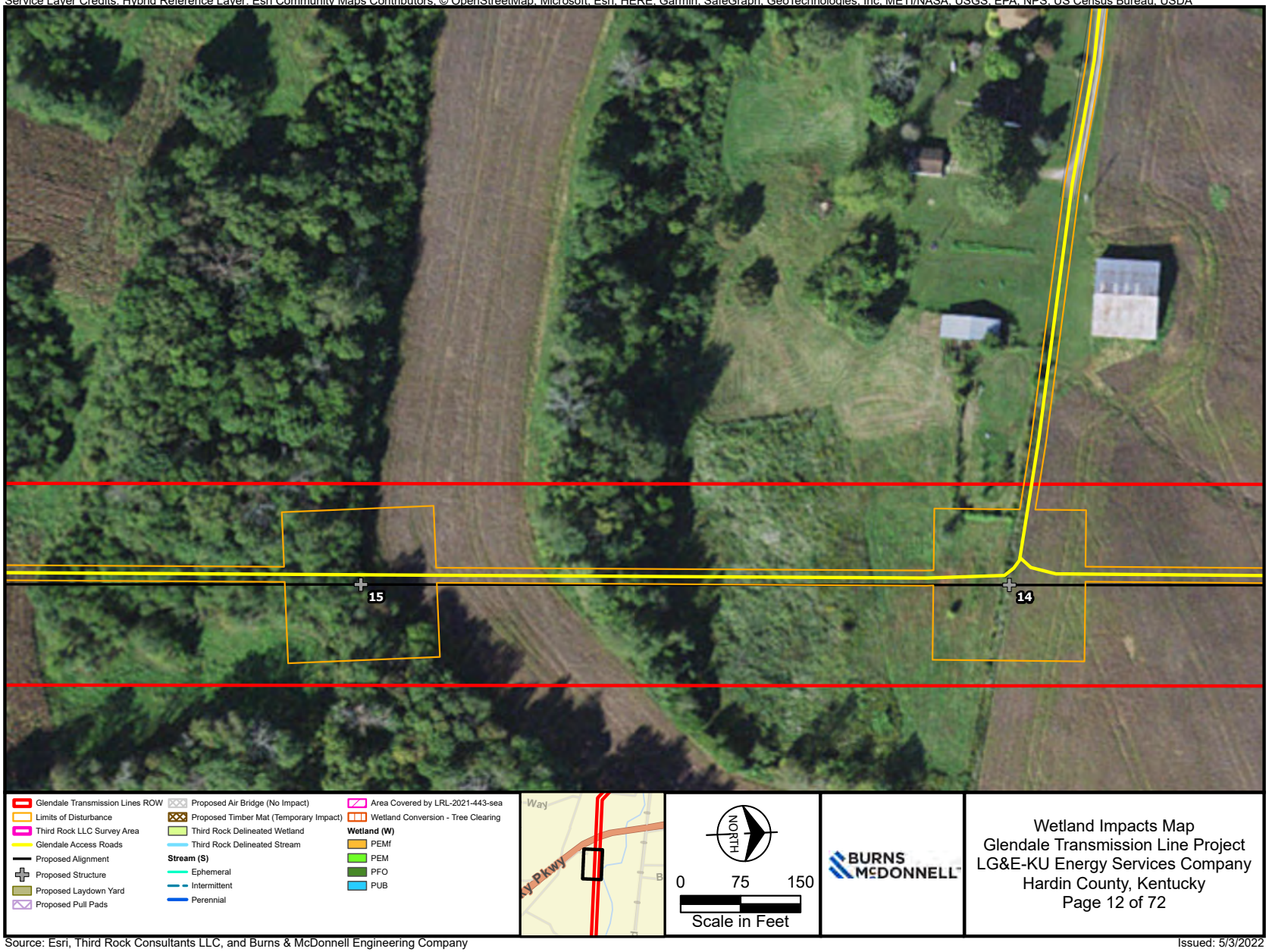

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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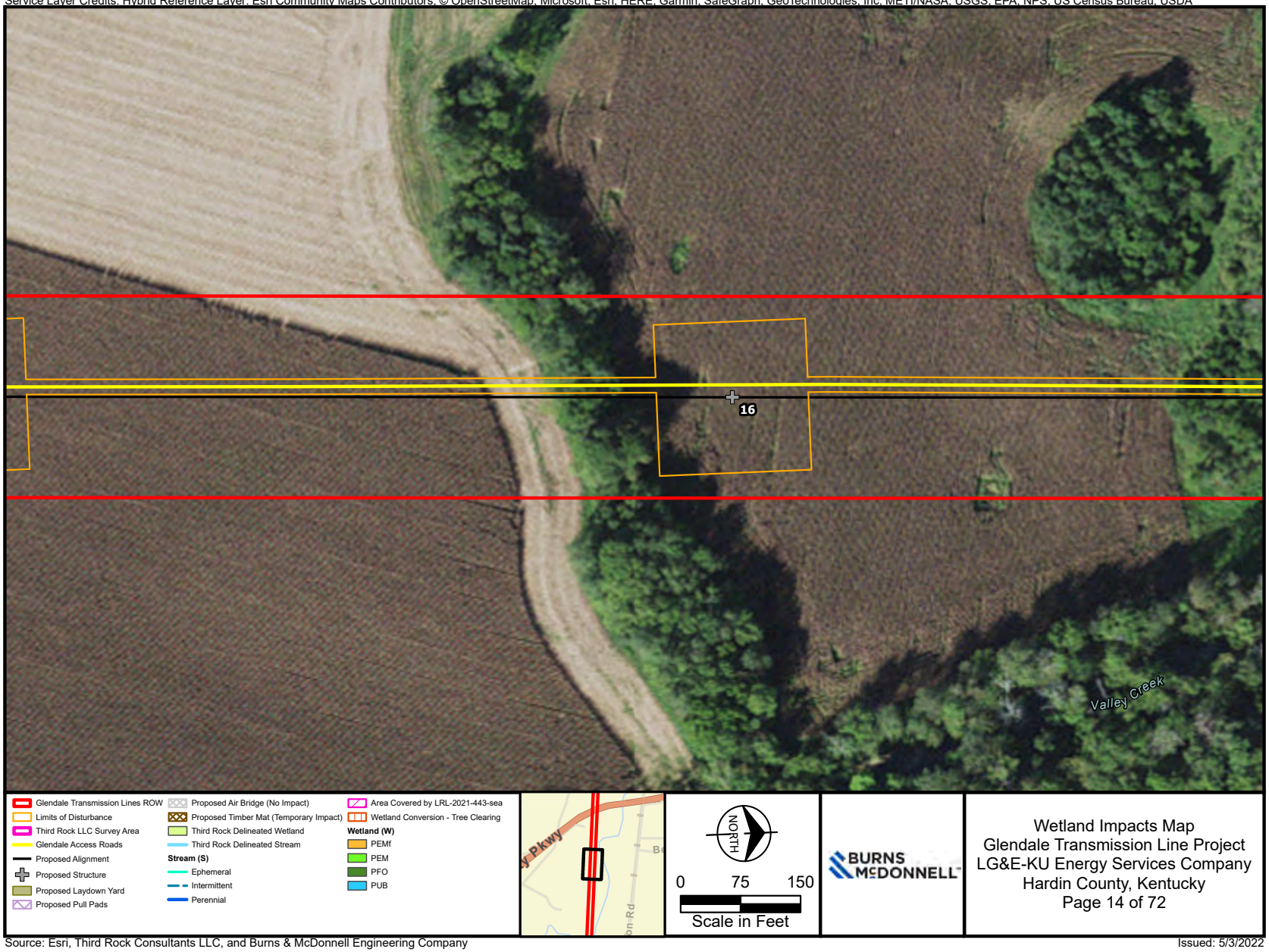

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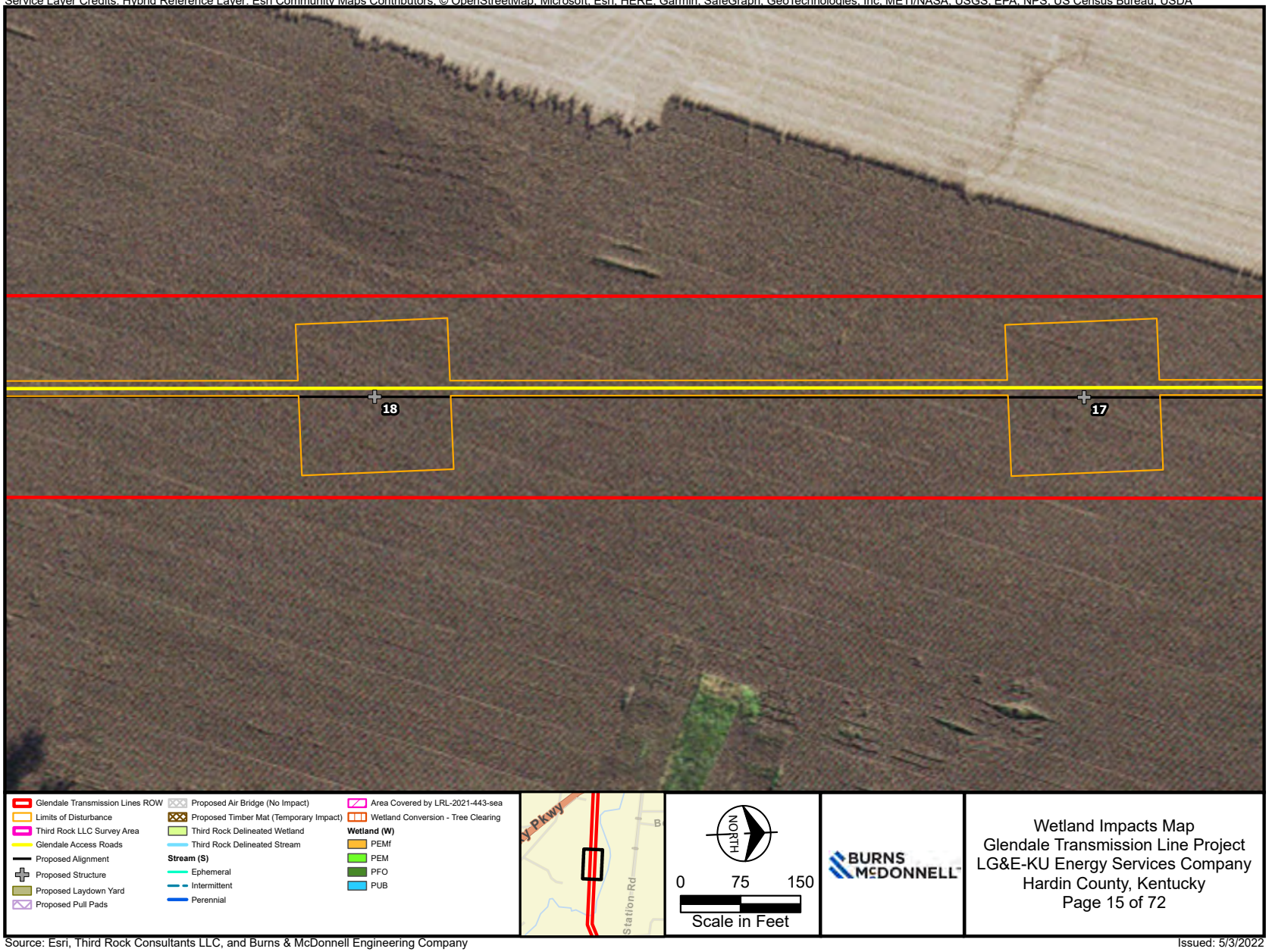

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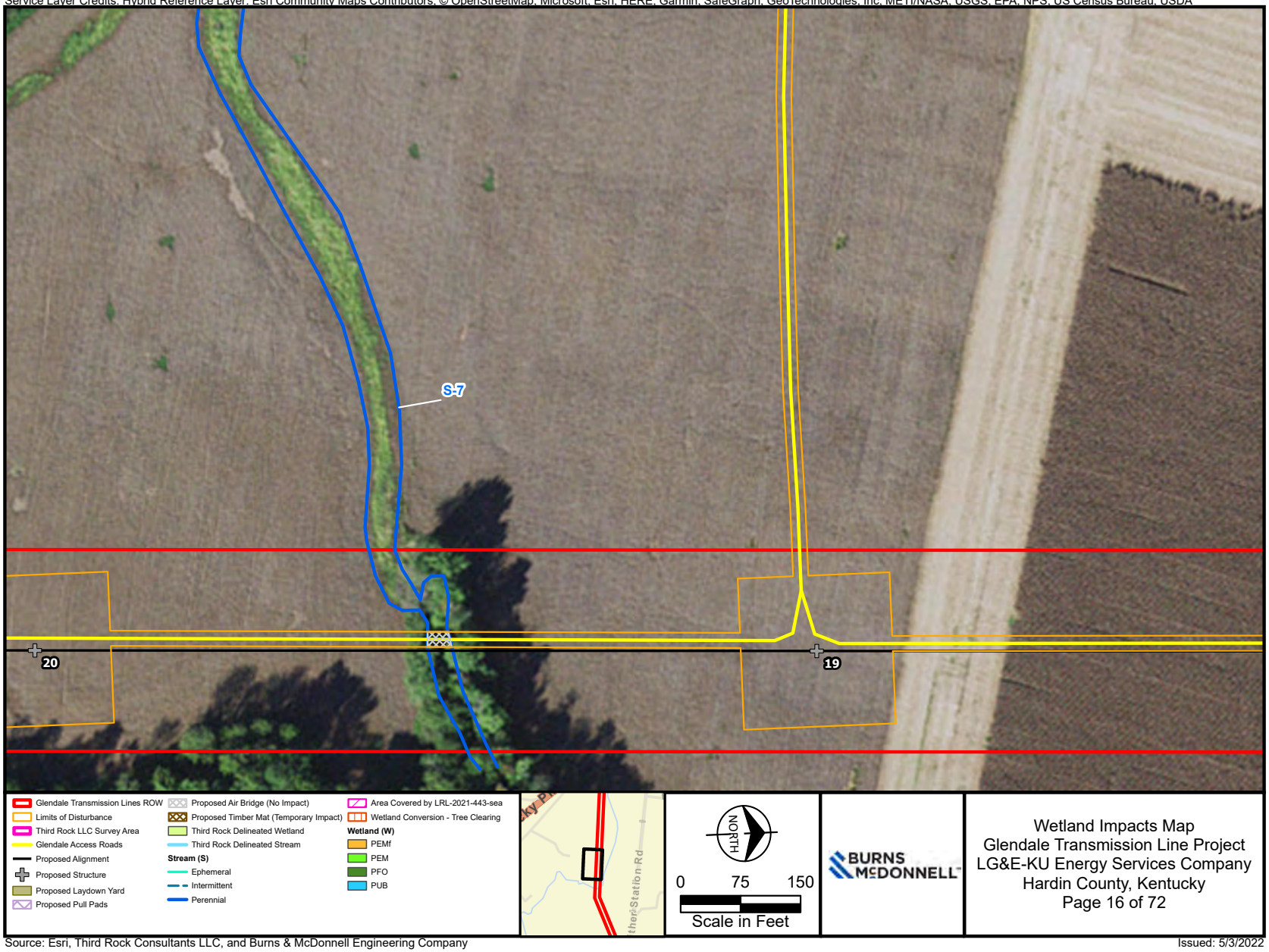

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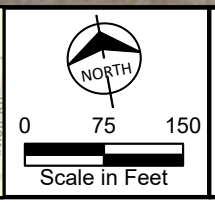
Proposed Timber Mat (Temporary Impact)
Third Rock Delineated Wetland
Third Rock Delineated Stream
Stream (S)
Ephemeral
Intermittent
Perennial
Area Covered by LRL-2021-443-sea
Wetland Conversion - Tree Clearing
Wetland (W)
PEMf
PEM
PFO
PUB



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Glendale Transmission Line Project
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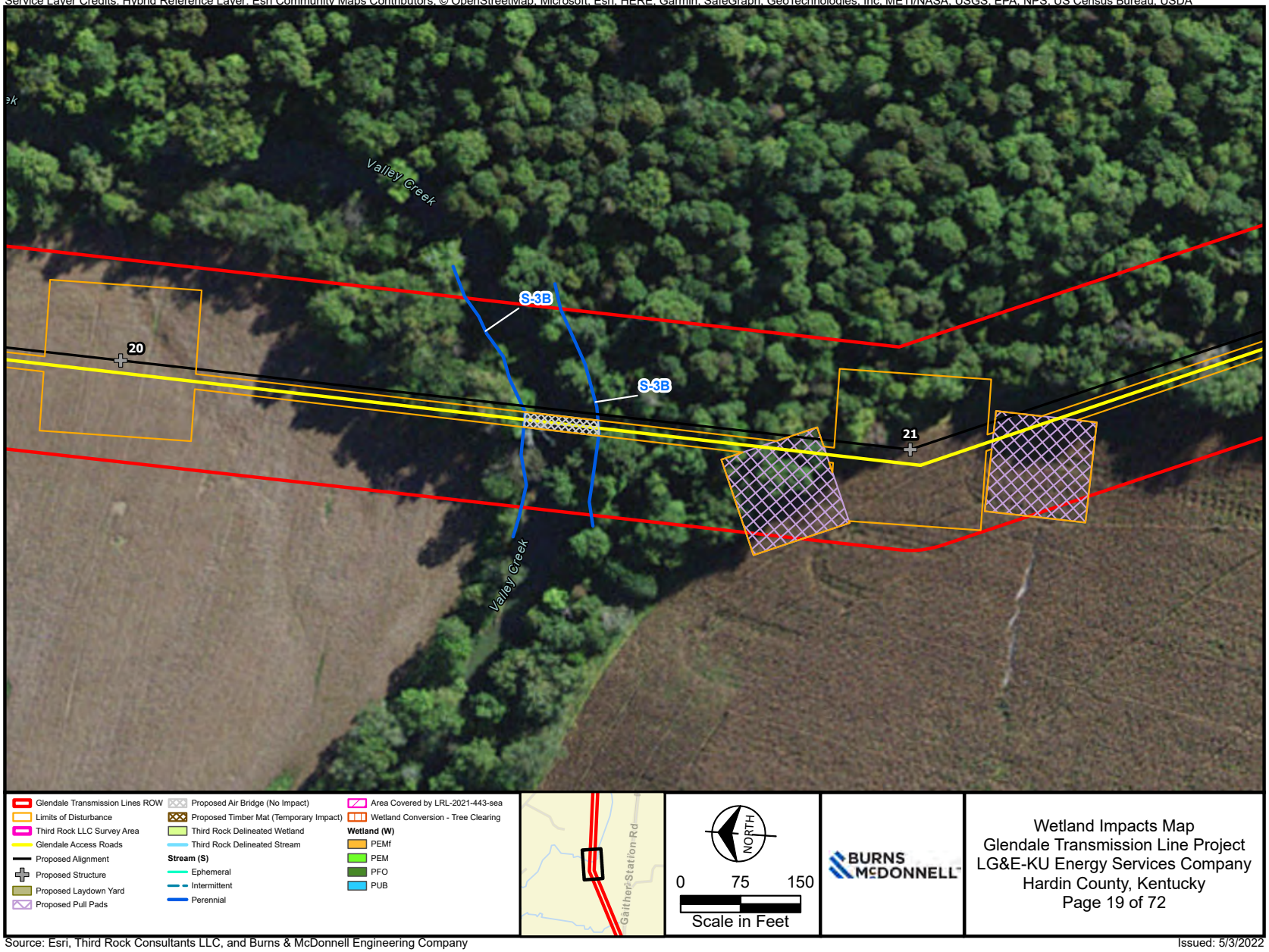

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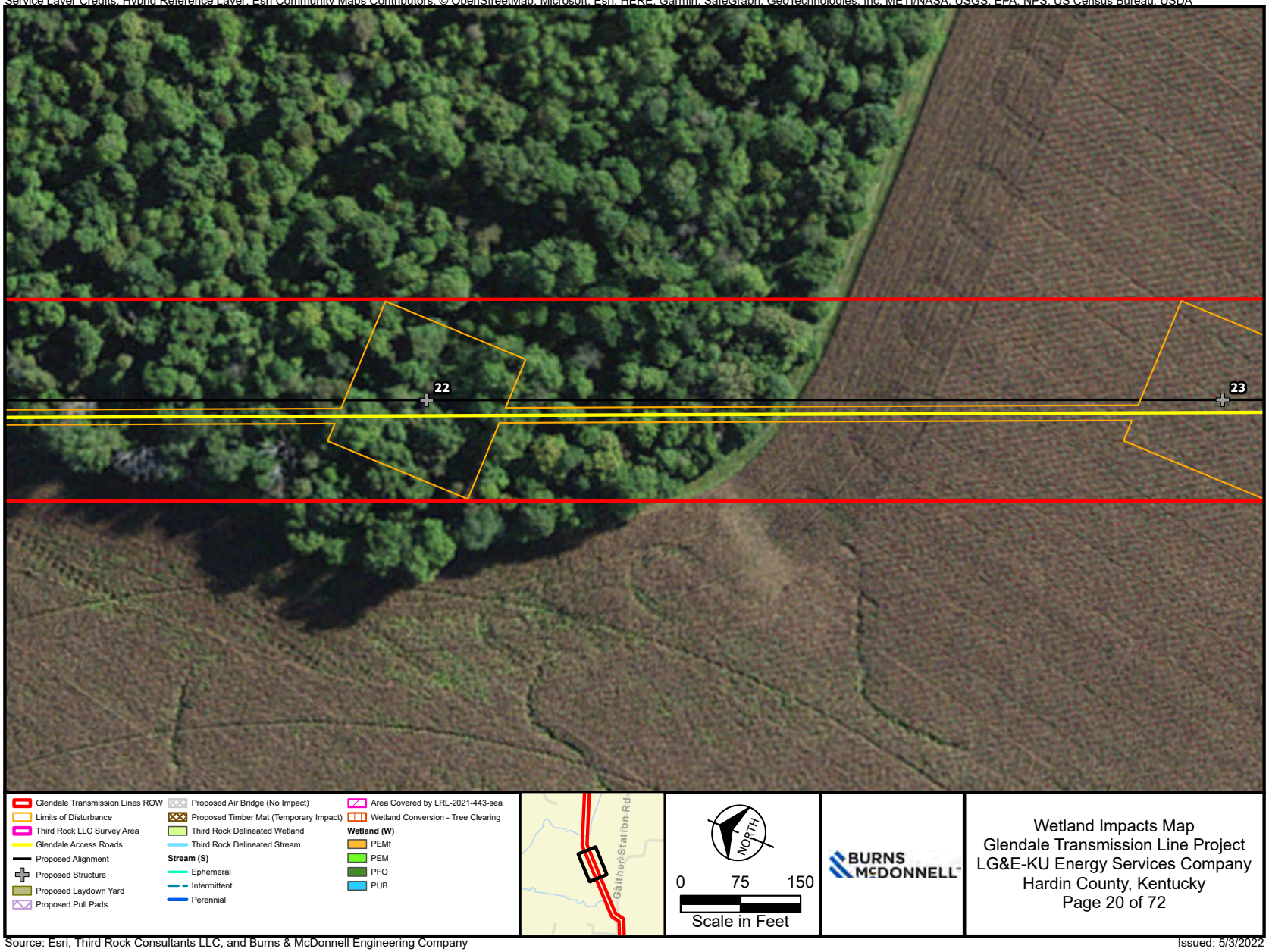

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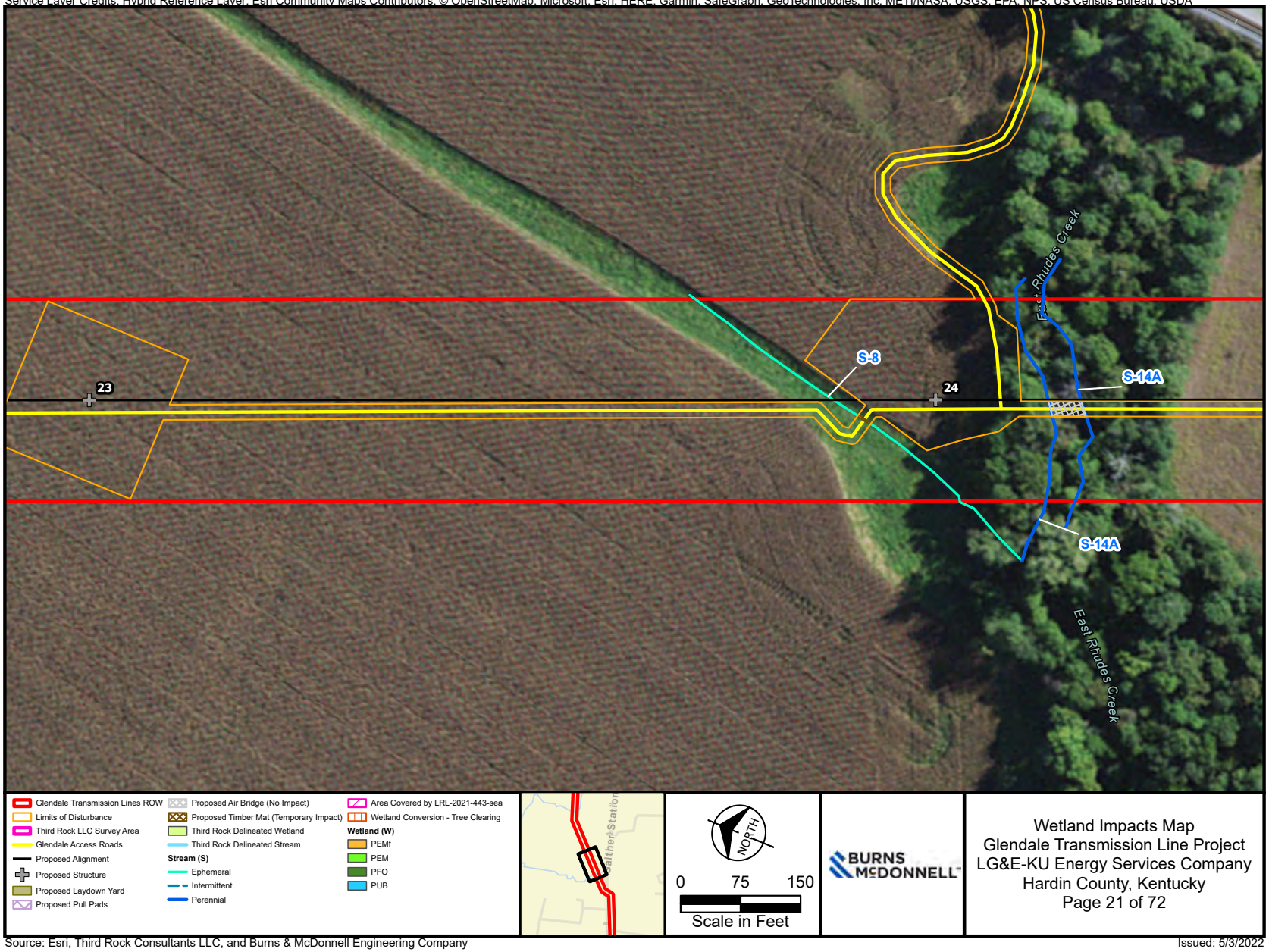

