BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

Enable Gas Transmission, LLC
a wholly-owned subsidiary of
Enable Midstream Partners, LP

DOCKET NO. CP14-23-000

Volume IIB of IV

PUBLIC

P. O. Box 21734
Shreveport, LA 71151-1734
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November 25, 2013

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N. E.
Washington, D.C. 20426

Re: Enable Gas Transmission Company, LLC
Central Arkansas Pipeline Enhancement Project
Docket No. CP14-____-000

Dear Ms. Bose:

Enable Gas Transmission, LLC ("EGT"), pursuant to Sections 7(b) and 7(c) of the Natural Gas Act and Part 157 of the Commission's Regulations, hereby submits an abbreviated application requesting authority for the Central Arkansas Pipeline Enhancement Project ("Project") to abandon and replace certain facilities located in Pulaski and Faulkner Counties, Arkansas.

This application contains Public, Critical Energy Infrastructure Information ("CEII") and Privileged and Confidential information ("P&C") and is organized as follows:

Volume I: Public (Original with CD and seven paper copies)

- Transmittal Letter
- Table of Contents
- Application
- Public Exhibits (excluding Exhibit F-1)
- FERC Resource Report Comment Matrix
- Applicant Prepared EA

Volumes IIA through IID: Public (Original with CD and seven paper copies)

- Exhibit F-1 and Public Appendices

Volume III: Contains CEII – Do Not Release (Original with CD and two paper copies)

- Exhibits G, G-I, and G-II
- Appendix 1.A5- Plot Plans

Volume IV: Contains P&C Information – Do Not Release (Original only with CD)

- Appendix 1.E – Affected Landowners
- Appendix 4.A – Cultural Resources Survey Report

EGT respectfully requests: (1) that the information herein submitted in Volume III be treated as CEII, as Volume III contains information about proposed critical infrastructure that could

be useful to any persons planning an attack on that infrastructure; and; (2) that Volume IV be accorded privileged and confidential treatment pursuant to 18 C. F. R. §388.112.

Any questions concerning the enclosed filing should be addressed to the undersigned by e-mail at michelle.willis@centerpointenergy.com or by telephone at (318) 429-3708.

Respectfully submitted

Enable Gas Transmission Company, LLC

B. Michelle Willis

B. Michelle Willis
Manager – Regulatory & Compliance

Attachments

ENABLE GAS TRANSMISSION, LLC

CENTRAL ARKANSAS PIPELINE ENHANCEMENT PROJECT
FERC DOCKET NO. PF13-10-000

RESOURCE REPORT NO. 2

WATER USE AND QUALITY

PUBLIC

Prepared for:
Enable Gas Transmission, LLC
P.O. Box 21734
Shreveport, LA
71151

Prepared by:
AK Environmental, LLC
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08628

October 2013

ENABLE™
MIDSTREAM PARTNERS

CENTRAL ARKANSAS PIPELINE ENHANCEMENT PROJECT
FERC DOCKET NO. PF13-10-000

RESOURCE REPORT NO. 2 – WATER USE AND QUALITY SUMMARY OF COMMISSION FILING INFORMATION	
INFORMATION	**FOUND IN**
1. Identify all perennial surface waterbodies crossed by the proposed project and their water quality classification. (§ 380.12 (d) (1))	Section 2.1.1, Table 2.1-1
2. Identify all waterbody crossings that may have contaminated waters or sediments. (§ 380.12 (d) (1))	Sections 2.1.2, 2.1.6
3. Identify watershed areas, designated surface water protection areas, and sensitive waterbodies crossed by the proposed project. (§ 380.12 (d) (1))	Sections 2.1.3, 2.1.4, 2.1.5
4. Provide a table (based on NWI maps if delineations have not been done) identifying all wetlands, by milepost and length, crossed by the project (including abandoned pipeline), and the total acreage and acreage of each wetland type that will be affected by construction. (§ 380.12 (d) (1 & 4))	Section 2.2.1, Table 2.2-1
5. Discuss construction and restoration methods proposed for crossing wetlands, and compare them to staff's Wetland and Waterbody Construction and Mitigation Procedures. (§ 380.12 (d) (2)).	Sections 2.2.2, 2.2.3
6. Describe the proposed waterbody construction, impact mitigation, and restoration methods to be used to cross surface waters and compare to the staff's Wetland and Waterbody Construction and Mitigation Procedures. (§ 380.12 (d) (2))	Sections 2.1.7, 2.1.8
7. Provide original National Wetlands Inventory (NWI) maps or the appropriate state wetland maps, if NWI are not available, that show all proposed facilities and include milepost location for proposed pipeline routes. (§ 380.12 (d) (4))	Appendix 2.A
8. Identify all U.S. Environmental Protection Agency (EPA) – or state-designated aquifers crossed. (§ 380.12 (d) (9))	Section 2.3.1
Additional Information Often Missing and Resulting in Data Requests	**Section Reference**
1. Identify proposed mitigation for impacts on groundwater resources.	Section 2.3.4
2. Discuss the potential for blasting to affect water wells, springs, and wetlands, and associated mitigation.	Section 2.3..4.8 and Table 2.3-2
3. Identify all sources of hydrostatic test water, the quantity of water required, methods for withdrawal, and treatment of discharge, and any waste products generated.	Section 2.1.8.7, 2.1.8.8, Table 2.1-4
4. If underground storage of natural gas is proposed, identify how water	N/A

RESOURCE REPORT NO. 2 – WATER USE AND QUALITY SUMMARY OF COMMISSION FILING INFORMATION	
INFORMATION	**FOUND IN**
produced from the storage field will be disposed.	
5. If salt caverns are proposed for storage of natural gas, identify the source locations, the quantity required, the method and rate of water withdrawal, and disposal methods.	N/A
6. For each waterbody greater than 100 feet wide, provide site-specific construction mitigation and restoration plans.	Section 2.1.1 and Resource Report 1, Appendix 1.A
7. Indicate mitigation measures to be undertaken to ensure that public or private water supplies are returned to their former capacity in the event of damage resulting from construction.	Section 2.3.4
8. Describe typical staging area requirements at waterbody and wetland crossings.	Sections 2.1.1.2 and table 2.1-2, Section 2.2.3.5 and table 2.2-3
9. If wetlands would be filled or permanently lost, describe proposed measures to compensate for permanent wetland losses.	Section 2.2.3
10. If forested wetlands would be affected, describe proposed measures to restore forested wetlands following construction.	Section 2.2.3
11. Describe techniques to be used to minimize turbidity and sedimentation impacts associated with offshore trenching, if any.	N/A

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ACRONYMS AND ABBREVIATIONS

ADH	Arkansas Department of Health
ARVE	Arkansas River Valley Ecoregion
APCEC	Arkansas Pollution Control and Ecological Commission
AWWCC	Arkansas Water Well Construction Commission
BMP	Best Management Practices
CFS	Cubic feet per second
CFR	Code of Federal Regulations
Commission	Federal Energy Regulatory Commission
CWA	Clean Water Act
DDCP	Directional Drilling Contingency Plan
DOT	Department of Transportation
EGT	Enable Gas Transmission, LLC
EPA	U.S. Environmental Protection Agency
ETWS	Extra Temporary Workspace
FERC	Federal Energy Regulatory Commission
GIS	geographic information systems
GPM	Gallons per minute
HUC	Hydrologic Unit Code
HDD	Horizontal Directional Drill
Mi^2	square miles
MP	Milepost
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NWI	National Wetland Inventory
PEM	Palustrine emergent
PFO	Palustrine forested
Plan	FERC Upland Erosion Control, Revegetation, and Maintenance Plan
Procedures	FERC Wetland and Waterbody Construction and Mitigation Procedures
Project	Central Arkansas Pipeline Enhancement Project
PSS	Palustrine scrub-shrub
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
ROW	Right-of-way
TMDL	Total Maximum Daily Load
UNT	unnamed tributary
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

2.0 INTRODUCTION

Enable Gas Transmission, LLC ("EGT") is filing an application for a certificate of public convenience and necessity with the Federal Energy Regulatory Commission ("FERC" or "Commission") for the Central Arkansas Pipeline Enhancement Project ("Project"). The Project will provide for the continued safe, reliable, and efficient transportation of natural gas to the central Arkansas cities and towns of Conway, Mayflower, Maumelle, North Little Rock, and Little Rock. As part of the Project, EGT is proposing the installation of approximately 28.5 miles of 12-inch-diameter natural gas pipeline and ancillary facilities in Pulaski and Faulkner Counties, Arkansas. The proposed pipeline, to be named Line BT-39, will be constructed primarily on new alignment, and will provide replacement transmission service for a portion of two existing EGT natural gas pipelines (Lines B and BT-14). EGT will also construct metering and appurtenances at seven new or modified locations along the Line BT-39 pipeline route and tie-in points to the existing Line BT-14 pipeline, as well as two 4-inch-diameter laterals (Lines BT-40 and BT-41) to provide natural gas deliveries to its distribution affiliate, CenterPoint Energy Resources Corporation d/b/a Arkansas Gas ("CERC"). As currently proposed, ownership of an approximately 12.4-mile-long segment of the existing Line BT-14 pipeline through the City of Conway, as well as the entirety (approximately 1,024 linear feet) of EGT's existing Line BT-19, would be transferred to CERC. Additionally, an approximately 21.7-mile-long segment of the existing Line B pipeline, extending from Conway to North Little Rock, would be retired from service, as would other minor ancillary facilities and small diameter pipelines (i.e., Line BM-1 and a portion of Line BM-21) within the City of Conway. Refer to the Project location map (Figure 1.1-1) for a depiction of existing, proposed, and retirement pipeline facilities associated with the Project.

This Resource Report describes surface waterbodies, water supplies, watersheds, wetlands, and groundwater resources in the areas potentially affected by construction and operation of the proposed Project. It provides information to determine the expected impact of the proposed Project on water quality and use, as well as the effectiveness of the proposed mitigation measures.

2.1 SURFACE WATER RESOURCES

This section describes the surface water resources that are crossed by the proposed Project, regulations that apply to those resources, and measures proposed by EGT to mitigate impacts to those resources.

2.1.1 Waterbody Crossings

The Commission defines waterbodies as "any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes." Perennial waterbodies are expected to contain water for most of the year and have flow. Intermittent streams include those that flow only seasonally or following rainfall events. Ephemeral waterbodies include those that only carry stormwater in direct response to precipitation, with water flowing only during and shortly after large precipitation events. Waterbodies were identified based on field surveys conducted in October 2012 and February 2013, aerial photography, and U.S. Geological Survey ("USGS") topographic maps. FERC-defined waterbodies along the proposed pipeline route are depicted on aerial alignment sheets provided as Appendix 1.A of Resource Report 1.

In accordance with the FERC's *Wetland and Waterbody Construction and Mitigation Procedures* ("Procedures"), waterbody crossings are defined as either minor, intermediate, or major crossings. Minor crossings are of waterbodies less than or equal to 10 feet wide at the water's edge. Intermediate crossings are of waterbodies greater than 10 feet wide but less than or equal to 100 feet wide. Lastly, major crossings are of waterbodies that are greater than 100 feet wide at the water's edge. This resource report discusses only those features that met FERC's definition of a waterbody at the time of survey, or are likely to meet FERC's definition at the time of construction.

2.1.1.1 Proposed Pipeline Facilities

The proposed pipeline facilities traverse a portion of the Arkansas River Valley Ecoregion ("ARVE") (APCEC, 2011) and will require 46 waterbody crossings, all associated with the proposed Line BT-39. They include 33 intermittent stream crossings, 12 perennial stream crossings, and one open water crossing. Three waterbodies will be crossed more than once by the proposed pipeline at different locations. Based on field surveys the proposed Line BT-39 pipeline will cross one major, 14 intermediate, and 31 minor waterbodies. The major waterbody is a water-filled borrow pit adjacent to, and presumably used in the construction of, Interstate 40. The proposed Line BT-40 and Line BT-41 routes do not cross any FERC-defined waterbodies. Table 2.1-1 provides detailed information on the waterbodies impacted by the proposed pipeline facilities.

The pipeline route passes near but avoids both Lake Carol-Dan reservoir and Davis Lake. Lake Carol-Dan is a public access lake located approximately 5.1 miles west of Conway. Davis Lake is an open waterbody impoundment of Tupelo Bayou, located in the Round Mountain region south of Conway, and used for recreation. One major waterbody crossing is proposed, associated with a water-filled borrow pit (W90PU) in Pulaski County. This borrow pit is located at approximately MP 18.5 and lies just west of Highway64/Interstate 40. This waterbody will be crossed by horizontal directional drill ("HDD") and therefore there will be no impacts to this resource.

EGT plans to cross six FERC-defined waterbodies with HDD methods, including Tucker Creek (S73FA), an unnamed tributary ("UNT") to Tucker Creek (S72FA), UNT to Beaverdam Creek (S300FA), Palarm Creek (S61PU), and two tributaries to Palarm Creek (S58FA and S63PU). The remaining waterbodies crossed by the Project will be crossed using the open-cut technique. Waterbody crossing methods are described in detail in Section 1.4.2.2 of Resource Report 1 and summarized in Section 2.1.7 below.

TABLE 2.1-1

Waterbodies Crossed by the Project

Feature ID	Milepost (MP)	Waterbody Name[1]	Waterbody Type [2]	Crossing Width (feet)	State Water Quality Certification [3]	Proposed Crossing Method[4]
Proposed Line BT-39						
S100FA	2.18	UNT Lake Carol-Dan	Intermittent	8	E, F, G, H, I	Open cut
S102FA	2.35	UNT Lake Carol-Dan	Intermittent	15*	E, F, G, H, I	Open cut
S104FA	3.15	UNT Arkansas River	Intermittent	6	E, F, G, H, I	Open cut
S105FA	3.29	UNT Arkansas R.	Intermittent	15*	E, F, G, H, I	Open cut
S105FA-2nd crossing	3.42	UNT Arkansas R.	Intermittent	15*	E, F, G, H, I	Open cut
S105DFA	3.42	UNT Arkansas R.	Intermittent	8	E, F, G, H, I	Open cut
S108AFA	3.67	UNT Arkansas R.	Intermittent	8	E, F, G, H, I	Open cut
S79FA	5.24	UNT Tucker Creek	Intermittent	8	E, F, G, H, I	Open cut
S82FA	5.56	UNT Tucker Creek	Intermittent	10	E, F, G, H, I	Open cut
S73FA	6.17	Tucker Creek	Perennial	50*	E, F, G, H, I	HDD
S72FA	6.44	UNT Tucker Creek	Intermittent	6	E, F, G, H, I	HDD
S70FA	7.27	UNT Tupelo Bayou	Perennial	10	E, F, G, H, I	Open cut
S19BFA	8.82	UNT Tupelo Bay.	Intermittent	8	E, F, G, H, I	Open cut

TABLE 2.1-1

Waterbodies Crossed by the Project

Feature ID	Milepost (MP)	Waterbody Name[1]	Waterbody Type [2]	Crossing Width (feet)	State Water Quality Certification [3]	Proposed Crossing Method[4]
S24AFA	9.34	Tupelo Bayou	Perennial	12*	E, F, G, H, I	Open cut
S25AFA	9.51	UNT Tupelo Bay.	Intermittent	10	E, F, G, H, I	Open cut
S26AFA	9.77	Tupelo Bayou	Perennial	10	E, F, G, H, I	Open cut
S26BFA	9.80	UNT Tupelo Bayou	Intermittent	12*	E, F, G, H, I	Open cut
S29FA	10.29	UNT Tupelo Bayou	Intermittent	10	E, F, G, H, I	Open cut
S31FA	10.52	UNT Tupelo Bayou	Intermittent	8	E, F, G, H, I	Open cut
S1FA	11.20	Tupelo Bayou	Perennial	4	E, F, G, H, I	Open cut
S6AFA	12.01	Tupelo Bayou	Perennial	4	E, F, G, H, I	Open cut
S6BFA	12.02	UNT Tupelo Bayou	Perennial	4	E, F, G, H, I	Open cut
S89AFA	13.94	UNT Beaverdam Creek	Perennial	8	E, F, G, H, I	Open cut
S38FA	14.47	UNT Beaverdam Creek	Intermittent	10	E, F, G, H, I	Open cut
S39FA	14.80	Beaverdam Creek	Perennial	12*	E, F, G, H, I	Open cut
S300FA	15.02	UNT Beaverdam Creek	Intermittent	3	E, F, G, H, I	HDD
S403FA	15.55	UNT Beaver Creek	Intermittent	8	E, F, G, H, I	Open cut
S403FA- 2nd crossing	15.60	UNT Beaver Creek	Intermittent	8	E, F, G, H, I	Open cut
S58FA	17.45	UNT Palarm Creek	Intermittent	4	E, F, G, H, I	HDD
S61PU	17.95	Palarm Creek	Perennial	40*	E, F, G, H, I	HDD
W90PU	18.50	Unnamed Borrow Pit	NA	575**	NA	HDD
S63PU	18.67	UNT Palarm Creek	Perennial	15*	E, F, G, H, I	HDD
S42APU	19.31	UNT Palarm Creek	Intermittent	5	E, F, G, H, I	Open cut
S42BPU	19.32	UNT Palarm Creek	Intermittent	5	E, F, G, H, I	Open cut
S43PU	19.60	UNT Palarm Creek	Intermittent	10	E, F, G, H, I	Open cut
S40PU	20.31	UNT Palarm Creek	Intermittent	6	E, F, G, H, I	Open cut
S40PU- 2nd crossing	20.40	UNT Palarm Creek	Intermittent	6	E, F, G, H, I	Open cut
S41APU	20.32	UNT Palarm Creek	Intermittent	6	E, F, G, H, I	Open cut
S173PU	22.20	UNT Palarm Creek	Intermittent	4	E, F, G, H, I	Open cut
S179PU	24.04	UNT Pond	Intermittent	10	E, F, G, H, I	Open cut
S183PU	24.72	UNT White Oak Bayou	Intermittent	12*	E, F, G, H, I	Open cut

TABLE 2.1-1

Waterbodies Crossed by the Project

Feature ID	Milepost (MP)	Waterbody Name[1]	Waterbody Type [2]	Crossing Width (feet)	State Water Quality Certification [3]	Proposed Crossing Method[4]
S140PU	25.77	White Oak Bayou	Intermittent	20*	E, F, G, H, I	Open cut
S128BPU	27.43	Winifree Creek	Intermittent	12*	E, F, G, H, I	Open cut
S128PU	27.45	UNT Winifree Creek	Intermittent	25*	E, F, G, H, I	Open cut
S126CPU	28.24	UNT Newton Creek	Perennial	8	E, F, G, H, I	Open cut
S126PU	28.33	Newton Creek	Intermittent	30*	E, F, G, H, I	Open cut
Proposed Line BT-40						
None crossed						
Proposed Line BT-41						
None crossed						

Note: Rows above indicate stream crossings. There are 3 streams crossed by the pipeline more than one time, and those crossings are indicated by the same feature number.

1 UNT= Unnamed Tributary to Named Waterbody

2 Perennial stream: has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year.

Intermittent stream: has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water.

3 E Secondary Contact Recreation: This beneficial use designates waters where secondary activities like boating, fishing, or wading are involved. All waters within the Arkansas River Valley Ecoregion are designated for these uses.

G, H, I Domestic, Industrial and Agricultural Water: This use includes surface waters designated as domestic, industrial, and agricultural. All waters within the Arkansas River Valley Ecoregion are designated for these uses.

4 HDD = Horizontal Directional Drill:.

* Crossing width classifies the waterbody as an intermediate waterbody.

** Crossing width classifies the waterbody as a major waterbody,

2.1.1.2 Extra Temporary Workspace

EGT has identified locations along the construction right-of-way ("ROW") where ETWS, including staging areas, will be required (see Resource Report 8, as well as the Project alignment sheets provided in Volume II of EGT's application). The ETWS located adjacent to the construction ROW could be used for spoil storage, staging, equipment movement, material stockpiles, and pull string assembly associated with HDD installation. At waterbody crossings there is generally ETWS on both sides of the crossing. All ETWS will be returned to their preconstruction condition and former usage following completion of construction activities. In accordance with the setback requirements specified in Section V.B.2 of the FERC Procedures, ETWS will generally be located at least 50 feet away from the waterbody's edge, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. Written approval per section V.B.2 of the FERC Procedures is hereby requested where necessary for site-specific construction reasons. Table 2.1-2 below lists all ETWS areas within 50 feet of a waterbody, identifies which of these ETWS areas require a site-specific justification pursuant to Section V.B.2.b of the FERC Procedures, and provides justification for their location. As shown in the table, no ETWS is located within a waterbody; however, two are located within 50 feet of waterbodies and require site-specific justification for written approval in accordance with the FERC Procedures.

TABLE 2.1-2

Extra Temporary Workspaces in or Within 50 Feet of Waterbody

ETWS ID	Approx. MP	Waterbody ID	Actively cultivated, rotated cropland, or other disturbed land?	Within Waterbody?	Within 50 Feet of Waterbody?	Site-Specific Justification Required?	Justification
116	12.02	S9AFA	Yes-Maintained Right-of-way (ROW)[1]	No	Yes	Yes	ETWS needed for stream/ditch crossings on both sides that intersect the pipeline and ROW in a non-perpendicular fashion. Nearby waterbody is parallel to pipeline alignment within a regularly maintained electric transmission line ROW.
203	20.31	S40PU	Yes-Agricultural	No	Yes	No	Not applicable

[1] EGT has no information on when the electric transmission right-of-way was constructed, but the right-of-way is regularly maintained by the operator, Entergy Corporation, to prevent the establishment and growth of trees and other woody vegetation. For this reason, EGT considers the right-of-way to represent disturbed land. Even so, site-specific justification for the workspace, which is required for constructability reasons, is provided above.

2.1.1.3 Pipe/Contractor Yards

EGT has preliminarily identified the following three pipe storage/contractor yards that may be utilized during construction of the Project:

Contractor yard #1 (MP 14.82) – This contractor yard is located adjacent to the proposed BT-39 corridor, at the intersection of the replacement pipeline route and Luker Lane. It has been sited on 5.50 acres of pasture/hay field. There were no waterbodies identified on this site.

Contractor yard #2 (MP 5.75) – This contractor yard is located on the northern end of the proposed BT-39 line. It has been sited on approximately 2.07 acres of fallow/hay field to the west of Conway, approximately 0.4 mile north of MP 5.75. There were no waterbodies identified on this site.

Contractor yard #3 (MP 16.40) – This contractor yard is located approximately 0.8 mile southwest of MP 16.40. It has been sited on approximately 2.07 acres of hay field near Faulkner Meadow Road and an existing rail line. There are no waterbodies at this location.

2.1.1.4 Aboveground Facilities

In addition to the proposed and retirement pipelines, EGT will install or modify six aboveground facility sites along the new Line BT-39, BT-40, and BT-41 pipelines, and will modify an existing aboveground facility site along EGT's existing Line BT-14. The aboveground facilities are all Town Border Stations ("TBS"), and are described in more detail in Section 1.2.4 of Resource Report 1. Environmental surveys indicate that there are no waterbodies at these locations, and therefore no impacts to waterbodies are anticipated as a result of this work.

2.1.1.5 Access Roads

Section 1.2.5 of Resource Report 1 and Appendix 8.A and 8.B of Resource Report 8 describe the access roads associated with the Project. EGT proposes to use 64 existing roads, totaling 41.29 acres, to provide access to the proposed pipeline ROWs and aboveground facilities during construction. Of these, 62 roads are temporary access

roads to obtain access to the construction ROWs; one (1) is a new, permanent road constructed to provide permanent access to the Bryant Road TBS; and one (1) is an existing, permanent road that provides access to the existing Oak Grove TBS. Associated with the Line B retirement activities, EGT proposes to use 37 existing access roads to provide temporary access to the proposed retirement work areas during construction. Table 2.1-3 provides a list of waterbodies within 50 feet of access roads. There are 11 waterbodies within 50 feet of the proposed Line BT-39 access roads. Three of these streams have existing culvert crossings. There are two waterbodies within 50 feet of the retirement pipeline access roads; one of them has an existing culvert crossing and the other has an existing wooden bridge crossing.

TABLE 2.1-3

Waterbodies within 50 Feet of Access Roads

Feature ID	Access Road Number	Waterbody Name	Waterbody Type [1]	Waterbody Width (feet)	Type of Access Road [2]
Line BT-39 Access Roads					
S1FA[4]	Line BT-39 AR-11.18	Tupelo Bayou	Perennial	3	Temporary
S6AFA[4]	Line BT-39 AR-11.5	Tupelo Bayou	Perennial	2	Temporary
S9AFA[5]	Line BT-39 AR-11.5	Tupelo Bayou	Intermittent	2	Temporary
S89AFA[4]	Line BT-39 AR-13.42	UNT to Beaverdam Creek	Perennial	0	Temporary
S59FA[3]	Line BT-39 AR-17.72	UNT to Palarm Creek	Intermittent	2	Temporary
S42APU[5]	Line BT-39 AR-19.33	UNT to Palarm Creek	Intermittent	2	Temporary
S42BPU[5]	Line BT-39 AR-19.33	UNT to Palarm Creek	Intermittent	2	Temporary
S40PU[3]	Line BT-39 AR-19.20	UNT to Palarm Creek	Intermittent	2	Temporary
S41APU[5]	Line BT-39 AR-19.20	UNT to Palarm Creek	Intermittent	2	Temporary
S41PU[5]	Line BT-39 AR-20.33	UNT to Palarm Creek	Intermittent	2	Temporary
S128PU[3]	Line BT-39 AR-27.48	Winifree Creek	Intermittent	0	Temporary
Retirement Line B Access Roads					
S125FA[3]	Line B AR-21	UNT to Gold Creek	Perennial	18	Temporary
S202FA[3]	Line B AR-26	UNT to Lake Conway	Perennial	1	Temporary

[1] Perennial stream: has flowing water year-round during a typical year water table is located above the stream bed for most of the year.

Intermittent stream: has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water.

Ephemeral waterbodies: those that only carry stormwater in direct response to precipitation, with water only flowing during and shortly after large precipitation events.

[2] The type of access road may be temporary or permanent, based on whether it will remain following construction.

[3] Access road stream crossing has an existing culvert or bridge.

[4] Stream has an existing low water crossing (no existing culvert or bridge).

[5] Stream within 50 feet but is not crossed by access road.

2.1.1.6 Retirement Work Areas

As described in Section 1.2.6 of Resource Report 1, EGT proposes to retire some existing pipeline assets (Line BM-1 and portions of Line B and BM-21), and will transfer ownership of a segment of Line BT-14 and the entirety of Line BT-19 to its distribution affiliate. The retired pipelines will be cut, capped, and grouted at improved road and railway crossings. In addition, existing aboveground facilities and other ancillary facilities such as rectifiers and pipeline markers along the pipeline segments to be retired will be removed. In general, retirement of the existing pipeline

facilities and removal of the existing aboveground and ancillary facilities will require minimal ground disturbance, and all such ground disturbing activities will be confined to EGT's existing and maintained pipeline ROWs or facility sites. There are no waterbodies present at the proposed retirement work areas.

2.1.2 Water Quality

Under the Clean Water Act ("CWA"), Section 303(c), the U.S. Environmental Protection Agency ("EPA") requires states to review, establish, and revise water quality standards for all surface waters within the state. To comply with this requirement, Arkansas has developed a classification system to describe the highest designated use(s) and associated minimum water quality requirements of identified surface waterbodies within the state. State and federal water quality standards are described in the following sections.

2.1.2.1 State Water Quality

The Arkansas Pollution Control and Ecology Commission ("APCEC") has established regulations that dictate water quality standards for surface waters within the state of Arkansas (APCEC, 2011). The APCEC recognizes 10 designated uses including:

(A) Extraordinary Resource Waters – a combination of the chemical, physical, and biological characteristics of a waterbody and its watershed, which is characterized by scenic beauty, aesthetics, scientific values, broad scope recreation potential, and intangible social values. There is one Extraordinary Resource Water ("ERW") in the vicinity of the Project, Cadron Creek. The creek is located approximately 2,000 feet west of the origin of the proposed Line BT-39. Line B retirement activities come within closer proximity to Cadron Creek, and include the closing of a valve located 130 feet northwest of the creek and the removal of a river header located 110 feet southeast of the creek. To protect water quality, EGT will implement best management practices outlined in the FERC *Upland Erosion Control, Revegetation, and Maintenance Plan* ("Plan") and the FERC Procedures (Resource Report 1, Appendices 1.B and 1.C, respectively) during construction, post-construction restoration, and operation.

(B) Ecologically Sensitive Waterbody – a waterbody known to provide habitat within the existing range of threatened, endangered, or endemic species of aquatic or semi-aquatic life forms. There are no Ecologically Sensitive Waterbodies within the Project area.

(C) Natural and Scenic Waterways – a waterbody that has been legislatively adopted into a state or federal system. There are no Natural and Scenic Waterways within the Project area.

(D) Primary Contact Recreation – waters where full body contact is involved. Any streams with watersheds of greater than 10 square miles ("mi^2") are designated for full body contact. All streams with watersheds less than 10 mi^2 may be designated for primary contact recreation after site verification. There are no primary contact waters crossed by the Project.

(E) Secondary Contact Recreation – waters where secondary activities like boating, fishing, or wading are involved. All waters within the Project area qualify.

(F) Fisheries – waters which provide for the protection and propagation of fish, shellfish, and other forms of aquatic life. This category is further subdivided into (i) trout fisheries, (ii) lake and reservoir fisheries, and (iii) stream fisheries. There are no trout waters within the Project area.

(G) Domestic Water Supply – water that will be protected for use in public and private water supplies. Conditioning or treatment may be necessary prior to use. All waters within the Project area qualify.

(H) Industrial Water Supply – water that will be protected for use as process or cooling water. Quality criteria may vary with the specific type of process involved, and the water supply may require prior treatment or conditioning. All waters within the Project area qualify.

(I) Agricultural Water Supply – waters that will be protected for irrigation crops and/or consumption by livestock. All waters within the Project area qualify.

(J) Other Uses – uses not dependent on water quality, such as hydroelectric power generation and navigation. None of the waters within the Project area are designated for Other Uses.

2.1.2.2 Federal Water Quality

Biennially, each state is required, under Section 305(b), to submit a report to the EPA describing the status of surface waters in the state. Waterbodies are assessed to determine if their designated use is "fully supported," "fully supported but threatened," "partially supported," or "not supported" in accordance with its water quality standards. A use is said to be "impaired" when it is only partially supported or not supported at all. A list of waters that are impaired is required by Section 303(d) and included in the 305(b) Water Quality Inventory Reports.

EPA regulations at 40 Code of Federal Regulations ("CFR") 130.7 require that each 303(d) list be prioritized and identify waters targeted for Total Maximum Daily Load ("TMDL") development in the next two years. The list must be submitted every even-numbered year on the first of April. The *Arkansas 2012 Draft List of Impaired Waterbodies* was reviewed to determine the water quality status of the surface water crossed by the proposed Project. No impaired waterbodies are crossed by the proposed Project route or associated facilities.

Although no impaired waterbodies are crossed by the Project, one impaired waterbody, Stone Dam Creek, was identified approximately ½-mile east of the existing Line BT-14 pipeline route, ownership of which will be transferred to EGT's distribution affiliate, CERC. Stone Dam Creek is listed in Category 4a, which are impaired or threatened waterbodies (streams) for one or more designated uses, but which do not require development of a TMDL because it has already been completed and approved by the EPA. Due to the ownership transfer of Line BT-14, no construction activities are proposed in this location, therefore no impacts to this stream are anticipated.

To protect water quality, EGT will implement best management practices outlined in the FERC Plan and Procedures (Resource Report 1, Appendices 1.B and 1.C, respectively) during construction, post-construction restoration, and operation.

2.1.3 Public Watershed Areas

The proposed Project area is located within three watersheds: Lake Conway-Point Remove Watershed (8-digit Hydrologic Unit Code ["HUC"] 11110203), Cadron Creek Watershed (HUC 11110205), and Lower Arkansas-Maumelle Watershed (HUC 11110207).

All but the northernmost and southernmost portions of the new pipeline route fall within the Lake Conway-Point Remove Watershed. This watershed is approximately 1,144 square miles of which approximately 51 percent is forest cover. The watershed lies within the Arkansas River Basin and hosts a population of approximately 115,000 Arkansans, according to the 2000 Census (Arkansaswater.org, 2013). Within the Lake Conway-Point Remove Watershed, portions of the new pipeline route fall within either the Rocky Cypress Creek – Arkansas River (10-digit HUC 1111020305) or the Palarm Creek (10-digit HUC 1111020304) sub-watersheds.

The northernmost portion of the new pipeline falls within the Cadron Creek Watershed, which roughly follows the outline of the northern border of Conway and includes an area just south of Interstate 40, encompassing approximately 775 square miles. Within the Cadron Watershed, the northwest portion of the pipeline lies within the Lower Cadron Creek (10-digit HUC 1111020502) sub-watershed. The Cadron Creek Watershed has approximately 48% percent forest cover, and hosts a population of approximately 36,000 Arkansans (Arkansaswater.org, 2013).

The southernmost portion of the proposed pipeline route falls within the Lower Arkansas-Maumelle Watershed. This watershed lies within the Arkansas River Basin and is home to the City of Little Rock and approximately 340,000 Arkansans. Like the Cadron and Lake Conway-Point Remove Watersheds, land use in this area is comprised of just over 50 percent forest cover (Arkansaswater.org, 2013).

2.1.4 Sensitive Surface Waters

The proposed Line BT-39 route will not cross any state-designated Extraordinary Resource Waters ("ERW"), Ecologically Sensitive Waterbodies, or Natural and Scenic Waterways (APCEC, 2011). According to the National Park Service (NPS, 2013a and 2013b), no National Wild or Scenic Rivers are crossed by the proposed pipeline.

However, Line B retirement activities are proposed near Cadron Creek, a state-designated ERW and a Nationwide Rivers Inventory-listed stream. These activities include closing a valve on Line B that is located 130 feet northwest of Cadron Creek, removing a river header that is located 110 feet southeast of Cadron Creek, and grouting the existing pipeline located under the creek.

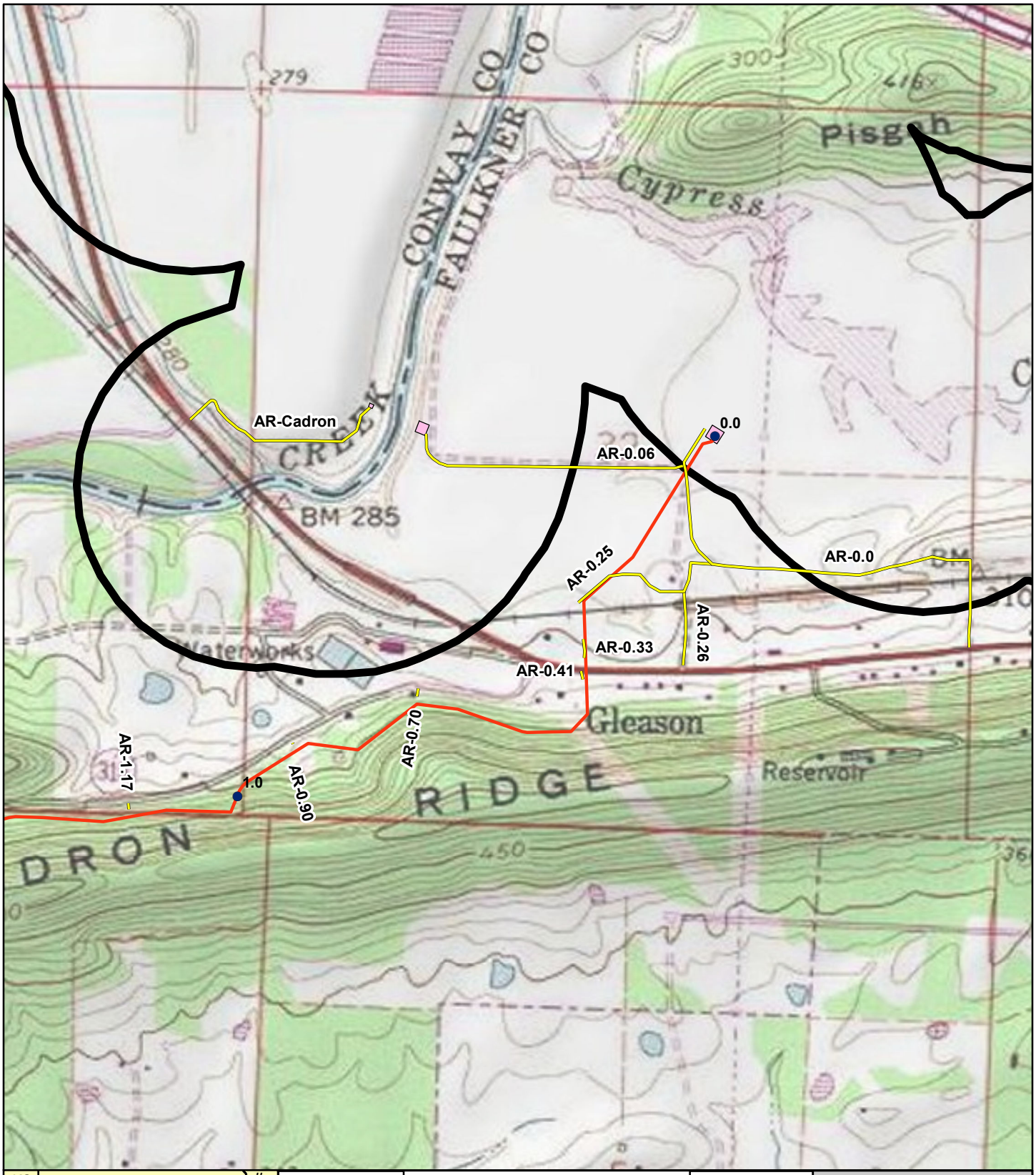
No waters supporting state-designated trout fisheries will be crossed by the proposed Project; however, all lakes and reservoirs and streams are designated fisheries (APCEC, 2011). A stream's Arkansas River Valley fishery designation is based upon size. Seasonal fisheries are within streams where the watershed is less than 10 mi^2. Streams with watersheds greater than 10 mi^2, or which have discharges equal to or exceeding 1 cubic foot per second ("cfs"), are designated as having a Perennial Arkansas River Valley fishery (APCEC, 2011). Per discussions with the ADEQ (2011), since the proposed Project is located in the Arkansas River Valley Ecoregion and in close geographic proximity to the Arkansas River, general assumptions about seasonal and perennial fisheries can be made. As a general rule, ground water-influenced streams (*e.g.*, perennial) that carry water year round can be considered perennial fisheries. Alternatively, if there are periods of no flow in the streams, then these streams can be considered seasonal (*e.g.*, ephemeral and intermittent). Of the 46 streams crossed by the proposed pipeline Project and the 8 proposed access road crossings, 37 are considered Seasonal Fisheries and the remaining 17 are considered Perennial Fisheries. As discussed in Section 3.1.2 of Resource Report 3, the proposed pipeline route will not cross any waterbodies supporting fisheries of special concern. The Arkansas Game and Fish Commission (AGFC; AGFC, 2013b) indicated that there were no construction timing restrictions for stream crossings in the Project area; therefore, EGT would not be limited to the June 1 to November 30 construction time window specified by the FERC Procedures for warmwater fisheries. Copies of relevant agency correspondence are included in Appendix 1.D of Resource Report 1.

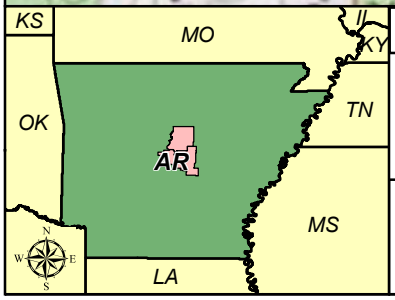
2.1.5 Surface Water Intakes, Surface Water Protection Areas, Wellhead Protection Areas

EGT consulted with the Arkansas Department of Health ("ADH") (ADH, 2013) concerning the proximity of any source water protection areas, surface water intakes, wellhead protection areas, or public water supply wells to the proposed Project. No surface water intakes or public water supply wells were identified that will be crossed by the Project. The ADH provided geographic information system ("GIS") shapefiles identifying that the northernmost portion of the Line BT-39 pipeline route (MP 0.00 to 0.06), as well as the Highway 64 TBS and parts of three access roads, (AR 0.0 in two locations, AR 0.06, and AR Cadron) extend through the Conway Water System - Cadron Creek public water supply watershed and wellhead protection area (see Figure 2.1-1). It should be noted that these Project facilities and work areas are also located on property utilized as a landfill by the City of Conway. Additionally, ADH filed a letter with the FERC dated June 12, 2013, that noted a staff review had been made of Project information and ADH had no comment on the submittal. Cadron Creek is the public drinking water source for the Conway Water System, which serves the City of Conway. EGT will ensure that proper Best Management Practices (BMPs) are followed during pipeline construction to avoid and minimize any impacts to the Conway Water System. Copies of relevant agency correspondence are included in Appendix 1.D of Resource Report 1.

2.1.6 Contaminated Sediments

The *Arkansas 2012 Draft List of Impaired Waterbodies* was reviewed to determine the water quality status of the surface water crossed by the proposed Project. The Section 303(d) report does not identify contaminated sediments in any of the waterbodies crossed by the proposed Project. Additional information on hazardous waste sites and contaminated sediments crossed by the Project is provided in Section 8.5.3 of Resource Report 8. As noted in that section, the ExxonMobil Pegasus pipeline ruptured on March 29, 2013 in the vicinity of the Northwoods subdivision in Mayflower, AR, approximately 200 feet west of the existing Line B retirement pipeline (MP 14.75). This site is currently under remediation; there are no known contaminated sediments within the Project work area.





Drawn On:
September 20, 2013

Cadron Creek
Wellhead Protection Area
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0.125 0.25 0.5 Miles
1 inch = 1,000 feet

Figure 2.1-1

Legend

- Mile Posts
- Line BT-39 Route
- Access Roads
- Aboveground Facilities
- Wellhead Protection Area

Prepared For: ENABLE MIDSTREAM PARTNERS

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

2.1.7 Waterbody Crossing Methods

Construction methods will comply with the FERC Procedures, which are designed to minimize the extent and duration of construction-related disturbance within waterbody features. Waterbodies along the proposed pipeline route will be crossed using either the open-cut or HDD method. Dry open-cut crossing methods (*i.e.*, flume, dam-and-pump) are not proposed for this Project, although they may be considered if warranted by site-specific conditions at the time of construction. Table 2.1-1 identifies the proposed crossing method for each waterbody. Site-specific crossing plans for HDDs are provided in Volume II of EGT's application.

EGT plans to cross six FERC-defined waterbodies with HDD methods, including Tucker Creek (S73FA), a UNT to Tucker Creek (S72FA), UNT to Beaverdam Creek (S300FA), Palarm Creek (S61PU), and two tributaries to Palarm Creek (S58FA and S63PU). The remaining waterbodies crossed by the Project will be crossed using open-cut construction methods. Waterbody crossing methods are described in detail in Section 1.4.2.2 of Resource Report 1 and summarized below.

Horizontal Directional Drill Method

The HDD method allows for trenchless construction across a waterbody by drilling a bore hole below the depth of the conventional pipeline lay and pulling the pipeline through the pre-drilled hole. The HDD method greatly reduces the risk of direct impacts on waterbodies, because it allows for pipe to be installed underneath the ground surface without disturbance of the stream bed or banks.

Installation of a pipeline by HDD is generally accomplished in three stages. The first stage consists of directionally drilling a small diameter pilot hole along the designed directional path. The second stage involves enlarging the pilot hole to a diameter suitable for installation of the pipeline. The third stage consists of pulling the pipeline back through the enlarged hole.

For most HDD crossings, electric-grid guide wires are hand-laid along the pipeline ROW to help guide the drill bit along the predetermined HDD route. The directional drilling rig will be set up in an approved workspace, and a small-diameter pilot hole will be drilled along a prescribed profile. Pilot hole directional control is achieved by using a non-rotating drill string with an asymmetrical leading edge. The asymmetry of the leading edge creates a steering bias, while the non-rotating aspect of the drill string allows the steering bias to be held in a specific position while drilling. If a change in direction is required, the drill string is rolled so that the direction of bias is the same as the desired change in direction. The actual path of the pilot hole is monitored during drilling by taking periodic readings of the inclination and azimuth of the leading edge.

Enlarging the pilot hole is accomplished by pre-reaming passes prior to pipeline installation. For a pre-reaming pass, reamers attached to the drill string at the exit point are rotated and drawn to the drilling rig, thus enlarging the pilot hole. Drill pipe is added behind the reamers as they progress toward the drill rig. This procedure insures that a string of pipe is always maintained in the drilled hole. During this process, bentonite clay drilling mud will be pumped into the hole continuously to provide lubrication, remove cuttings and maintain the integrity of the hole.