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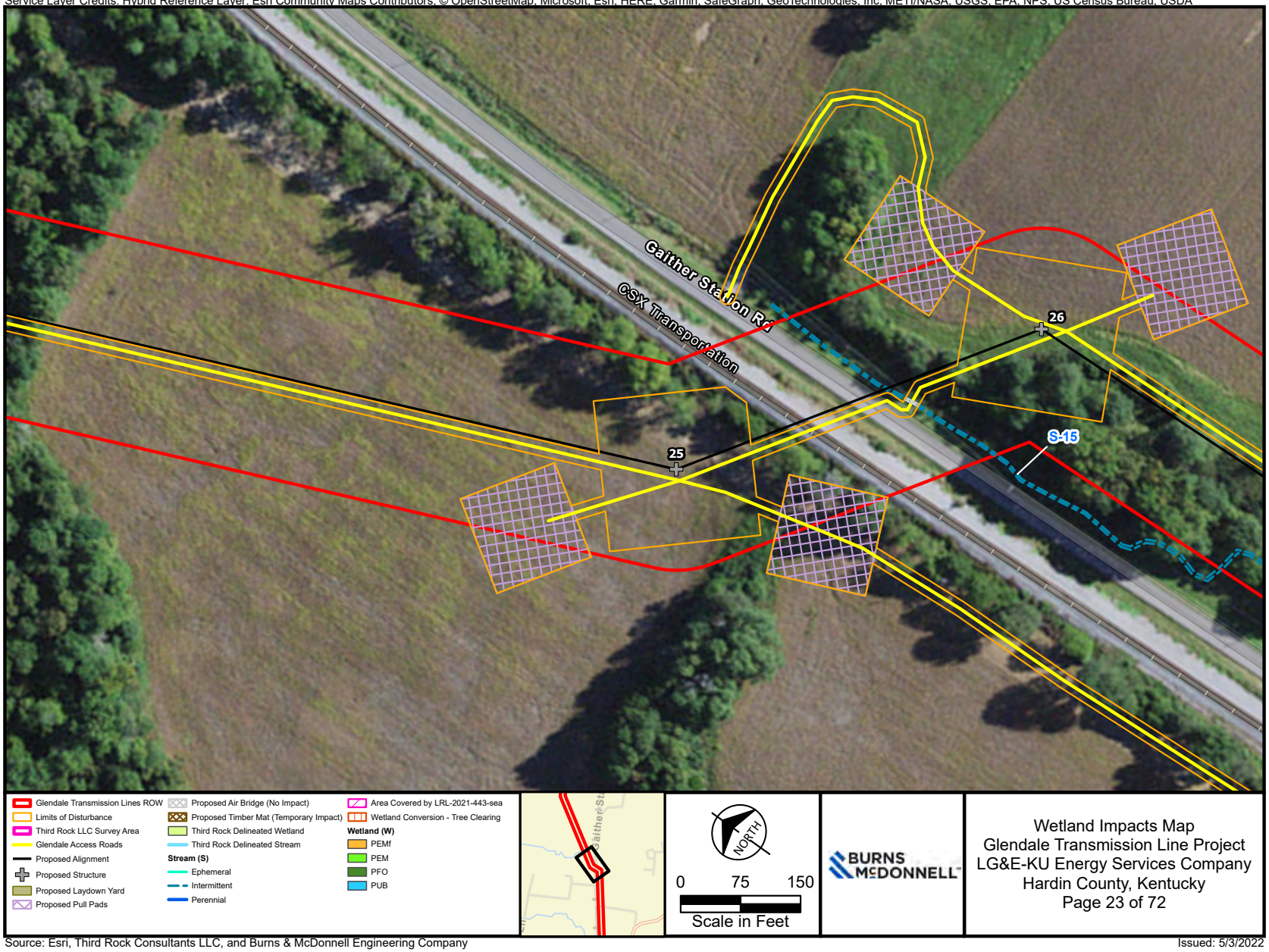

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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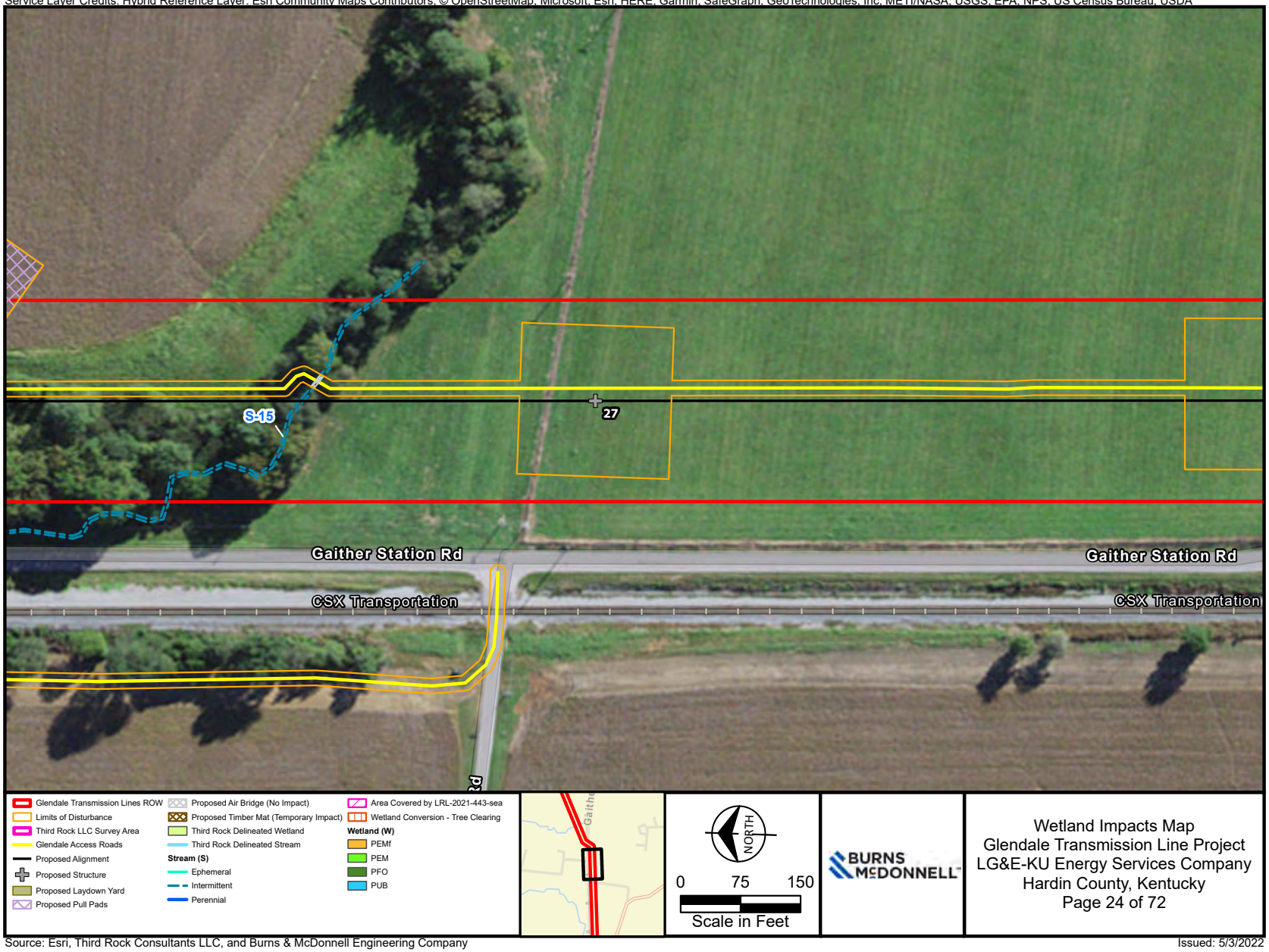

Wetland Impacts Map
Glendale Transmission Line Project
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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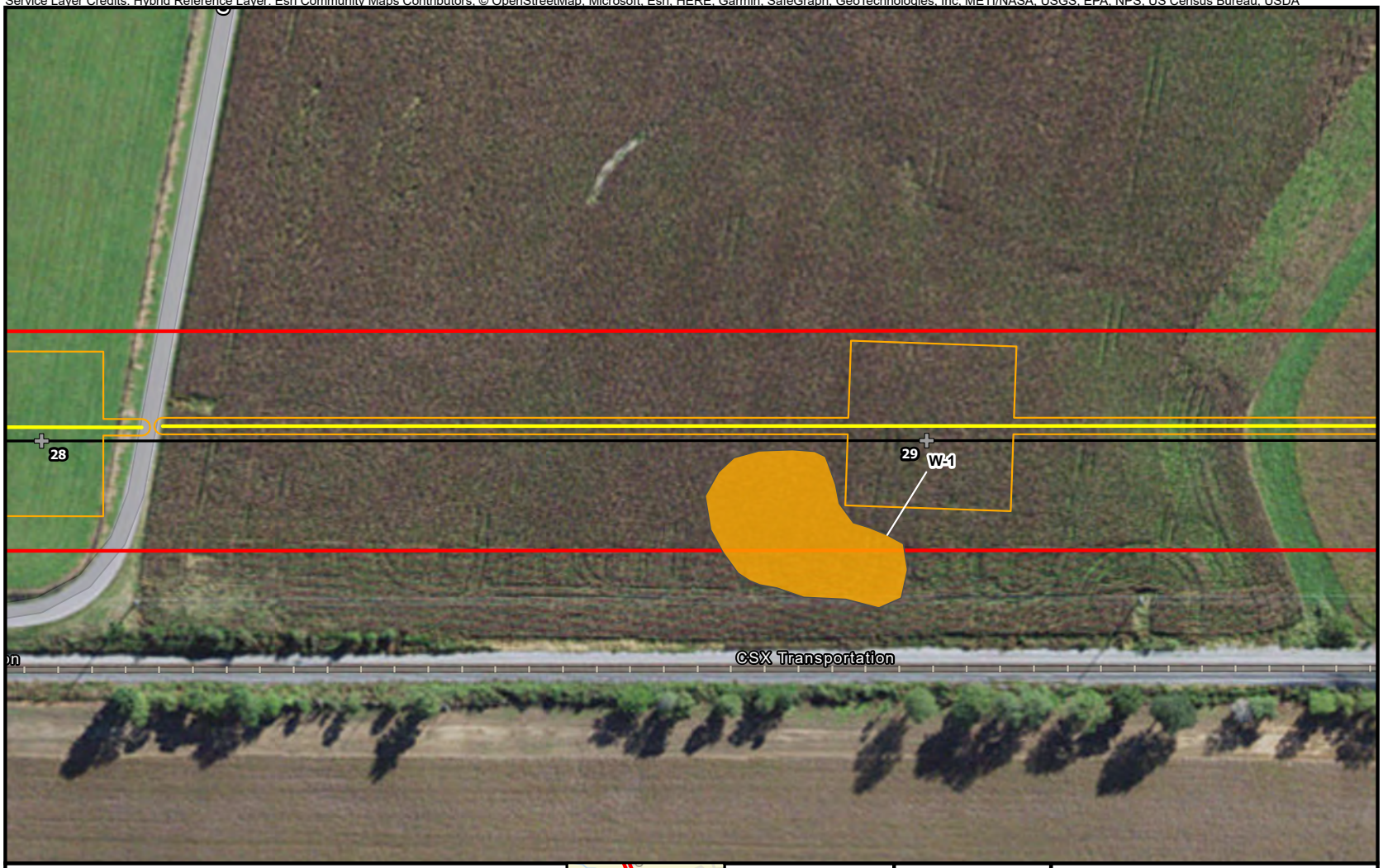

Glendale Transmission Lines ROW
Limits of Disturbance
Third Rock LLC Survey Area
Glendale Access Roads
Proposed Alignment
Proposed Structure
Proposed Laydown Yard
Proposed Pull Pads
Proposed Air Bridge (No Impact)
Proposed Timber Mat (Temporary Impact)
Third Rock Delineated Wetland
Third Rock Delineated Stream
Stream (S)
Ephemeral
Intermittent
Perennial
Area Covered by LRL-2021-443-sea
Wetland Conversion - Tree Clearing
Wetland (W)
PEMf
PEM
PFO
PUB

NORTH
0 75 150
Scale in Feet

BURNS McDONNELL

Wetland Impacts Map
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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BURNS McDONNELL

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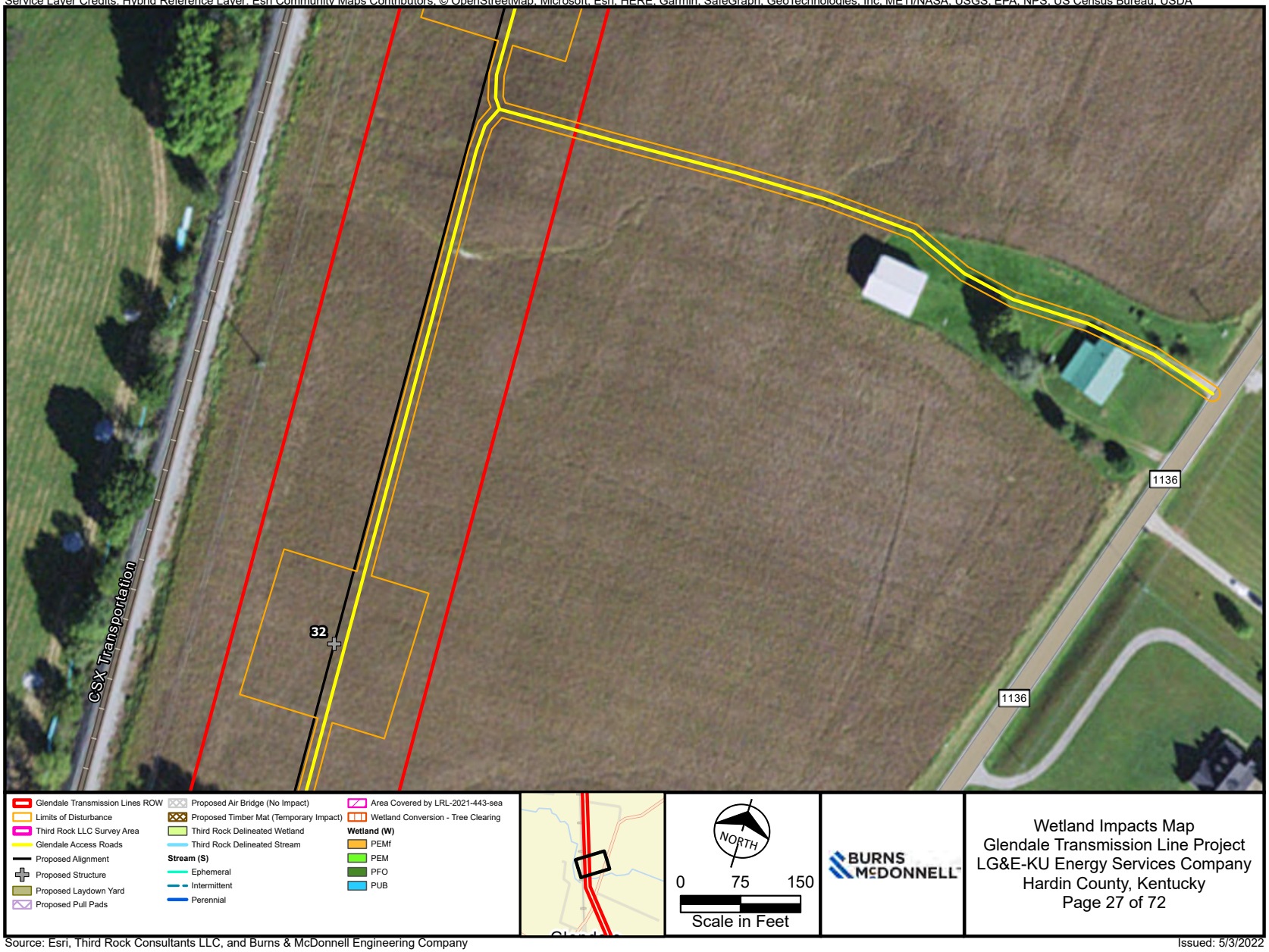

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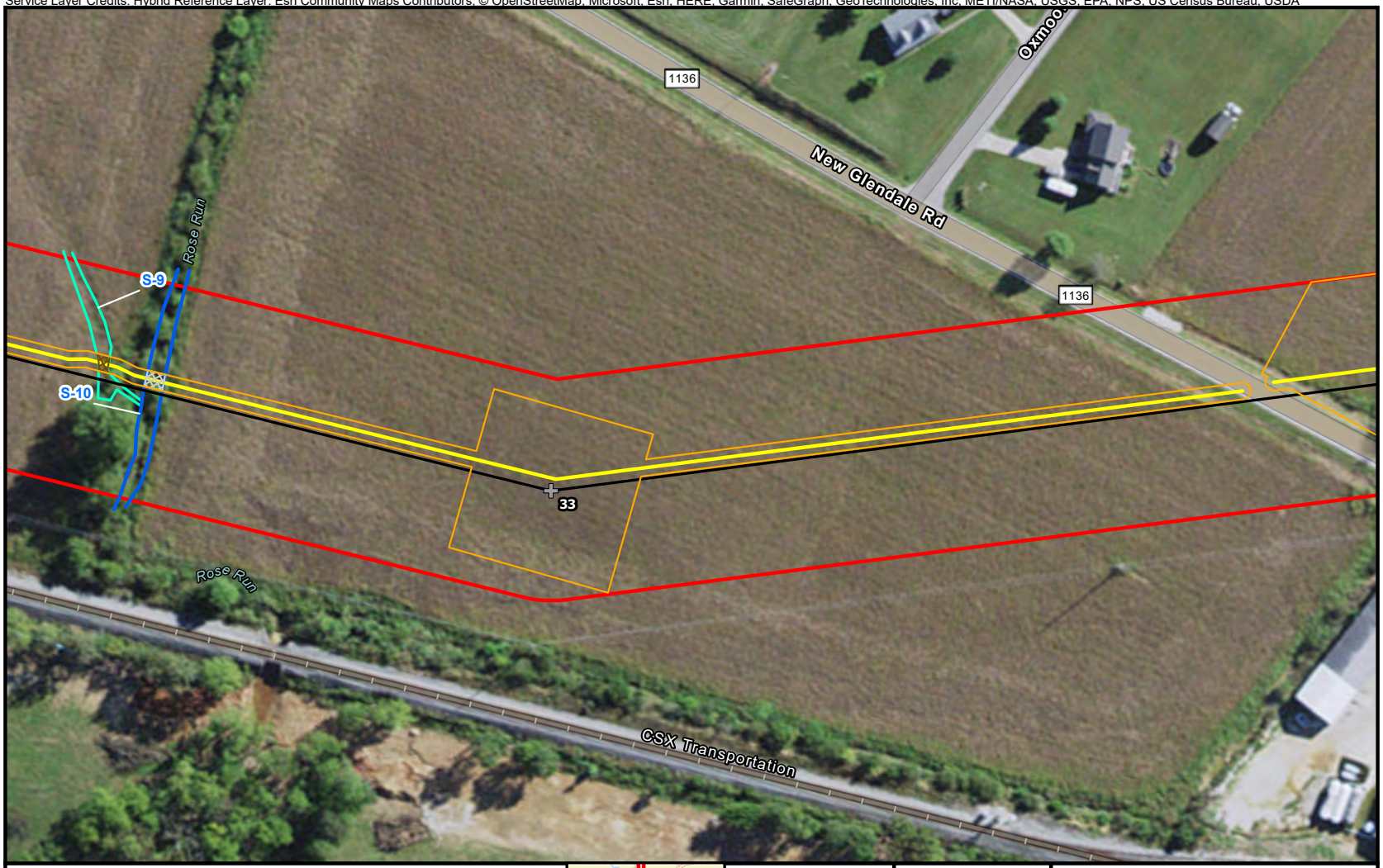

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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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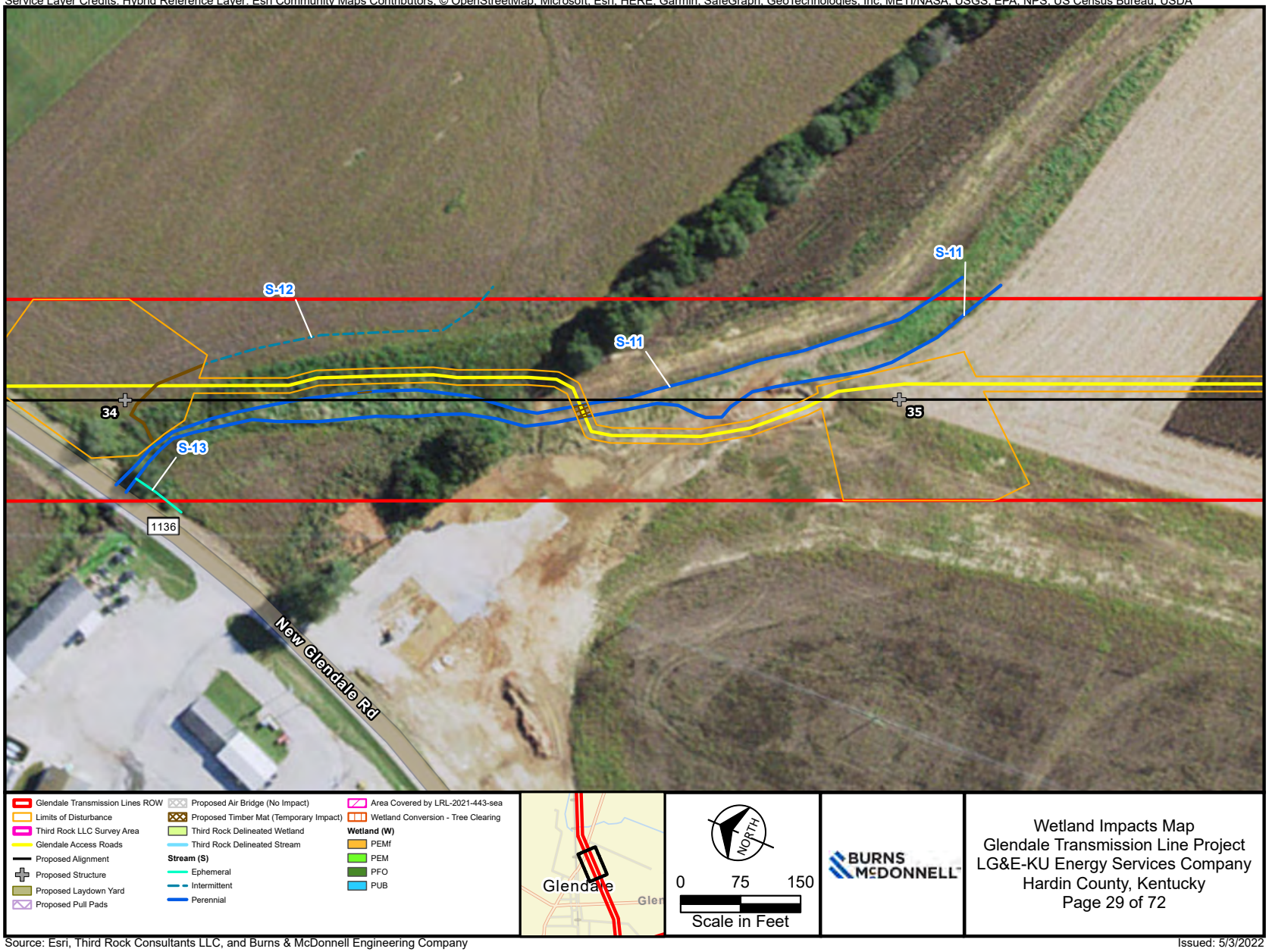