Pipe installation is accomplished by attaching the prefabricated pipeline pull section behind a reaming assembly at the exit point and pulling the reaming assembly and pull section back to the drilling rig. A swivel is utilized to connect the pull section to the leading reaming assembly to minimize torsion transmitted to the pipe. The pull section is supported using a combination of roller stands and pipe handling equipment.

Although the HDD method typically avoids impacts on water quality by precluding disturbance of the waterbody bed and banks, an inadvertent release of drilling fluid (sometimes referred to as a "frac-out") could occur if drilling fluids escape the drill bore hole and are forced through the subsurface substrate to the ground surface. Frac-outs occur most often in highly permeable soils during the entrance and exit phases of the pilot hole drill, as this is when the greatest pressures are exerted on the bore walls in shallow soils. To minimize potential impacts of inadvertent releases of drilling fluid, EGT has prepared a Directional Drilling Contingency Plan ("DDCP"), which is provided in Resource Report 1, Appendix 1.B. The DDCP describes the procedures that will be used to monitor, contain, and

clean up any potential releases of drilling fluid. Implementation of the procedures described in the DDCP will minimize the impacts of any potential inadvertent release of drilling fluid.

None of the proposed HDDs are considered to present a high risk of failure, as the proposed drill lengths are well within the bounds of typical drills accomplished for 12-inch-diameter pipeline. While length and diameter influence the technical feasibility of an HDD, subsurface material is the primary limiting factor. However, based on general geologic review of the Project area, no challenging or unusual geologic or subsurface material conditions (e.g., large grained formations, such as coarse gravel or cobble; excessive rock strength and abrasivity; poor rock quality; or solution cavities/karst formations) are anticipated to be encountered. Prior to construction, EGT's HDD consulting engineer will perform a site evaluation and engineering analysis for each of the proposed HDDs to refine the design and assess any factors influencing the feasibility of the HDDs. If recommended by that review, EGT will conduct appropriate subsurface investigations (e.g., geotechnical borings) to assist in that analysis.

Open Cut Method

The open-cut method of construction will involve excavation of the pipeline trench across the waterbody, installation of a pre-fabricated segment of pipeline, and backfilling of the trench with native material. No effort is made to isolate flow from construction activities. Excavation and backfilling of the trench will be accomplished using backhoes or other excavation equipment operating from one or both banks of the waterbody. The following additional best management practices will apply to open-cut stream crossings:

- Equipment operating in the waterbody will be limited to that needed to construct the crossing;
- Excavated material will be stockpiled in the construction ROW at least 10 feet from the water's edge or in ETWS located at least 50 feet from the water's edge;
- Sediment barriers, such as silt fencing, staked straw bales, or trench plugs, will be installed to prevent spoil and sediment-laden water from entering the waterbody from adjacent upland areas;
- Stream crossings will be as close to perpendicular to the streams as possible to reduce the length of the crossing;
- A prefabricated segment of pipeline will be laid in the pipe trench across the waterbody bed;
- The pipeline may be weighted with concrete weights, screw anchors, and/or concrete coating to provide sufficient negative buoyancy to the pipe;
- All adjacent pipelines will be protected, as necessary;
- Excavated material from the trench generally will be used as backfill, unless federal or state permits specify otherwise;
- Waterbody banks will be restored to the original grade, and foreign objects will be removed from the waterbody; and
- The stream bottom will be returned to its original contour.

2.1.8 Waterbody Crossing Impacts and Mitigation

2.1.8.1 Proposed Pipeline Facilities

Pipeline Construction

Crossing of waterbodies using the open-cut method may result in minor, short-term impacts as a result of in-stream construction activities or construction on slopes adjacent to stream channels. The clearing and grading of stream banks, in-stream trenching, trench dewatering, and backfilling of the in-stream trench could affect water quality and in-stream habitat by increasing turbidity, sedimentation, and water temperature, as well as modifying aquatic habitat and decreasing dissolved oxygen levels. The use of heavy equipment or other vehicles in and near surface waterbodies without proper containment could introduce chemical contaminants, such as fuels and lubricants, into surface waters or could result in accidental spills during construction. These impacts will be localized and limited to the period of in-stream construction activities, including trenching, pipe installation, backfill, and restoration of the stream bed contours to pre-construction conditions. All of the minor waterbodies proposed to be open cut for the Project will be subject to the 24-hour limit for in-stream construction activities, and all of the intermediate waterbodies proposed to be open cut for the Project will be subject to the 48-hour limit for in-stream construction activities, as specified in the FERC Procedures. Only one major waterbody is crossed by the Project, using HDD methods.

The extent of the potential impacts resulting from increased sedimentation and turbidity will depend on the amount of material disturbed, the sediment grain size, stream velocity, and channel stability. These factors will determine the amount of suspended sediment and the downstream distance that the suspended sediment is transported. In general, where the streambed consists of fine materials, such as sand and silt, as is likely along the proposed pipeline route, the increase in turbidity and suspended sediments will be relatively greater when compared to locations where the streambed consists of coarser materials, such as gravel and cobble. However, stream gradients tend to be relatively low in the area of the proposed pipeline; thus, suspended sediments within these streams typically will be transported over short distances.

Increased turbidity can reduce light penetration into the water and thereby reduce photosynthetic activity and levels of DO in the water column. Organic materials suspended in the water can further reduce DO by increasing the biochemical oxygen demand. Resuspension of sediments also can introduce contaminants, such as metals and nutrients bound to the sediments, into the water column. Use of the HDD method will avoid these impacts at six FERC-defined waterbodies with HDD methods, including Tucker Creek (S73FA), a UNT to Tucker Creek (S72FA), UNT to Beaverdam Creek (S300FA), Palarm Creek (S61PU), and two tributaries to Palarm Creek (S58FA and S63PU). The HDD method allows for the pipe to be installed underneath the ground surface without disturbance of the stream bed or banks; therefore, adverse impacts resulting from resuspension of sediments will be avoided at these waterbody crossings.

Removal of vegetation from riparian areas could cause an increase in surface runoff and erosion from the pipeline corridor. However, the use of temporary and permanent sediment controls (*e.g.*, silt fence and slope breakers) will minimize this impact by directing surface runoff to well vegetated areas along the sides of the construction ROW. Removal of riparian vegetation and the loss of associated shading at waterbody crossings could result in elevated water temperatures, but potential impacts are not expected to be significant because of the limited amount of stream bank canopy that will be cleared. Following construction, trees and shrubs within waterbody riparian areas will be allowed to reestablish themselves, except for a 10-foot-wide corridor centered over the pipeline, which may be annually maintained in an herbaceous state to facilitate periodic pipeline inspections.

When possible, pipeline construction at stream crossings will be conducted during low-flow periods, which will minimize sedimentation and turbidity and stream bank and bed disturbances and reduce the time it takes to complete in-stream construction. Disruption to water flow will be will be minimized, as will the suspension and deposition of sediments downstream of the crossing location. Adequate flow rates will be maintained in streams to limit the potential effects on aquatic life.

To minimize adverse impacts at stream crossings, EGT will adopt and implement the FERC Plan and Procedures during construction, post-construction restoration, and operation of the proposed Project. Copies of the FERC Plan and Procedures are provided in Appendix 1.B and 1.C, respectively, of Resource Report 1. Measures outlined in these plans and procedures include, but are not limited to:

- Obtain all necessary permits from the United States Army Corps of Engineers ("USACE") and state agencies prior to construction, and notify applicable state agencies at least 48 hours before commencing in-stream trenching;
- Use Environmental Inspectors during construction (*see Resource Report 1, Section 1.5*);
- Route the proposed pipeline as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit, and minimize the number of individual crossings where waterbodies meander or have multiple channels;
- Limit the use of equipment within the waterbody to that necessary to construct the crossing, and utilize equipment bridges for passage of other construction equipment;
- Place spoil at least 10 feet away from the water's edge, with installation of sediment barriers to prevent the flow of spoil or silt-laden water to the waterbody;
- Limit the duration of construction (including stabilization and re-contouring of banks, but not including rock-breaking activities) to 24 hours across minor waterbodies (10 feet wide or less) and 48 hours across intermediate waterbodies (between 10 feet and 100 feet wide), unless site-specific conditions make completion within the applicable period infeasible;
- Use temporary erosion and sediment control measures, such as sediment barriers and trench plugs; and
- Conduct restoration activities, including restoration of preconstruction bank contours, installation of slope breakers, and revegetation of disturbed riparian areas.

Construction activities at stream and river crossings also will be conducted in accordance with other applicable federal, state, and local regulations and permit requirements.

Following installation and backfilling of the pipeline, suspended sediments and turbidity levels will decline. Stream bed and bank contours will be restored to pre-construction conditions, and waterbody banks will be stabilized as soon as possible after construction activities have been completed to prevent sloughing. Permanent erosion control structures will be installed in accordance with the FERC Plan and Procedures, and temporary erosion control measures will be maintained to minimize erosion potential. Stabilization, restoration, and revegetation of the pipeline ROW and ETWS areas will be completed in accordance with the FERC Plan and Procedures. Following construction, waterbody crossings will be inspected to verify that temporary erosion controls are functioning properly and that revegetation is progressing appropriately.

Spills

Spills, leaks, or other releases of hazardous materials during construction of waterbody crossings could adversely impact water quality. To protect surface and groundwater resources from inadvertent releases of fuels, lubricants, and other petroleum products, EGT will implement its Spill Prevention, Control, and Countermeasure Plan ("SPCC Plan"), which is provided as Appendix 1.C to Resource Report 1. The SPCC Plan describes measures to be implemented by EGT personnel to prevent and, if necessary, control any inadvertent spills of these materials, which could affect water quality.

As noted above, use of the HDD method will reduce the risk of impacts to six waterbodies. The HDD method allows for the pipe to be installed underneath the ground surface without disturbance of the stream bed or banks. However,

a temporary, localized increase in turbidity could occur in the event of an inadvertent release of drilling fluid (frac out). Drilling fluid to be used on this Project generally will be composed of fresh water with high-yield bentonite added to achieve the properties necessary to facilitate HDD operations. The EPA does not list bentonite as a hazardous substance, and no long-term adverse environmental impacts would be expected should a frac-out occur.

Due to the possibility of drilling fluid loss during HDD operations, EGT has developed a DDCP, which is included as Appendix 1.B of Resource Report 1. The DDCP describes measures to prevent, detect, and respond to frac-outs, including, but not limited to, monitoring during drilling operations, availability of equipment and materials to contain and clean up drilling mud, containment and mitigation measures, notification requirements, and guidelines for abandoning the directional drill, if necessary.

In the event that a complete loss of circulation of drilling mud occurs during operation of the HDD, the contractor will immediately suspend drilling operations. The Environmental Inspector will be notified, as well as construction management personnel, and these staff, in coordination with the construction contractor, will determine the best way to mitigate the released fluid and, if possible, to seal the fracture. Drilling fluid that has surfaced will be contained in accordance with the DDCP. Depending on the location of the release, portable pumps, hand tools, sand, hay bales, silt fencing, earthen dam, or other structures may be used to prevent down gradient migration of the fluids. Once the fluids have been contained, they will be cleaned up and disposed of in accordance with proper waste disposal procedures.

If a release occurs without the complete loss of circulation, the contractor will reduce the volume of drill fluid and increase the yield point of the fluid. This procedure often will return the flow rate and allow drilling operations to continue.

Pipeline Operations

Operation of the new pipeline and aboveground facilities is not expected to result in any impacts on surface water use or quality, unless maintenance activities involving pipe excavation and/or repair are required in proximity to streams. In such a case, the impacts and mitigation will be similar to those previously described for pipeline construction activities.

2.1.8.2 Extra Temporary Workspaces

In accordance with the FERC Procedures, EGT has attempted to locate ETWS and staging areas at least 50 feet away from the stream banks. In the setback areas, vegetation will not be cleared between the ETWS and the waterbody. The work area will be limited in size to the minimum area necessary to construct the waterbody crossing safely, accommodate any stockpile of excavated material from the trench, and accommodate the prefabricated pipeline crossing section. However, in some instances, the setbacks will not be able to be maintained due to site-specific construction limitations. In those cases, EGT is providing site-specific justification pursuant to item V.B.2.b of the FERC Procedures. Table 2.1-2 specifically identifies the locations and justifications where written approval for ETWS setback exceptions is required.

2.1.8.3 Aboveground Facilities

There are no waterbodies present at the proposed aboveground facility sites; therefore, construction at these sites will have no impacts on surface water.

2.1.8.4 Access Roads

As identified in Table 2.1-3 above, there are 11 waterbodies within 50 feet of the proposed Line BT-39. Of the 11 waterbodies, three have low water crossings, three have existing culverts, and the remaining five are within 50 feet but not directly crossed by an access road. The retirement Line B access roads include only two waterbody crossings, one of which has an existing culvert and one of which has a wooden bridge crossing. No alteratations of these crossings are currently anticipated. Where access roads cross waterbodies, if conditions require, EGT will

place construction mats to either span the waterbody or over the existing culverts, where they occur. No long-term impacts are expected from the use of these access roads.

2.1.8.5 Pipe/Contractor Yards

There are no FERC-defined waterbodies present at the proposed contractor yard sites; therefore, use of these areas will have no impacts on surface water.

2.1.8.6 Retirement Work Areas

As there are no waterbodies present at the proposed retirement work areas, construction at the retirement work areas will have no direct impacts on surface water resources.

As proposed, the pipeline facilities to be retired will be cut, capped, and grouted at improved road and railway crossings, which represent locations potentially subject to significant overburden stresses and where subsidence could adversely affect level, hardened surfaces and traffic flow. Grouting of retired pipeline through wetlands and waterbodies is not proposed, nor is such activity deemed appropriate. The retired pipeline will not be subjected to significant overburden stresses in waterbodies, nor would potential subsidence of subsurface, small diameter pipeline be likely to cause a noticeable or potentially significant impact on stream bed topography and hydrology. Prior to pipeline retirement, EGT will complete pipeline deactivation activities in accordance with applicable company procedures. The pipelines will be removed from service and physically separated from supply sources of natural gas. The pipelines will be purged and cleaned, to the extent practicable. Additionally, EGT will collect and sample any free liquids encountered at locations where the pipeline will be cut. If found to contain potentially hazardous or regulated materials, such liquids will be handled and disposed of in accordance with applicable company procedures and state and federal regulations. For these reasons, the proposed in-place retirement of pipeline facilities is not anticipated to result in any adverse environmental consequences on waterbodies.

2.1.8.7 Hydrostatic Test Water Withdrawal and Discharge

In compliance with the United States Department of Transportation (“DOT”) requirements per 49 CFR Part 192 and Section VII of the FERC Procedures, EGT will test the pipeline and aboveground facility piping hydrostatically prior to putting it in service. Hydrostatic testing will occur following backfilling, and each pipeline segment to be installed by HDD also will be pre-tested prior to installation. Withdrawal and discharge of hydrostatic test water will be completed in accordance with the FERC Procedures and other applicable permits. EGT will obtain coverage under the appropriate National Pollutant Discharge Elimination System (“NPDES”) permit prior to conducting hydrostatic testing.

Upon completion of each test, it is anticipated that hydrostatic test water will be discharged overland along the edges of the construction right-of-way using energy dissipation devices to minimize erosion and sedimentation. Test water will contact only new pipe, and currently there are no plans to add chemicals to the water. The water will be sampled prior to discharge and tested to determine suitability for discharge, as required by the applicable NPDES permit. If treatment of hydrostatic test water is found to be required, treatment procedures will be implemented prior to discharge. After completion of hydrostatic testing, the new pipeline will be cleaned and dried using pipeline pigs that are propelled through the pipeline with compressed air. Once cleaned and purged of air, the pipeline will be packed with natural gas.

The anticipated sources, discharge locations, discharge rates, and volumes of hydrostatic test water, are provided in Table 2.1-4.

TABLE 2.1-4

Anticipated Hydrostatic Test Water Source and Discharge Information

Facility	Source	Approximate Discharge Location (MP)	Approximate Discharge Rate (gal/min)	Approximate Volume (gal)
Pipeline				
BT-39	Municipal Conway	MP 18	500	283,284
BT-40	Municipal Mayflower	MP 27.5	200	140
BT-41	Municipal Mayflower	MP 23.5	200	975
HDD Test Sections				
UCPR Railroad and Highway 64	Municipal Conway	MP 0.4	200	4,087
Tucker Creek	Municipal Conway	MP 6	200	14,640
Luker Lane and UNT to Beaverdam Creek	Municipal Conway	MP 15	200	6,368
Center Street and Railroad	Municipal Mayflower	MP 16	200	2,848
Tributary to Palarm Creek	Municipal Mayflower	MP 18	200	9,760
Palarm Creek	Municipal Mayflower	MP 18	200	9,150
Borrow Pit	Municipal Mayflower	MP 18	200	8,540
Interstate 40	Municipal Mayflower	MP 20	200	9,740
Aboveground Facilities/Fabrications				
BT-39 Hwy 64	Municipal Conway	MP 0	200	800
BT-14 Shoemaker Circle	Municipal Conway	MP 110.5	200	400
BT-39 Bryant Road	Municipal Conway	MP 7.5	200	400
BT-39 Mayflower Hwy 365	Municipal Mayflower	MP 17	200	500
BT-41 Morgan	Municipal Mayflower	MP 0.25	200	300
BT-40 James Road	Municipal Mayflower	MP 0.04	200	300
BT-39 Oak Grove	Municipal Mayflower	MP 28.5	200	600

2.1.8.8 Dust Suppression

If required during construction, EGT will apply water to disturbed areas to control fugitive dust emissions. The frequency of application and quantity of water that will be used will depend on the prevailing environmental conditions at the time of construction, and thus, it is not possible to accurately estimate the volume of water that might be required. If water application for dust suppression is required, the water will be obtained from municipal sources.

2.1.8.9 Dewatering

Pipeline installation may require localized pipeline trench, road bore, and HDD site dewatering. The volumes and rates of these dewatering operations will not be extensive enough to affect the underlying aquifers. The amount of dewatering required will be reduced by isolating sections of the trench so that it can be dewatered in an efficient manner. EGT proposes to discharge water from dewatering activities into well-vegetated upland areas. If vegetation is insufficient, or if water must be discharged such that it will run into waterbodies, EGT will use hay bale/silt fence filtering structures, as described in FERC's Plan and Procedures). The hay bale structure will capture a significant volume of solids during discharge, as well as decrease the impacts from erosion. Implementation of

these procedures and use of dewatering structures at stream crossings will minimize turbidity and erosion and reduce the risk of groundwater impacts during dewatering operations.

2.2 WETLANDS

According to Section 404 of the CWA, jurisdictional waters of the U.S., including wetlands, are provided certain protections. The term "waters of the United States" refers to open waters or watercourses that are non-vegetated. Wetland is the collective term for swamps, marshes, bogs, wet meadows, and similar areas that are transitional communities situated between upland and aquatic communities, where the vegetation and soil substrate are influenced by intermittent to permanent saturation or flooding. Wetlands are valuable resources that help to improve water quality, reduce flood and storm damage, provide important fish and wildlife habitat, and support outdoor recreational activities, such as hunting and fishing. Impacts resulting from construction activities in wetlands often differ from those in uplands.

The CWA authorizes the Secretary of the Army, acting through the USACE, to regulate the filling of waters of the U.S. and disturbance of wetlands. The Environmental Laboratory of the USACE developed the *USACE Wetlands Delineation Manual* (USACE, 1987) to set technical guidelines and methods to identify and delineate wetlands using a multi-parameter approach. In accordance with this methodology, the following three parameters are diagnostic of wetlands: (1) the vegetation consists predominately of hydrophytes; (2) the substrate is predominately undrained, hydric soils; and (3) the substrate is saturated with water or covered by shallow water for a prolonged period during the growing season. It is required that, under normal circumstances, all three of these conditions be met for an area to be defined as a wetland.

Wetlands and waters of the U.S. considered jurisdictional by the USACE include waters that may impact interstate commerce, according to the application of 33 CFR Part 328 and the *USACE Wetlands Delineation Manual* under the authority of the CWA (USACE, 1987). Storm water management swales, ponds, and outlet areas, as well as construction-related ponding, may or may not be considered jurisdictional waters of the U.S., according to specific conditions and professional interpretation of the *USACE Wetlands Delineation Manual*.

2.2.1 Wetland Resources

In accordance with the methodology set out in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region: Version 2* (USACE, April 2012), EGT identified wetland areas along the proposed route by field delineation surveys conducted in October 2012 and February 2013. Table 2.2-1 presents the location, classification, crossing length, and area affected by construction and operation of the pipeline for each wetland crossed. Delineated wetlands along the proposed pipeline route are depicted on aerial alignment sheets provided as Appendix 1.A of Resource Report 1. The field delineation report and mapping are included as Appendix 2.A of this report. Designations for each type of wetland follow the classifications developed by the U.S. Fish and Wildlife Service (Cowardin *et al.*, 1979).

Three broad classes (Cowardin *et al.*, 1979) of palustrine (freshwater) wetland systems are present in the Project area, including forested ("PFO"), scrub-shrub ("PSS"), emergent ("PEM"), and open water ("POW"). Descriptions of wetland cover types are provided below, and habitat descriptions are presented in Resource Report 3.

Palustrine Forested Wetlands

Forested ("PFO") wetlands are dominated by woody vegetation that is at least 6 meters tall (Cowardin *et. al.*, 1979). Based on the field survey data, construction of the proposed Project will affect a total of approximately 2.0 acres of PFO wetlands (see Table 2.2-1). During operation, a portion of the permanent ROW will be maintained clear of trees and woody shrubs to allow for ongoing pipeline inspection and maintenance, a requirement of 49 CFR 192. Specifically, a corridor centered on the pipeline and up to 10 feet wide will be maintained in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating may be selectively cut and removed from the permanent ROW. Therefore, operation of the new pipeline will result in a permanent conversion of 0.8 acre of PFO wetlands to either PSS or PEM wetlands within the

maintained portion of the permanent easement. Dominant vegetation in the PFO wetlands along the proposed route generally includes red maple (*Acer rubrum*), willow oak (*Quercus phellos*), green ash (*Fraxinus pennsylvanica*), and persimmon (*Diospyros virginiana*).

TABLE 2.2-1

Wetlands Impacted by the Project

Wetland ID	Approx. MP	Wetland Classification[1]	Crossing Length (ft)[2]	Construction Impacts (ac)[3]	Operation Impacts (ac)[4]
Proposed Line BT- 39					
W101FA	0.01	PEM	246.62	0.33	0.00
W102FA	0.07	PEM	242.34	0.33	0.00
W104FA[5]	0.32	PFO	62.56	0.00	0.00
W71FA	4.80	PFO	35.68	0.04	0.03
W80FA	5.27	PFO	37.40	0.16	0.04
W81FA**	5.32	POW	0.00	<0.01	0.00
W70FA[5]	6.29	PFO**	0.00	0.00	0.00
		PSS	779.50	0.00	0.00
		PEM	287.50	0.00	0.00
W69FA**	6.67	PEM	0.00	0.01	0.00
W68FA	7.37	PEM	204.23	0.33	0.00
W13FA	8.28	PFO	14.20	0.02	0.01
W18FA	8.79	PFO	48.05	0.04	0.03
W19FA	8.83	PEM	25.00	0.02	0.00
W24FA	9.34	PFO	0.06	0.02	<0.01
W38FA	14.32	PEM	0.00	0.08	0.00
		PSS	219.00	0.28	0.05
		PFO	119.41	0.19	0.08
W39FA	14.54	PFO	218.70	0.36	0.14
W53FA[5]	15.03	PEM	92.50	0.00	0.00
		PFO	168.82	0.00	0.00
W408FA	15.25	PFO	240.84	0.41	0.17
W407FA**	15.53	PEM	0.00	0.03	0.00
W405FA	16.01	PFO	24.00	0.05	0.02
W301FA	16.02	PFO	169.71	0.09	0.07
W404FA	16.07	PFO	17.10	0.06	0.02
W403FA	16.19	PFO	35.44	0.07	0.02
W402FA[5]	16.29	PFO	21.84	0.00	0.00
W400FA	16.39	PFO	52.31	0.26	0.05
W58FA**	16.84	PFO	0.00	0.01	0.01
W59FA	17.24	PEM	15.03	0.26	0.00
W60FA[5]	17.33	PFO	55.65	0.00	0.00

TABLE 2.2-1

Wetlands Impacted by the Project

Wetland ID	Approx. MP	Wetland Classification[1]	Crossing Length (ft)[2]	Construction Impacts (ac)[3]	Operation Impacts (ac)[4]
W61FA[5]	17.50	PFO	1,150.00	0.00	0.00
		PSS	312.00	0.00	0.00
		PEM	1,390.70	1.28	0.00
W66PU	18.13	PEM	612.08	0.89	0.00
W64PU	18.48	PFO	30.50	0.02	0.02
W90PU[5]	18.50	POW	590.00	0.00	0.00
W45PU[5]	20.76	PEM	44.00	0.00	0.00
W46PU[5]	20.78	PFO	116.21	0.00	0.00
W48PU	20.95	PFO	0.00	0.06	0.00
W411PU**	24.82	PFO	0.00	0.03	0.00
W120PU	24.38	PSS	18.54	0.02	<0.01
W121PU	24.45	PFO	62.86	0.10	0.04
W113PU	25.45	PEM	0.00	<0.01	0.00
W410PU	28.25	PEM	77.20	0.04	0.00
W109PU**	28.39	PEM	9.40	0.05	0.00
			Proposed Line BT-39 Subtotal	**5.96**	**0.84**
Proposed Line BT-40					
None crossed					
Proposed Line BT-41					
None crossed					
Extra Temporary Workspaces					
W61FA	17.50	PEM	N/A	0.85	0.00
			ETWS Subtotal	**0.85**	**0.00**
Retirement Line B Pipeline					
W200PU	7.44	PSS	30	0.02	0.00
W108FA	24.64	PEM	9.23	0.02	0.00
W104FA	26.47	PFO	2.4	<0.01	0.00
			Retirement Line B Subtotal	**0.04**	**0.00**
			Totals by Wetland Classification:		
			POW	**<0.01**	**0.00**
			PEM	**4.53**	**0.00**
			PSS	**0.32**	**0.05**

TABLE 2.2-1

Wetlands Impacted by the Project

Wetland ID	Approx. MP	Wetland Classification[1]	Crossing Length (ft)[2]	Construction Impacts (ac)[3]	Operation Impacts (ac)[4]
			PFO	**2.00**	**0.79**
			PROJECT TOTAL	**6.86**	**0.84**

[1] Classification Definitions: PEM-Palustrine Emergent; PSS-Palustrine Scrub-Shrub; PFO-Palustrine Forested. Some wetlands are within Mixed Communities and may have more than one Classification assigned to the feature, therefor will have impact calculation associated with each class.

[2] In order to maintain consistency, the crossing length provided represents the total wetland crossing length along the centerline. Subdivisions of the crossing length for each classification type of the wetland are not provided, because not all the divisions or classification types of the wetland are crossed by the centerline.

[3] Construction impacts on wetlands along the proposed pipeline ROW are based on a 65 to 75-foot-wide construction ROW, except in areas encompassed by horizontal directional drill (HDD) crossings, which will not require construction right-of-way between the HDD entrances and exits.

[4] Impacts in this column represent a permanent conversion of PFO wetlands to PEM or PSS wetlands and PSS wetlands to PEM wetlands within the permanent ROW for the proposed Project. There will be no operation impacts on PEM wetlands as these wetlands will revert back to the same type following construction. Operation impacts on PSS wetlands reflect the permanent conversion of PSS wetlands to PEM wetlands within the 10-foot-wide corridor over the pipeline that will be maintained in an herbaceous state. Conversion impacts on PFO wetlands are based on a 30-foot-wide corridor, due to the potential for selective thinning of trees within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating.

[5] These features are crossed by HDD.

**Feature not crossed by centerline.

PalustrineScrub-Shrub Wetlands

Construction of the proposed Project will affect 0.3 acre of PSS wetlands temporarily. During operation, the permanent ROW will be maintained clear of trees and woody shrubs to allow for ongoing pipeline inspection and maintenance, a requirement of 49 CFR 192. Specifically, a corridor centered on the pipeline and up to 10 feet wide will be maintained in an herbaceous state within PSS wetlands. Therefore, operation of the new pipeline will result in a permanent conversion of approximately 0.05 acre of PSS wetlands to PEM wetlands. Vegetation in the PSS wetlands observed along the Project corridor includes sweetgum saplings (*Liquidambar styraciflua*), *Acer rubrum* saplings, black willow (*Salix nigra*), and buttonbush (*Cephalantus occidentalis*).

Palustrine Emergent Wetlands

Construction of the proposed Project will affect 4.5 acres of PEM wetlands temporarily. There will be no permanent impact on PEM wetlands along the pipeline ROW, as these areas will revert back to the same type following construction. Herbaceous species found in these wetlands include variable softrush (*Juncus effusus*), sedges (*Carex* spp.), woolgrass (*Scirpus cyperinus*), beggarticks (*Bidens* spp.), asters (*Boltania* spp.), and sphagnum moss.

Palustrine Open Water Wetlands

Construction of the proposed Project will affect less than 0.01 acre of POW. There will be no permanent impact on POW wetlands, as these areas will revert back to the same type following construction. POW wetlands, also known as unconsolidated bottom wetlands, occur where vegetation is absent over the majority (70%) of the wetland. The substrate consists of mud, sand, cobble, gravel, or organic matter. Water depths are less than 6.6 feet deep. Small ponds are grouped into this category.

2.2.2 Wetland Crossing Methods

EGT will construct wetland crossings in accordance with the FERC Procedures and other applicable federal and state permit requirements. Wetland crossing techniques are described in Section 1.4.2.1 of Resource Report 1. Wetland conditions along the construction corridor likely will dictate the use of either conventional open ditch lay or open ditch push/float lay. Selection of the most appropriate method will depend on site-specific weather conditions, inundation, soil saturation, and soil stability at the time of construction. The conventional open ditch lay method will be the most frequently used technique for installation of the pipeline in wetlands. The push/float lay method will be used in inundated or saturated wetland areas that can support this technique. Selection of the push/float method will be decided during construction by the construction supervisor and the Environmental Inspector, depending on the conditions encountered at the time of construction.

2.2.3 Wetland Impacts and Mitigation

As shown in Table 2.2-1, construction of the proposed Project will affect a total of 6.9 acres of wetlands, of which approximately 2.0 acres are PFO, 4.5 acres are PEM, and 0.3 acre is PSS. Of the 6.9 acres of wetlands impacted during construction, only a total of 0.8 acre will be permanently impacted by operations. The 0.8 acre of permanent impact is entirely associated with the conversion of PFO and PSS wetlands as a result of ROW maintenance for the proposed Line BT-39. EGT anticipates that permanent impacts to forested and scrub shrub wetlands will be mitigated by purchasing credits from an approved mitigation bank. As requested by the USACE in a pre-application meeting held on May 22, 2013, EGT will calculate mitigation requirements using the 2002 Charleston method (USACE, 2013). EGT has identified an appropriate mitigation bank for the Project, Cadron Creek Wetland Mitigation Bank, but has not yet secured mitigation credits from this bank. Those credits will be secured once the USACE reviews and responds to EGT's Pre-construction Notification for the Project, which is anticipated to be submitted to the USACE concurrent with the FERC application.

This section further describes the construction and operational impacts and mitigation to wetlands by Project component.

2.2.3.1 Proposed Pipeline Facilities

The USACE requires that all appropriate and practicable actions be taken to avoid or minimize wetland impacts, pursuant to its Section 404(b) (1) guidelines, which restrict discharges of dredged or fill material where a less environmentally damaging and practicable alternative exists. All wetland crossings will be subject to review by the USACE to ensure that wetland impacts are fully identified and that appropriate wetland restoration and mitigation measures are identified. EGT also will comply with all conditions of the Section 404 permit authorizations that may be issued by the USACE. In order to minimize wetland disturbance, operation of construction equipment will be limited to that needed to clear the ROW, dig the trench, fabricate the pipe, install the pipe, backfill the trench, and restore the ROW. A detailed description of the construction and mitigation measures for wetlands and waterbodies also is provided in the FERC Procedures.

Pipeline construction will result in both short- and long-term alterations of the vegetative cover in wetlands along the proposed ROW. A summary of temporary and permanent wetland impacts by wetland type is provided in Table 2.2-1. In the short term, construction activities will diminish the recreational and aesthetic value of wetlands through clearing, trenching, spoil placement, vehicle traffic, and related construction disturbances. Wetland functions, such as erosion control, buffering and flood flow attenuation, and sediment and nutrient retention also will be affected by construction. These effects typically will be greatest during and immediately following construction.

Other types of impacts associated with construction of the pipeline could include temporary changes to wetland hydrology and water quality. Excavation of the pipeline trench during the conventional open ditch construction, installation of the pipe, and backfill of the trench could affect the rate and direction of water movement within wetlands. In addition, excavation activities could alter perched water tables by disturbing impermeable soil layers. These disturbances could adversely affect wetland hydrology and revegetation by creating soil conditions that might not support wetland communities and hydric vegetation at preconstruction levels. Temporary stockpiling of soil and

the movement of heavy machinery across wetlands also could lead to inadvertent compaction and furrowing of soils, which could alter natural hydrologic patterns, inhibit seed germination, and increase seedling mortality. Altered surface drainage patterns, storm water runoff, runoff from the trench, accidental spills, and discharge of hydrostatic test water also could negatively affect water quality by increasing the potential for siltation and turbidity resulting from construction activities.

During clearing, temporary erosion control measures will be installed between upland construction areas and wetlands to prevent sedimentation of wetlands. To avoid excessive disturbance to wetland soils and the native rootstock, stump removal, grading, and excavation within wetland areas will be limited to the area immediately over the trench line unless grading or stump removal is required to provide safe working conditions. Trench plugs will be installed in upland slopes adjacent to wetlands to prevent trench erosion. Trench plugs also will be installed at the edges of wetlands where the potential to drain the wetlands exists. Any confining layers that were breached during construction will be restored during backfilling. Special construction techniques will be used in saturated wetlands, including use of low ground pressure equipment and timber construction mats and/or timber riprap. Concrete coated pipe or weights will be used during construction to ensure that the pipe does not float in saturated conditions. As previously discussed, EGT will implement its SPCC Plan during construction to minimize the potential for spills, and any impacts from such spills.

To preserve wetland rootstock in unsaturated wetlands, up to 12 inches of topsoil will be removed from the trench line and stored separately from subsoil. This topsoil material will function as a seed bank for the germination of wetland plants. Failure to properly segregate soils during construction could result in mixed soil layers, which could alter biological components of the wetland and affect the reestablishment of native wetland vegetation. Topsoil will not be stripped in saturated wetlands, in wetlands where no topsoil layer is evident, or in wetlands where the topsoil depth exceeds the depth of the trench.

EGT will minimize impacts by using the construction techniques described in Section 1.4.2 of Resource Report 1, implementing the measures in the FERC Procedures, and complying with the conditions of applicable permits. EGT will use the minimum construction equipment necessary within wetlands for clearing, trench excavation, pipe fabrication and installation, trench backfilling, and restoration activities. If standing water or saturated soil conditions are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil, construction equipment operating in wetland areas will be limited further to the use of low-ground-pressure equipment or normal equipment operating from timber riprap or prefabricated equipment mats.

As mentioned previously, EGT also will minimize impacts on wetlands by implementing the measures identified in FERC's Procedures. These measures include, but are not limited to:

- Marking wetland boundaries and buffers in the field until construction is complete;
- Limiting tree stump removal and grading to the area directly over the pipeline trench, unless it is determined that safety-related construction constraints require grading or removal of tree stumps from under the working side of the construction ROW;
- Stripping topsoil from the area directly over the trench line to a maximum depth of 12 inches in unsaturated soils;
- Minimizing the amount of time that topsoil is segregated and the trench is open;
- Using sediment barriers to prevent sediment flow into a wetland;
- Dewatering trenches in a way that does not cause sedimentation in a wetland;
- Using trench breakers to ensure maintenance of the original wetland hydrology;

- Prohibiting the storage of hazardous materials and re-fueling within 100 feet of a wetland; and
- Restoring preconstruction contours and vegetation.

Following construction, timber mats and/or timber riprap will be removed, and the contours will be returned as close to pre-existing condition as possible. Permanent erosion controls, including terraces, interceptor diversion devices, rock riprap, and vegetative cover, may be utilized on adjacent upland areas to minimize long-term sedimentation of the wetlands. Permanent erosion controls, which may alter hydrology, will not be installed within wetland boundaries. Energy dissipation devices may be installed at the down-slope end of surface water diversion devices to prevent sediment from leaving the ROW and entering wetlands.

EGT will revegetate wetlands in accordance with the FERC Procedures and will consult with the USACE as part of the Section 404 CWA permitting process regarding mitigation for wetland impacts associated with the proposed Project. Impacts on PSS wetlands will be mostly short term with regeneration likely to occur within two to four years. PEM wetlands, which can regenerate more rapidly, typically will be affected only temporarily and may become reestablished in one or two growing seasons. Due to the relatively long period required for PFO wetlands to regenerate, up to 15 years or more, impacts on these wetland types will be long term.

EGT will monitor the success of wetland revegetation annually for the first three years after construction or until wetland revegetation is considered successful. Revegetation will be considered successful if the cover of herbaceous and/or woody species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction. If revegetation is not successful at the end of three years, a remedial revegetation plan will be developed and implemented in consultation with a professional wetland ecologist. The remedial revegetation plan will serve as a guide to actively revegetate the wetland with native wetland herbaceous and woody plant species. Revegetation efforts will be continued until revegetation is successful. Vegetation management in wetlands during operation also will be performed in accordance with the FERC Procedures, which means that vegetation maintenance will not be conducted over the full width of the permanent easement in wetlands. Vegetation maintenance within PFO wetlands will be limited to a 30-foot-wide corridor due to the potential for selective thinning of trees within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating.

2.2.3.2 Extra Temporary Workspaces

In accordance with Section VI.B.1 of the FERC's Procedures, EGT has attempted to locate ETWS at least 50 feet away from wetlands, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. In the setback areas, vegetation will not be cleared between the ETWS area and the wetland. However, in some instances, the setbacks will not be able to be maintained due to construction limitations. EGT is providing site-specific justification for written approval in accordance with section VI.B.1.b of the Procedures where construction conditions require workspace within the 50-foot setback.. Table 2.2-2 specifically identifies the locations where ETWS setback approval is required for wetlands.

2.2.3.3 Pipe/Contractor Yards

There is one PEM wetland (W52FA) located within Yard #3. The use of this contractor yard will be designed such that it will avoid disturbing this wetland during construction. No wetlands were identified within any other proposed contractor yards associated with the Project.

2.2.3.4 Aboveground Facilities

No permanent impacts to wetlands are expected as a result of the proposed aboveground facilities.

TABLE 2.2-2

Extra Temporary Workspaces (ETWS) in or within 50 Feet of Wetlands

ETWS ID	Approx. MP	Adjacent to actively cultivated, rotated cropland, other disturbed land?	Feature ID	Within Wetland?	Distance from Wetland?	Acres of Wetland Impacted	Site-Specific Justification Required	Justification
1	0.01	No-Fallow field	W101FA	No	8	0.00	Yes	Workspace associated with aboveground facility. Facility is sited outside wetland, but location is constrained by intersection of existing pipelines.
2	0.07	No-Fallow field	W102FA	No	27	0	Yes	Workspace is located adjacent to a road and between two wetlands. It is needed for accomplishing pipeline crossing of the road.
6	0.26	No-Forested and open	W105FA	No	13	0	Yes	Workspace is located adjacent to railroad. It is needed for accomplishing bore activities at the railroad crossing.
181-185	17.50	Yes-Ag	W61FA	Yes	0	1.28	No	Not applicable; wetland is agricultural (i.e., rice field).
186-187	18.04	No-Forested and Ag	W67FA	No	17	0	Yes	Workspace located where access road meets ROW and is needed for equipment turnouts, parking, and off-loading.
191	18.23	No-Forested and Ag	W65PU	No	32	0	Yes	Workspace is located at edge of ag field and woods. It is needed for access road equipment turnouts, parking, and off-loading.
192-193	18.48	No-Forested and Ag	W64PU	No	28, 25	0	Yes	Workspace is at edge of ag field and woods. It is needed for placement of HDD equipment.
248	24.38	No-Forested and open	W120PU	No	10	0	Yes	Workspace is needed to support road crossing and point of inflection in pipeline alignment. W120PU is located within the proposed construction ROW.
276	27.46	No-Regularly maintained firebreak for Camp Robinson	W110PU	No	25	0	Yes	ETWS is required for crossing of stream S128PU. Cannot be located on other side of stream due to construction of Line BT-40.

1 EGT has no information on when the firebreak was originally constructed, but the firebreak is regularly maintained by Camp Robinson to prevent the establishment and growth of trees and other woody vegetation. For this reason, EGT considers the right-of-way to represent disturbed land. Even so, site-specific justification for the workspace, which is required for constructability reasons, is provided above.

2.2.3.5 Access Roads

Of the 24 wetlands located within 50 feet of access roads (Table 2.2-3), five will be crossed by the Line BT-39 access roads and four will be crossed by access roads for the retirement of Line B. No modifications or improvements are anticipated at the access road crossings of wetlands. The use of two proposed permanent

access roads (AR-MP-118.635 and AR-MP-127.649) will not affect any wetlands, and therefore no permanent wetland impacts are proposed as a result of Project access roads.

TABLE 2.2-3

Wetlands within 50 Feet of Access Roads

Feature ID[1]	Access Road Number	Wetland Classification [2]	Type of Access Road [3]
Proposed Line BT-39 Access Roads			
W101FA	Line BT-39 AR-0.0	PEM	Temporary
W102FA	Line BT-39 AR-0.0	PEM	Temporary
W105FA	Line BT-39 AR-0.25	PFO	Temporary
W304FA	Line BT-39 AR-11.5	PEM	Temporary
W303FA	Line BT-39 AR-11.5	POW	Temporary
W63FA	Line BT-39 AR-17.72	PSS	Temporary
W62FA	Line BT-39 AR-17.72	PSS	Temporary
W61FA	Line BT-39 AR-17.68	PFO	Temporary
W66PU	Line BT-39 AR-18.08	PEM	Temporary
W67FA	Line BT-39 AR-18.09	PFO	Temporary
W65PU	Line BT-39 AR-18.08	PFO	Temporary
W64PU	Line BT-39 AR-18.38	PFO	Temporary
W90PU	Line BT-39 AR-18.38	POW	Temporary
W46PU	Line BT-39 AR-20.59	PFO	Temporary
W113PU	Line BT-39 AR-25.43	PEM	Temporary
W110PU	Line BT-39 AR-27.48	PEM	Temporary
W112PU	Line BT-39 AR-27.49	POW	Temporary
W111PU	Line BT-39 AR-27.49	POW	Temporary
Retirement Line B Access Roads			
W106FA	Line B AR-1	PEM	Temporary
W107FA	Line B AR-1	PEM	Temporary
W122PU	Line B AR-31	PEM	Temporary
W123PU	Line B AR-31	PEM	Temporary
W124PU	Line B AR-31	PEM	Temporary
W200PU	Line B AR-33	PSS	Temporary

[1] Feature IDs in **bold** will be crossed by the access road.

[2] Classification Definitions: PFO-Palustrine Forested, PSS-Palustrine Scrub Shrub, PEM-Palustrine Emergent

[3] The type of access road may be temporary or permanent, based on whether it will be retained for use following construction.

2.2.3.6 Pipeline Retirement Work Areas

EGT made efforts to site workspace areas associated with the proposed pipeline retirement activities outside of wetland areas, but some wetlands located within EGT's existing, maintained right-of-way would be unavoidably impacted by excavation and below ground pipeline cutting and capping activities. In total, approximately 0.04 acre of predominantly palustrine emergent and scrub-shrub wetland will be included within workspace areas associated with pipeline retirement activities at road and railroad crossings. As the retirement workspaces must occur at the

locations of these facilities/features, complete avoidance of wetland impacts is not possible. Where wetlands are located within proposed pipeline retirement workspaces, all activities will be conducted in accordance with the FERC Procedures, as well as the conditions of the Nationwide Permit 12 authorization issued by the USACE for the Project.

As proposed, the pipeline facilities to be retired will be cut, capped, and grouted at improved road and railway crossings, which represent locations potentially subject to significant overburden stresses and where subsidence could adversely affect level, hardened surfaces and traffic flow. Grouting of retired pipeline through wetlands and waterbodies is not proposed, nor is such activity deemed appropriate. The retired pipeline will not be subjected to significant overburden stresses in wetlands, nor would potential subsidence of subsurface, small diameter pipeline be likely to cause a noticeable or potentially significant impact on wetland topography and hydrology. Prior to pipeline retirement, EGT will complete pipeline deactivation activities in accordance with applicable company procedures. The pipelines will be removed from service and physically separated from supply sources of natural gas. The pipelines will be purged and cleaned, to the extent practicable. Additionally, EGT will collect and sample any free liquids encountered at locations where the pipeline will be cut. If found to contain potentially hazardous or regulated materials, such liquids will be handled and disposed of in accordance with applicable company procedures and state and federal regulations. For these reasons, the proposed in-place retirement of pipeline facilities is not anticipated to result in any adverse environmental consequences on wetlands.