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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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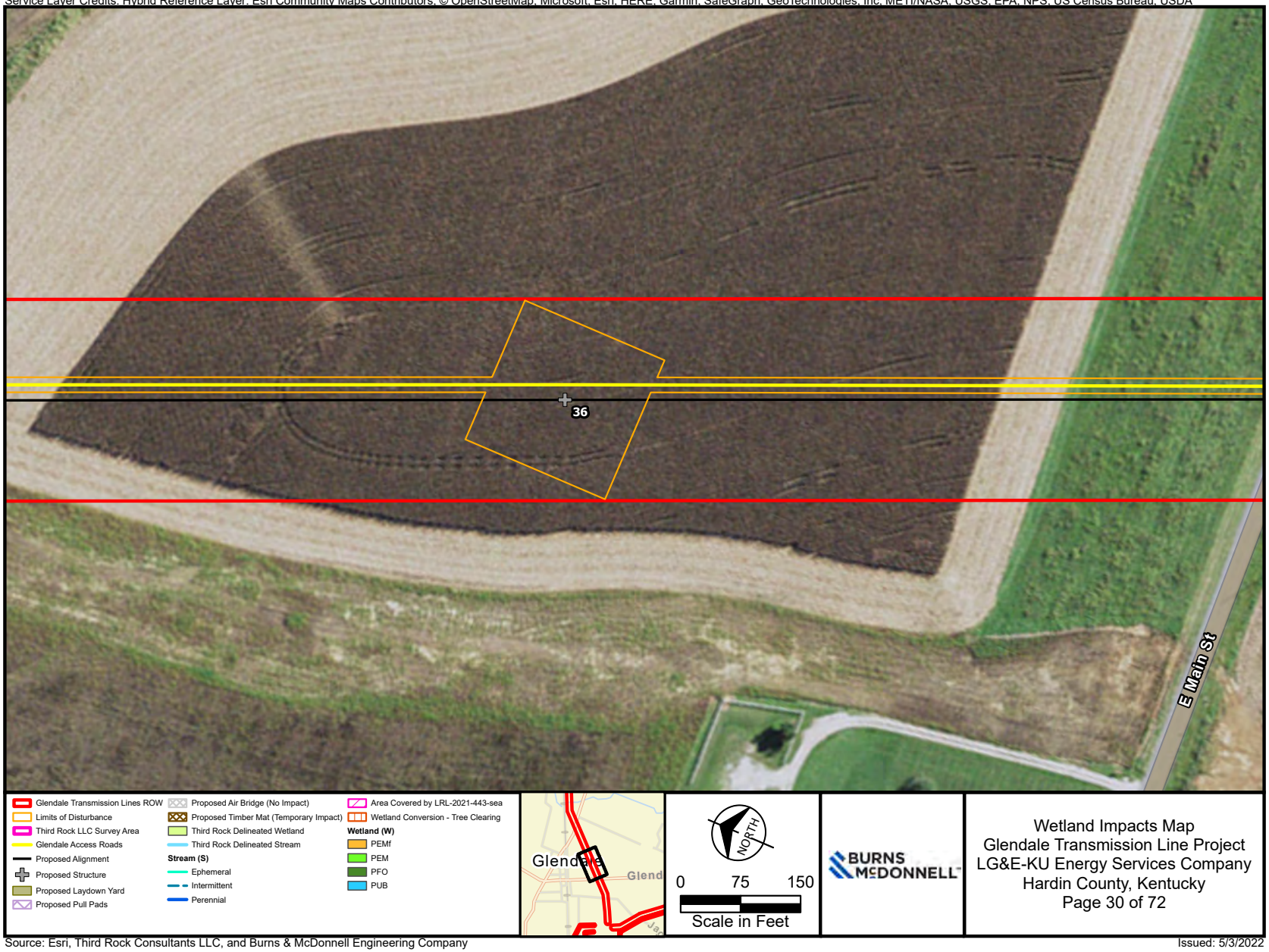

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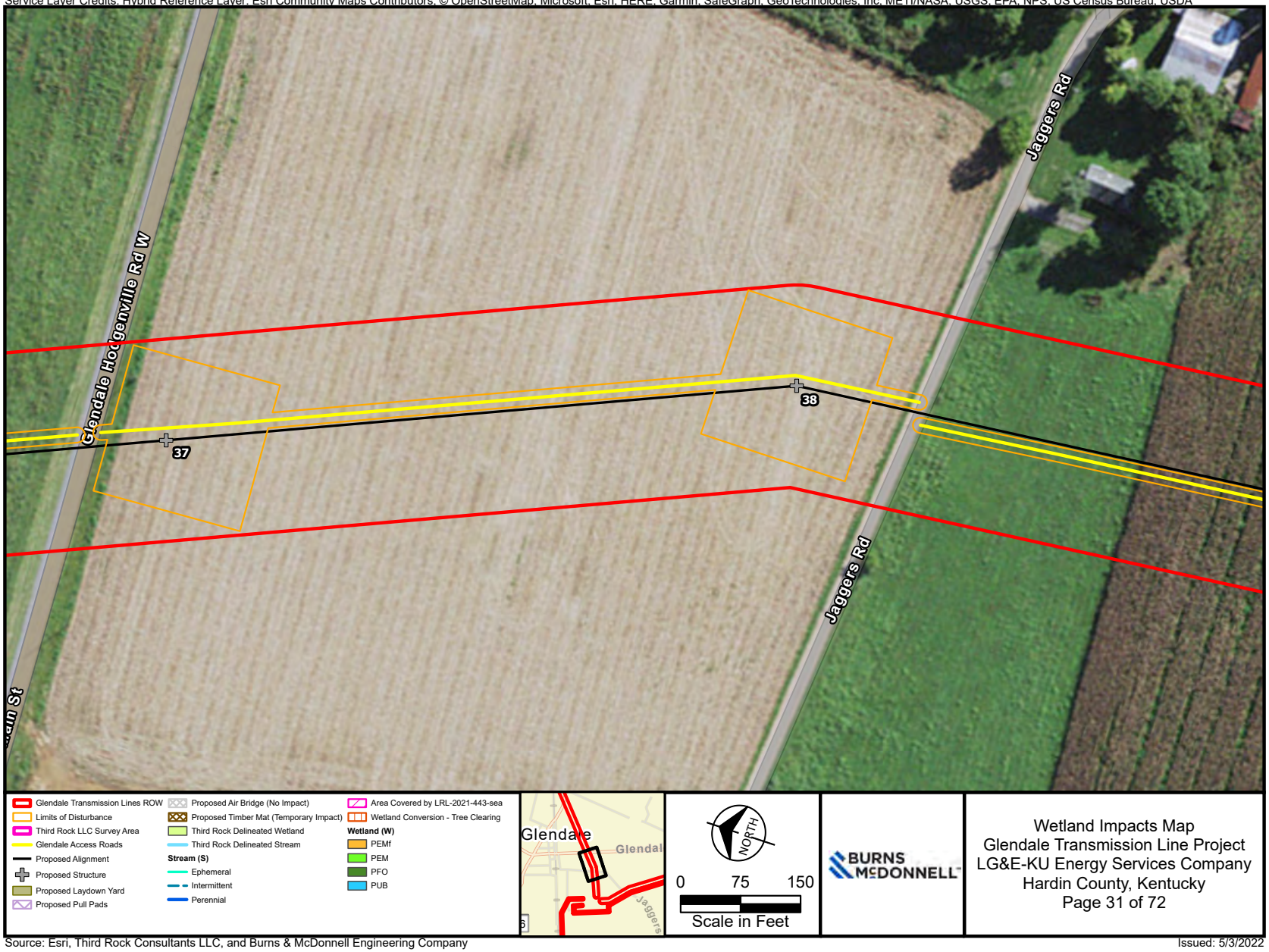

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Glendale Transmission Line Project
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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Glendale Transmission Line Project
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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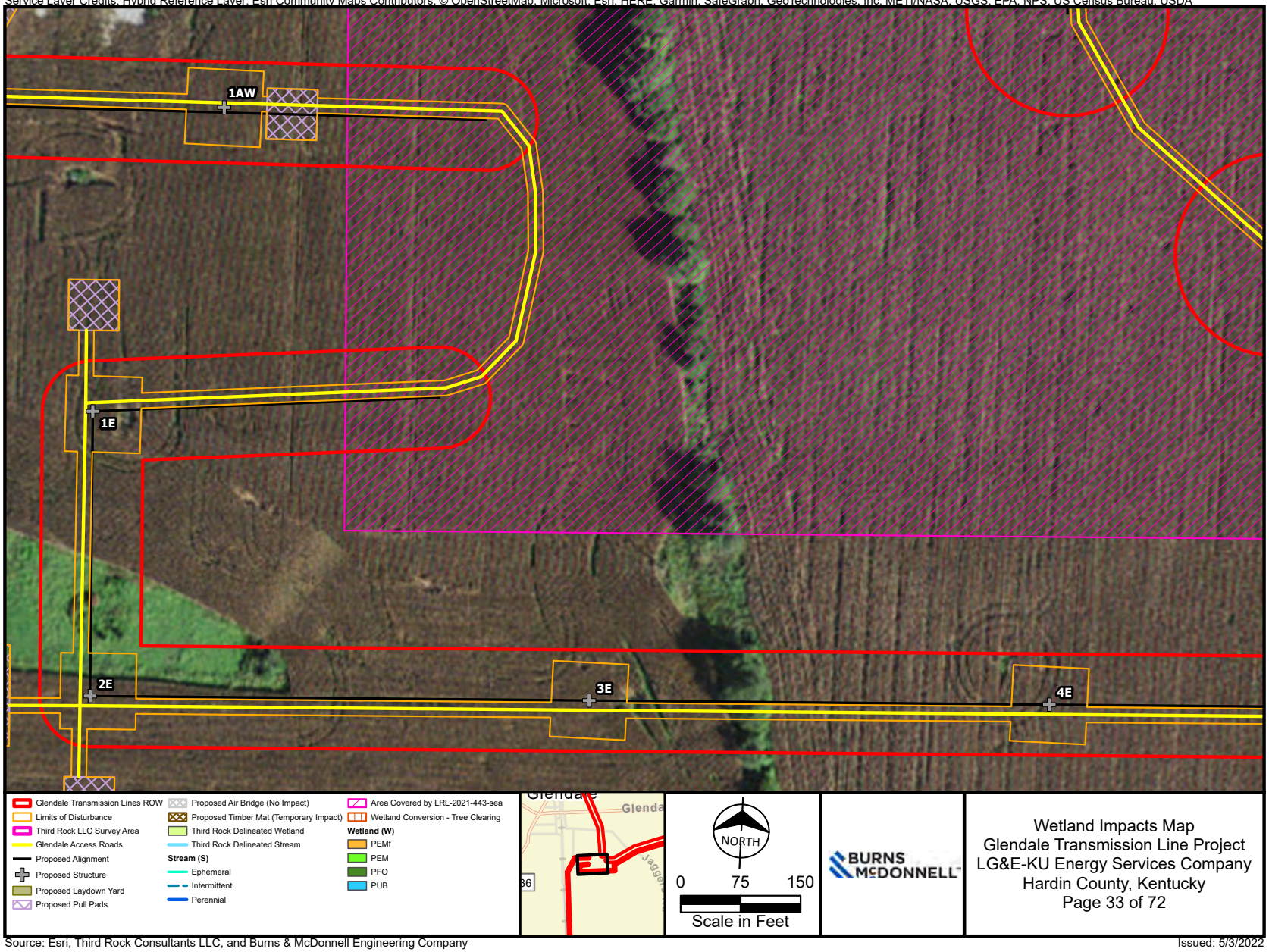

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Glendale Transmission Line Project
LG&E-KU Energy Services Company
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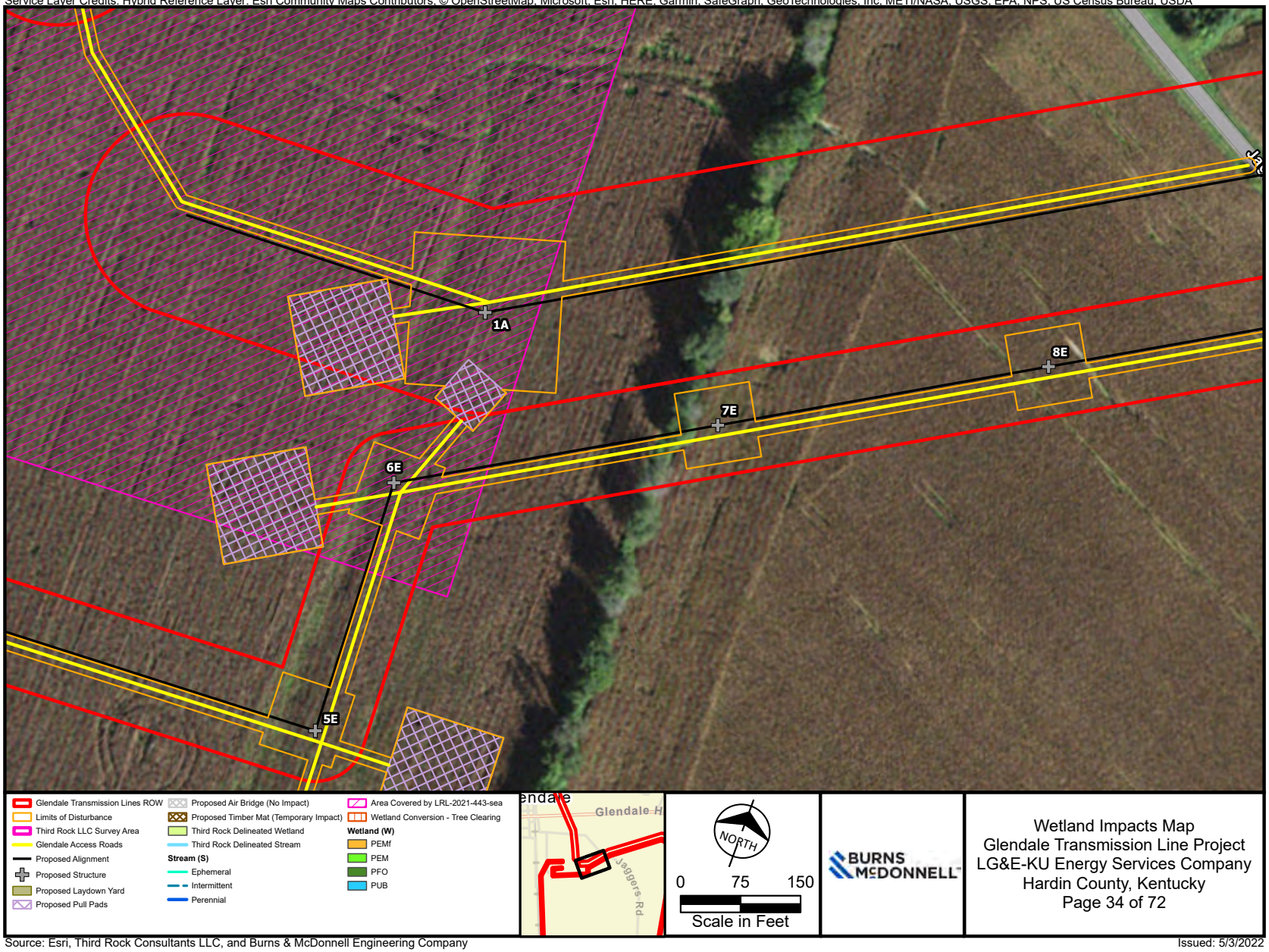

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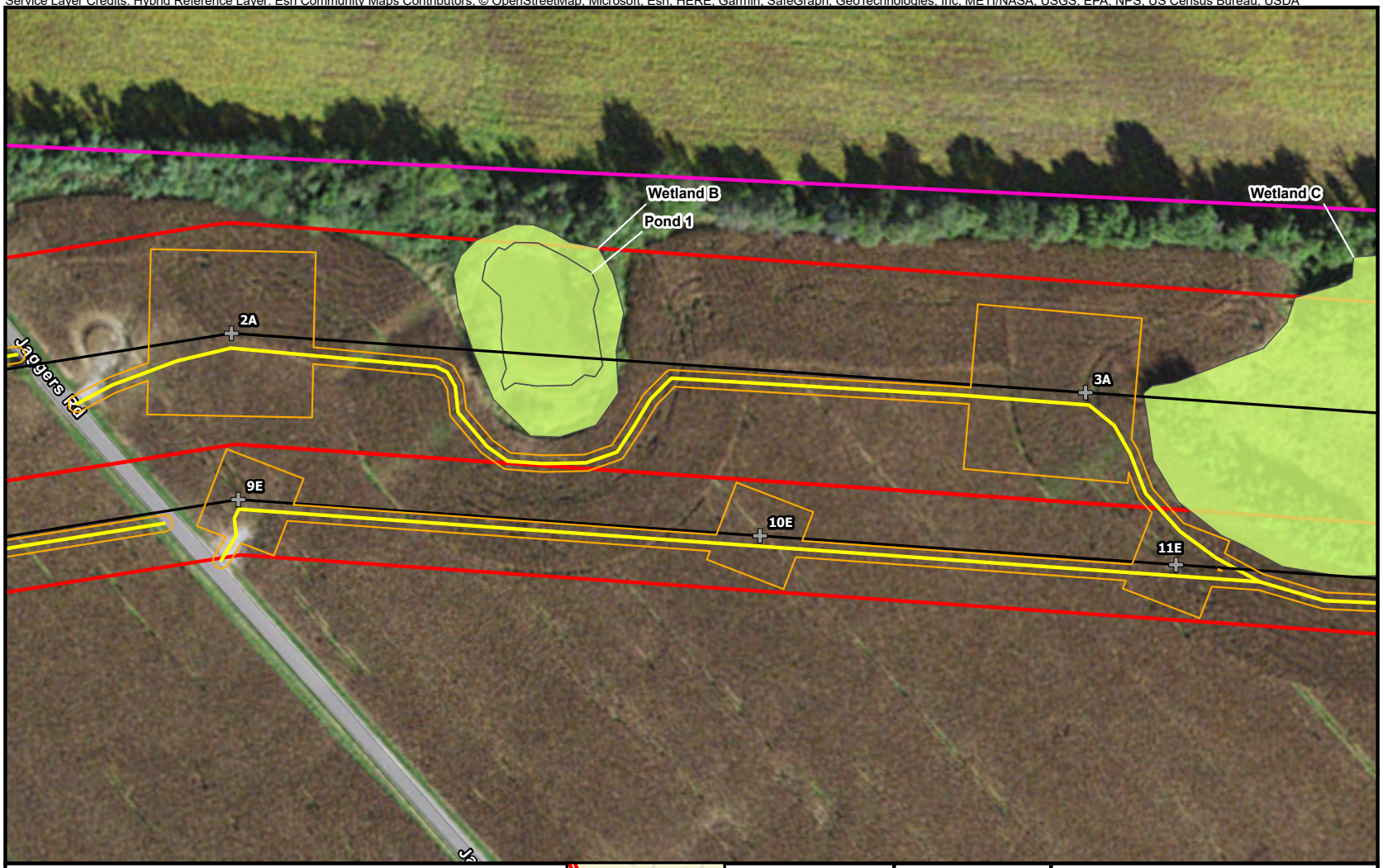

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Attachment 4 to Response to Wade Family Farm-PH-1 Question No. 5
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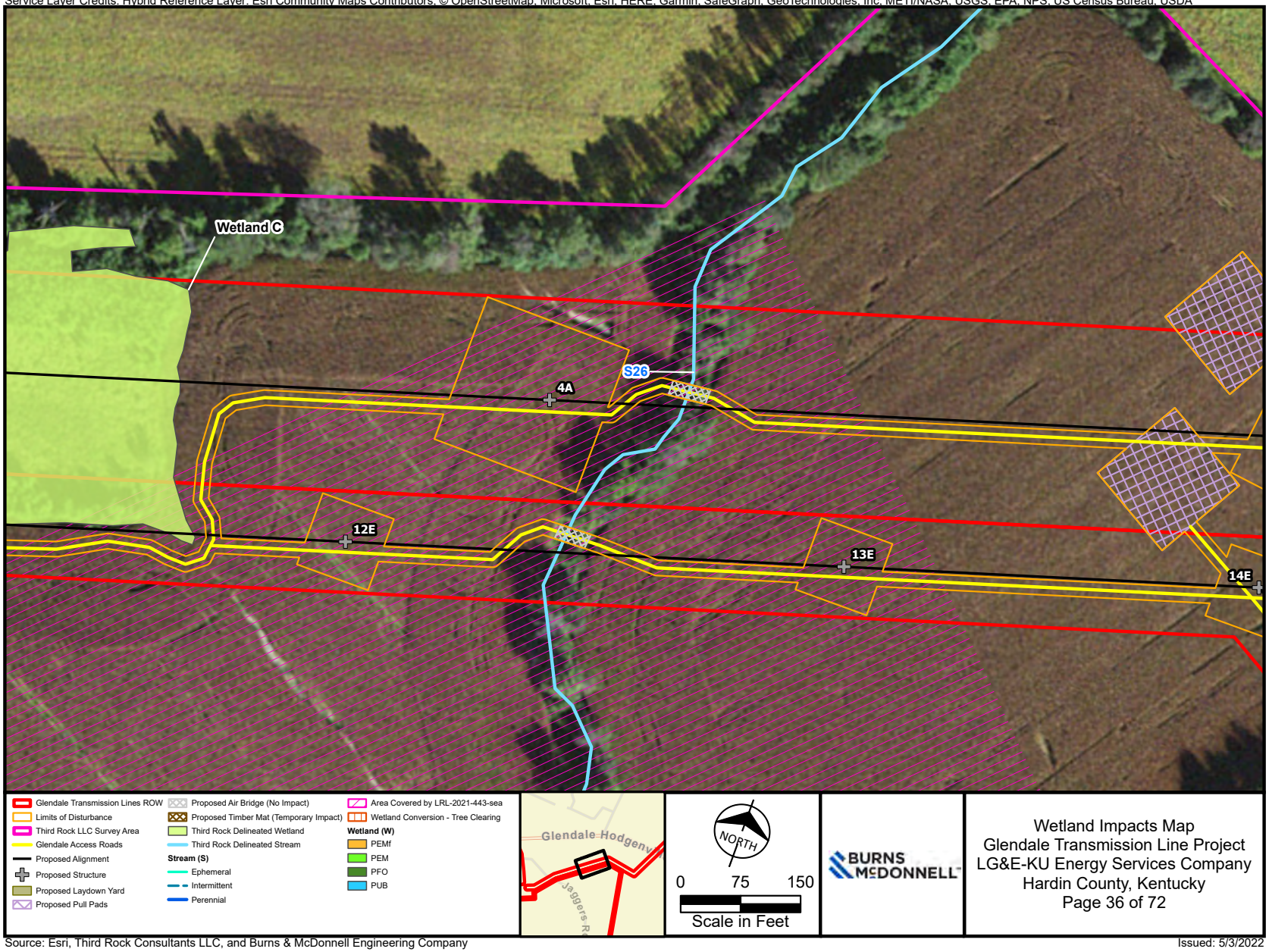

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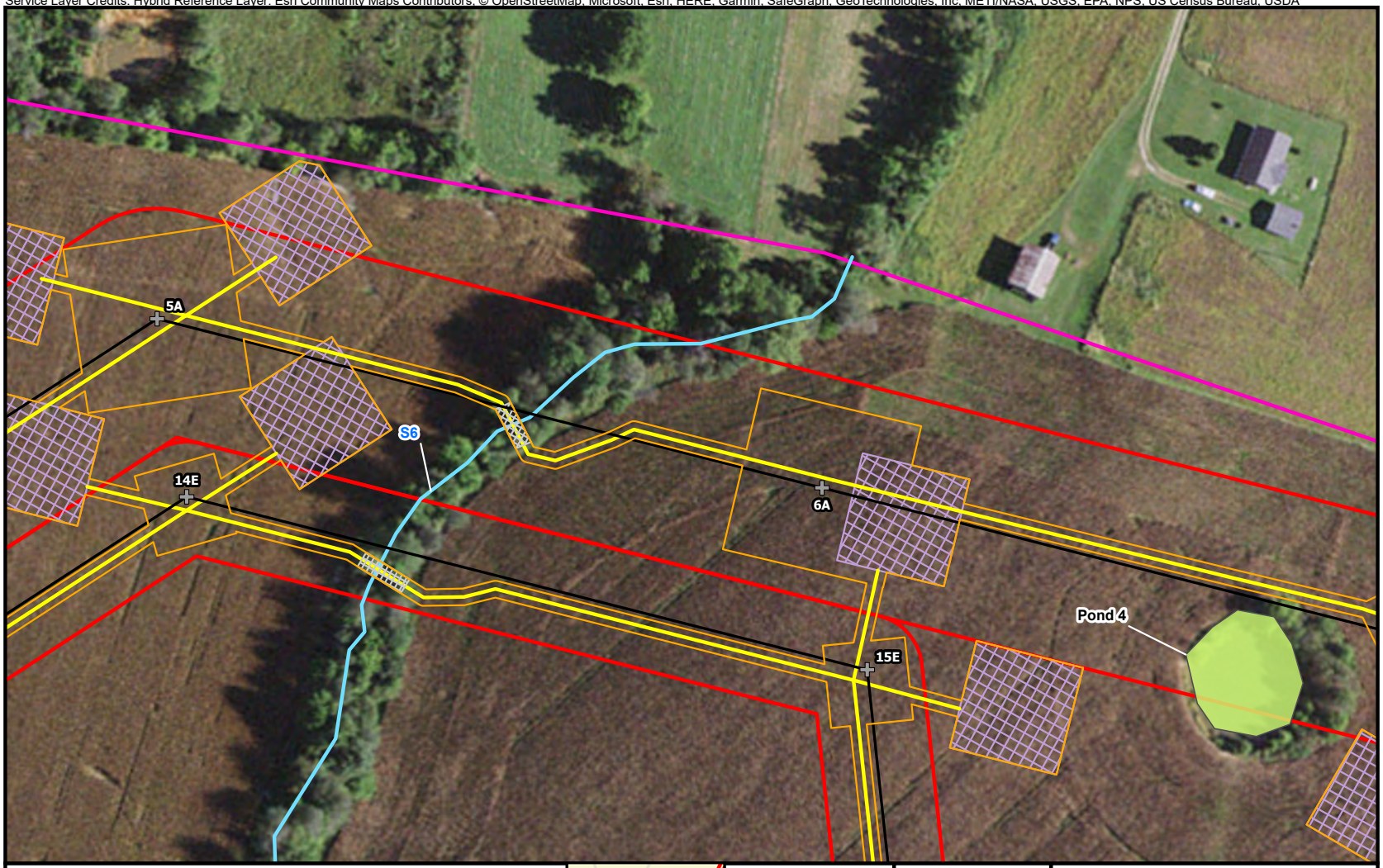

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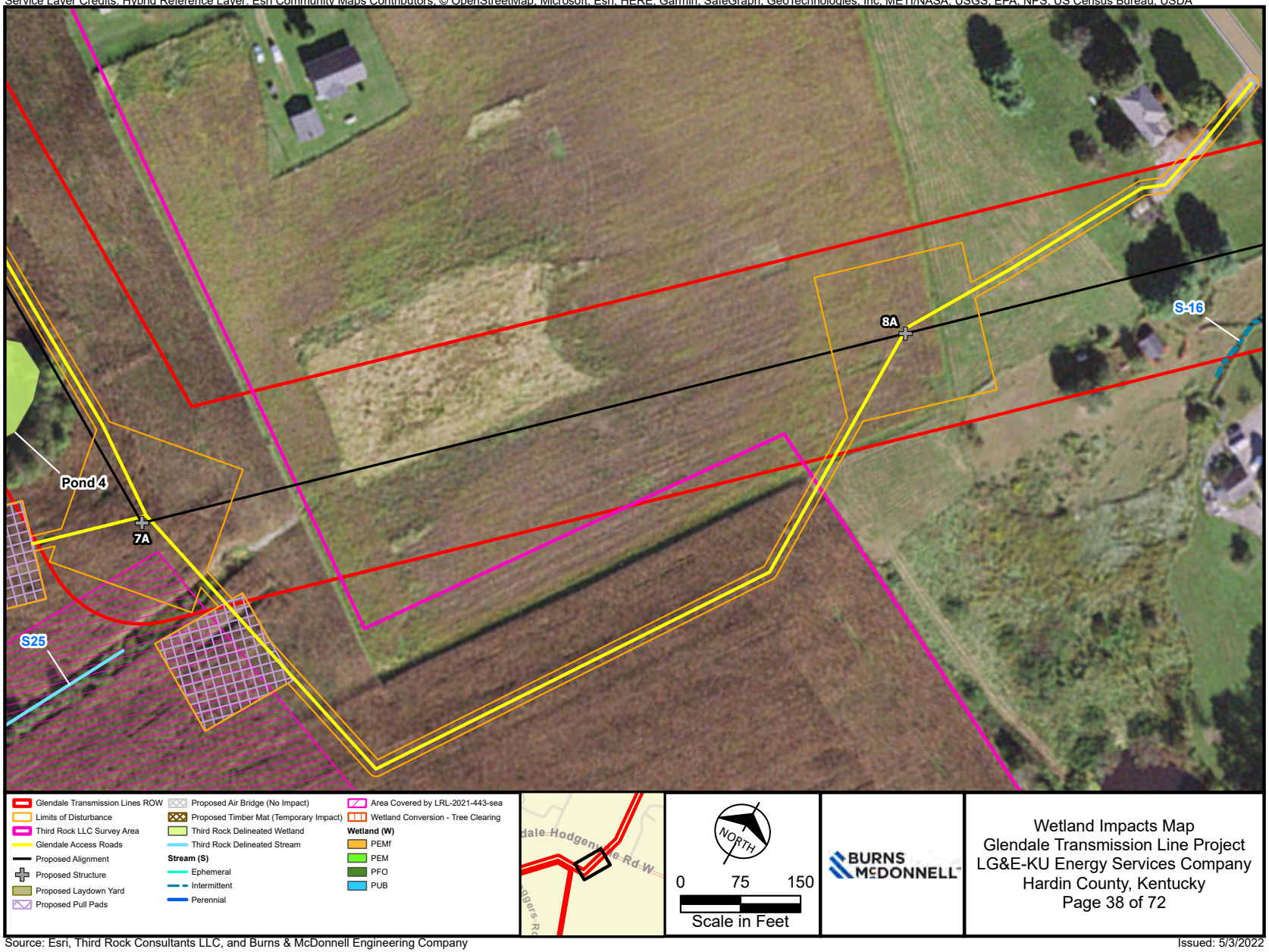

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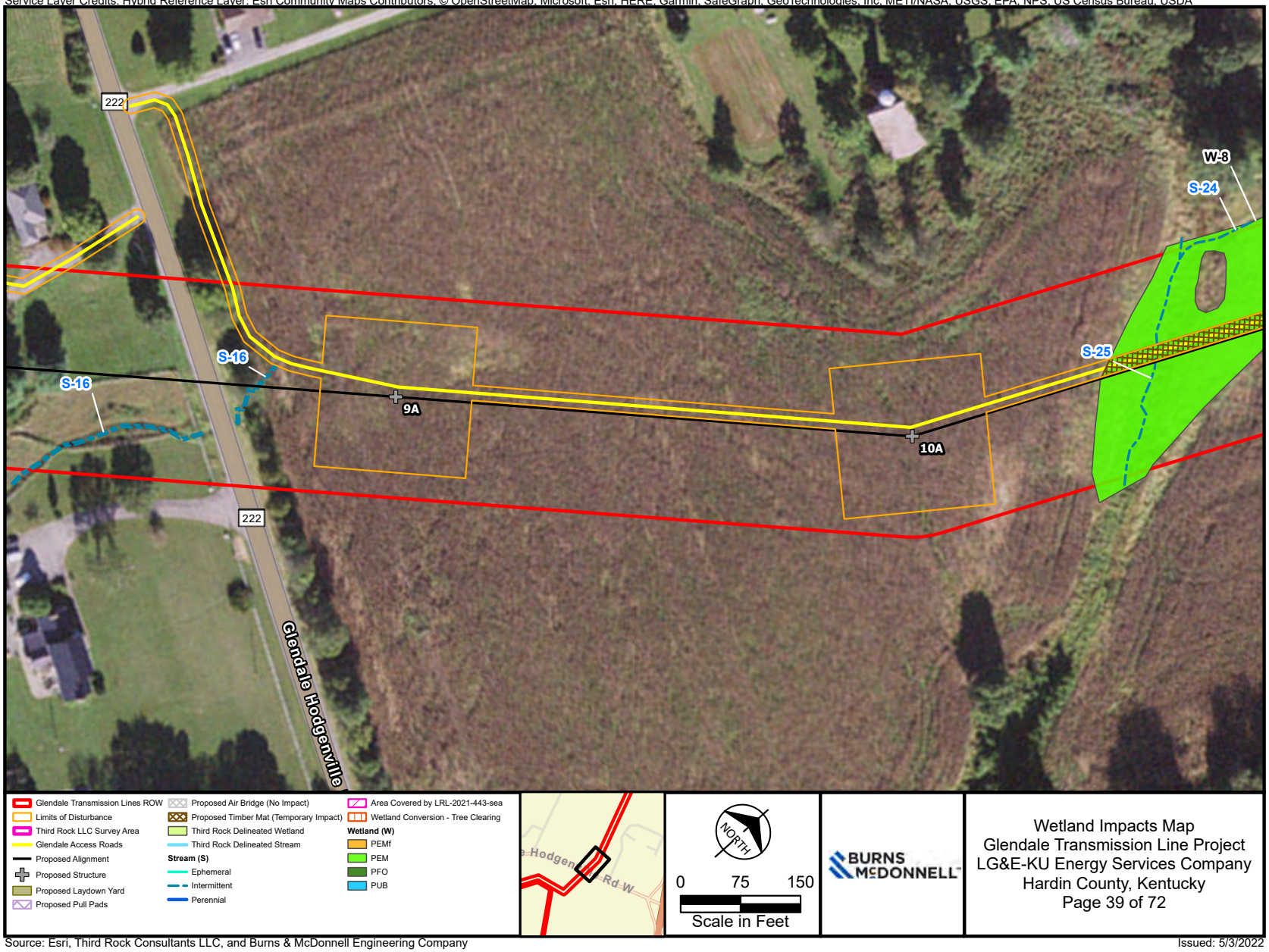

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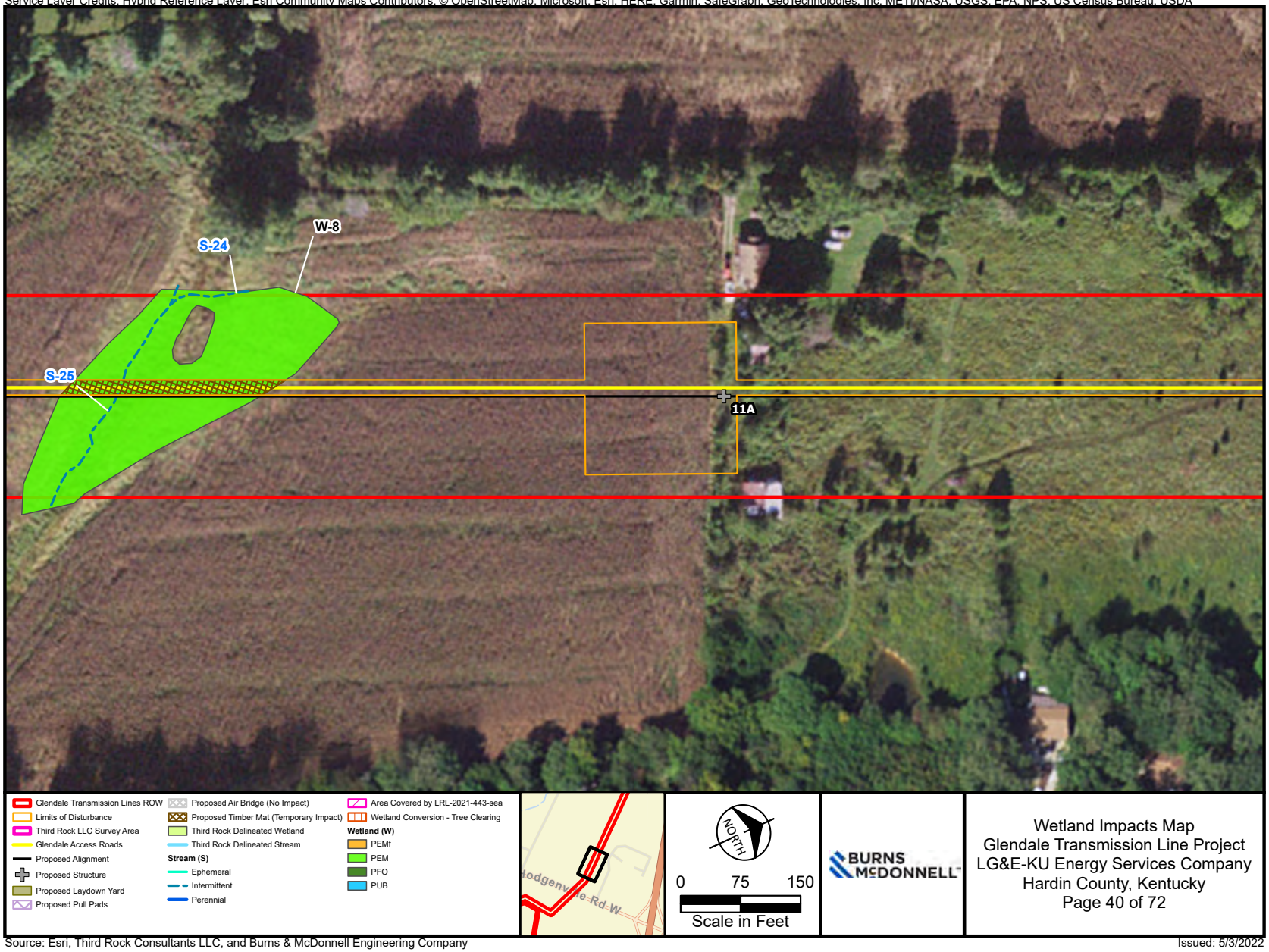

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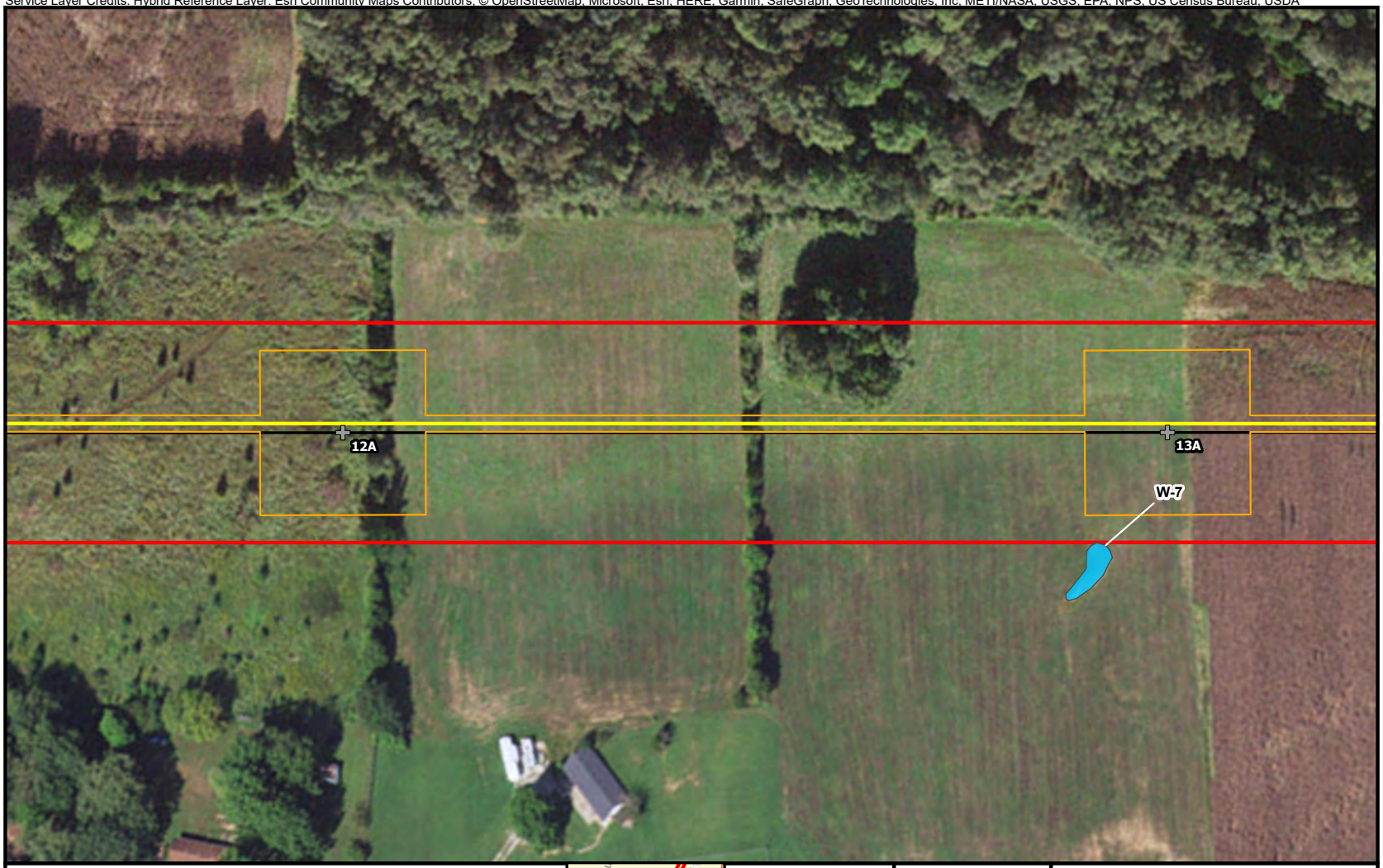

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BURNS McDONNELL

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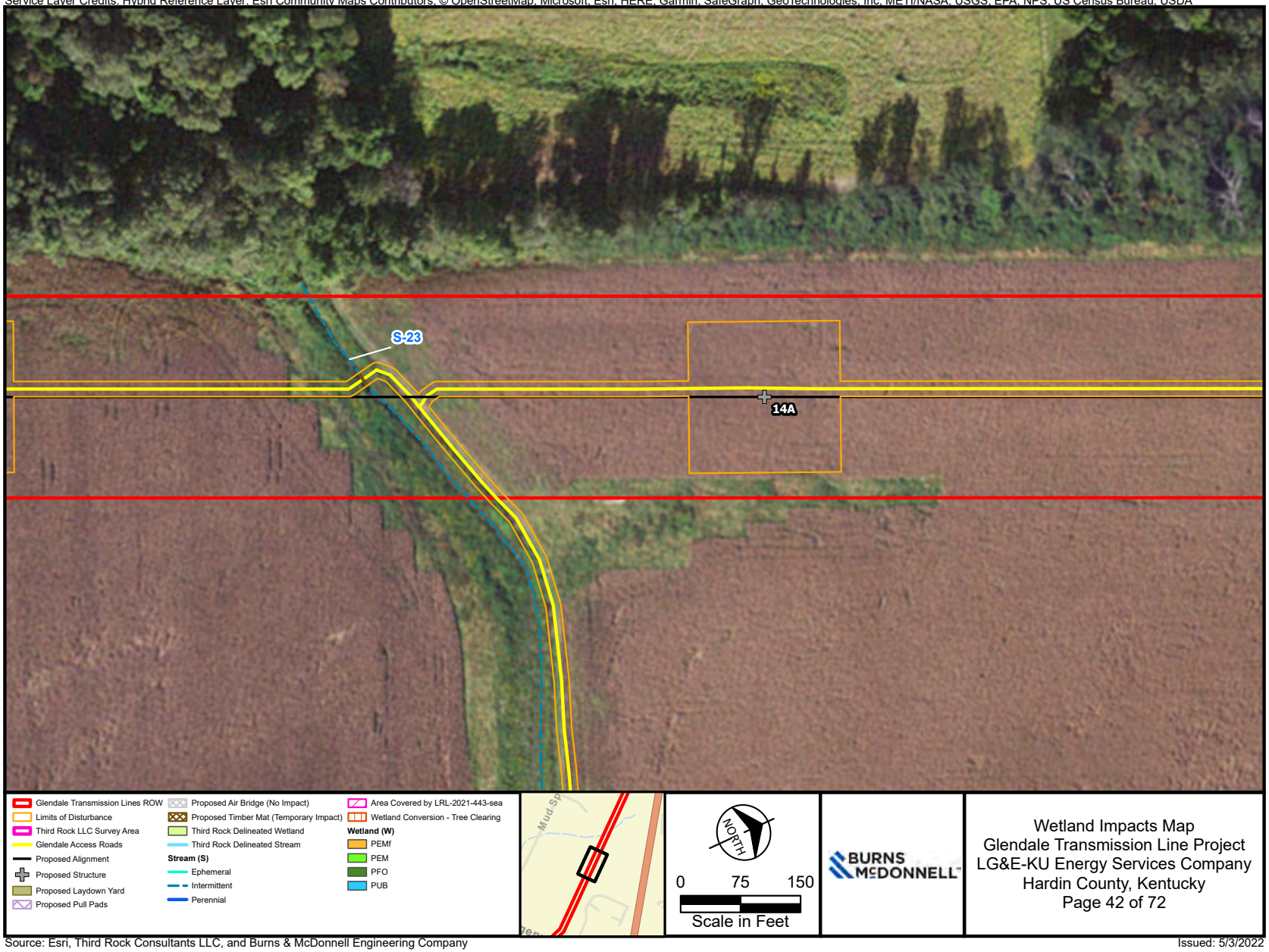

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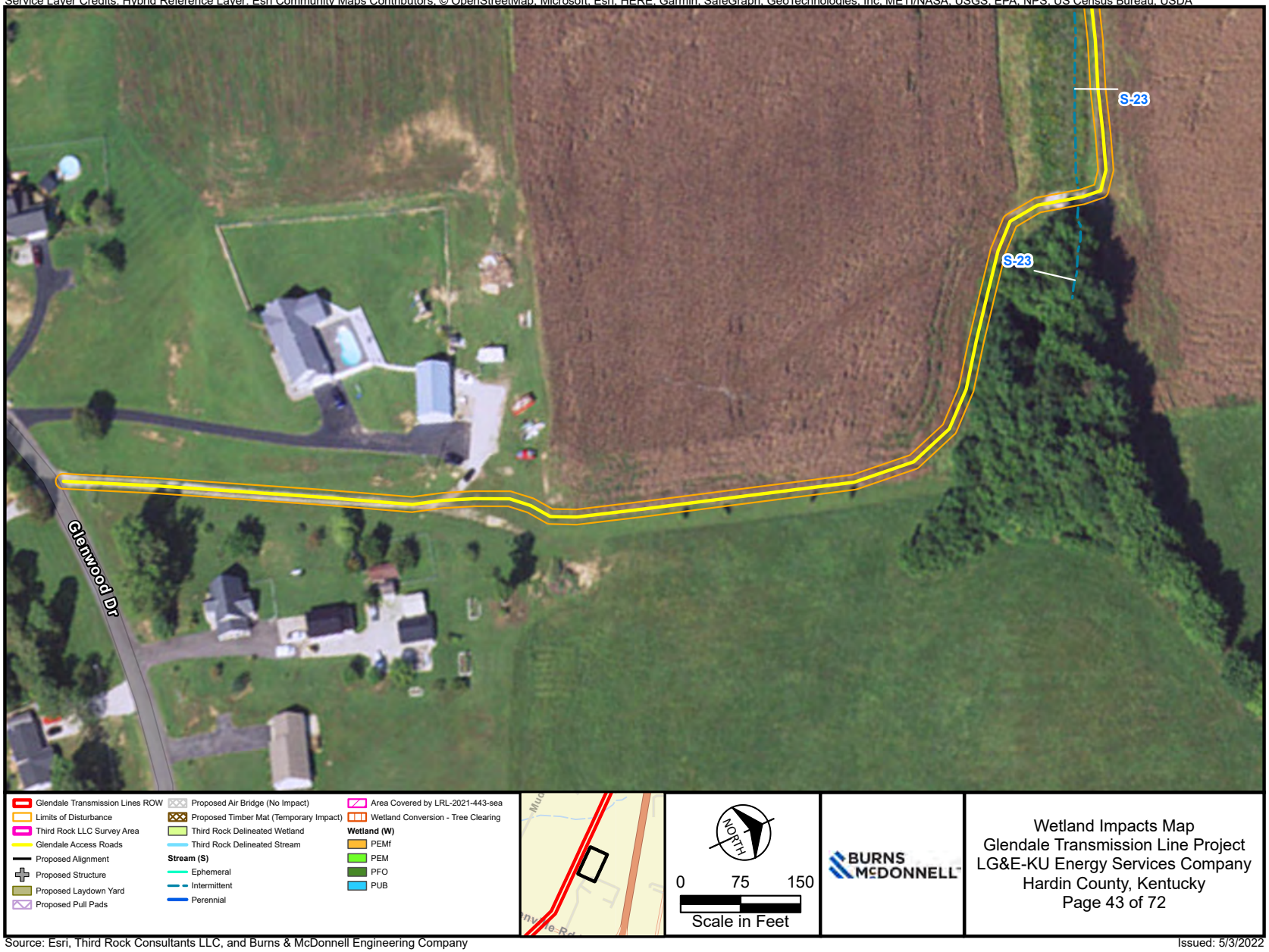

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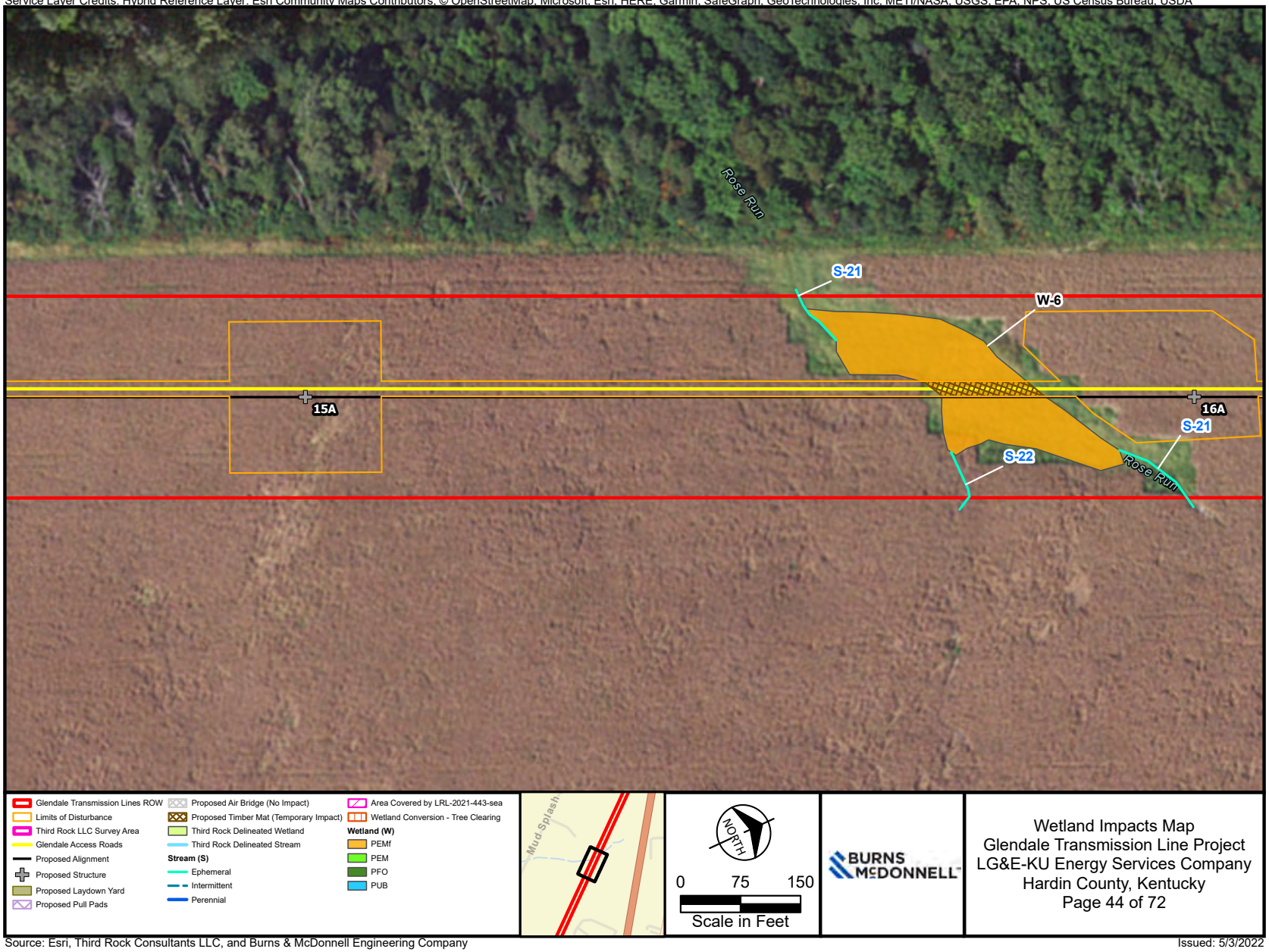