2.3 GROUNDWATER RESOURCES

This section describes the geology, hydrology, quality, and use of the principal aquifers within the Project area, the potential for Project-related impacts on those aquifers, and proposed measures to mitigate these impacts.

2.3.1 Regional Aquifers

Much of Arkansas' groundwater comes from Quaternary deposits of sand and gravel in the Mississippi River Embayment. Irrigation wells, with depths ranging from 100 to 200 feet, commonly produce 1,000 to 2,000 gallons per minute ("gpm"). Although usable for irrigation and some domestic uses, the high iron content of Quaternary aquifers makes the water generally unsuitable for human consumption in many areas (AGS, 2013). The Project area is located in an area designated by the USGS as "Other Rocks." This category includes large-to-small areas that are designated "minor aquifer," "not a principal aquifer," or "confining unit" (National Atlas, 2013). Such areas are underlain by low-permeability deposits and rocks, unsaturated materials, or aquifers that supply little water, because they are of local extent, poorly permeable, or both.

The proposed Project area is located along the border of two minor aquifers, the southern edge of the Western Interior Plains confining system and the eastern edge of the Ouachita Mountains aquifer (Renken, 1998).

2.3.1.1 Western Interior Plains Aquifer

The Western Interior Plains confining system is part of a widespread, thick, geologically complex, poorly permeable, sedimentary sequence that extends eastward from the Rocky Mountains to western Missouri and northern Arkansas. The Western Interior Plains confining system consists of a sequence of shale, sandstone, and limestone of Mississippian to Pennsylvanian age that thickens to more than 8,000 feet as it extends southwestward. On a regional scale, the rocks that compose the confining system are poorly permeable and function as a confining unit. Locally, however, individual geologic units or parts of units within the confining system yield as much as 19 gallons per minute to wells. The confining system is, therefore, considered to be a minor aquifer (Renken, 1998).

The groundwater flow system within the Western Interior Plains confining system can be separated into two zones: an upper zone within soil and highly weathered bedrock and a lower zone within moderately weathered to unweathered bedrock. Water levels within the Western Interior Plains confining system can fluctuate as much as 10 feet per year in response to seasonal variations in rainfall and evapotranspiration. Wells completed in the weathered zone of the Western Interior Plains confining system generally yield only small volumes of water (Renken, 1998).

2.3.1.2 Ouachita Mountains Aquifer

The Ouachita Mountains aquifer has a north-to-south width of approximately 80 miles along the Arkansas-Oklahoma State line, but progressively narrows eastward. The Ouachita Mountains aquifer consists mostly of shale, sandstone, and chert beds of Cambrian to Pennsylvanian age, all of which were deposited in deep-marine water conditions. Only limited quantities of water for domestic and non-irrigation farm uses can be obtained from wells completed in this aquifer. Most wells completed in the aquifer yield less than 50 gallons per minute; "large-yield" wells generally are viewed as those capable of yielding more than 10 gallons per minute. Water levels in the aquifer can fluctuate by as much as 10 feet per year as rainfall and evapotranspiration rates change seasonally (Renken, 1998).

Fault zones within the Ouachita Mountains aquifer function as local conduits for groundwater flow. However, the fault zones may conduct little water if they are filled with fault gouge or cemented breccia. In Hot Springs, approximately 50 miles southwest of the Project area, faults are the principal conduit for deep-seated, thermal groundwater discharge. Most joints and fractures in the Ouachita Mountains aquifer, however, are within 300 feet of land surface. Joints and other fractures tend to close or decrease in width with depth owing to lithostatic pressure, which is the vertical pressure caused by the weight of overlying rock and soil (Renken, 1998).

2.3.1.3 Groundwater Quality

Water from the Western Interior Plains confining system is used mostly for domestic purposes due to well yield and water quality. The quality of groundwater in the Western Interior Plains confining system is highly variable, but meets most secondary drinking-water standards and is considered to be suitable for livestock uses. However, the quality of the water generally is not considered to be adequate for municipal supply. Principal constituents in the water are sodium and bicarbonate ions (Renken, 1998).

2.3.1.4 Sole Source Aquifers

A Sole Source Aquifer (“SSA”) is an aquifer designated by the EPA as the "sole or principal source" of drinking water for a given service area. By definition, a SSA is an aquifer which is needed to supply 50 percent or more of the drinking water for the area and for which there are no reasonably available alternative sources should the aquifer become contaminated. There are no SSAs present in Arkansas (EPA, 2013).

2.3.2 Public and Private Water Wells, Wellhead Protection Areas

EGT consulted with the ADH concerning the proximity of any source water protection areas, surface water intakes, wellhead protection areas, or public water supply wells to the proposed Project. GIS shapefiles provided by ADH identified that the northernmost portion of the Line BT-39 pipeline route, as well the Highway 64 TBS and two access roads, extend through the Conway Water System - Cadron Creek wellhead protection area (ADH, 2013). The Wellhead Protection program was authorized by the 1986 Amendments to the Safe Drinking Water Act. The program is designed to protect the ground-water resource tapped by public water-supply wells from contaminants that are injurious to the public health. The ADH has been designated to be the lead state agency in carrying out the Wellhead Protection Program (ADH, 1995). ADH filed a letter with the FERC dated June 12, 2013, that noted a staff review had been made of Project information and ADH had no comment on the submittal. Copies of relevant agency correspondence are included in Appendix 1.D of Resource Report 1.

EGT has identified ten groundwater wells within 150 feet of the proposed Project, but each of these wells will be avoided during construction and, with the exception of the agricultural well located at MP 19.50, located at least 35 feet from construction work areas. A list of the identified wells is provided in Table 2.3-1. If additional groundwater wells are identified in proximity to the proposed Project, EGT will provide the FERC with the locations of those wells prior to construction.

TABLE 2.3-1

Groundwater Wells within 150 Feet of the Project

Well ID	Milepost	Approximate Distance from Construction Workspace (Feet)	Direction from Construction Workspace	Comment
1	0.83	37	North	Residential well
2	3.74	35	West	Residential well
3	3.80	52	West	Residential well
4	3.82	74	West	Residential well
5	3.87	58	West	Residential well
6	3.88	123	West	Residential well
7	4.00	44	West	Residential well
8	4.01	59	West	Residential well
9	4.10	115	West	Residential well
10	19.50	6	West	Agricultural well

2.3.3 Groundwater Hazards

EGT consulted with the Arkansas Natural Resources Commission ("ANRC") and verified in May 2013 that the Project is not within a Critical Groundwater Areas are designated by the Arkansas Natural Resources Commission ("ANRC") pursuant to Act 154 of 1991. Critical Groundwater Areas are defined as having significant groundwater declines and/or water quality degradation. There is no regulation of water associated with critical area designation; designation makes an area priority for state and federal programs, including conservation and educational efforts. A portion of Pulaski County, located southeast of the Project area, is a designated Critical Groundwater Area, but EGT verified through consultations with ANRC that the Project would not be located within or affect any Critical Groundwater Area; therefore no impacts to these areas are anticipated as a result of the Project (AWWCC, 2013).

EGT consulted with Arkansas Department of Environmental Quality ("ADEQ") to determine whether any areas with contaminated groundwater are near the proposed project. Verification of one landfill, the Conway City Landfill, was received on May 9, 2013, in the immediate Project area. A second site, the recent Exxon-Mobil petroleum pipeline oil spill near Mayflower, Arkansas, is located approximately 200 feet west of the existing Line B pipeline at MP 12.25 and near a proposed Line BT-39 access road at MP 0.25. Section 8.5.3 and Table 8.5-2 of Resource Report 8 discuss these findings. Construction and retirement activities should not impact groundwater in these areas; however, BMPs identified in the Project SPCC Plan will be implemented in the event that hazardous materials are encountered during Project construction.

2.3.4 Construction Impacts and Mitigation

In general, the potential for temporary and permanent impacts on groundwater resulting from construction and operation of the proposed Project depends upon whether the proposed facilities will cause localized changes to existing groundwater flow paths. Most aquifers underlying the proposed pipeline area will not be impacted due to their depth and the generally shallow nature of trenching and disturbance. No groundwater withdrawals are proposed in association with construction and operation of the proposed Project and the Project generally will not cause changes in the overall quantity of groundwater.

2.3.4.1 Proposed Pipeline Facilities

Construction of the proposed pipeline facilities generally will require a trench excavation of 4 to 6 feet (or deeper at crossings of utilities and foreign pipelines). This depth is much shallower than any underlying aquifers and will not create a potential for interfering with flow in aquifers.

The proposed Project generally will not cause changes in the overall quantity of groundwater, which is determined by the quantity of recharge to the aquifer, except to the extent that clearing of vegetation reduces evapotranspiration (movement of water from soil to air through vegetation), and pipeline trenching increases the potential for infiltration of rainfall in specific locations. However, such effects are unlikely for this Project, given the relatively small area of the pipeline trench, construction ROW, and aboveground facility structures relative to the total potential recharge area. In porous soils, an open trench could provide a more direct pathway for infiltration compared to undisturbed land. Increased infiltration and reduced evapotranspiration could result in increased recharge to groundwater, thus increasing groundwater storage. However, given the localized nature of the pipeline trench relative to the surrounding area, such increased recharge likely will not be significant and may even be offset given the increased potential for runoff from cleared areas. Soil compaction also could increase runoff and affect groundwater recharge.

Backfill placed within the pipeline trench typically will be somewhat more permeable than the surrounding soil and rock units. As a result, the trench could act as a preferential pathway for groundwater flow in areas where it intersects the water table and potentially alter the existing groundwater flow patterns within shallow saturated zones. However, most wells receive water from deeper formations, where flow paths will not be affected by the trench. Additionally, EGT will install trench breakers at specified intervals in accordance with the FERC Plan and Procedures to reduce the potential for the trench to act as a preferential groundwater flow path. Conversely, if soils along the proposed Project become compacted due to construction and operation of heavy machinery, infiltration and recharge of groundwater along the trench or ROW could be adversely impacted. However, EGT will implement the measures identified in the FERC Plan, which includes testing and mitigation for compacted soils, as applicable.

Construction and operation of the Project is not expected to affect groundwater wells in the Project vicinity. No water wells are located within proposed construction work areas. As described above, excavations planned in association with the proposed Project will be much shallower than any underlying aquifers and will not create the potential for interference with groundwater flow paths. Similarly, the proposed Project is not anticipated to cause changes in the overall quantity of groundwater, which is determined by the quantity of recharge to any aquifer supplying water wells in the Project area. Additionally, water wells are typically screened considerably deeper (at least 100 feet, with many being much deeper) than the shallow underground intrusion by the pipeline (generally less than 10 feet). For these reasons, direct impacts on wells resulting from the proposed construction activity will be unlikely. Accidental spills or leaks of hazardous materials could cause indirect impacts to groundwater resources through introduction of contaminants, especially in highly permeable areas located near wells. To address such concerns, CEGT will implement the spill prevention and control measures identified in its Spill Prevention, Control, and Countermeasure Plan and in the FERC Procedures during construction. Additionally, no refueling activities or storage of potentially hazardous materials will be allowed within 200 feet of any private water well or 400 feet of any public water well during construction. For these reasons, construction and operation of the Project is not expected to affect the Cadron Creek wellhead protection area or private water wells in the Project vicinity.

If a well is identified within construction work areas, EGT will conduct pre- and post-construction monitoring of water yield and quality of such wells. In the unlikely event that a well must be taken out of service during construction, EGT will provide an alternate water source or negotiate a mitigation plan with the landowner to offset any adverse impacts. If construction activities are implicated in the temporary impairment of well water quantity or quality, EGT will provide alternative sources of water or otherwise compensate the owner. If permanent well damage is substantiated, EGT will either compensate the owner for damages or arrange for a new well to be installed.

Dewatering of the pipeline trench will be necessary if shallow groundwater is encountered within the excavation zone. The water pumped from the excavation will be discharged in accordance with the FERC Procedures, and the potential impact of dewatering will be minimized by discharging the pumped water to well vegetated areas or properly constructed temporary retention structures that will promote infiltration and minimize or eliminate runoff.

Because trenching typically proceeds at a relatively rapid rate, any depression of the local water table around the trench is expected to recover rapidly once the trench is backfilled. Therefore, dewatering could affect flow patterns in nearby shallow wells temporarily, but such impacts likely will be minor and of a brief duration.

2.3.4.2 Extra Temporary Workspaces

The temporary use of ETWS areas during construction are not expected to affect groundwater quality. Groundwater impact and mitigation procedures are similar to those described for the pipeline facilities above.

2.3.4.3 Pipe/Contractor Yards

Approximately 13.8 acres of hay fields will be used for temporary pipe storage. Use of these areas is temporary, and any gravel or other materials placed will be removed and the area will be restored post-construction. A Project-specific SPCC Plan will be implemented during construction to protect groundwater quality. Therefore, no impacts to groundwater are anticipated as a result of the temporary use of these yards.

2.3.4.4 Aboveground Facilities

Construction and operation of the proposed aboveground facilities is not expected to affect groundwater quality. Permanent impacts on groundwater recharge could occur from development of impervious surfaces and structures at the proposed aboveground facility sites. However, these impacts likely will be minor, considering the relatively small area of the aboveground facility structures relative to the total potential recharge area. Groundwater impact and mitigation procedures are similar to those described for the pipeline above.

2.3.4.5 Access Roads

The use of temporary access roads during construction is not expected to affect groundwater quality. The two permanent access roads proposed will be graveled; therefore, no impervious surfaces are proposed that may affect groundwater recharge. Groundwater impact and mitigation procedures during construction will be as described for the pipeline facilities above.

2.3.4.6 Retirement Work Areas

Construction at the proposed retirement work areas is not expected to affect groundwater quality due the minimal disturbance and temporary nature of the work to be completed at these sites.

2.3.4.7 Hydrostatic Testing

Hydrostatic test water is not anticipated to be a potential source of groundwater contamination. Test-water will be obtained from municipal water sources. Hydrostatic test water will be sampled and tested for contaminants in accordance with the appropriate state NPDES permit requirements prior to discharge of water. No chemicals will be added to the water prior to, during, or after the hydrostatic testing process; therefore, source water and discharge water quality are anticipated to be equivalent.

2.3.4.8 Accidental Spills and Leaks

Accidental spills and leaks of hazardous materials could cause impacts to groundwater resources through introduction of contaminants, especially in highly permeable areas near wells. EGT will implement the spill prevention and control measures identified in its SPCC Plan and in the FERC Procedures during construction.

In the event that hazardous materials are discovered during construction of the proposed Project, EGT will stop work, notify the appropriate state and federal agencies, and proceed in accordance with local, state, and federal regulations. Known hazardous waste areas in the vicinity of the Project area are discussed in Section 8.5.3 of Resource Report 8 and include the City of Conway Landfill and the ExxonMobil Pegasus pipeline rupture. EGT is in the process of coordinating with the City of Conway regarding best management practices or monitoring that may be required during construction in the vicinity of the City of Conway's landfill. The ExxonMobil Pegasus pipeline

ruptured on March 29, 2013 in the vicinity of the Northwoods subdivision in Mayflower, AR, approximately 200 feet west of the existing Line B retirement pipeline (MP 14.75). This site is currently under remediation; there are no known contaminated sediments within the Project work area. Should any contaminated soils be found during construction activities, EGT will coordinate with ExxonMobil and the ADEQ to remediate those contaminants properly

2.3.4.9 Blasting

No blasting activities are anticipated during construction of the proposed Project (see Resource Report 6); therefore, no adverse effects due to blasting on water wells, springs, or wetlands are expected. In the unlikely event that any blasting is conducted within 150 feet of any identified water wells, then EGT will conduct pre- and post-construction monitoring of potable wells to assess potential impacts on water yield or quality. If blasting activities are determined to temporarily impair well water quality or yield, EGT will provide alternative water source or negotiate a mitigation plan with the landowner. If permanent well damage is substantiated, EGT will either compensate the owner for damages or arrange for a new well to be installed. Potential impacts to water wells associated with standard pipeline construction activities are addressed in Section 2.3.4.1 above.

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CP14-___-000

ENABLE GAS TRANSMISSION, LLC

APPENDIX 2.A (PART 1 of 3)

WETLAND AND WATERBODY DELINEATION REPORT

APPENDIX 2.A

WETLAND & WATERBODY DELINEATION REPORT

Appendix 2.A

Wetland & Waterbody Delineation Report

AK Environmental, LLC
"Consulting with Energy"
www.ak-env.com

Wetland & Waterbody Delineation Report

for

Central Arkansas Pipeline Enhancement Project

Prepared for: Enable Gas Transmission, LLC

Prepared by: AK Environmental, LLC

October 2013

DRAFT
WETLAND & WATERBODY DELINEATION REPORT

FOR

CENTRAL ARKANSAS PIPELINE ENHANCEMENT PROJECT

Faulkner and Pulaski Counties
Arkansas

Prepared for:
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October 2013

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I. INTRODUCTION

AK Environmental, LLC. ("AK") was contracted by Enable Gas Transmission, LLC ("EGT")[1], to perform field surveys to identify and delineate wetlands and waterbodies[2] within an area potentially impacted by a new project in Pulaski and Faulkner Counties, Arkansas. Following is a description of the proposed Project, methodologies implemented by AK in identification and delineation of wetlands and waterbodies, and a summary of the results of the field surveys.

A. PROJECT LOCATION AND DESCRIPTION

EGT, in cooperation with its affiliated natural gas distribution business, is proposing the Central Arkansas Pipeline Enhancement Project ("Project"). As part of the Project, EGT is proposing the installation of new natural gas pipelines and ancillary facilities in Pulaski and Faulkner Counties, Arkansas. The Project also includes the abandonment of certain existing pipelines and ancillary facilities in the Conway and North Little Rock area. Figure 1 shows the location of the Project on the U.S. Geological Survey ("USGS") 7.5-minute quadrangles of Gleason, Conway, Hamlet, Mayflower, Cato, and North Little Rock, Arkansas.

B. DESCRIPTION OF THE STUDY AREA

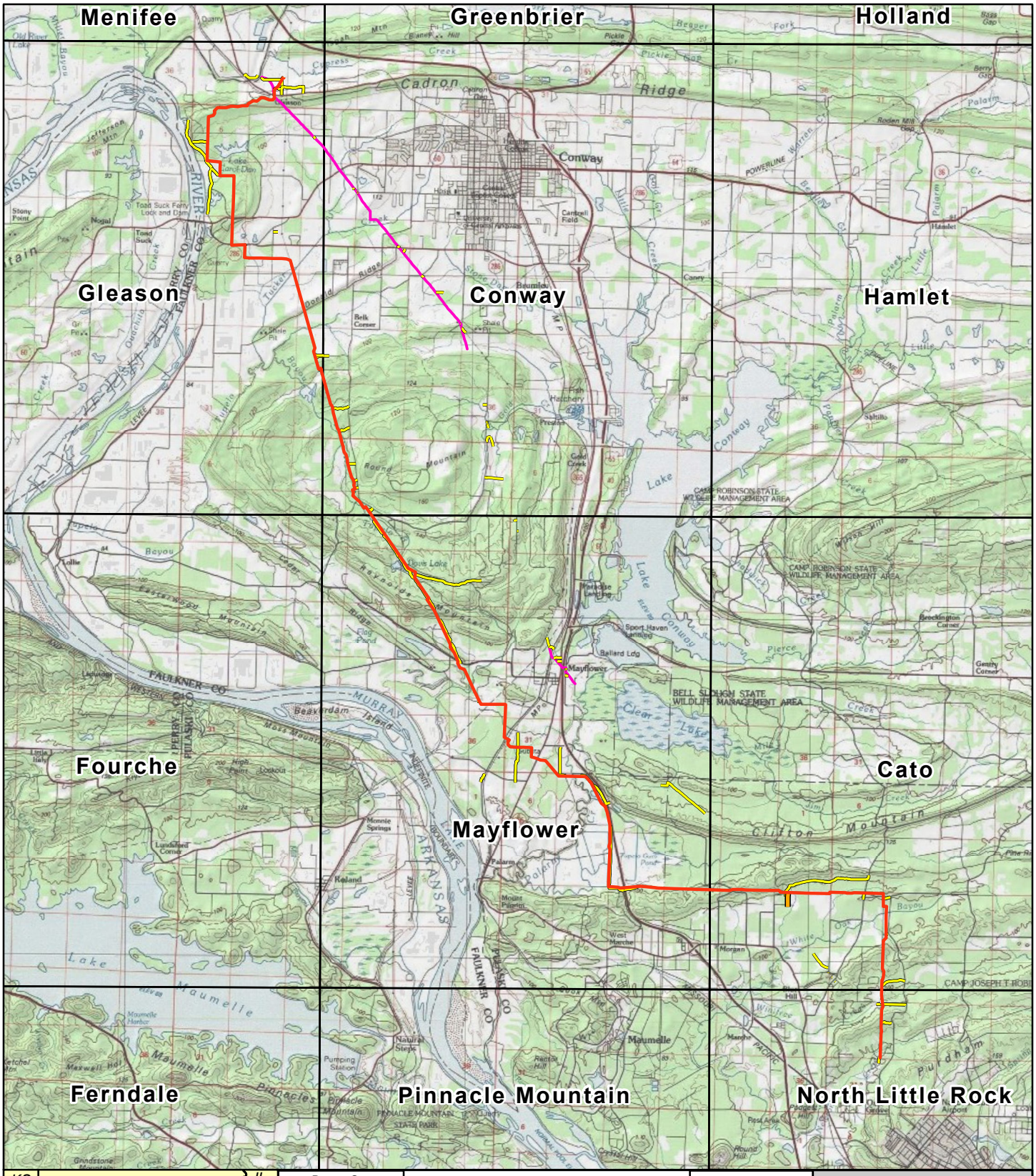
The Project study area encompasses both proposed facilities and certain abandonment facilities that may need to be removed as part of this Project. The limits of the study area for the proposed facilities are shown on the attached Figure 2A, and the study area for the abandonment facilities are depicted in Figure 2B. A 200-foot corridor was surveyed along the proposed pipeline route, except at road crossings where planned extra work space necessitated an expansion of the survey corridor. Proposed access roads were surveyed at a width of 50 feet. Yards, other ancillary facilities and abandonment sites included a survey area that was site-specific.