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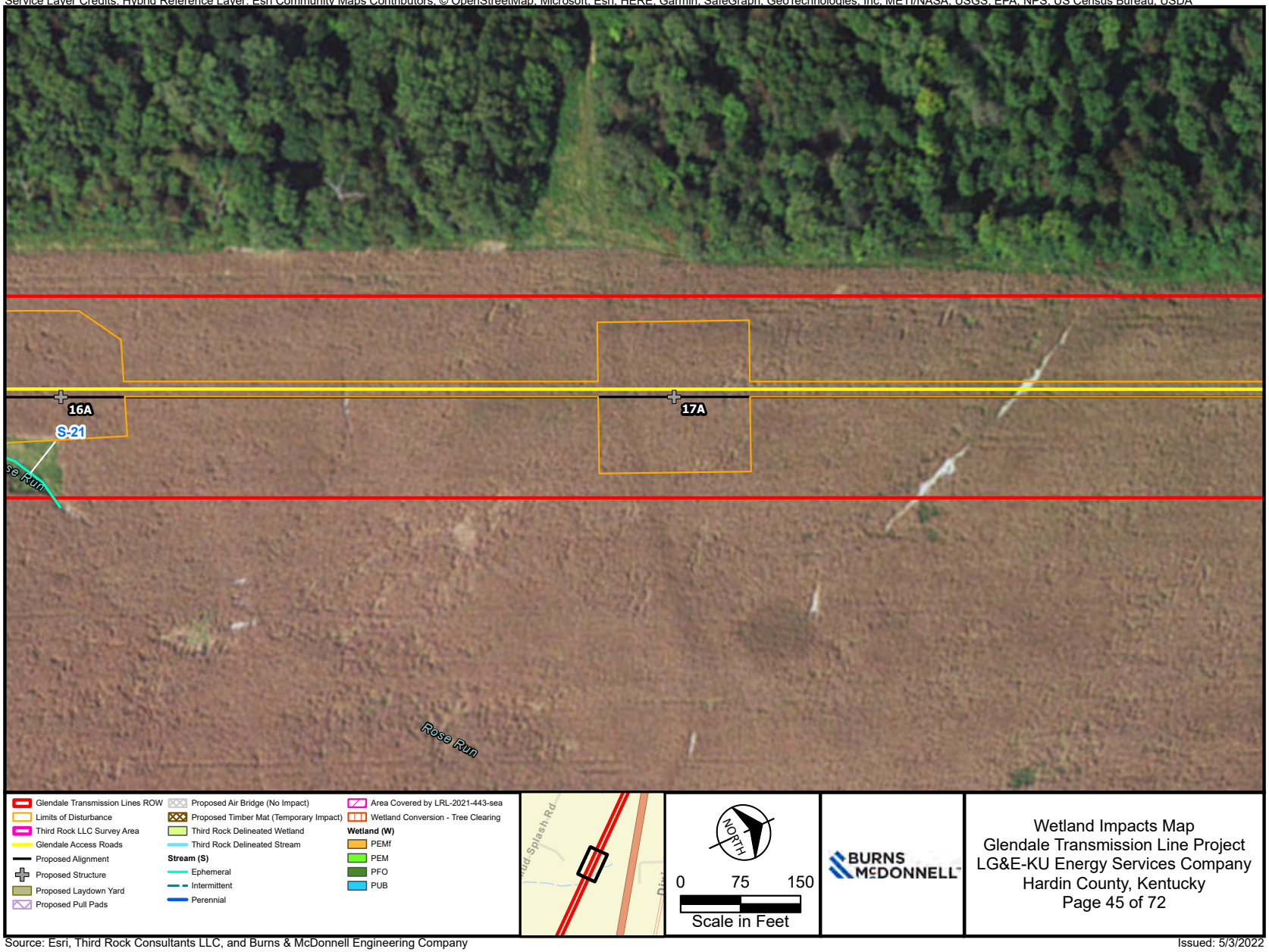

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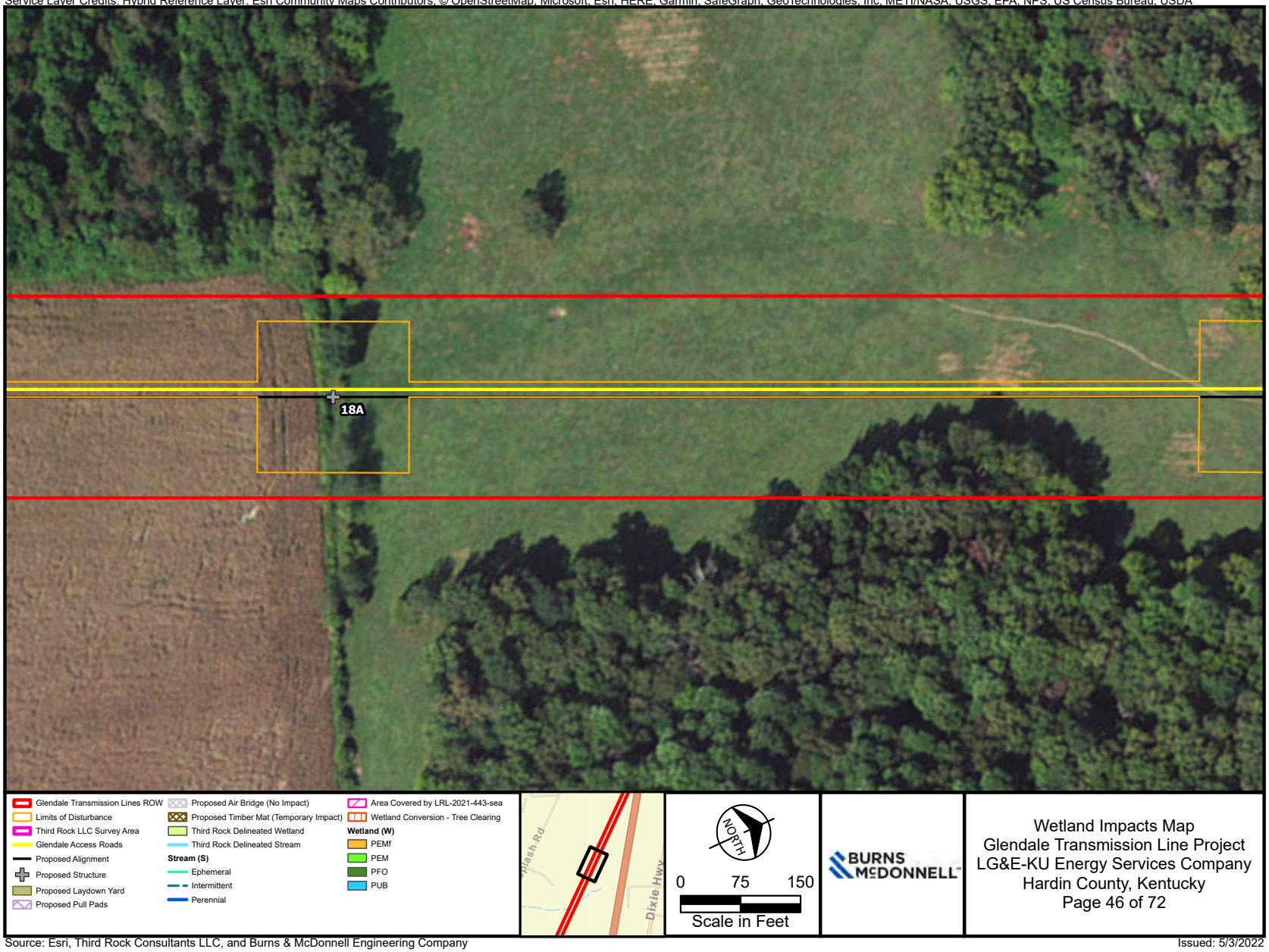

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 46 of 72

Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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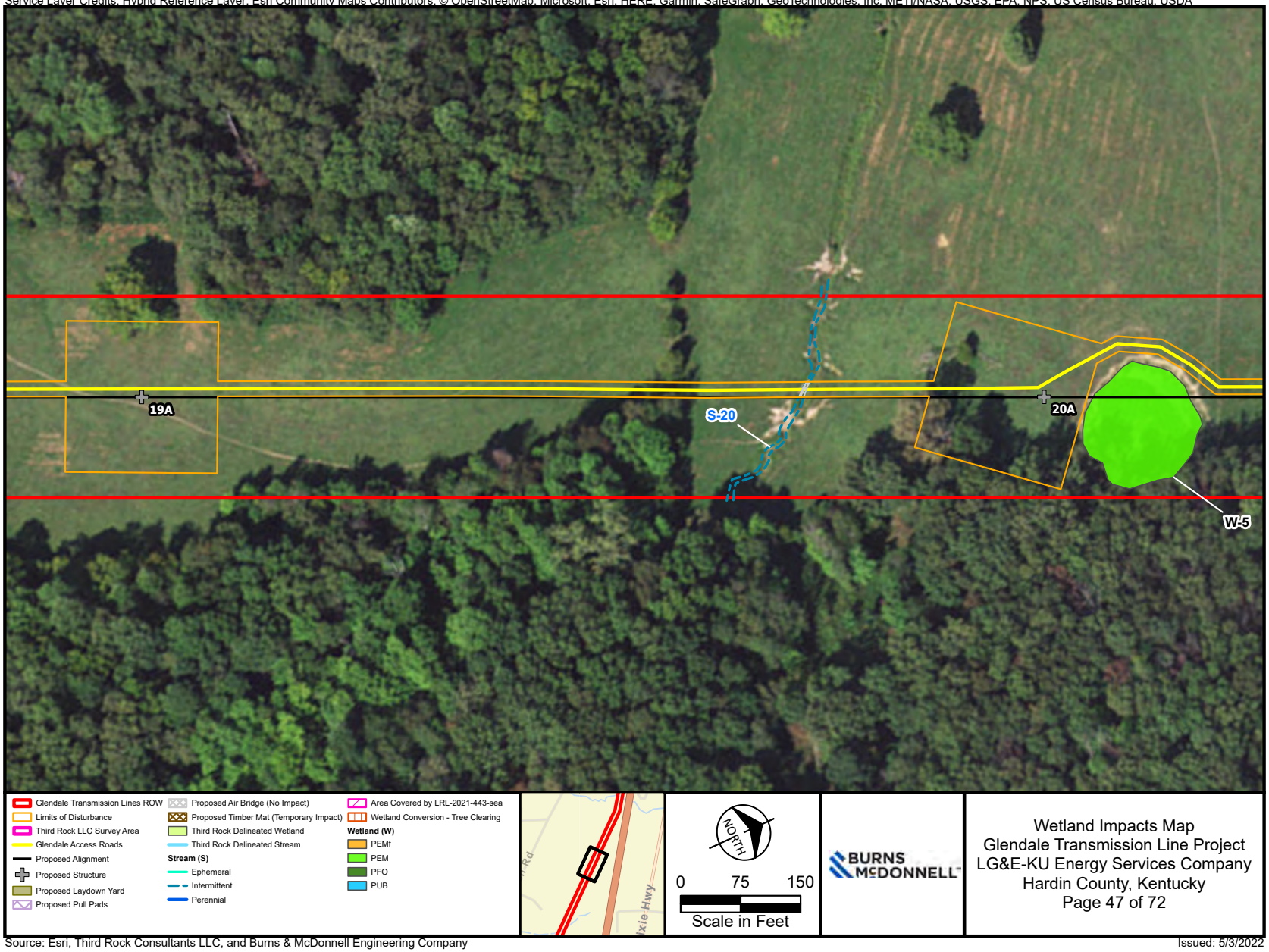

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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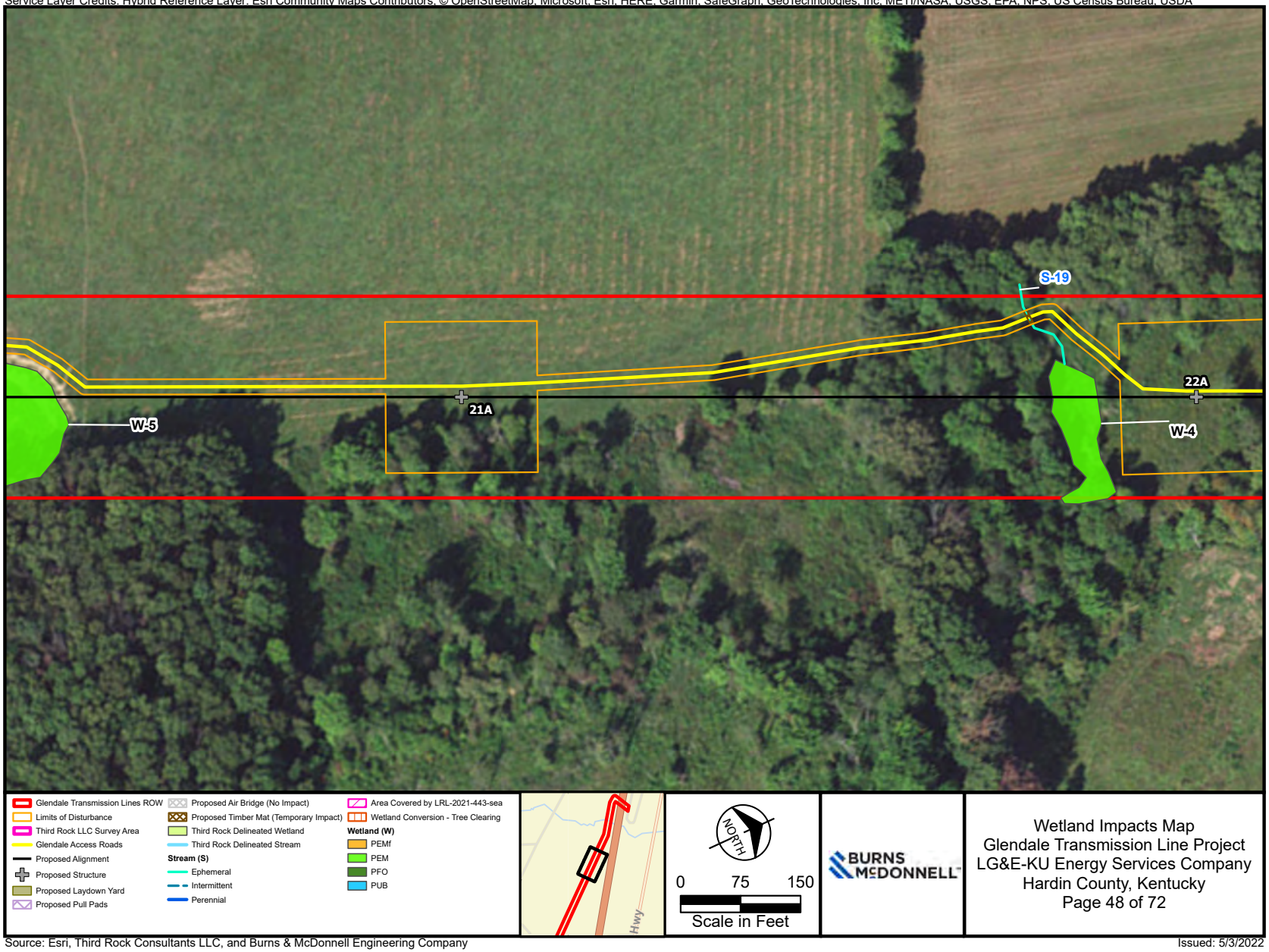

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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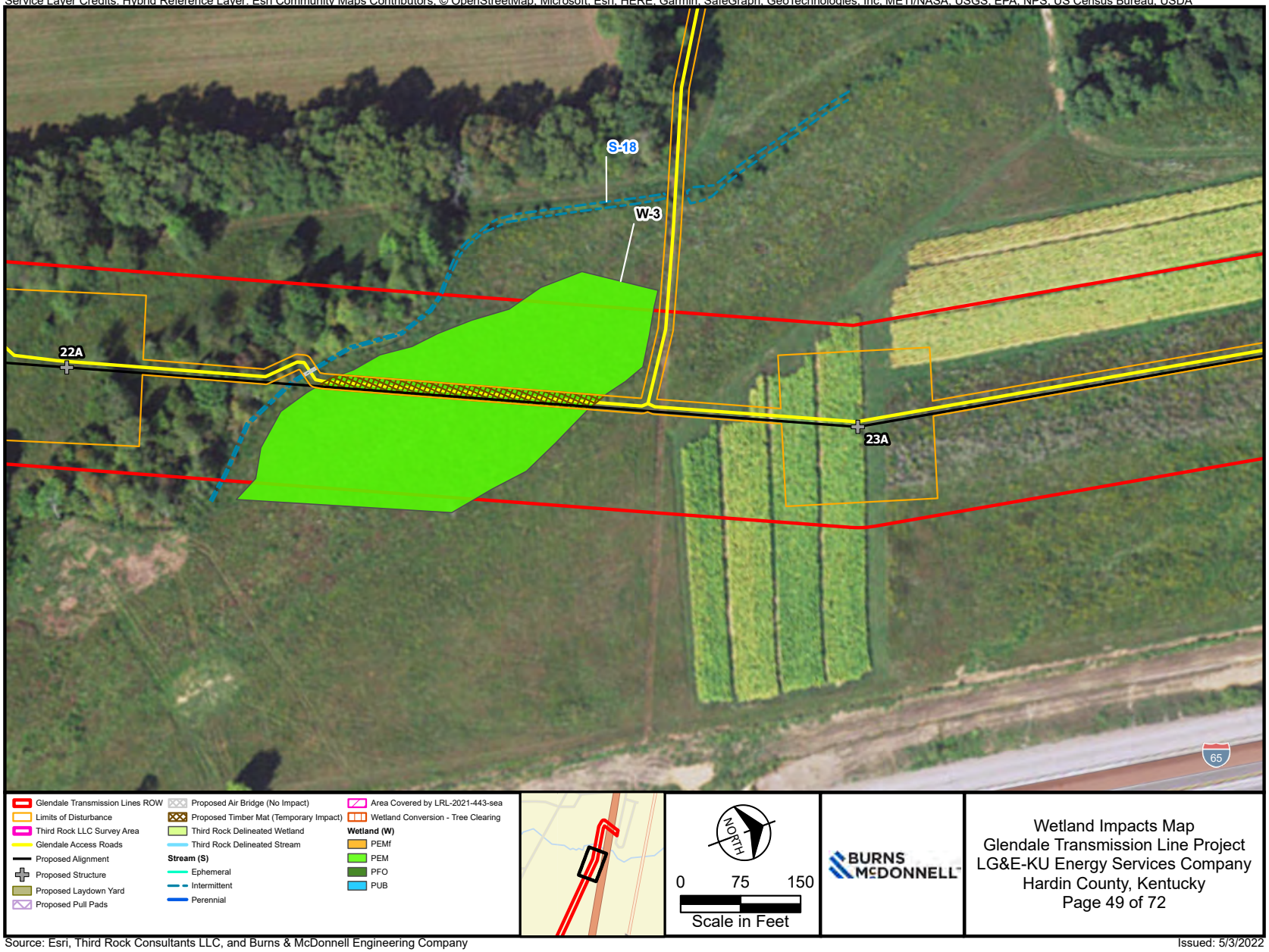

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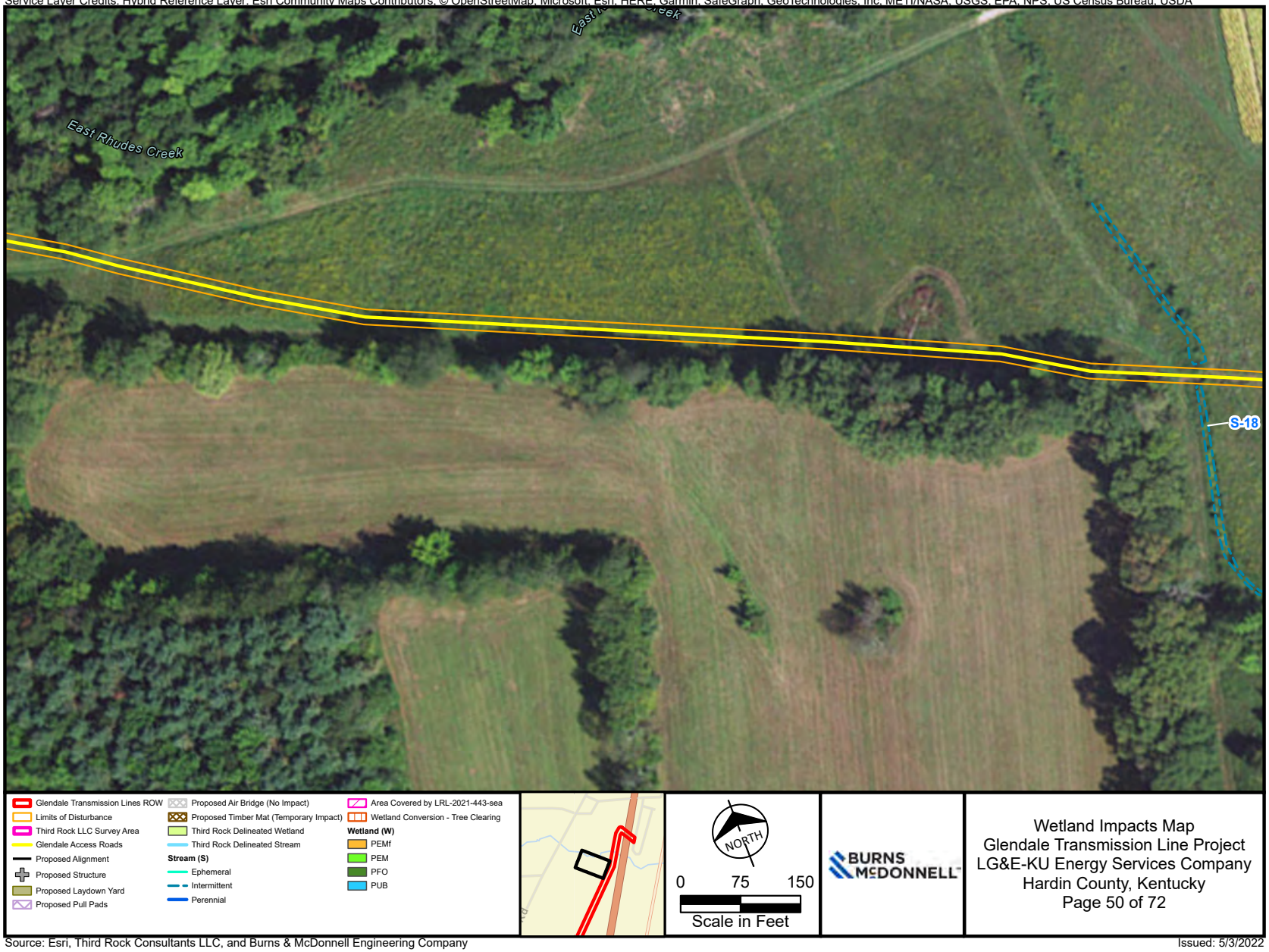

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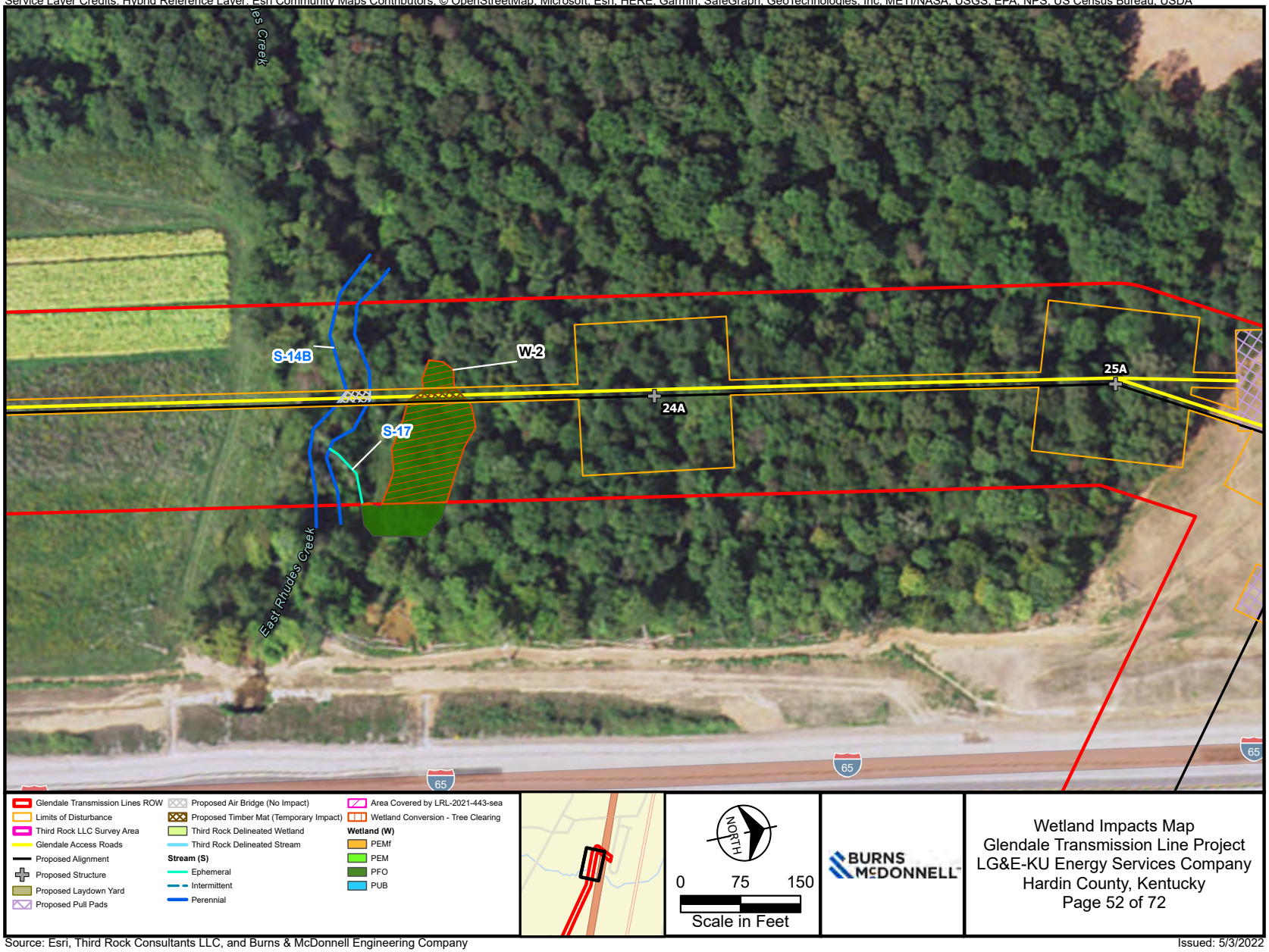