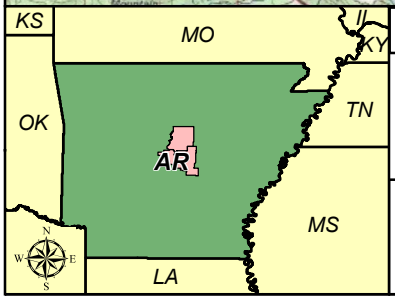
In general the study area consists of:

- Proposed Facilities: Approximately 595 acres of study corridor for potential new pipeline routes and appurtenant facilities
- Abandoned Facilities: Approximately 76 acres of study corridor for abandonment pipelines and associated facilities
- Approximately 5.5 acres of wareyards
- Approximately 141 acres of access roads (50-foot wide corridor)

[1] Effective July 30, 2013, CenterPoint Energy Gas Transmission Company, LLC changed its name to Enable Gas Transmission, LLC

[2] The extent and type of wetlands and waterbodies presented herein is subject to verification by the U.S. Army Corps of Engineers ("USACE") through the Jurisdictional Determination ("JD") process.





Drawn On:
September 19, 2013

Project Location Map

Central Arkansas
Pipeline Enhancement Project

Faulkner and Pulaski Counties, Arkansas

0 1.25 2.5 5 Miles

1 inch = 2.5 miles

Figure 1

Legend

- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- Access Roads
- Surveyed Existing Line B
- USGS 24k Topo Map Boundaries

Prepared For: ENABLE MIDSTREAM PARTNERS

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5020 Ritter Road
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Mechanicsburg, PA 17055

C. GEOGRAPHY AND LAND USE OF STUDY AREA

The Project lies within the Arkansas River Valley Region of the Interior Highlands Physiographic Province. The Arkansas River Valley is a low-lying region surrounding the Arkansas River and its major tributaries.

Land use within the study area is a mix of residential subdivisions, commercial retail, and smaller woodlots in the northern and central portions, while the southern portion is dominated by rolling mature forest land associated with Camp Robinson.

II. METHODOLOGY

A. RECORDS RESEARCH

Prior to field surveys, AK obtained and reviewed the 7.5-minute USGS topographic quadrangles, the National Wetlands Inventory ("NWI") web-based Interactive Mapper, and the Web Soil Survey to identify natural areas, areas with topographical configurations, mapped wetlands and/or hydric soils that may suggest the presence of wetlands. Habitat information from the Arkansas Natural Heritage Commission ("ANHC") was also obtained. Figure 1 shows the location of the Project on USGS maps, and Figures 2A and 2B show the proposed and abandonment facilities study areas, respectively, on aerial photos with an NWI and Natural Resources Conservation Service ("NRCS") Soil Survey overlay (see Appendix A). Water quality classifications, which are listed by the Arkansas Pollution Control and Ecology Commission in Regulation 2, were obtained from the State of Arkansas online GIS map, with updates on existing water quality available through the Arkansas Geographic Information Office (http://www.geostor.arkansas.gov/G6/Home.html).

B. FIELD INVESTIGATIONS

Investigations were conducted to identify and delineate the extent and location of jurisdictional waters and wetlands within the Project study area pursuant to the federal Clean Water Act ("CWA"), Sections 401 and 404, and the Arkansas Department of Environmental Quality ("ADEQ") water quality regulations. The Code of Federal Regulations (33 CFR Parts 320-330) and the ADEQ define wetlands and watercourses and provide regulatory jurisdictional guidance on water obstructions and encroachments. Jurisdictional wetlands are defined as those areas satisfying the technical criteria contained in the United States Army Corps of Engineers ("USACE") Wetlands Delineation Manual (USACE, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region: Version 2* (USACE, April 2012).

Field investigations were conducted on the original proposed alignment, alternate route, and abandonment areas from October 1-12, 2012. A second round of field surveys to cover re-routes, additional access roads, and an additional ancillary facility occurred from January 28-30, 2013. A follow-up survey was conducted on August 27, 2013.

Investigations were conducted within the study area to verify the records research mapping, and to identify land use, plant community types, and presence and extent of regulated and non-regulated wetland and water resources within the study area. The pipeline centerline within the study area, where applicable, was based on GPS location.

Wetland Delineation Methods

Wetlands were delineated in the field by AK wetland scientists in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont: Version 2, East and Central Farming Region (LRR N)* (USACE, 2012). Professional qualifications of the individuals involved in the field delineations and preparation of this report are provided in Appendix B.

The on-site field investigation involved inspection of the study area to identify areas that satisfy the three wetland criteria: a dominance of hydrophytic (wetland) vegetation, wetland hydrology, and hydric soils. To make a determination that an area is a wetland, the Regional Supplement requires that, under natural (typical) conditions, a minimum of one primary wetland indicator be confirmed for each of the three wetland parameters. A failure to confirm all three parameters must result in a finding that the area under evaluation is a non-wetland under typical conditions.

Sampling was conducted along the gradient between uplands and wetlands to identify the location of the wetland boundary based upon the above criteria. One sample plot was placed in a representative wetland area, and one was placed in the adjacent upland area, for the collection of data pertinent to assessment of the mandatory technical criteria. Sample points (data points) were selected at locations along wetland boundaries to identify important, defining characteristics and to resolve obscure transitions between wetlands and uplands. Visual estimates of percent vegetation cover by species, indicators of hydrology, and a soil profile were recorded on Wetland Determination Data Forms.

The wetland/upland boundary was marked in the field using pink surveyors ribbon tied to live, woody vegetation nearest the boundary. The flags were spaced at appropriate turning points, or at approximately 15-meter (50-foot) intervals for long, straight stretches. Wetland flags were located using a Trimble GeoXH global positioning system ("GPS") unit with sub-meter accuracy.

Wetland Classification Methods

Wetlands were classified based on the hydrogeomorphic method ("HGM") and the Cowardin systems, as described below.

The HGM code identifies a wetland's function and geomorphic position as a means for comparison and aggregation of wetlands with similar function (Brinson, 1993). This classification helps to assess the capacity of a wetland to perform functions relative to similar wetlands in the region (Wilder and Roberts, 2002). All of the wetlands identified in the proposed Project study area were classified as Riverine, Depression, or Flats. Riverine wetlands are characterized by a water source of overbank flow from a channel and hydrodynamics that are predominantly unidirectional and horizontal. Depressional wetlands are characterized by a water source consisting of return flow from groundwater and interflow with primarily vertical

hydrodynamics. Flats have little or no gradient, and the principal water source is precipitation (*i.e.*, there is minimal overland flow into or out of the wetland) (MAWPT, 2001).

Wetlands were also classified in accordance with the methods of Cowardin *et al.* (1979), which categorizes wetlands based on dominant vegetation, such as palustrine emergent ("PEM"), palustrine scrub/shrub ("PSS"), palustrine forested ("PFO") or some combination of these wetland types. Inundated features, such as ponds and lakes, were classified as palustrine open water ("POW").

Waterbody Delineation Methods

In general, waterbodies were considered to be linear features with a gradient or impoundments of these features (*i.e.*, rivers, streams and swales). Lakes and ponds were delineated as POW wetlands, as described above. For the majority of streams, the approximate centerline of the channel was delineated and located using a Trimble GeoXH GPS unit with sub-meter accuracy. Where conditions warranted, both banks of a stream were identified and GPS-located.

Data on the physical characteristics of each waterbody were recorded on Stream Data Forms. These forms include detailed information on flow, substrate type, sinuosity, bank width and height, water quality, and surrounding land use.

Waterbody Classification Methods

Waterbodies were identified by flow regime as perennial streams, intermittent streams, ephemeral streams, or swales. Streams are considered perennial if they contain base flow supported with groundwater throughout the year. Intermittent streams are those that contain base flow supported by groundwater at least seasonally. Ephemeral streams are primarily supported by snow and rain precipitation, and typically only flow as a result of a storm event. Ephemeral streams may include: stormwater channels, which are manmade features specifically constructed for the conveyance of surface water from upslope areas; roadside ditches; and seeps, which may discharge groundwater or surface water.

Waterbodies were also classified in accordance with Cowardin *et al.* (1979), which classifies streams largely in accordance with the flow regime described above. The Cowardin code for perennial streams used in this report is R5 (Unknown Perennial). Intermittent streams are identified as Cowardin code R4, and ephemeral streams and swales are identified with a Cowardin code of R6.

Wetland and Waterbody Preliminary Regulatory Assessment

As a means of assessing whether each wetland and waterbody is likely to be regulated as a Water of the U.S. by the USACE, each feature was assigned a "Waters Type" classification, which identifies its relationship to traditionally navigable waters, per the USACE *Jurisdictional Determination Form Instructional Guidebook (2007)*. The USACE will assert jurisdiction over the following wetlands and waterbodies:

- Traditionally navigable waters ("TNW"), which are those that are influenced by the ebb and flow of tide or those that are currently, or have in the past, been used for interstate or foreign commerce;
- Wetlands adjacent to TNWs;
- Relatively Permanent Waters ("RPW"), which are non-navigable tributaries of TNWs that typically flow year-round or have continuous flow at least seasonally (*i.e.*, perennial streams and intermittent streams); and
- Wetlands that directly abut RPWs ("RPWWD"s).

The USACE may also take jurisdiction over the following features, if they have a significant nexus to a TNW:

- Non Relatively Permanent Waters ("NRPW"s), such as ephemeral streams;
- Wetlands that lay adjacent to but do not directly abut RPWs ("RPWWN"s);
- Wetlands adjacent to NRPWs ("NRPWW"s);
- Delineated wetlands that are abutting NRPWs ("DELINEATE"); and
- Isolated wetlands ("ISOLATE"), which are geographically isolated with no link to a TNW and are generally not regulated under the CWA. Isolated waters jurisdiction is determined on a case-by-case basis through the JD process.

In general, perennial and intermittent streams are considered RPWs, and are therefore regulated as a Water of the U.S., as are any RPWWDs. Ephemeral channels are NRPWs and can be considered Waters of the U.S. if they exhibit an Ordinary High Water Mark ("OHWM"), bed and bank, are tributary to jurisdictional waters, or if they are built in Waters of the U.S. or wetlands. The OHWM is that line on the shore or streambank established by the fluctuations of water and typically characterized by a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, or the presence of litter and debris (USC Title 33). Stormwater channels are also considered Waters of the U.S. in the absence of an OHWM, if the channel connects two wetlands or Waters of the U.S. or is tributary to jurisdictional waters. Other features that may, or may not be jurisdictional include pipes (culverts), ditches, swales, erosional features, and certain wetlands (RPWWNs, NRPWWs, and DELINEATE), which would be considered jurisdictional if/when they have a significant nexus to a TNW. Jurisdiction is ultimately determined through the USACE's Jurisdictional Determination ("JD") process.

III. RESULTS

A. RECORDS RESEARCH

USGS Topographic Maps

The Project is located on the Gleason, Conway, Hamlet, Mayflower, Cato, and North Little Rock USGS topographic quadrangles. As shown on these maps, the Project crosses the Cadron Creek, Lake Conway-Point Remove, and Lower Arkansas-Maumelle watersheds of the Arkansas River basin. Named streams within the Project area include Tucker Creek, Tupelo Bayou, Beaverdam Creek, Palarm Creek, White Oak Bayou, Winifree Creek, and Newton Creek.

Named and unnamed stream crossings are shown on the USGS map (Figure 1) and identified in Section III.B below.

Elevations within the study area range between approximately 300 feet above mean sea level ("AMSL") on the northern end along Route 64, to approximately 600 feet in the central portion of the study area near Round Mountain, to approximately 500 feet on the southern portion of the study area near Camp Robinson.

Soil Survey

There are twenty-eight (28) separate soil mapping units identified within the Project study corridors in Faulkner and Pulaski Counties. Table 1 presents the physical soil characteristics and limitations of these soil mapping units in the Project area. The Soil Survey mapping of the Project study area is provided on Figures 2A and 2B in Appendix B. The soil descriptions are provided in Appendix E.

Table 1. Soil Physical Characteristics/Limitations

Soil Code	Soil Name	Hydric	Depth to Restrictive Layer (inches)	Prime Farmland	Depth to Seasonal High Water (feet)
Faulkner County, Arkansas					
1	Acadia silt loam	No	NA	All Prime	0.5-2.0
2	Amy soils, frequently flooded	Yes	NA	NA	0->6.0
4	Enders gravelly fine sandy loam, 8 to 12 percent slopes	No	40-60	NA	NA
5	Enders gravelly fine sandy loam, 12 to 45 percent slopes	No	40-60	NA	NA
6	Gallion silt loam	No	NA	All Prime	NA
8	Leadvale silt loam, 1 to 3 percent slopes	No	18-34	All Prime	1.3-3.0
9	Leadvale silt loam, 3 to 8 percent slopes	No	18-34	Statewide	1.3-3.0
10	Linker fine sandy loam, 1 to 3 percent slopes	No	20-40	All Prime	NA
11	Linker fine sandy loam, 3 to 8 percent slopes	No	20-40	All Prime	NA
12	Linker fine sandy loam, 8 to 12 percent slopes	No	20-40	NA	NA
15	McKamie silty clay loam, 3 to 8 percent slopes, severely eroded	No	NA	NA	NA
16	Moreland silty clay	No	NA	All Prime	0->6.0
17	Mountainburg gravelly fine sandy loam, 3 to 8 percent slopes	No	12-20	NA	NA

Table 1. Soil Physical Characteristics/Limitations					
Soil Code	**Soil Name**	**Hydric**	**Depth to Restrictive Layer (inches)**	**Prime Farmland**	**Depth to Seasonal High Water (feet)**
18	Mountainburg gravelly fine sandy loam, 8 to 12 percent slopes	No	12-20	NA	NA
20	Mountainburg very stony fine sandy loam, 12 to 40 percent slopes	No	12-20	NA	NA
21	Muskogee silt loam, 1 to 3 percent slopes	No	NA	All Prime	1.0-3.0
22	Muskogee silty clay loam, 3 to 8 percent slopes, severely eroded	No	NA	NA	1.0-3.0
23	Ouachita silt loam, occasionally flooded	No	NA	All Prime	NA
24	Perry clay, occasionally flooded	Yes	NA	Prime if drained	0.2->6.0
32	Taft silt loam, 0 to 2 percent slopes	No	20-28	NA	0.8-3.0
Pulaski County, Arkansas					
GeB	Guthrie-Leadvale complex, undulating	Yes	12-60	Prime if drained	0.5-2.0
LeB	Leadvale silt loam, 1 to 3 percent slopes	No	12-60	All Prime	1.3-3.0
LeC	Leadvale silt loam, 3 to 8 percent slopes	No	12-60	Statewide	1.3-3.0
LRE	Linker-Mountainburg association, moderately steep	No	20-40	NA	NA
LkC	Linker gravelly fine sandy loam, 3 to 8 percent slopes	No	20-40	All Prime	NA
LnC	Linker-Urban land complex, 3 to 8 percent slopes	No	NA	NA	NA
Me	Moreland silty clay	No	NA	All Prime	0->6.0
Pe	Perry Clay, 0 to 1 percent slopes, rarely flooded	Yes	NA	Prime if drained	0->6.0

National Wetland Inventory ("NWI") Maps

NWI information was gathered for Pulaski County, Arkansas. However, the majority of Faulkner County does not have NWI data. Review of the available NWI data indicates there are many mapped palustrine and riverine communities within or near the study area. Field verification occurred where NWI features were crossed by the proposed Project. The NWI data are depicted in Figures 2A and 2B of Appendix A.

During field investigation, NWI features were located and are included in Tables 2A, 2B, 3A, and 3B of Section III.B below. However, it is important to note that NWI mapping is a tool that is based on aerial interpretation, and NWI features may not have been identified as wetlands in the field if they lack one or more of the three parameters necessary to be considered a wetland (hydric soils, hydrophytic vegetation, and/or hydrology).

Arkansas State Resources

Surface water quality classifications in Arkansas are established in Arkansas Pollution Control and Ecology Commission, Regulation 2. According to Regulation 2 and the Arkansas online GIS mapper, there are no extraordinary resource waters, natural and scenic waterways, ecologically sensitive waterbodies, or impaired waters crossed by the proposed project. However, the proposed Project is located approximately 200 feet east of Cadron Creek. Cadron Creek is a listed Extraordinary Resource Water. A letter from the ANHC, dated October 18, 2012, also confirms there are no outstanding natural communities or natural or scenic rivers within or near the proposed Project corridors. The ANHC letter is included in Appendix G.

B. FIELD INVESTIGATIONS

Several wetlands and waterbodies were identified within the Project study corridor during field investigations. In total, 77 wetland features and 222 waterbody/stream features were delineated. Appendix A includes tables of each wetland and waterbody feature identified and delineated along the Proposed and Abandonment Project area. All delineated features are shown on the Environmental Resources Maps, provided as Figures 2A and 2B of Appendix B. Professional qualifications of individuals performing the survey and compiling this wetland report are located in Appendix C. Wetland and waterbody delineation forms are provided in Appendix D. Photographs provided in Appendix F and are located on Figures 2A and 2B.

Plant Community

The upland forested plant community within the Project study area is typical of a southern forest. Species composition is dominated by red maple (*Acer rubrum),* sugar maple (*Acer saccharum),* red oak (*Quercus rubra*), white oak (*Quercus alba*), sweetgum (*Liquidambar styraciflua),* willow oak (*Quercus phellos*), pin oak (*Quercus palustris*), persimmon (*Diospyros virginiana*), ash species (*Fraxinus spp*.), American elm (*Ulmus americana*), American hornbeam (*Carpinus caroliniana),* water tupelo (*Nyssa sylvatica*), white pine (*Pinus strobus*), eastern red cedar (*Juniperus virginiana*), and loblolly pine *(Pinus taeda)* in the canopy. Beauty berry (*Callicarpa americana),* highbush blueberry (*Vaccinium corymbosum*) and greenbriar (*Smilax rotundifolia*) were noted in the understory.

The wetland and waterbody communities are described in the following sections.

Wetlands

Of the 77 palustrine wetlands identified as part of this investigation, 67 wetlands were identified within the study area of the proposed facilities (see Appendix A Tables 2A-2B and Appendix B Figure 2A), and 10 wetlands were identified in the study area associated with the abandonment facilities (see Table 2B and Figure 2B). Wetland types identified include twenty-nine (29) PFO wetlands, five (5) PSS wetlands, twenty-one (21) PEM wetlands, fifteen (15) POW wetlands, and seven (7) mixed community wetlands that were dominated by a combination of these.

Wetland delineation forms, located in Appendix D, provide hydrology, vegetation, and soils information as well as a sketch of the feature within the study area. Tables 2A and 2B list the wetlands identified along the proposed and abandonment pipeline routes, respectively, and include the following information: wetland feature ID, figure sheet number, photo number, Cowardin classification, HGM code, area in acres within the study corridor, waters types, latitude/longitude, local waterway and hydrologic unit code ("HUC").

Twenty-nine (29) wetlands identified within the study area are dominated by mature trees, and classified as PFO under the Cowardin classification system. These forested wetlands predominantly occur either along the banks of streams (HGM Class: Riverine), as pine or hardwood flats (HGM Class: Flats), or as lowland depressions (HGM Class: Depression). Dominant vegetation within the forested wetlands in the Project study area includes willow oak, sweetgum, black willow (*Salix nigra*), bald cypress (*Taxodium distichum*), sugarberry (*Celtis laevigata*), green ash (*Fraxinus pennsylvanica*), red maple, and persimmon in the tree and shrub/sapling layers; and poison ivy (*Toxicodendron radicans*), indian woodoats (*Chasmanthium latifolium*), and common marsh-mallow (*Althaea officinalis*) in the herb layer.

There are five (5) wetlands identified within the study area that are dominated by shrubs and/or saplings. The dominant vegetation throughout these PSS wetlands includes sweetgum, red maple, black willow, and buttonbush (*Cephalanthus occidentalis*). All of these wetlands occur either as flats (HGM Class: Flats) or depressional (HGM Class: Depression) wetlands, and are situated within forested uplands or adjacent to maintained rights-of-way ("ROW"s).

There were twenty-one (21) wetlands identified within the study area that are dominated by emergent vegetation. These PEM wetlands generally occur as depressions in agricultural fields and forested settings (HGM Class: Depression), fringe areas along streams (HGM Class: Riverine), or in open/cleared areas in the forest canopy (HGM Class: Flats). They are dominated by woolgrass (*Scirpus cyperinus*), beggarticks (*Bidens spp*.), aster (*Boltonia spp*.), sedges (*Carex spp*.), soft rush (*Juncus effusus*), smartweed (*Polygonum* spp.), and sphagnum moss. Many of these wetlands are maintained as PEM wetlands by agricultural practices, ROW clearing, or for forest fire prevention within the fire break of Camp Robinson.

There are fifteen (15) wetlands identified within the study area that are dominated by open water and surrounded by uplands. These POW wetlands were generally observed to be impoundments (*e.g.,* ponds, lakes, or reservoirs), designated on NWI maps as palustrine unconsolidated bottom ("PUB") wetlands and for the purposes of this report as POW communities.

Seven (7) wetlands characterized by a combination of wetland community types were located during field investigations. These included large wetland systems with naturally occurring vegetation zones, as well as medium to large wetland systems that are impacted in areas by agriculture, maintained utility or transportation ROWs, or forest fire prevention practices within the fire break of Camp Robinson.

A large wetland complex, Wetland W61FA is forested in the western portion and to the west it is a farmed emergent wetland. During consecutive site visits in the fall, winter and summer, the farmed portion of the wetland was either dry or flooded. Crops grown here include soybeans and rice.

All NWI mapped features were field verified. Most of the NWI features were found to exhibit wetland character and have all three parameters to be considered wetlands. These were collected with the GPS and given a feature ID. Only two mapped NWI wetlands located around stream features S39FA (Beaverdam Creek) and S1FA were verified to not meet wetland parameter conditions. Indicators of wetland conditions may lie outside of the study corridor, but not where the proposed centerline and easement will cross.

Waterbodies

The Project study area is within the Cadron Creek, Lake Conway-Point Remove, and Lower Arkansas-Maumelle watersheds of the Arkansas River basin. There were 222 waterbodies identified as part of this investigation, including 197 waterbodies identified within the study area of the proposed facilities and 24 waterbodies identified within the study area associated with the abandonment facilities (see Appendix A Tables 3A-3B and Appendix B Figure 2B). Of these, there were 50 RPWs, including 16 perennial streams and 34 intermittent streams; and 172 NRPWs, including 110 ephemeral streams and 62 swales. Photographs of these features are provided in Appendix F.