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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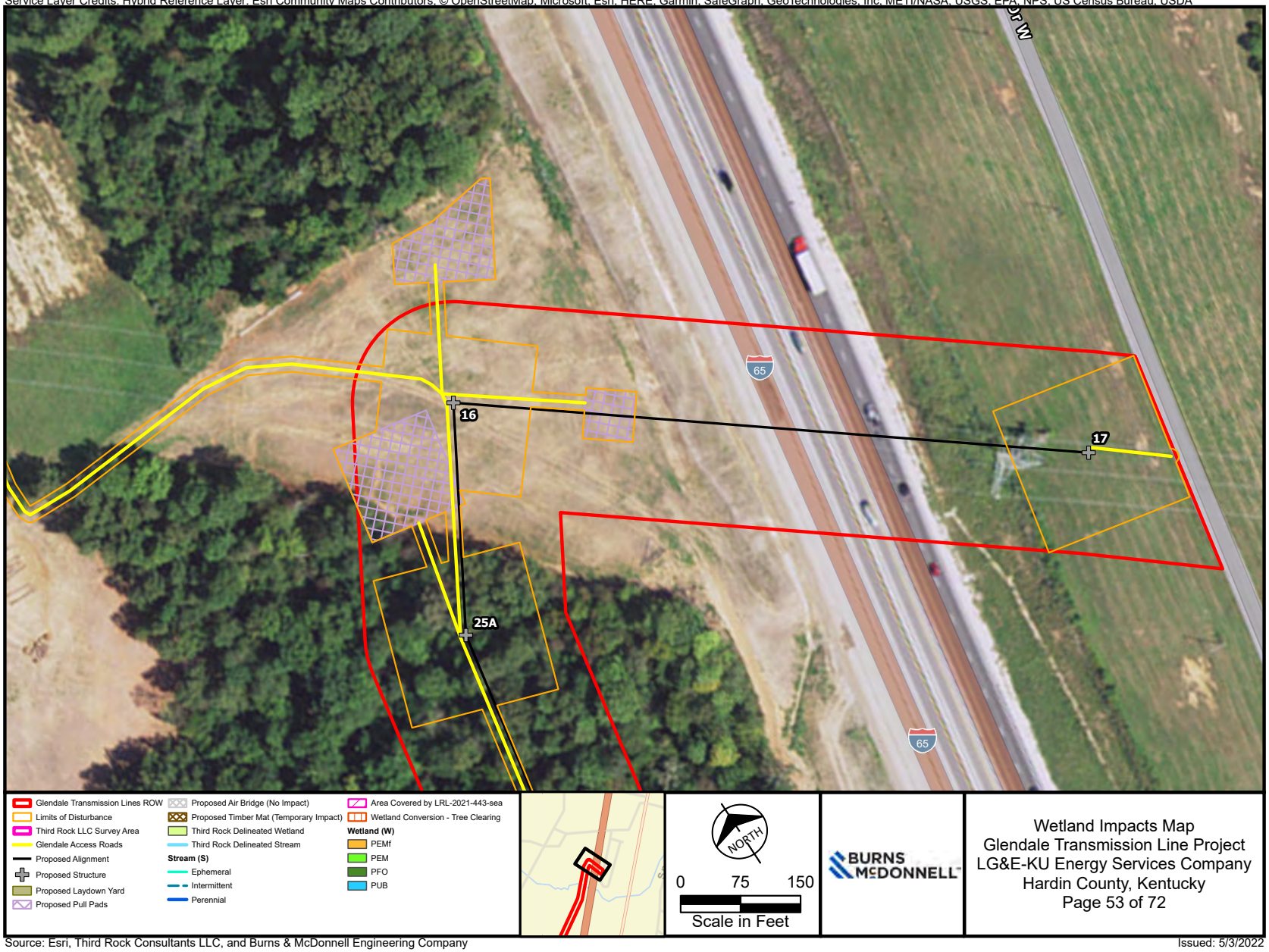

Glendale Transmission Lines ROW
Limits of Disturbance
Third Rock LLC Survey Area
Glendale Access Roads
Proposed Alignment
Proposed Structure
Proposed Laydown Yard
Proposed Pull Pads
Proposed Air Bridge (No Impact)
Proposed Timber Mat (Temporary Impact)
Third Rock Delineated Wetland
Third Rock Delineated Stream
Stream (S)
Ephemeral
Intermittent
Perennial
Area Covered by LRL-2021-443-sea
Wetland Conversion - Tree Clearing
Wetland (W)
PEMf
PEM
PFO
PUB

NORTH
0 75 150
Scale in Feet

BURNS McDONNELL

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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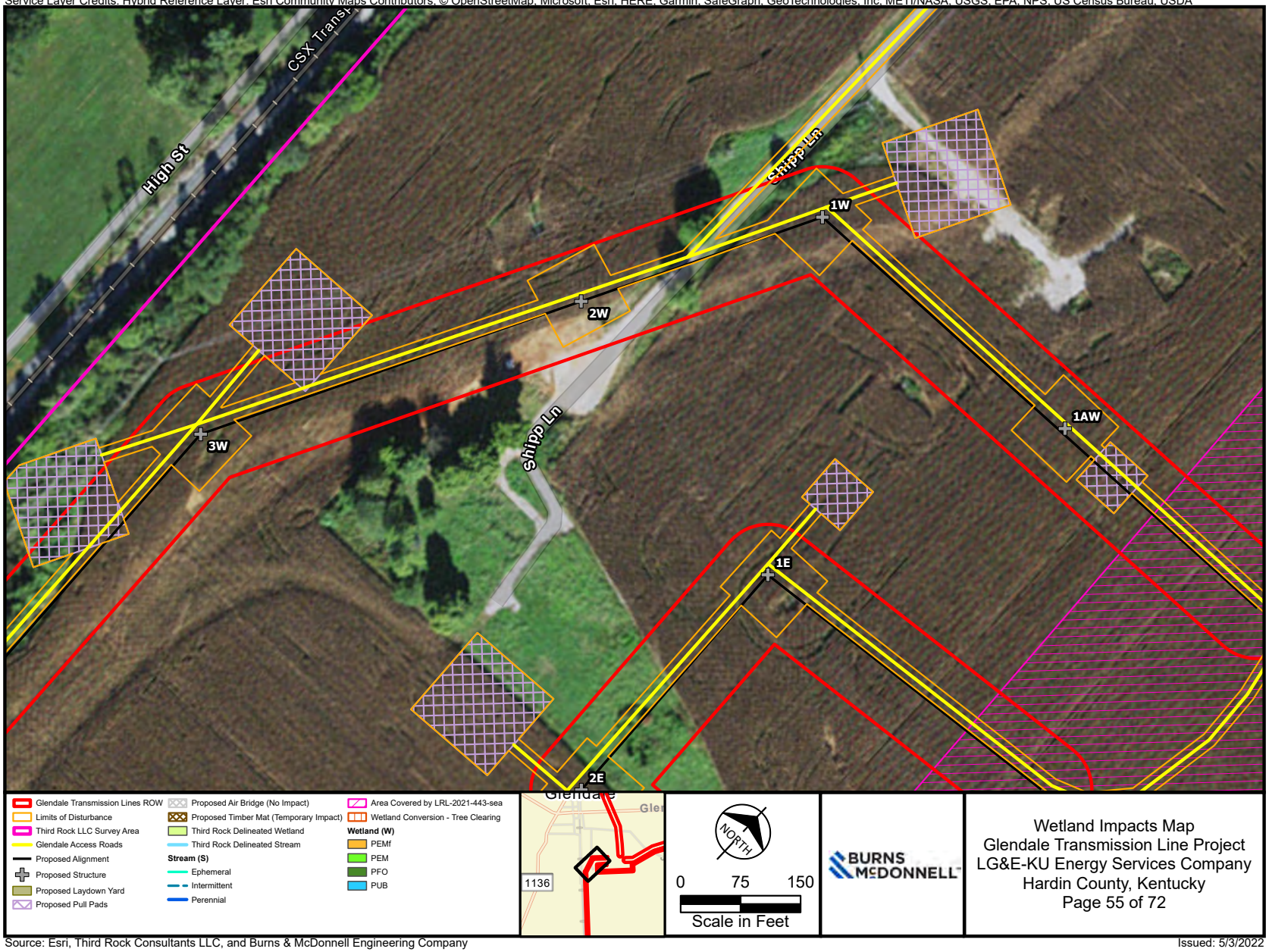

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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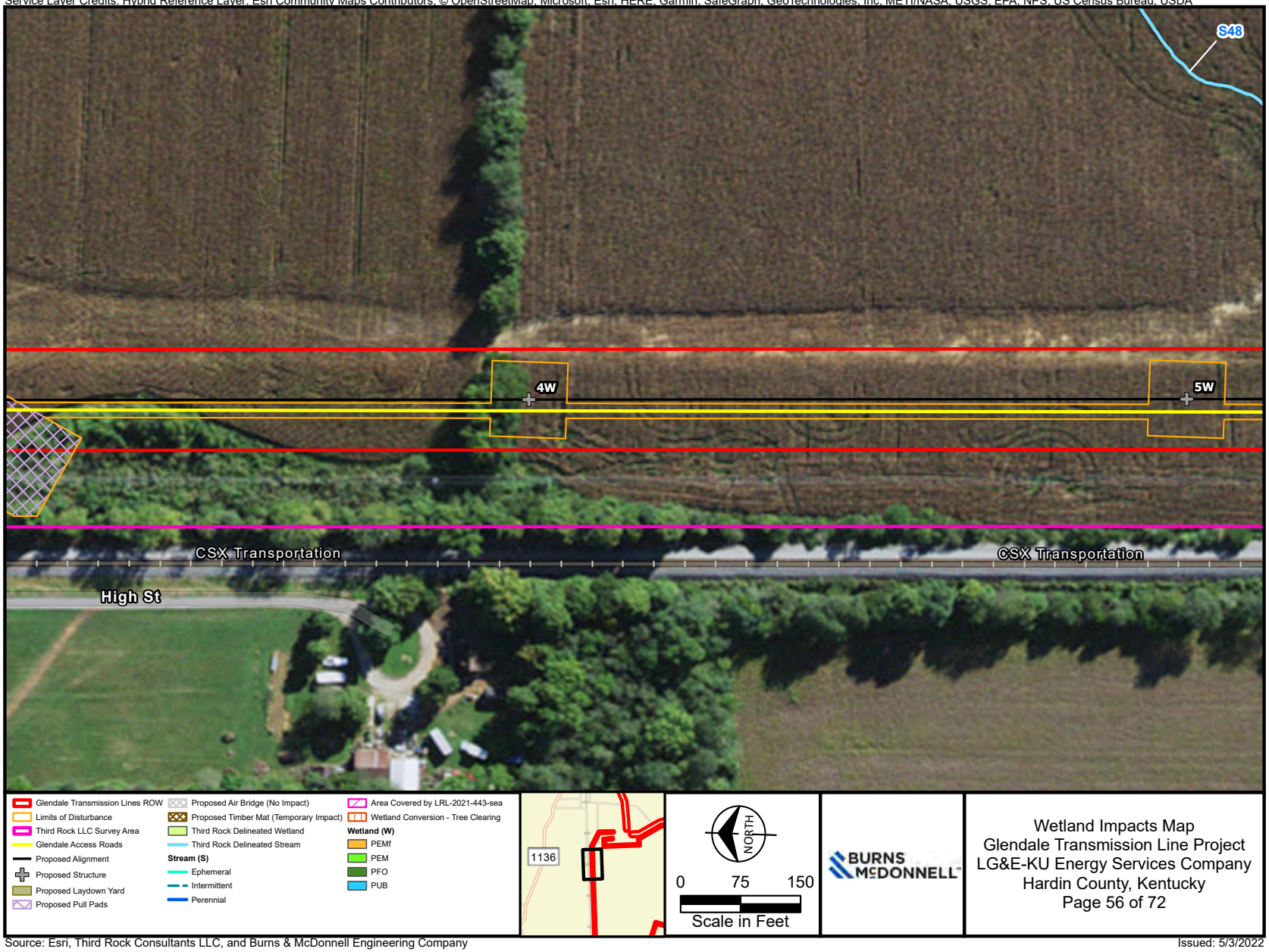

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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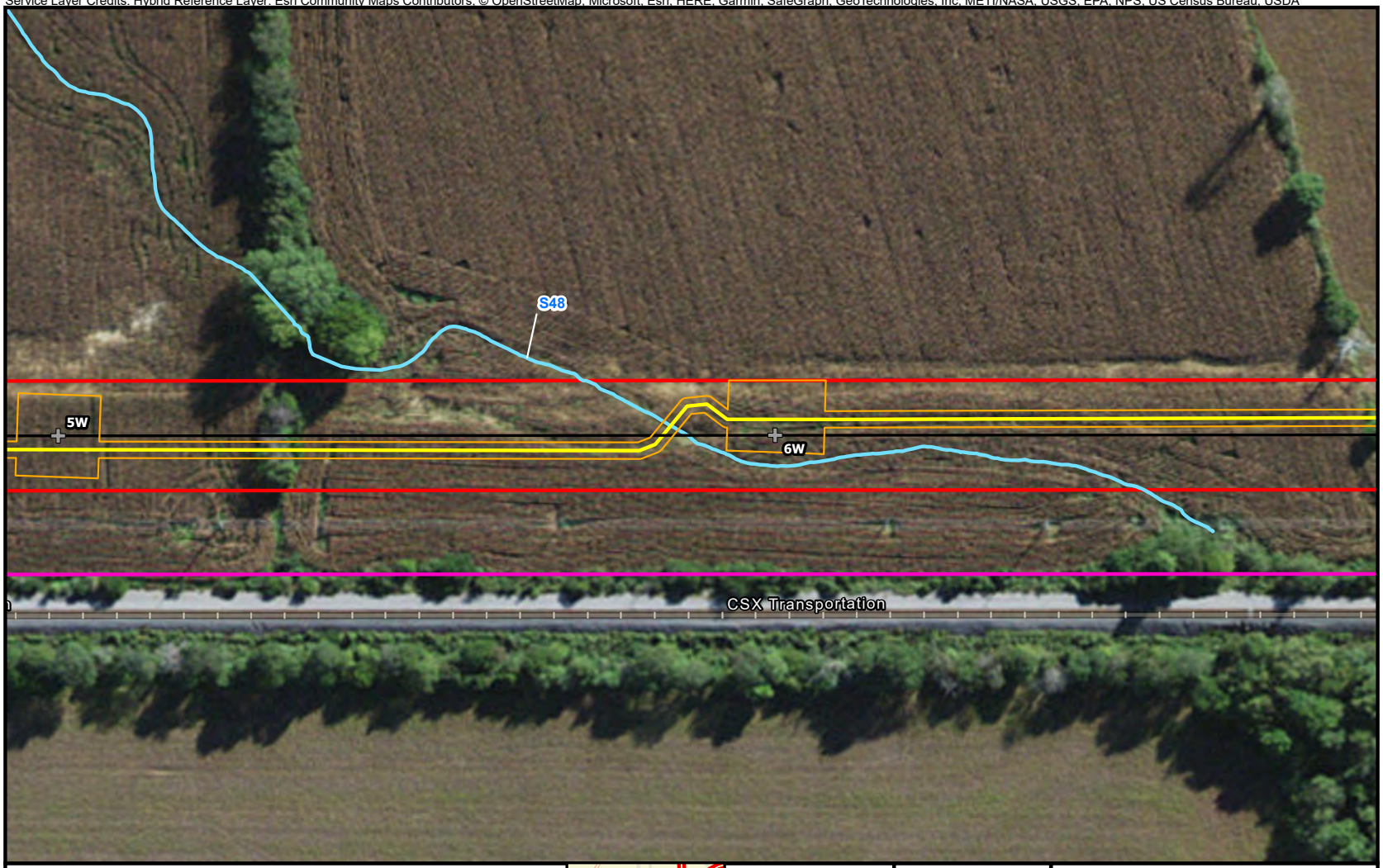

Glendale Transmission Lines ROW
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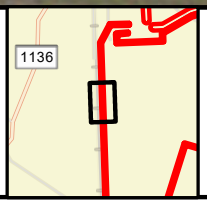
PUB



NORTH
0 75 150
Scale in Feet

BURNS McDONNELL

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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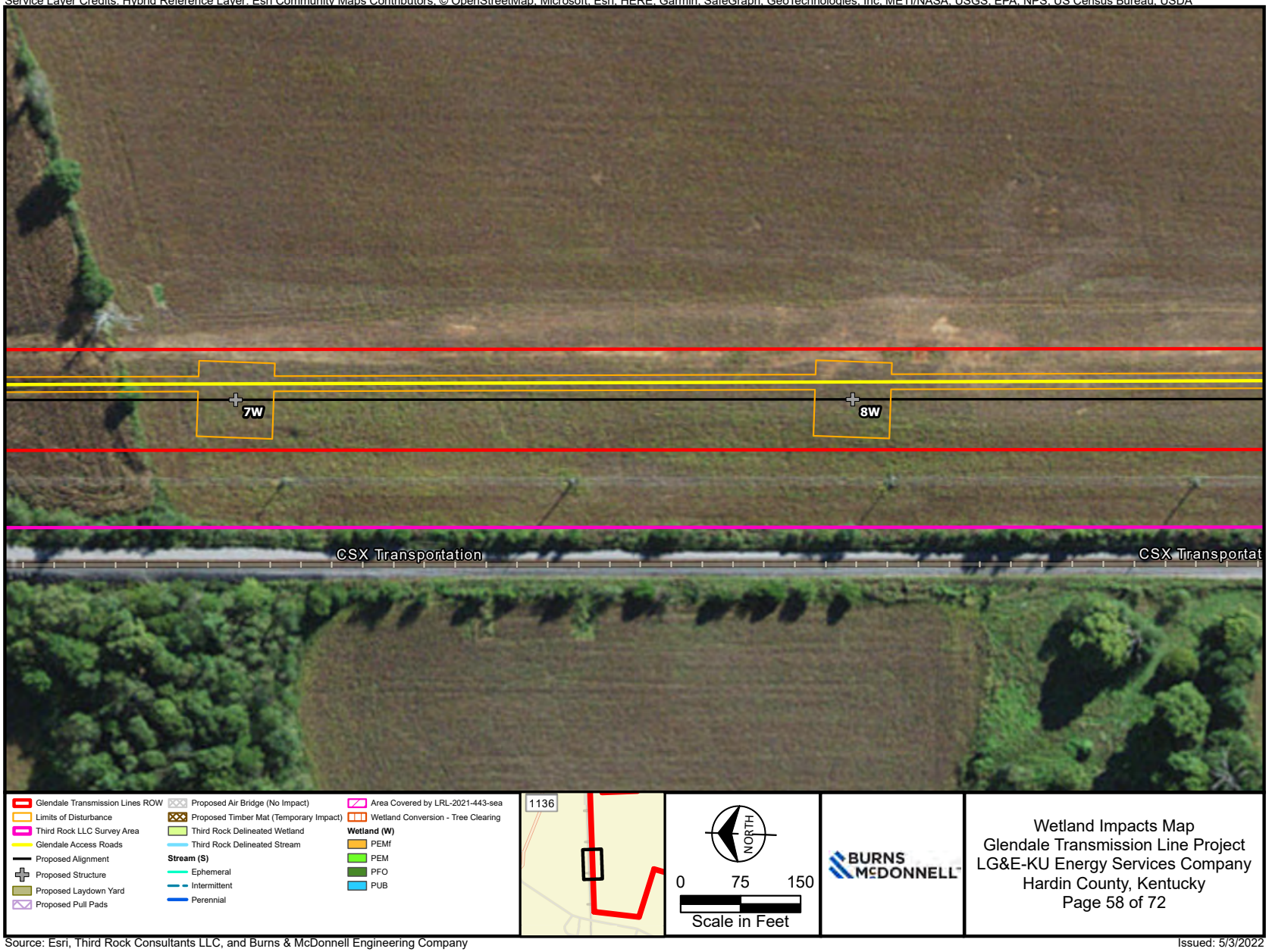

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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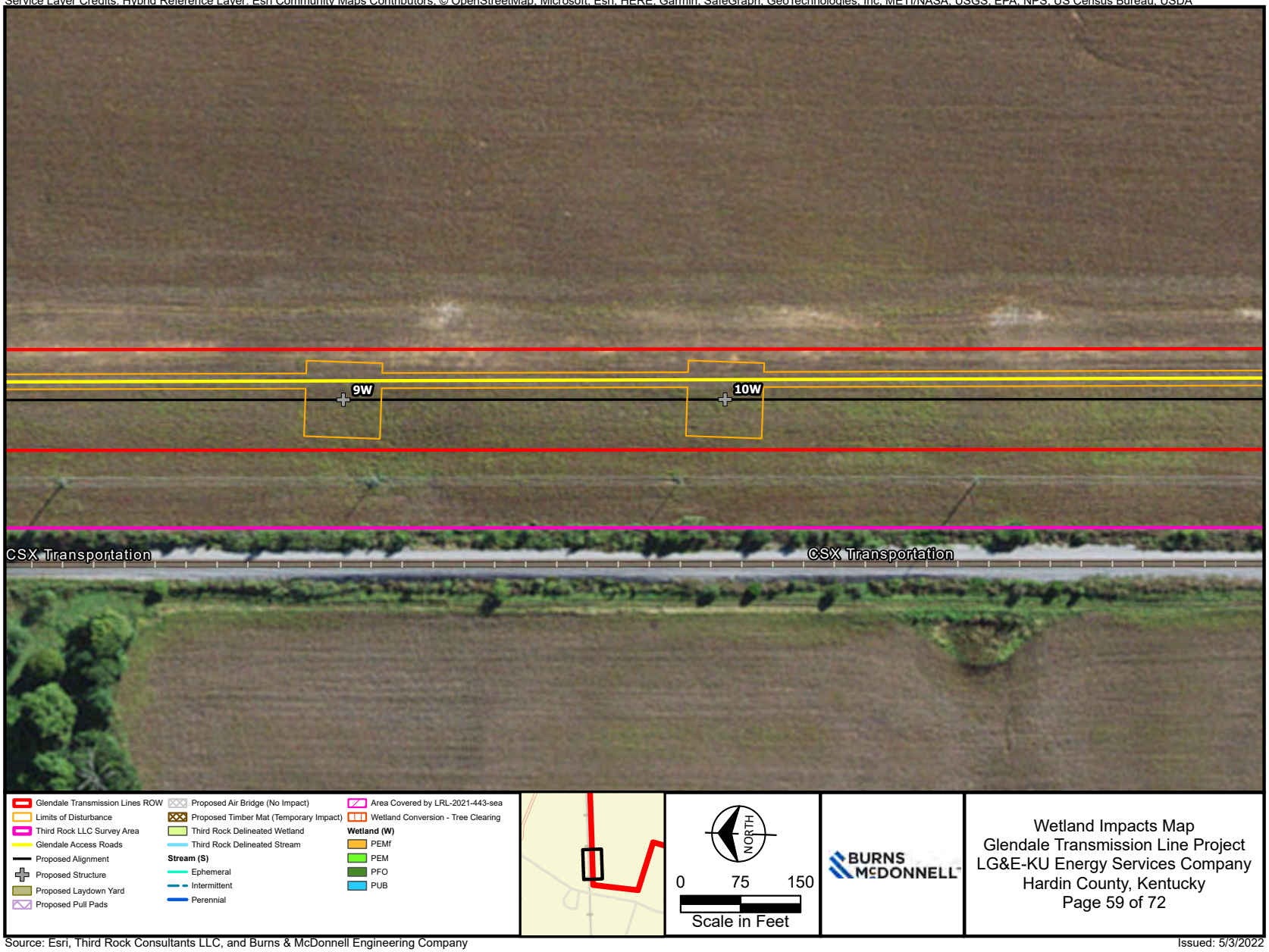