Waterbody data forms are provided in Appendix D, and include detailed information on the physical characteristics of the streams, including flow, substrate type, channel sinuosity, bank width and height, water quality, and surrounding land use. The waterbody tables (Tables 3A and 3B) summarize this information and include the waterbody feature ID number, the figure sheet number, photo number, waters name (if named), Cowardin classification, bank-to-bank width, survey length, square feet within study area, waters type, latitude/longitude, local waterway and 12-digit HUC.

The 16 perennial streams varied in respect to their physical characteristics. Bank-to-bank width ranged from 4 feet to 60 feet. Most were slow-moving, sinuous streams with a mixed substrate of cobbles, gravel, silt and/or clay. However, some were more heavily impacted by channelization and were observed to have moderate flow and a mixed substrate of channery, gravel, and sediment.

The 34 intermittent streams also varied in respect to their physical characteristics. Bank-to-bank width ranged from 3 to 25 feet. Most were stagnant to dry at the time of inspection, sinuous streams with a mixed substrate of cobbles, gravel, silt, and/or clay. Those streams that were channelized tended to include greater components of channery and sediment in their substrate.

The 110 ephemeral streams included naturally occurring channels transporting stormwater flows in forested uplands, as well as roadside ditches, stormwater channels, and agricultural ditches. Bank-to-bank width varied from 1 to 12 feet, and substrate was typically a mix of cobble, gravel, sand, silt and/or clay. Although most ephemeral features had no flow at the time of the original wetland and waterbody delineation, recent heavy rain events resulted in stormwater flow in ephemeral channels identified during the second round of surveys in January.

The 62 swales identified generally convey ephemeral flow, but lack an OHWM. Although some occurred within forested settings, many are impacted by existing utility corridors. Substrate was typically a mix of channery, cobble, gravel, sand, silt and/or clay.

As with the wetlands, some streams were in a relatively natural state, while others were observed to be impacted by existing maintained utility or transportation ROWs, channelization, agricultural activities, or fire prevention practices within the fire break of Camp Robinson.

IV. SUMMARY

Using the methodologies outlined above, AK identified and delineated in total 77 wetlands and 222 waterbodies within the study area. Fifty (50) waterbodies classified as RPWs, with perennial flow (R5) or intermittent flow (R4), were identified. There were also 172 NRPWs identified, including both ephemeral streams (R6) and swale features.

In total, fifteen (15) POW communities, twenty-one (21) PEM communities, five (5) PSS communities, twenty-nine (29) PFO communities and seven (7) mixed community wetlands were delineated. Eight (8) of these wetlands directly abut RPWs (RPWWDs), while the remaining sixty-nine (69) wetlands are either isolated wetlands (ISOLATE); wetlands adjacent to, but not directly abutting, a RPW (RPWWNs); or wetlands adjacent to or abutting NRPWs (NRPWWs or DELINEATE).

The findings of this investigation represent a study of the Project area for non-tidal wetlands. Findings depend on the time of year, the conditions at that time of year and site-specific influences (e.g., artificial disturbance). This report represents a professional estimate of the study area's wetlands and waterbodies, and agency jurisdiction based upon available information and techniques. Final verification of the wetland and waterbody boundaries for regulatory purposes can only be completed through a Jurisdictional Determination review by the USACE or its duly appointed representative.

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APPENDIX A

Wetlands

Tables 2A-2B

Table 2A. Wetlands Identified within the Proposed Facilities Study Area Central Arkansas Pipeline Enhancement Project											
Feature ID (*1)	**Milepost**	**Figure 2A Sheet #**	**Photo #**	**Cowardin Code (*2)**	**HGM Code (*3)**	**Area (acres) (*4)**	**Waters Types (*5)**	**Latitude**	**Longitude**	**Local Waterway**	**12-Digit HUC (*6)**
Pipeline Facilities											
W101FA	0.03	1 of 64	1	PEM	FLAT	0.77	NRPWW	35.115316	-92.513312	Cypress Creek	111102050204
W102FA	0.1	1 of 64	Similar to 1	PEM	SLOPE	1.1	NRPWW	35.114637	-92.514004	Cypress Creek	111102050204
W105FA	0.27	1 of 64	5	PFO	FLAT	0	RPWWD	35.112747	-92.515817	Cypress Creek	111102050204
W104FA	0.38	1 of 64	7	PFO	FLAT	0.26	ISOLATE	35.111752	-92.515933	Cypress Creek	111102050204
W103FA	0.4	1 of 64	8	POW	DEPRESS	0.16	ISOLATE	35.045721	-92.454501	Cypress Creek	111102050204
W84FA	1.61	5 of 64	10	POW	DEPRESS	0.44	ISOLATE	35.107442	-92.535386	Arkansas River	111102050204
W71FA	4.8	15 of 64	32	PFO	RIVERINE	0.04	NRPWW	35.071299	-92.526854	Tucker Creek	111102030405
W80FA	5.25	15 of 64	37	PFO	FLAT	0.2	NRPWW	35.067941	-92.522648	Tucker Creek	111102030405
W81FA	5.33	15 of 64	38	POW	DEPRESS	0.42	ISOLATE	35.06791	-92.521552	Tucker Creek	111102030405
W70FA	6.38	18 of 64	43	PFO	RIVERINE	1.80	RPWWD	35.061333	-92.508538	Tucker Creek	111102030403
W70FA	6.38	18 of 64	42	PSS	RIVERINE	3.08	RPWWD	35.061333	-92.508538	Tucker Creek	111102030404
W70FA	6.48	18 of 64	44	PEM	RIVERINE	1.74	RPWWD	35.061333	-92.508538	Tucker Creek	111102030405
W69FA	6.67	19 of 64	46	PEM	FLAT	0.08	ISOLATE	35.057392	-92.507324	Tucker Creek	111102030405
W68FA	7.39	20 of 64	51	PEM	FLAT	0.97	DELINEATE	35.047546	-92.50369	Tupelo Bayou	111102030405
W13FA	8.28	21 of 64	56	PFO	FLAT	0.03	NRPWW	35.035895	-92.499697	Tupelo Bayou	111102030406
W18FA	8.79	22 of 64	62	PFO	FLAT	0.12	ISOLATE	35.028751	-92.497071	Tupelo Bayou	111102030405
W19FA	8.83	23 of 64	65	PEM	RIVERINE	0.05	RPWWD	35.028289	-92.496847	Tupelo Bayou	111102030405
W21FA	9.2	23 of 64	68	PEM	FLAT	0.67	ISOLATE	35.023008	-92.495529	Tupelo Bayou	111102030405
W24FA	9.34	24 of 64	72a	PFO	RIVERINE	0.03	RPWWD	35.021156	-92.494285	Tupelo Bayou	111102030405
W30FA	10.35	25 of 64	84	POW	DEPRESS	0.27	ISOLATE	35.00721	-92.490214	Tupelo Bayou	111102030505
W6FA	12	28 of 64	94	PFO	RIVERINE	0.07	RPWWD	34.988951	-92.474421	Tupelo Bayou	111102030405
W304FA	12.02	28 of 64	260	PEM	FLAT	0.24	RPWWD	34.988483	-92.474928	Tupelo Bayou	111102030405
W303FA	12.17	28 of 64	261	POW	RIVERINE	17.9	DELINEATE	34.986107	-92.475068	Tupelo Bayou	111102030405
W38FA	14.36	35 of 64	116	PFO	FLAT	1.02	DELINEATE	34.960344	-92.455968	Beaverdam Cr.	111102030507
W38FA	14.36	35 of 64	116	PSS	FLAT	0.61	DELINEATE	34.960344	-92.455968	Beaverdam Cr.	111102030507
W38FA	14.36	35 of 64	116	PEM	FLAT	0.14	DELINEATE	34.960344	-92.455968	Beaverdam Cr.	111102030507
W39FA	14.55	36 of 64	118	PFO	FLAT	1.15	ISOLATE	34.958443	-92.453494	Beaverdam Cr.	111102030507
W53FA	15.03	36 of 64	121	PEM	FLAT	2.40	RPWWN	34.951903	-92.44942	Beaverdam Cr.	111102030506

Table 2A. Wetlands Identified within the Proposed Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Cowardin Code (*2)	HGM Code (*3)	Area (acres) (*4)	Waters Types (*5)	Latitude	Longitude	Local Waterway	12-Digit HUC (*6)
W53FA	15.05	36 of 64	120	PFO	FLAT	0.71	RPWWN	34.951903	-92.44942	Beaverdam Cr.	111102030507
W408FA	15.23	37 of 64	266	PFO	RIVERINE	1.16	DELINEATE	34.95023	-92.447932	Beaverdam Cr.	111102030507
W407FA	15.54	37 of 64	267	PEM	RIVERINE	0.22	DELINEATE	34.950405	-92.44239	Beaverdam Cr.	111102030507
W406FA	15.94	37 of 64	272	PFO	FLAT	0.53	ISOLATE	34.945642	-92.440701	Beaverdam Cr.	111102030507
W50FA	Offline	38 of 64	127	POW	DEPRESS	0.41	ISOLATE	34.9425	-92.444207	Beaverdam Cr.	111102030507
W55FA	Offline	37 of 64	123	PFO	FLAT	0.95	ISOLATE	34.946354	-92.446132	Beaverdam Cr.	111102030507
W56FA	Offline	37 of 64	124	PFO	FLAT	0.8	ISOLATE	34.944974	-92.445402	Beaverdam Cr.	111102030507
W56FA	Offline	37 of 64	125	PEM	FLAT	0.57	ISOLATE	34.944974	-92.445402	Beaverdam Cr.	111102030507
W57FA	Offline	38 of 64	128	PEM	FLAT	0.17	ISOLATE	34.940436	-92.441337	Beaverdam Cr.	111102030507
W405FA	16.01	38 of 64	273	PFO	FLAT	0.17	ISOLATE	34.944659	-92.440906	Beaverdam Cr.	111102030507
W301FA	16.04	38 of 64	274	PFO	FLAT	2.22	ISOLATE	34.944111	-92.439928	Beaverdam Cr.	111102030507
W404FA	16.07	38 of 64	275	PFO	FLAT	0.31	ISOLATE	34.943807	-92.441179	Beaverdam Cr.	111102030507
W403FA	16.19	38 of 64	276	PFO	FLAT	0.1	ISOLATE	34.942046	-92.441244	Beaverdam Cr.	111102030507
W402FA	16.29	38 of 64	277	PFO	FLAT	0.17	ISOLATE	34.940917	-92.44033	Beaverdam Cr.	111102030507
W400FA	16.41	38 of 64	280	PFO	FLAT	1.07	ISOLATE	34.939932	-92.439691	Beaverdam Cr.	111102030507
W58FA	16.84	41 of 64	133	PFO	RIVERINE	0.1	DELINEATE	34.938647	-92.432986	Palarm Creek	111102030405
W59FA	17.25	41 of 64	135	PEM	FLAT	0.55	ISOLATE	34.935556	-92.428687	Palarm Creek	111102030405
W60FA	17.35	41 of 64	136	PFO	FLAT	0.16	ISOLATE	34.934986	-92.427401	Palarm Creek	111102030405
W61FA	17.5	42 of 64	137	PFO	RIVERINE	16.07	RPWWD	34.933475	-92.426241	Palarm Creek	111102030404
W61FA	17.75	42 of 64	281/281B	PEM	RIVERINE	1.12	RPWWD	34.933475	-92.426241	Palarm Creek	111102030405
W62FA	17.7	43 of 64	140	PSS	DEPRESS	2.89	NRPWW	34.935166	-92.423411	Palarm Creek	111102030405
W63FA	17.7	43 of 64	141	PSS	DEPRESS	2.1	NRPWW	34.935183	-92.423155	Palarm Creek	111102030405
W67PU	18.09	44 of 64	143	PFO	FLAT	0.95	DELINEATE	34.931458	-92.41585	Palarm Creek	111102030405
W66PU	18.18	44 of 64	145	PEM	FLAT	1.17	NRPWW	34.930969	-92.414842	Palarm Creek	111102030405
W65PU	18.25	44 of 64	146	PFO	FLAT	0.68	DELINEATE	34.929475	-92.413087	Palarm Creek	111102030405
W64PU	18.49	44 of 64	147	PFO	FLAT	3.08	DELINEATE	34.927915	-92.411931	Palarm Creek	111102030405
W90PU	18.5	44 of 64	148	POW	DEPRESS	11.01	ISOLATE	34.926703	-92.411514	Palarm Creek	111102030405
W44PU	18.82	45 of 64	150	PFO	RIVERINE	0.19	NRPWW	34.923399	-92.408541	Palarm Creek	111102030405
W45PU	20.75	48 of 64	159	PEM	FLAT	0.19	ISOLATE	34.902156	-92.399527	Palarm Creek	111102030405

Table 2A. Wetlands Identified within the Proposed Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Cowardin Code (*2)	HGM Code (*3)	Area (acres) (*4)	Waters Types (*5)	Latitude	Longitude	Local Waterway	12-Digit HUC (*6)
W46PU	20.77	48 of 64	160	PFO	DEPRESS	0.45	DELINEATE	34.90211	-92.399065	Palarm Creek	111102030405
W47PU	20.83	48 of 64	162	POW	DEPRESS	0.21	ISOLATE	34.902497	-92.398343	Palarm Creek	111102030405
W48PU	20.96	49 of 64	163	PFO	RIVERINE	0.29	DELINEATE	34.902418	-92.396285	Palarm Creek	111102030405
W51PU	21.29	49 of 64	167	POW	DEPRESS	0.18	ISOLATE	34.902172	-92.390107	Palarm Creek	111102030405
W120PU	24.38	55 of 64	196	PSS	FLAT	0.02	DELINEATE	34.900852	-92.336597	White Oak Bay.	111102070401
W121PU	24.45	55 of 64	198	PFO	FLAT	0.02	DELINEATE	34.900898	-92.335349	White Oak Bay.	111102070401
W411PU	24.82	56 of 64	285	PFO	FLAT	0.06	ISOLATE	34.900883	-92.328776	White Oak Bay.	111102070401
W113PU	25.45	56 of 64	203	PEM	SLOPE	0.01	ISOLATE	34.899348	-92.319433	White Oak Bay.	111102070401
W110PU	27.47	60 of 64	216	PEM	FLAT	0.02	ISOLATE	34.871271	-92.319847	Winifree Creek	111102070401
W410FAPU	28.25	62 of 64	284	PEM	RIVERINE	0.1	RPWWD	34.86021	-92.320262	Newton Creek	111102070401
W109PU	28.42	63 of 64	225	PEM/PSS mosaic	FLAT	0.09	ISOLATE	34.857873	-92.320256	Newton Creek	111102070401
Access Roads and Yards											
W409FA	AR- Cadron Creek	3 of 64	NA	PSS	FLAT	0.02	ISOLATE	35.115769	-92.524418	Cadron Creek	111102030506
W54FA	Offline	35 of 64	122	PFO	FLAT	0.11	ISOLATE	34.946844	-92.447514	Beaverdam Cr.	111102030507
W111PU	AR-27.49	60 of 64	221	POW	SLOPE	144.31ft²	ISOLATE	34.871109	-92.312253	Winifree Creek	111102070401
W112PU	AR-27.49	60 of 64	218	POW	SLOPE	0.01	DELINEATE	34.871243	-92.318933	Winifree Creek	111102070401
W52FA	Contractor Yard 3	40 of 64	130	PEM	RIVERINE	0.12	DELINEATE	34.929531	-92.449186	Arkansas River	111102030506
W300FA(*6)	Shoemaker Site	64 of 64	288	PFO/PEM	FLAT	0.42	ISOLATE	35.081572	-92.318403	Palarm Creek	111102030405

1 FA=Faulkner County, PU=Pulaski County

2 PEM=Palustrine Emergent, PSS=Palustrine Scrub/Shrub, PFO=Palustrine Forested, POW=Palustrine Open Water

3 HGM Codes: DEPRESS=Depressional, RIVERINE=Riverine, FLAT=Flat

4 Area represents area of wetland within the Project study corridor

5 Waters Types: DELINEATE=Delineation only, ISOLATE=Isolated waters and wetlands, RPWWD=Wetlands abutting Relatively Permanent Waters, RPWWN= Wetlands adjacent to Non-Relatively Permanent Waters

6 HUC= Hydrologic unit code

*Features Summary **Table 2A+2B**: POW-15, PSS-5, PEM-21, PFO-29, and Mixed Community Wetlands-7- Total Wetland Features-77 (**Table 2A** feature total= 67)*

Table 2B. Wetlands Identified within the Abandonment Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2B Sheet #	Photo #	Cowardin Code (*2)	HGM Code (*3)	Area (acres) (*4)	Waters Types (*5)	Latitude	Longitude	Local Waterway	12-Digit HUC (*6)
W106FA	26.83	1 of 39	226	PEM	FLAT	0.01	DELINEATE	35.115704	-92.519886	Cadron Creek	111102030506
W107FA	26.71	1 of 39	227	PEM	FLAT	0.04	DELINEATE	35.114949	-92.518094	Cadron Creek	111102030506
W125FA	25.68	2 of 39	NA	POW	ISOLATE	0.16	DELINEATE	35.103494	-92.507147	Tucker Creek	111102030405
W126FA	25.68	2 of 39	NA	POW	ISOLATE	0.16	DELINEATE	35.103536	-92.507601	Tucker Creek	111102030405
W108FA	24.64	4 of 39	228	PEM	SLOPE	0.05	DELINEATE	35.09121	-92.494901	Tucker Creek	111102030405
W127FA	20.77	11 of 39	233	POW	DEPRESS	0.31	DELINEATE	35.111968	-92.51174	Cypress Creek	111102050204
W122PU	11.54	28 of 39	238	POW	SLOPE	0.22	DELINEATE	34.928241	-92.387799	Tucker Creek	111102030405
W123PU	11.53	28 of 39	239	PEM	FLAT	0.01	DELINEATE	34.928623	-92.387017	Tucker Creek	111102030405
W124PU	10.95	29 of 39	251	PEM	DEPRESS	0.02	NRPWW	34.923446	-92.379285	Grassy Lake	111102030405
W200PU	7.45	35 of 39	256	PSS	DEPRESS	0.22	DELINEATE	34.884563	-92.34173	White Oak Bay.	111102070401

1 FA=Faulkner County, PU=Pulaski County

2 PEM=Palustrine Emergent, PSS=Palustrine Scrub/Shrub, PFO=Palustrine Forested, POW=Palustrine Open Water

3 HGM Codes: DEPRESS=Depressional, RIVERINE=Riverine, FLAT=Flat

4 Area represents area of wetland within the Project study corridor

5 Waters Types: DELINEATE=Delineation only, ISOLATE=Isolated waters and wetlands, RPWWD=Wetlands abutting Relatively Permanent Waters, RPWWN= Wetlands adjacent to Non-Relatively Permanent Waters

6 HUC= Hydrologic unit code

*Features Summary **Table 2A+2B**: POW-15, PSS-5, PEM-21, PFO-29, and Mixed Community Wetlands-7- Total Wetland Features=77 (**Table 2B** feature total= 10)*

APPENDIX A

Waterbodies

Tables 3A-3B

Table 3A. Waterbodies Identified within the Proposed Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
Pipeline Facilities													
S116FA	0.08	1 of 64	2	UNT Cypress Cr.	R6	12	66.4	796.8	NRPW	35.114938	-92.514397	Cypress Cr	111102030506
S116AFA	0.08	1 of 64	3	UNT Cypress Cr.	R6	Swale	63.7	NA	NRPW	35.114913	-92.513457	Cypress Cr	111102030506
S117FA	0.26	1 of 64	4	UNT Cypress Cr.	R6	4	205.2	820.8	NRPW	35.112774	-92.515593	Cypress Cr	111102050204
S118FA	0.27	4 of 64	6	UNT Cadron Cr.	R6	Swale	30.7	NA	NRPW	35.112783	-92.516089	Cadron Creek	111102050204
S85FA	1.35	5 of 64	9	UNT Cadron Cr.	R6	Swale	145.9	NA	NRPW	35.107854	-92.53033	Cadron Creek	111102050204
S119FA	1.35	5 of 64	52	UNT Tupelo Bay.	R6	3	52.8	158.4	NRPW	35.042162	-92.501306	Tupelo Bayou	111102030405
S111FA	Offline	7 of 64	15	UNT Lake Carol-Dan	R6	3	154.3	462.9	NRPW	35.100692	-92.536242	Lake Carol-Dan	111102030506
S112FA	Offline	6 of 64	14	UNT Lake Carol-Dan	R4	15	249.7	3745.5	RPW	35.100662	-92.533665	Lake Carol-Dan	111102030506
S113FA	Offline	6 of 64	13	UNT Lake Carol-Dan	R6	10	182.4	1824	NRPW	35.100568	-92.529187	Lake Carol-Dan	111102030506
S114FA	Offline	6 of 64	12	UNT Lake Carol-Dan	R6	5	149.4	747	NRPW	35.102497	-92.528639	Lake Carol-Dan	111102030506
S115FA	Offline	6 of 64	11	UNT Lake Carol-Dan	R6	8	238	1904	NRPW	35.104175	-92.528582	Lake Carol-Dan	111102030506
S100FA	2.18	7 of 64	16	UNT Lake Carol-Dan	R4	8	242.2	1937.6	RPW	35.100068	-92.537326	Lake Carol-Dan	111102030506
S100AFA	2.21	7 of 64	**NA**	UNT Lake Carol-Dan	R6	2	147.6	295.2	NRPW	35.099651	-92.537346	Lake Carol-Dan	111102030506
S101FA	2.28	7 of 64	17	UNT Lake Carol-Dan	R6	2	136.2	272.4	NRPW	35.098664	-92.537418	Lake Carol-Dan	111102030506
S102FA	2.4	7 of 64	18	UNT Lake Carol-Dan	R4	15	187.7	2815.5	RPW	35.097628	-92.537489	Lake Carol-Dan	111102030506
S103FA	2.6	7 of 64	19	UNT Arkansas R.	R6	4	201	804	NRPW	35.093983	-92.537614	Arkansas River	111102030506
S104FA	3.15	10 of 64	20	UNT Arkansas R.	R4	6	154.3	925.8	RPW	35.089513	-92.533059	Arkansas River	111102030506
S105FA	3.29	11 of 64	21	UNT Arkansas R.	R4	15	403.4	6051	RPW	35.089541	-92.530686	Arkansas River	111102030506
S105AFA	3.29	11 of 64	**NA**	UNT Arkansas R.	R6	2	165.7	331.4	NRPW	35.089541	-92.530302	Arkansas River	111102030506
S105BFA	3.3	11 of 64	22	UNT Arkansas R.	R6	2	99	198	NRPW	35.089457	-92.530275	Arkansas River	111102030506
S105DFA	3.42	11 of 64	**NA**	UNT Arkansas R.	R4	8	74.1	592.8	RPW	35.089086	-92.528812	Arkansas River	111102030506
S106FA	3.49	11 of 64	23	UNT Arkansas R.	R6	1	96.6	96.6	NRPW	35.088138	-92.528938	Arkansas River	111102030506
S107FA	3.52	11 of 64	24	UNT Arkansas R.	R6	1	255.1	255.1	NRPW	35.08764	-92.528978	Arkansas River	111102030506
S108AFA	3.67	11 of 64	26	UNT Arkansas R.	R4	8	267.8	2142.4	RPW	35.085345	-92529022	Arkansas River	111102030506