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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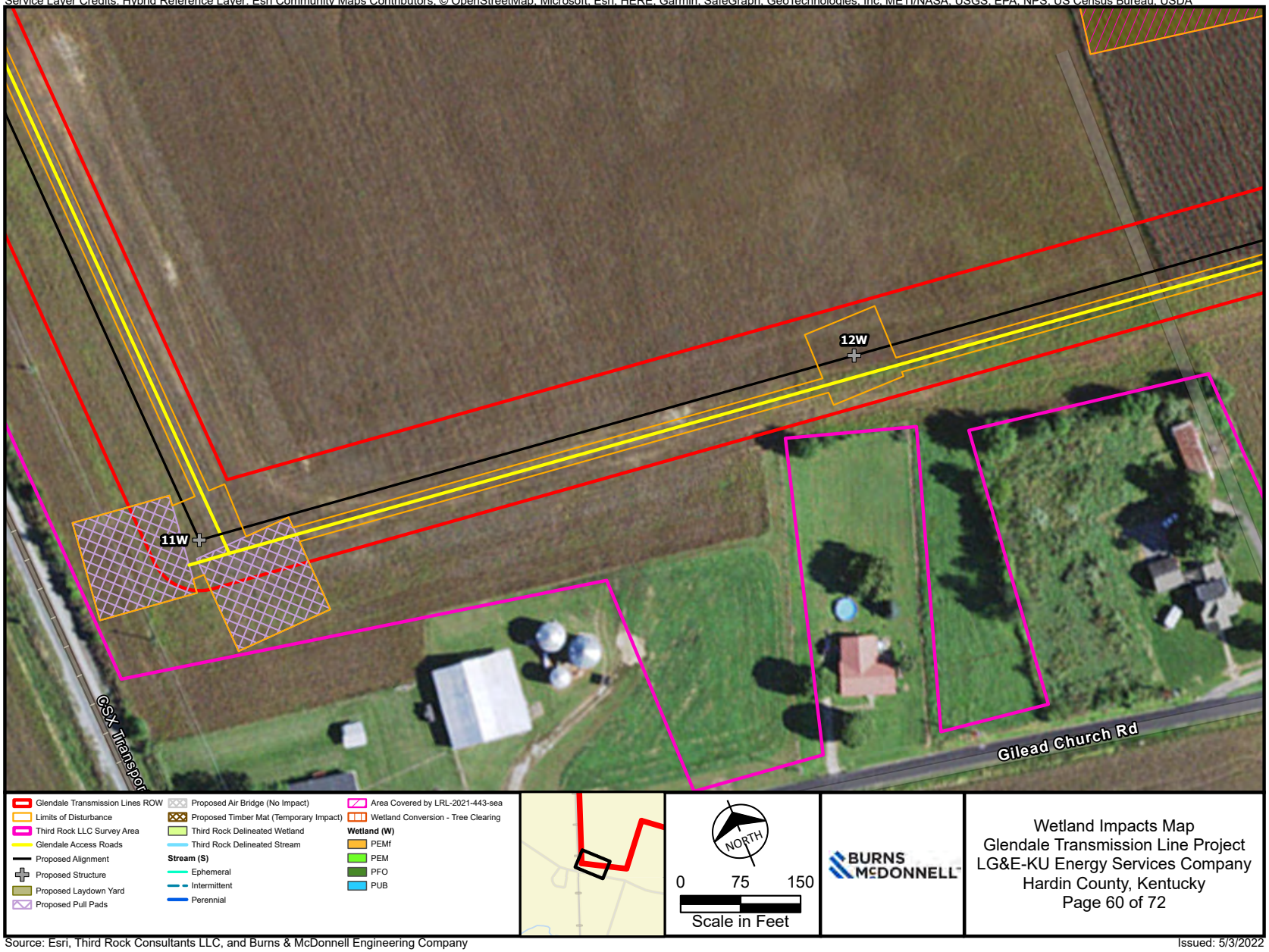

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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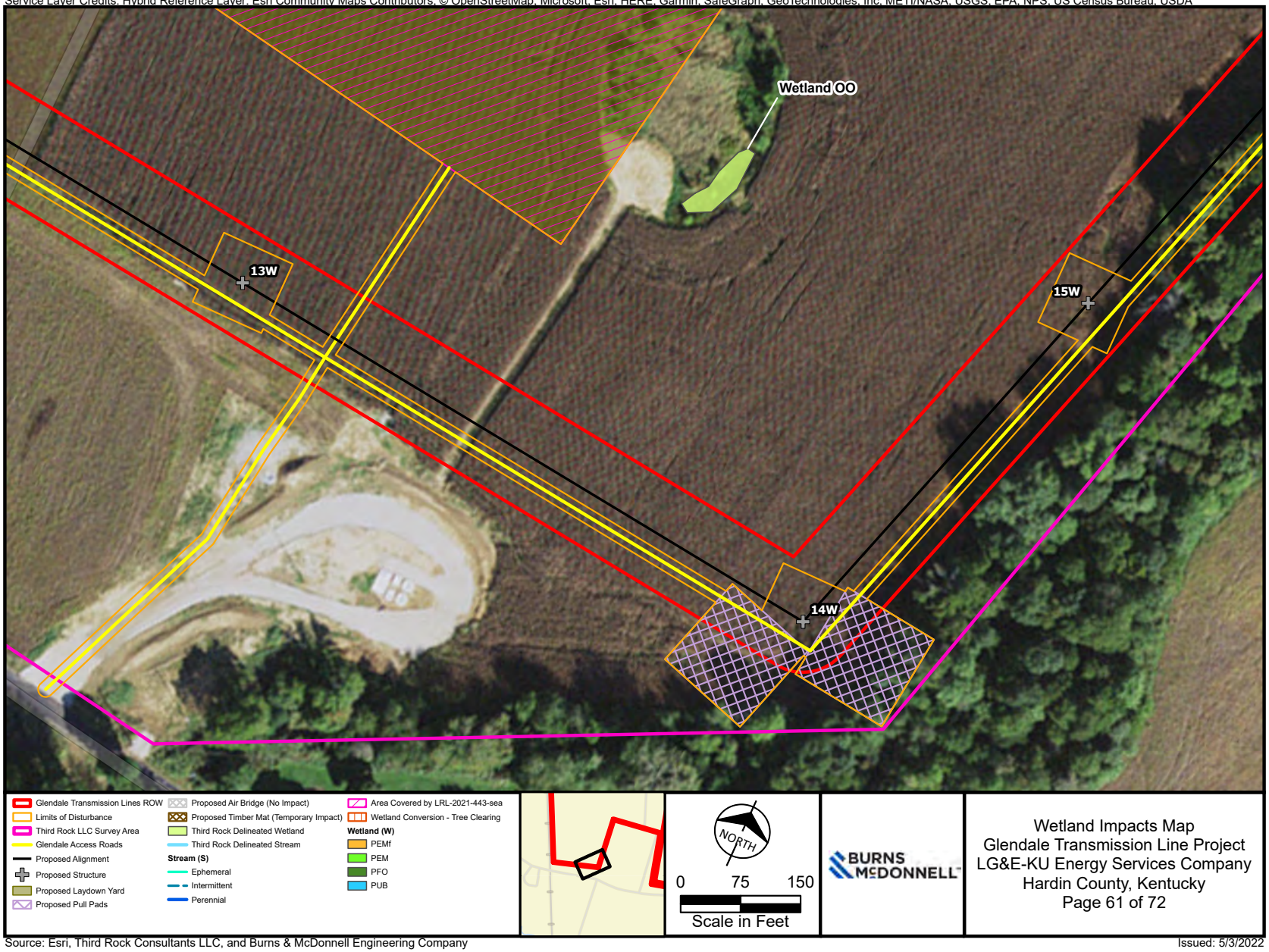

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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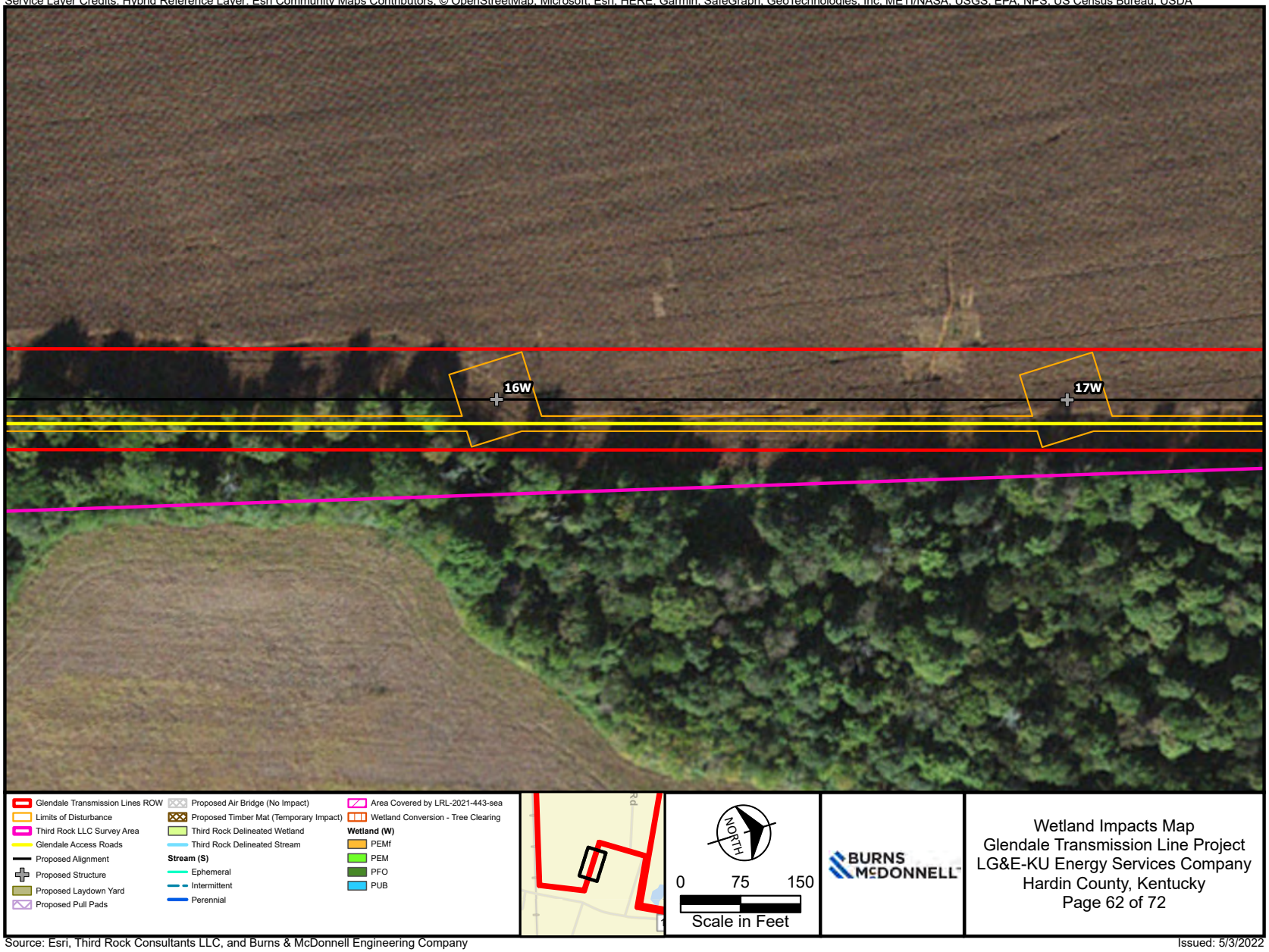

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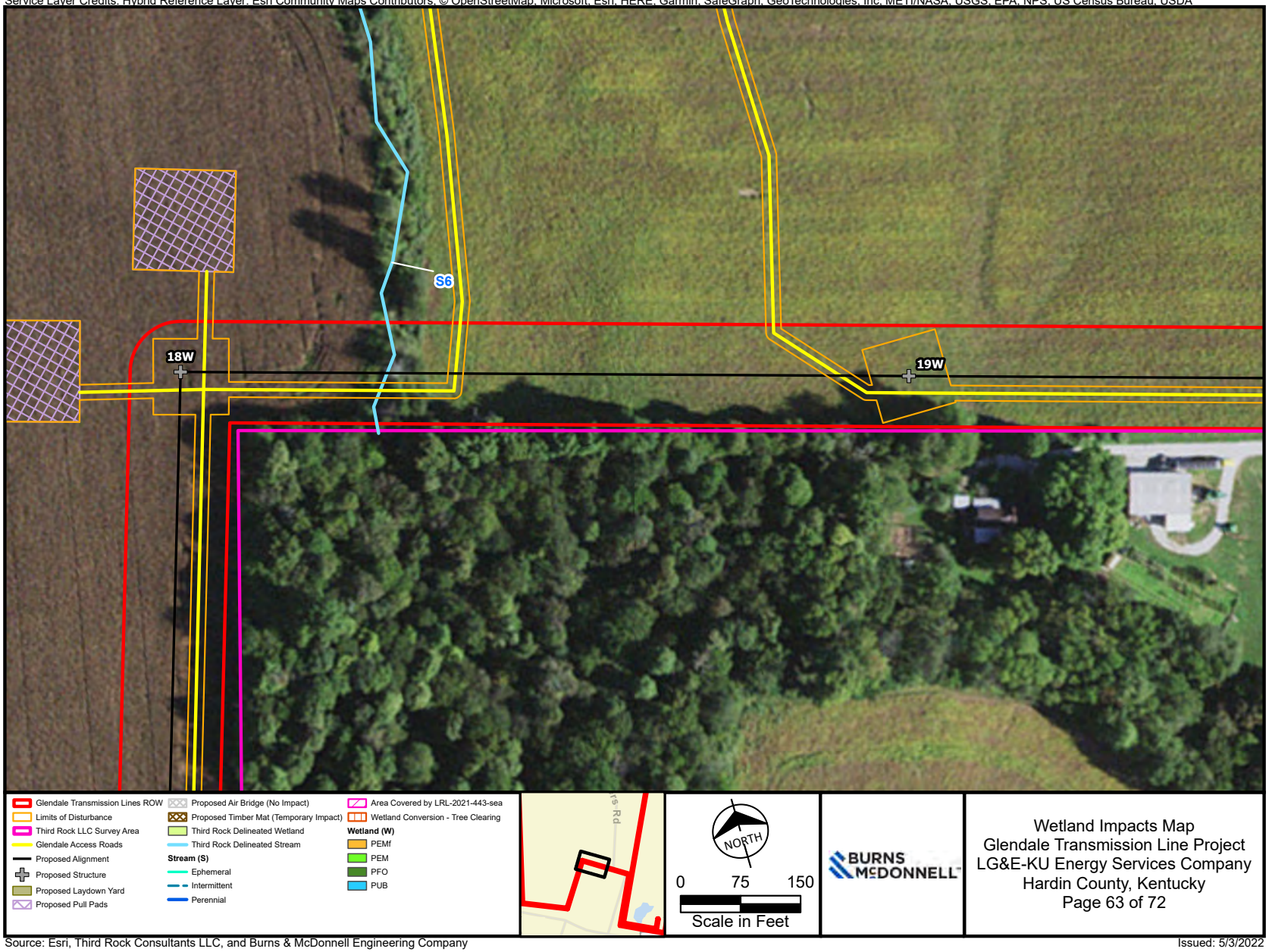

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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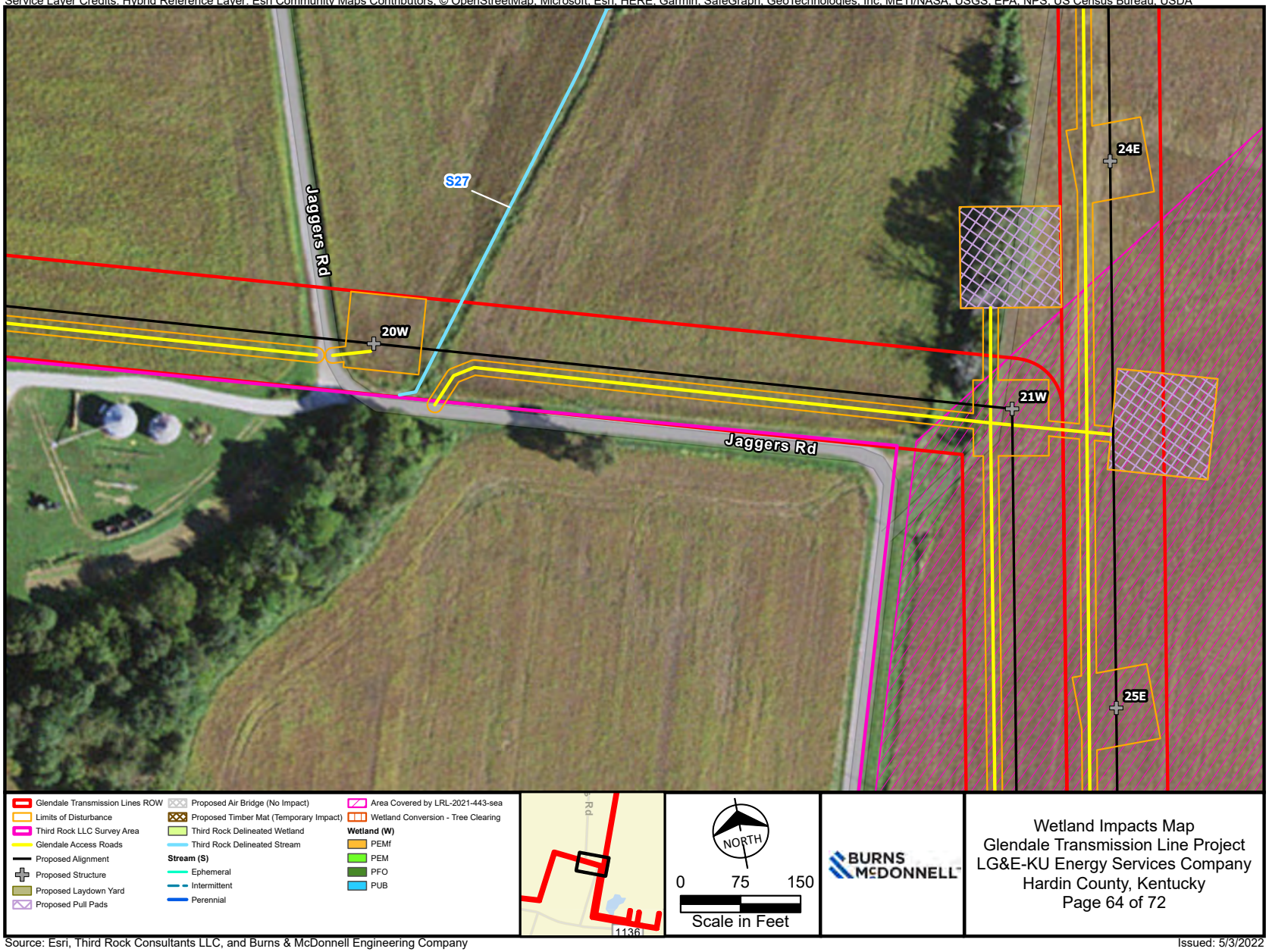

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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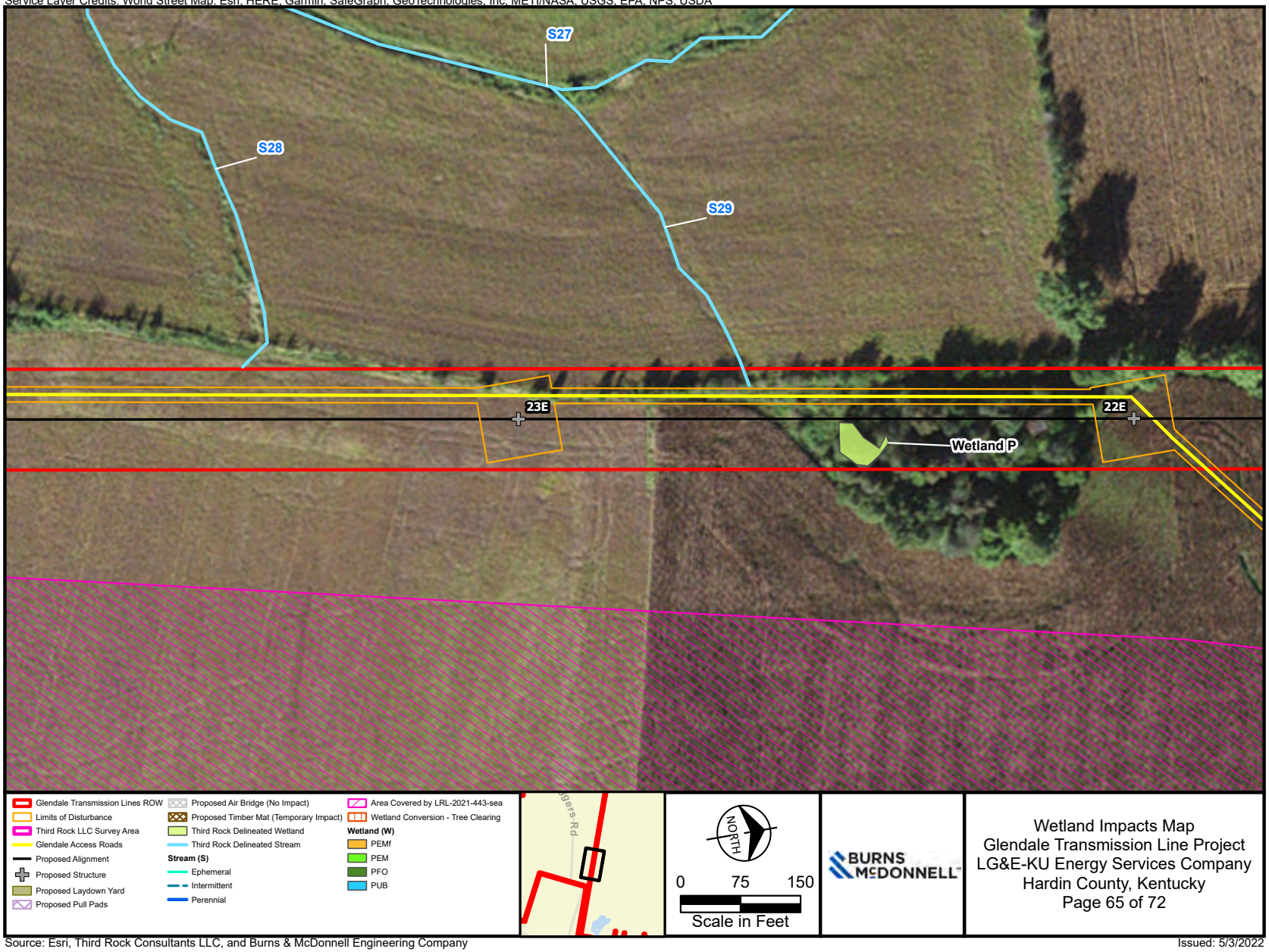

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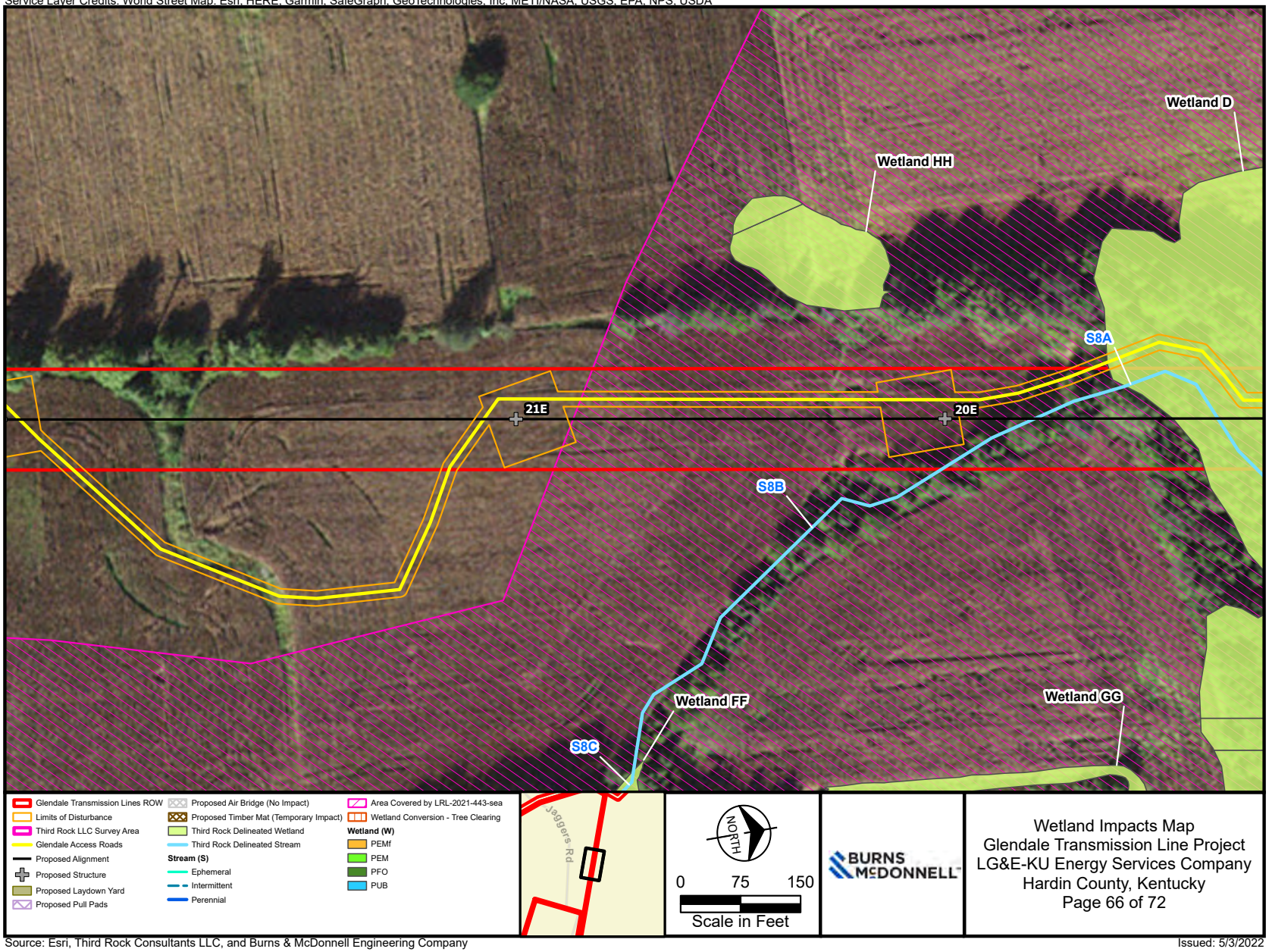

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
Page 66 of 72

Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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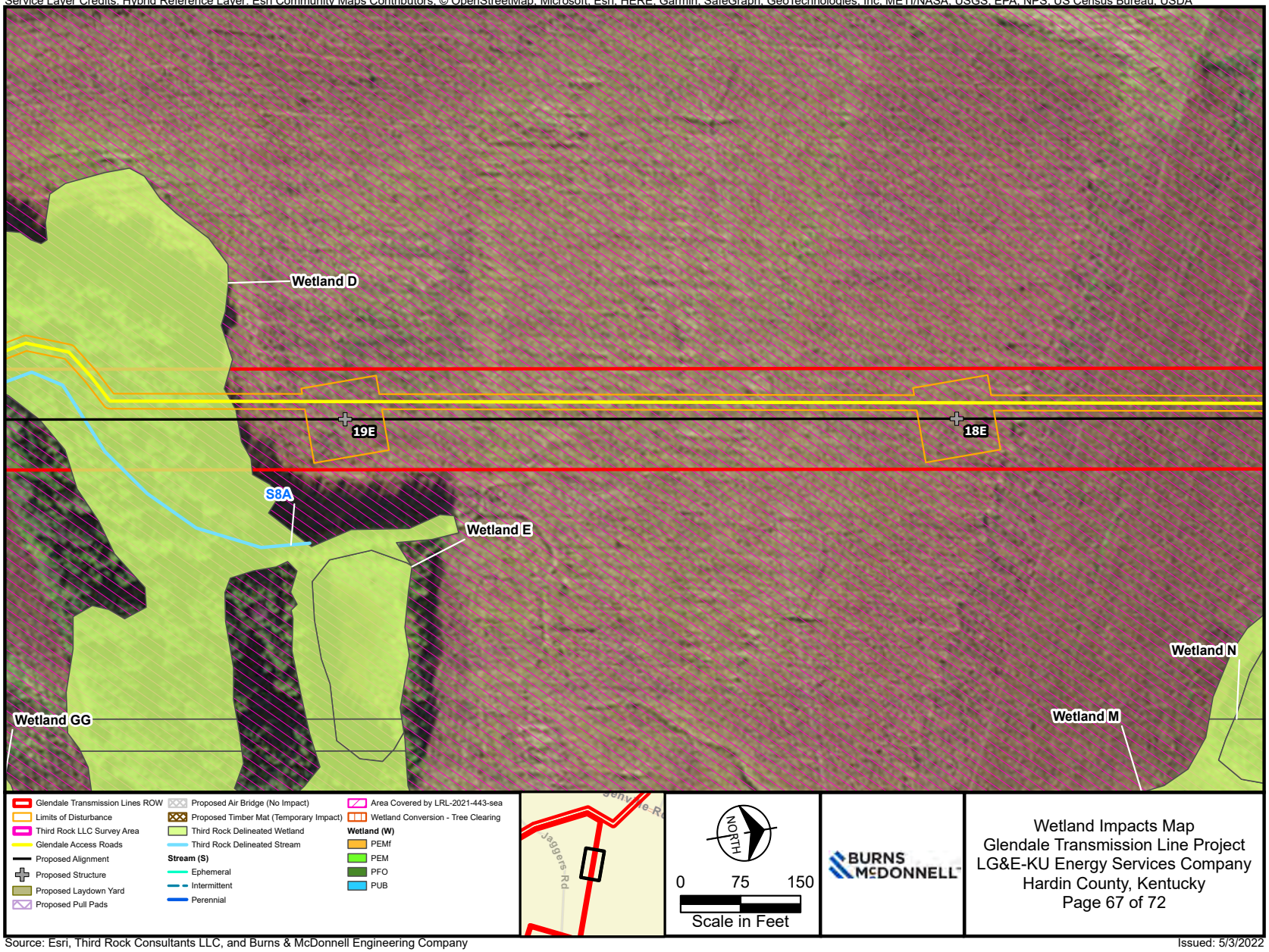

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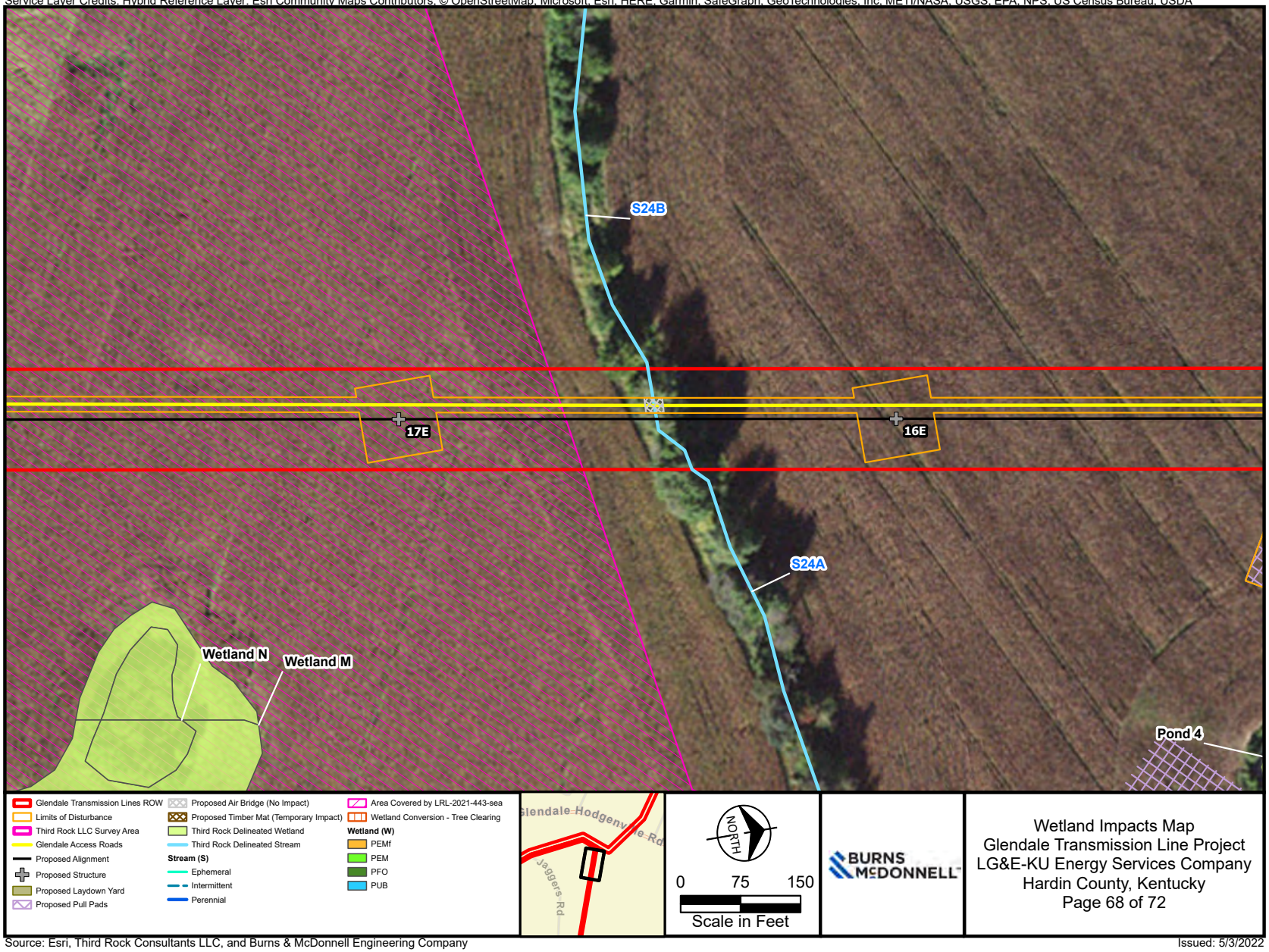

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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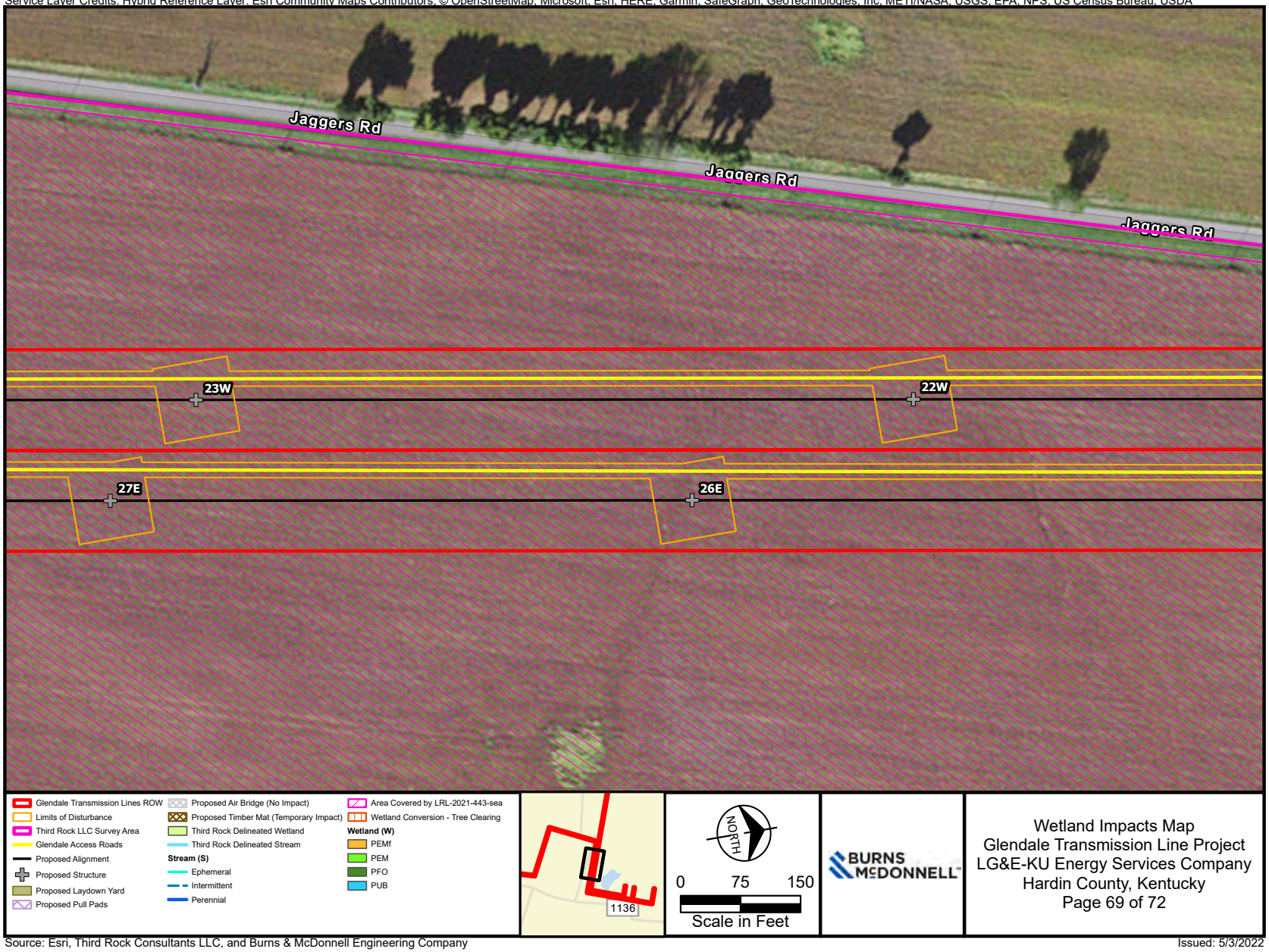

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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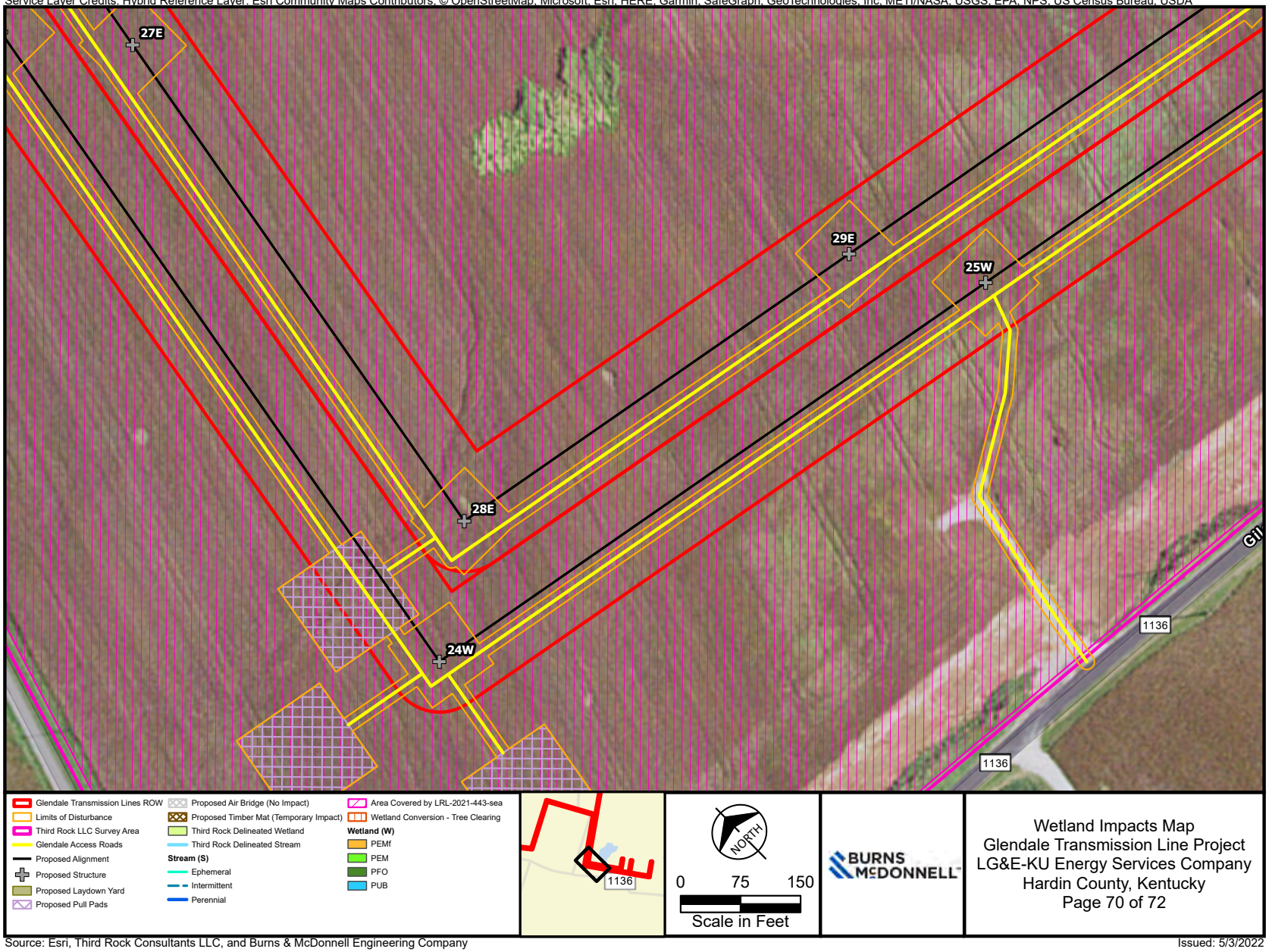

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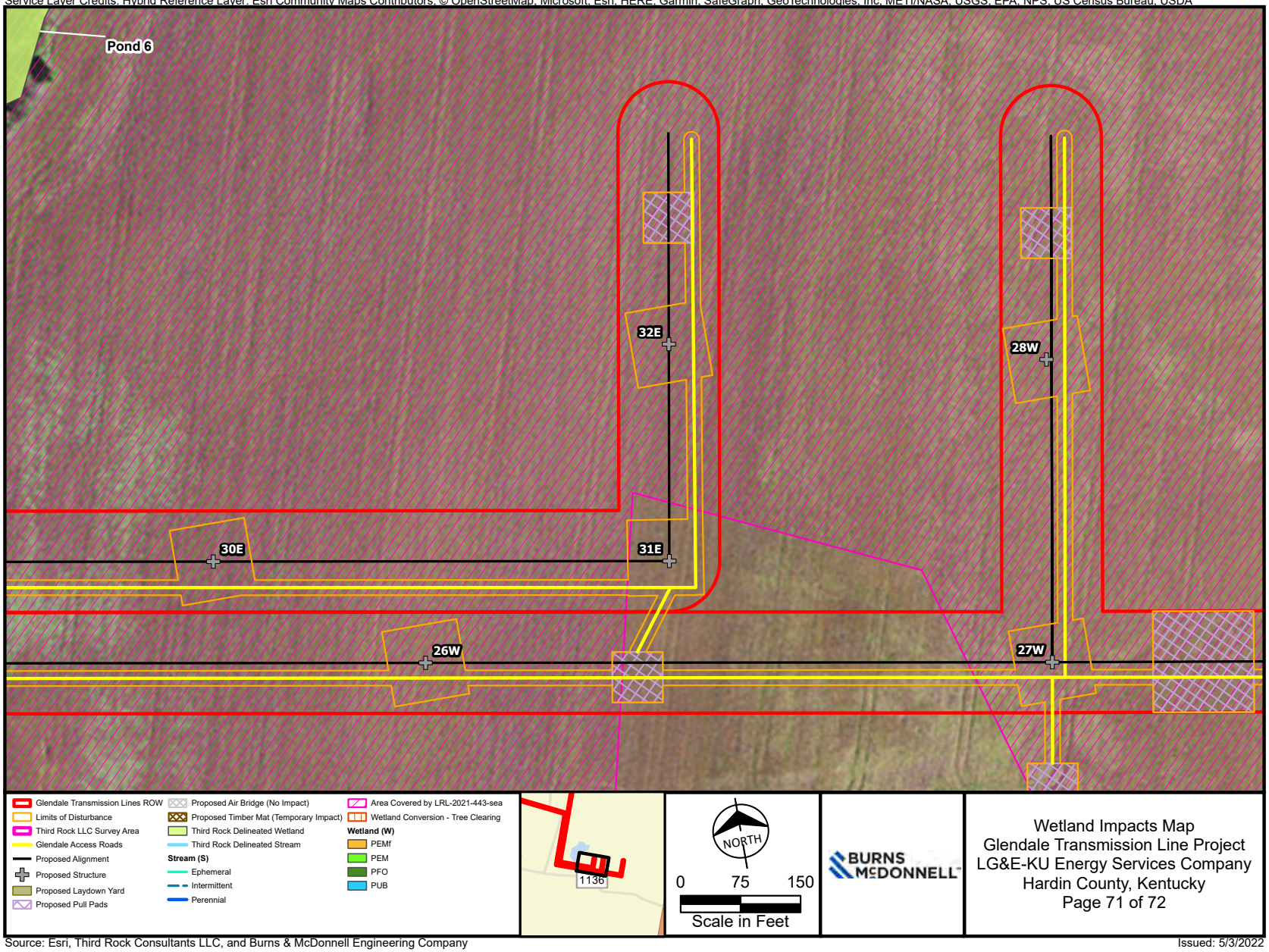

Wetland Impacts Map
Glendale Transmission Line Project
LG&E-KU Energy Services Company
Hardin County, Kentucky
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Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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Attachment 4 to Response to Wade Family Farm-PH-1 Question No. 5
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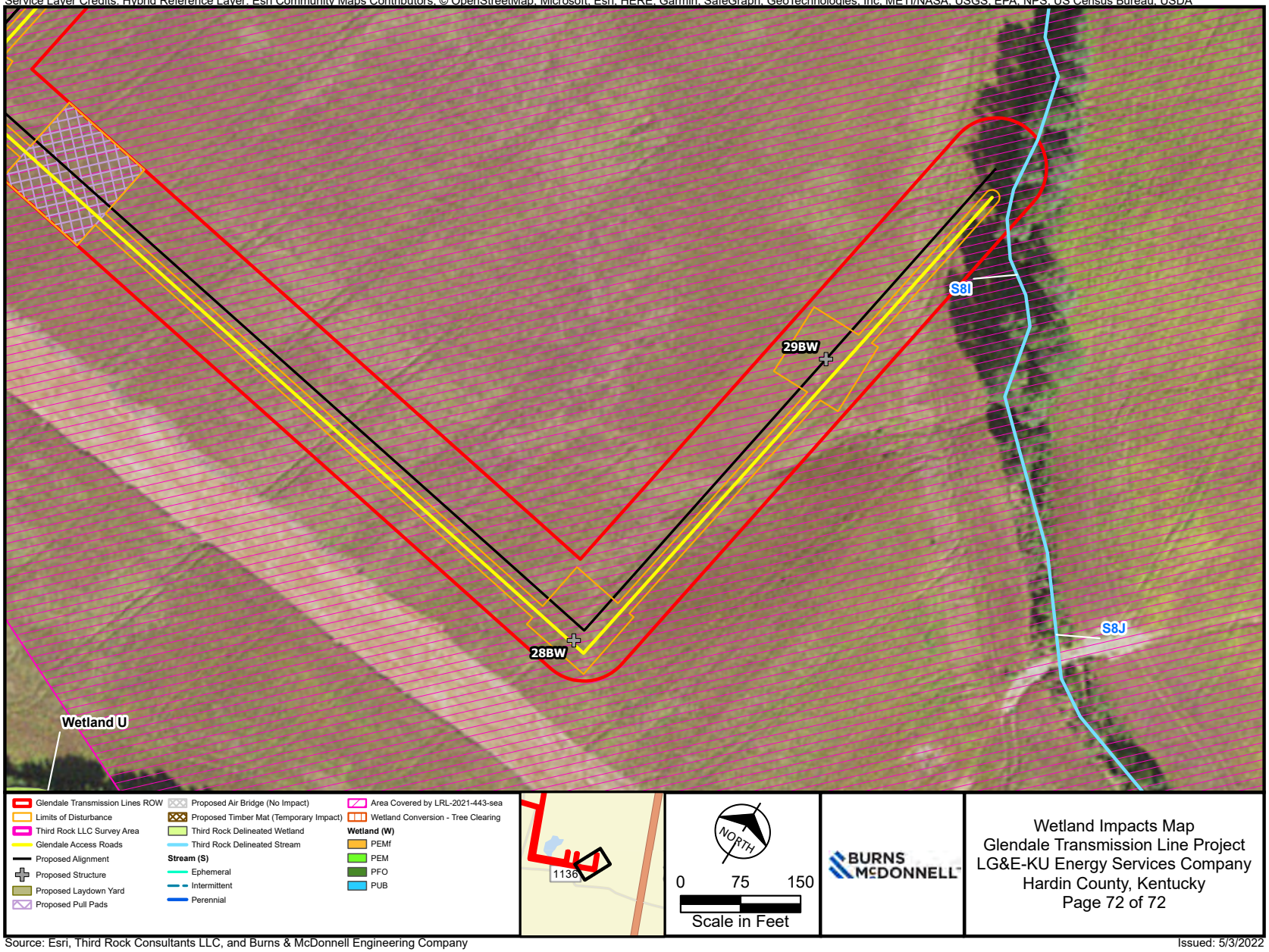

Source: Esri, Third Rock Consultants LLC, and Burns & McDonnell Engineering Company

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Glendale 345kV Transmission Lines Project
LRL-2022-00469-sea
Summary of Stream/Wetland Disturbance and Tree Removal

Resource Name	Stream Classification/ Wetland Type[a]	Length of Delineated Stream (feet)/Area of Wetland Delineated (Acre) in Survey Area	Temporary Air Bridge Installed below the OHWM (feet/acre)[b]	Permanent Wetland Disturbance Area (acre)	Acres of Tree Removal within 50'	Acres of Suitable Bat Habitat Removal within 50'	Latitude	Longitude	Description of Disturbance
S-AA	Ephemeral	15	15/0.003	--	0	0	37.667572	-85.901649	Temporary timber mat installed below the OHWM for construction access to string OPGW between Structures 1 and 2.
S-AB	Ephemeral	16	16/0.003	--	0	0	37.667549	-85.902507	Temporary timber mat installed below the OHWM for construction access to string OPGW between Structures 1 and 2.
S-8	Ephemeral	331	15/0.001	--	0.02	0.02	37.626178	-85.907700	Temporary air bridge installed below the OHWM for construction access/line stringing between Structures 23 and 24
S-9	Ephemeral	166	16/0.003	--	0.03	0	37.610559	-85.904560	Temporary timber mat installed below the OHWM for line stringing between Structures 32 and 33
S-11	Perennial	884	15/0.004	--	0.04	0	37.606304	-85.902949	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 34 and 35
S-12	Intermittent	421	12/0.0004	--	0	0	37.606983	-85.903165	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 34 and 35
S-19	Ephemeral	87	15/0.001	--	0.02	0	37.625130	-85.864605	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 22A and 23A.
S-23	Intermittent	257	15/0.001	--	0	0	37.608228	-85.874073	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 23A and 24A. An existing culverted access road will be used for the construction access road from Glenwood Drive to the ROW.
S-25	Intermittent	238	16/0.004	--	0	0	37.601892	-85.877781	Temporary timber mat installed below the OHWM for construction access/line stringing between Structures 23A and 24A.
W-2	PFO	0.18	--	Temporary Matting for Access Road - 0.016 Permanent Conversion PFO to PEM - 0.185	0.54	0	37.627968	-85.863088	Trees within W-2 will be cut by hand, no mechanized clearing is proposed. Temporary timber matting will be used for construction/line stringing access between Structures 24A and 25A. Temporary timber matting is wholly located within the portion of W-2 being converted from a PFO to a PEM wetland. W-2 will be converted from a PFO to a PEM

Glendale 345kV Transmission Lines Project
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Summary of Stream/Wetland Disturbance and Tree Removal

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W-3	PEM	1.1	--	0.092	0.17	0	37.625151	-85.864262	Temporary timber matting will be used for construction/line stringing access between Structures 23A and 24A.
W-6	PEMf	0.44	--	0.035	0	0	37.612458	-85.871701	Temporary timber matting will be used for construction/line stringing access between Structures 15A and 16A.
W-8	PEM	0.72	--	0.07	0	0	37.602045	-85.877743	Temporary timber matting will be used for construction/line stringing access between Structures 10A and 11A.
Total	--	2,415/2.26	135/0.02	0.382	0.82	0.02	--	--	--

(a) PEMf = farmed wetland, PEM = palustrine emergent, PFO = palustrine forested

(b) Temporary air bridges or timber mats will be placed across the stream as the bank height is not anticipated to provide a span across the stream above the OHWM. The OHWM bank height is provided in the attached Wetland Delineation Report.