Table 3A. Waterbodies Identified within the Proposed Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
S108FA	3.68	11 of 64	25	UNT Arkansas R.	R6	15	110	1650	NRPW	35.085473	-92.529018	Arkansas River	111102030506
S109FA	3.8	11 of 64	27	UNT Arkansas R.	R6	4	153.2	612.8	NRPW	35.083636	-92.529038	Arkansas River	111102030506
S110FA	3.96	14 of 64	28	UNT Arkansas R.	R6	3	161.6	484.8	NRPW	35.081316	-92.529136	Arkansas River	111102030506
S74FA	4.18	14 of 64	29	UNT Arkansas R.	R6	3	197.7	593.1	NRPW	35.078152	-92.529289	Arkansas River	111102030506
S75AFA	4.79	15 of 64	30	UNT Tucker Cr.	R6	3	228.4	685.2	NRPW	35.071285	-92.527111	Tucker Creek	111102030405
S75BFA	4.8	15 of 64	31	UNT Tucker Cr.	R6	Swale	53.3	NA	NRPW	35.071325	-92.52695	Tucker Creek	111102030405
S76FA	5	15 of 64	33	UNT Tucker Cr.	R6	2	79.8	159.6	NRPW	35.069627	-92.52526	Tucker Creek	111102030405
S77FA	5.09	15 of 64	33a	UNT Tucker Cr.	R6	4	573.2	2292.8	NRPW	35.068321	-92.525391	Tucker Creek	111102030405
S78FA	5.11	15 of 64	34	UNT Tucker Cr.	R6	4	184.5	738	NRPW	35.068128	-92.525417	Tucker Creek	111102030405
S79FA	5.24	15 of 64	35	UNT Tucker Cr.	R4	8	162.2	1297.6	RPW	35.067931	-92.523232	Tucker Creek	111102030405
S80FA	5.25	16 of 64	36	UNT Tucker Cr.	R6	6	2003.2	12019.2	NRPW	35.067752	-92.519935	Tucker Creek	111102030405
S83FA	5.54	16 of 64	39	UNT Tucker Cr.	R6	5	57.6	288	NRPW	35.067997	-92.518106	Tucker Creek	111102030405
S82FA	5.55	16 of 64	40	UNT Tucker Cr.	R4	10	323.5	3235	RPW	35.067819	-92.517698	Tucker Creek	111102030405
S73FA	6.18	18 of 64	41	Tucker Cr.	R5	50	365.4	18270	RPW	35.064274	-92.509618	Tucker Creek	111102030405
S72FA	6.45	18 of 64	45	UNT Tucker Cr.	R4	6	156.2	937.2	RPW	35.060534	-92.508299	Tucker Creek	111102030405
S71AFA	6.84	19 of 64	47	UNT Tucker Cr.	R6	3	179.5	538.5	NRPW	35.054976	-92.506328	Tucker Creek	111102030405
S71BFA	6.85	19 of 64	48	UNT Tucker Cr.	R6	Swale	8	NA	NRPW	35.054845	-92.506017	Tucker Creek	111102030405
S70FA	7.27	20 of 64	49	UNT Tupelo Bay.	R5	10	318.6	3186	RPW	35.049187	-92.504347	Tupelo Bayou	111102030405
S69FA	7.37	20 of 64	50	UNT Tupelo Bay.	R6	Swale	551.6	NA	NRPW	35.047639	-92.50383	Tupelo Bayou	111102030405
S68FA	7.82	21 of 64	53	UNT Tupelo Bay.	R6	3	444.9	1334.7	NRPW	35.041428	-92.502466	Tupelo Bayou	111102030405
S14FA	8.17	21 of 64	54	UNT Tupelo Bay.	R6	Swale	166.4	NA	NRPW	35.037454	-92.500311	Tupelo Bayou	111102030505
S13FA	8.28	21 of 64	55	UNT Tupelo Bay.	R6	2	216.2	432.4	NRPW	34.035926	-92.499731	Tupelo Bayou	111102030505
S15FA	8.32	22 of 64	57	UNT Tupelo Bay.	R6	Swale	151.2	NA	NRPW	35.035245	-92.499508	Tupelo Bayou	111102030505
S16FA	8.42	22 of 64	58	UNT Tupelo Bay.	R6	Swale	161.5	NA	NRPW	35.033866	-92.499033	Tupelo Bayou	111102030505
S17AFA	8.62	22 of 64	60	UNT Tupelo Bay.	R6	Swale	73.4	NA	NRPW	35.031103	-92.497818	Tupelo Bayou	111102030505
S17BFA	8.63	22 of 64	59	UNT Tupelo Bay.	R6	3	156.4	469.2	NRPW	35.031016	-92.498027	Tupelo Bayou	111102030505
S18FA	8.73	22 of 64	61	UNT Tupelo Bay.	R6	Swale	169.4	NA	NRPW	35.02961	-92.497514	Tupelo Bayou	111102030505
S19AFA	8.81	22 of 64	64	UNT Tupelo Bay.	R6	Swale	142.6	NA	NRPW	35.028551	-92.496825	Tupelo Bayou	111102030505

Table 3A. Waterbodies Identified within the Proposed Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
S19BFA	8.82	23 of 64	63	UNT Tupelo Bay.	R4	8	223.7	1789.6	RPW	35.028428	-92.49689	Tupelo Bayou	111102030505
S20FA	8.84	23 of 64	66	UNT Tupelo Bay.	R6	Swale	242.3	NA	NRPW	35.028214	-92.496813	Tupelo Bayou	111102030505
S21FA	9	23 of 64	67	UNT Tupelo Bay.	R6	3	160.8	482.4	NRPW	35.025908	-92.496246	Tupelo Bayou	111102030505
S22BFA	9.29	23 of 64	70	UNT Tupelo Bay.	R6	5	104	520	NRPW	35.021857	-92.494622	Tupelo Bayou	111102030505
S22AFA	9.31	23 of 64	71	UNT Tupelo Bay.	R6	6	419.2	2515.2	NRPW	35.021819	-92.494709	Tupelo Bayou	111102030505
S24AFA	9.34	23 of 64	72	Tupelo Bayou	R5	12	163.4	1960.8	RPW	35.021184	-92.494255	Tupelo Bayou	111102030505
S24BFA	9.34	23 of 64	73	UNT Tupelo Bay.	R6	8	98.5	788	NRPW	35.021177	-92.494266	Tupelo Bayou	111102030505
S25AFA	9.51	24 of 64	74	UNT Tupelo Bay.	R4	10	198.7	1987	RPW	35.018811	-92.493598	Tupelo Bayou	111102030505
S25BFA	9.54	24 of 64	75	UNT Tupelo Bay.	R6	8	40.2	321.6	NRPW	35.01845	-92.49321	Tupelo Bayou	111102030505
S25CFA	9.56	24 of 64	76	UNT Tupelo Bay.	R6	5	60.5	302.5	NRPW	35.018037	-92.493012	Tupelo Bayou	111102030505
S26AFA	9.77	24 of 64	77	Tupelo Bayou	R5	10	255.2	2552	RPW	35.015268	-92.492221	Tupelo Bayou	111102030505
S26BFA	9.8	24 of 64	78	UNT Tupelo Bayou	R4	12	158.3	1899.6	RPW	35.014812	-92.49209	Tupelo Bayou	111102030505
S27FA	10.05	25 of 64	79	UNT Tupelo Bayou	R6	Swale	215.1	NA	NRPW	35.011344	-92.491128	Tupelo Bayou	111102030505
S28FA	10.2	25 of 64	80	UNT Tupelo Bayou	R6	Swale	327.5	NA	NRPW	35.009588	-92.490471	Tupelo Bayou	111102030505
S28AFA	10.23	25 of 64	82	UNT Tupelo Bayou	R6	4	427.3	1709.2	NRPW	35.00889	-92.49083	Tupelo Bayou	111102030505
S28BFA	10.23	25 of 64	83	UNT Tupelo Bayou	R6	4	201.1	804.4	NRPW	35.008789	-92.490857	Tupelo Bayou	111102030505
S29BFA	10.28	25 of 64	258	UNT Tupelo Bayou	R6	3	100.6	301.8	NRPW	35.008241	-92.489782	Tupelo Bayou	111102030505
S29FA	10.29	25 of 64	81	UNT Tupelo Bayou	R4	10	221.2	2212	RPW	35.009056	-92.491098	Tupelo Bayou	111102030505
S32FA	10.51	25 of 64	85	UNT Tupelo Bayou	R6	6	215.5	1293	NRPW	35.005578	-92.490085	Tupelo Bayou	111102030505
S31FA	10.52	26 of 64	86	UNT Tupelo Bayou	R4	8	902.8	7222.4	RPW	35.005366	-92.4901	Tupelo Bayou	111102030505
S1FA	11.2	26 of 64	87	Tupelo Bayou	R5	4	167.1	668.4	RPW	34.998414	-92.482791	Tupelo Bayou	111102030505
S2FA	11.43	27 of 64	88	UNT Tupelo Bay.	R6	1	185.2	185.2	NRPW	34.995779	-92.480562	Tupelo Bayou	111102030505
S3AFA	11.52	27 of 64	89	UNT Tupelo Bay.	R6	1	154.5	154.5	NRPW	34.994576	-92.479532	Tupelo Bayou	111102030505
S3BFA	11.53	27 of 64	90	UNT Tupelo Bay.	R6	1	172.5	172.5	NRPW	34.9945	-92.479461	Tupelo Bayou	111102030505
S4FA	11.73	27 of 64	91	UNT Tupelo Bay.	R6	1	153.3	153.3	NRPW	34.992114	-92.477473	Tupelo Bayou	111102030505
S5FA	11.9	28 of 64	92	UNT Tupelo Bay.	R6	Swale	427.1	NA	NRPW	34.990076	-92.475745	Tupelo Bayou	111102030505
S6AFA	12.01	28 of 64	93	Tupelo Bayou	R5	4	154.7	618.8	RPW	34.988809	-92.474685	Tupelo Bayou	111102030505
S6BFA	12.02	28 of 64	95	UNT Tupelo Bay.	R5	4	69.7	278.8	RPW	34.988728	-92.474592	Tupelo Bayou	111102030505
S7FA	12.02	28 of 64	96	UNT Tupelo Bay.	R6	2	79.6	159.2	NRPW	34.98866	-92.474531	Tupelo Bayou	111102030505

Table 3A. Waterbodies Identified within the Proposed Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
S9AFA	12.03	28 of 64	259	Tupelo Bay.	R4	4	485.7	1942.8	RPW	34.9879	-92.474495	Tupelo Bayou	111102030505
S8FA	12.07	28 of 64	97	UNT Tupelo Bay.	R6	Swale	158.7	NA	NRPW	34.988016	-92.47401	Tupelo Bayou	111102030505
S9FA	12.09	28 of 64	98	UNT Tupelo Bay.	R6	2	265.8	531.6	NRPW	34.987767	-92.473809	Tupelo Bayou	111102030505
S10AFA	12.47	29 of 64	104	UNT Davis Lake	R6	2	155.9	311.8	NRPW	34.984074	-92.470155	Davis Lake/ Tupelo Bayou	111102030505
S10BFA	12.48	29 of 64	105	UNT Davis Lake	R6	2	189.3	378.6	NRPW	34.983999	-92.470152	Davis Lake/ Tupelo Bayou	111102030505
S11AFA	12.61	29 of 64	106	UNT Davis Lake	R6	4	136.7	546.8	NRPW	34.982346	-92.468913	Davis Lake/ Tupelo Bayou	111102030505
S11BFA	12.61	20 of 64	107	UNT Davis Lake	R6	Swale	71.8	NA	NRPW	34.982221	-92.468772	Davis Lake/ Tupelo Bayou	111102030505
S901FA	13.4	32 of 64	289	UNT Beaverdam Cr.	R6	1	160	160	NRPW	34.972719	-92.462964	Beaverdam Cr.	111102030507
S302FA	13.45	32 of 64	262	UNT Beaverdam Cr.	R6	Swale	156.9	NA	NRPW	34.972324	-92.462004	Beaverdam Cr.	111102030507
S86CFA	13.61	34 of 64	108	UNT Beaverdam Cr.	R6	3	190.6	571.8	NRPW	34.969434	-92.461008	Beaverdam Cr.	111102030507
S86BFA	13.65	34 of 64	109	UNT Beaverdam Cr.	R6	4	337.2	1348.8	NRPW	34.969452	-92.460731	Beaverdam Cr.	111102030507
S86AFA	13.69	34 of 64	110	UNT Beaverdam Cr.	R6	Swale	221.5	NA	NRPW	35.107837	-92.530346	Beaverdam Cr.	111102030507
S87FA	13.78	34 of 64	111	UNT Beaverdam Cr.	R6	5	359.5	1797.5	NRPW	34.967824	-92.45973	Beaverdam Cr.	111102030507
S88FA	13.8	34 of 64	112	UNT Beaverdam Cr.	R6	4	55.2	220.8	NRPW	34.96738	-92.459656	Beaverdam Cr.	111102030507
S89CFA	13.87	34 of 64	263	UNT Beaverdam Cr.	R6	Swale	523.1	NA	NRPW	34.965765	-92.458074	Beaverdam Cr.	111102030507
S301FA	13.91	34 of 64	264	UNT Beaverdam Cr.	R6	3	491.7	1475.1	NRPW	34.966779	-92.458649	Beaverdam Cr.	111102030507
S89FA	13.94	34 of 64	113	UNT Beaverdam Cr.	R4	8	395	3160	RPW	34.96574	-92.458763	Beaverdam Cr.	111102030507
S89BFA	13.94	34 of 64	114	UNT Beaverdam Cr.	R6	4	85.2	340.8	NRPW	34.965631	-92.458764	Beaverdam Cr.	111102030507
S12FA	14.08	34 of 64	115	UNT Beaverdam Cr.	R6	Swale	137.5	NA	NRPW	34.963913	-92.457501	Beaverdam Cr.	111102030507
S38FA	14.47	35 of 64	117	UNT Beaverdam Cr.	R4	10	293.2	2932	RPW	34.959362	-92.454108	Beaverdam Cr.	111102030507
S39FA	14.8	36 of 64	119	Beaverdam Cr.	R5	12	724.9	8698.8	RPW	34.95515	-92.4516	Beaverdam Cr.	111102030507
S300FA	15.02	36 of 64	265	UNT Beaverdam Cr.	R4	3	188.7	566.1	RPW	34.952352	-92.450216	Beaverdam Cr.	111102030507
S405FA	15.53	37 of 64	268	UNT Beaver Cr.	R6	Swale	208.6	NA	NRPW	34.950128	-92.442797	Beaverdam Cr.	111102030507
S403FA	15.55	37 of 64	270	UNT Beaver Cr.	R4	8	1019	8152	RPW	34.950136	-92.441709	Beaverdam Cr.	111102030507
S404FA	15.55	37 of 64	269	UNT Beaver Cr.	R6	Swale	208.4	NA	NRPW	34.950405	-92.442052	Beaverdam Cr.	111102030507
S402FA	15.72	37 of 64	271	UNT Beaver Cr.	R6	4	420.1	1680.4	NRPW	34.948909	-92.441021	Beaverdam Cr.	111102030507

Table 3A. Waterbodies Identified within the Proposed Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
S53FA	Offline	38 of 64	126	UNT Beaverdam Cr.	R6	Swale	109.1	NA	NRPW	34.943827	-92.444665	Beaverdam Cr.	111102030507
S400FA	16.31	38 of 64	279	UNT Palarm Cr.	R6	Swale	158.4	NA	NRPW	34.940965	-92.439468	Palarm Creek	111102030405
S401FA	16.31	38 of 64	278	UNT Palarm Cr.	R6	Swale	124.8	NA	NRPW	34.941008	-92.439726	Palarm Creek	111102030405
S56FA	16.84	41 of 64	132	UNT Palarm Cr.	R6	4	377.6	1510.4	NRPW	34.938722	-92.432938	Palarm Creek	111102030405
S55FA	17.1	41 of 64	134	UNT Palarm Cr.	R6	3	375.9	1127.7	NRPW	34.936049	-92.431204	Palarm Creek	111102030405
S58FA	17.44	41 of 64	138	UNT Palarm Cr.	R5	4	236.4	945.6	RPW	34.933618	-92.426401	Palarm Creek	111102030405
S64FA	17.66	41 of 64	**NA**	UNT Palarm Cr.	R6	8	1422.5	11380	NRPW	34.931484	-92.421478	Palarm Creek	111102030405
S61PU	17.94	44 of 64	142	Palarm Cr.	R5	40	310.4	12416	RPW	34.931255	-92.418898	Palarm Creek	111102030405
S62PU	18.14	44 of 64	144	UNT Palarm Cr.	R6	3	2061.7	6185.1	NRPW	34.929575	-92.413202	Palarm Creek	111102030405
S63PU	18.68	45 of 64	149	UNT Palarm Cr.	R4	15	150.6	2259	RPW	34.924861	-92.410308	Palarm Creek	111102030405
S44BPU	18.83	45 of 64	151	UNT Palarm Cr.	R6	8	1296.8	10374.4	NRPW	34.921881	-92.407966	Palarm Creek	111102030405
S44APU	19.07	45 of 64	152	UNT Palarm Cr.	R6	4	152.1	608.4	NRPW	34.919875	-92.407632	Palarm Creek	111102030405
S40PU	19.19	46, 47, 48	**NA**	UNT Palarm Cr.	R4	6	7240.9	43445.4	RPW	34.915034	-92.406897	Palarm Creek	111102030405
S42APU	19.31	46 of 64	153	UNT Palarm Cr.	R4	5	189	945	RPW	34.916338	-92.407083	Palarm Creek	111102030405
S42BPU	19.31	46 of 64	154	UNT Palarm Cr.	R4	5	168.6	843	RPW	34.916283	-92.407039	Palarm Creek	111102030405
S43PU	19.59	46 of 64	156	UNT Palarm Cr.	R5	10	168.2	1682	RPW	34.902174	-92.396122	Palarm Creek	111102030405
S41PU	20.55	48 of 64	155	UNT Palarm Cr.	R4	6	179.9	1079.4	RPW	34.901677	-92.405912	Palarm Creek	111102030405
S41APU	20.55	48 of 64	157	UNT Palarm Cr.	R4	6	5294.9	31769.4	RPW	34.901677	-92.405912	Palarm Creek	111102030405
S45PU	20.64	48 of 64	158	UNT Palarm Cr.	R6	Swale	203.6	NA	NRPW	34.901715	-92.401681	Palarm Creek	111102030405
S46PU	20.81	48 of 64	161	UNT Palarm Cr.	R6	5	156	780	NRPW	34.902157	-92.398621	Palarm Creek	111102030405
S48PU	20.96	49 of 64	164	UNT Palarm Cr.	R6	Swale	184.7	NA	NRPW	34.902163	-92.396033	Palarm Creek	111102030405
S49PU	21.09	49 of 64	165	UNT Palarm Cr.	R6	5	211.6	1058	NRPW	34.90201	-92.393822	Palarm Creek	111102030405
S50PU	21.24	49 of 64	166	UNT Palarm Cr.	R6	5	169.5	847.5	NRPW	34.901837	-92.391133	Palarm Creek	111102030405
S170PU	21.47	50 of 64	168	UNT Palarm Cr.	R6	1	271.7	271.7	NRPW	34.901787	-92.387219	Palarm Creek	111102030405
S171PU	21.73	50 of 64	169	UNT Palarm Cr.	R6	2	148.8	297.6	NRPW	34.901626	-92.382618	Palarm Creek	111102030405
S172PU	21.74	50 of 64	170	UNT Palarm Cr.	R6	4	152.8	611.2	NRPW	34.901624	-92.382443	Palarm Creek	111102030405
S173PU	22.2	51 of 64	171	UNT Palarm Cr.	R4	4	150.8	603.2	RPW	34.901451	-92.374276	Palarm Creek	111102030405
S174PU	22.61	52 of 64	NA	UNT Palarm Cr.	R6	2	160.8	321.6	NRPW	34.901454	-92.367134	Palarm Creek	111102030405

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Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
S175PU	23.24	53 of 64	172	UNT White Oak Bay.	R6	3	143.6	430.8	NRPW	34.901319	-92.356038	Palarm Creek	111102070401
S176PU	23.3	53 of 64	173	UNT White Oak Bay.	R6	5	241.7	1208.5	NRPW	34.901269	-92.354928	Palarm Creek	111102070401
S177PU	23.65	54 of 64	191	UNT White Oak Bay.	R6	3	111.2	333.6	NRPW	34.900695	-92.349098	Palarm Creek	111102070401
S178PU	23.85	54 of 64	192	UNT White Oak Bay.	R6	6	150.6	903.6	NRPW	34.90064	-92.345532	White Oak Bay.	111102070401
S179PU	24.04	54 of 64	193	UNT Pond	R4	10	149.2	1492	RPW	34.900584	-92.342262	White Oak Bay.	111102070401
S180PU	24.16	54 of 64	194	UNT White Oak Bay.	R6	8	135.9	1087.2	NRPW	34.900547	-92.340147	White Oak Bay.	111102070401
S181PU	24.38	55 of 64	195	UNT White Oak Bay.	R6	1	34	34	NRPW	34.900983	-92.33656	White Oak Bay.	111102070401
S182PU	24.45	55 of 64	197	UNT White Oak Bay.	R6	3	121	363	NRPW	34.900795	-92.335358	White Oak Bay.	111102070401
S406PU	24.63	55 of 64	NA	UNT White Oak Bay.	R6	7	141.8	992.6	NRPW	34.900788	-92.332201	White Oak Bay.	111102070401
S407PU	24.64	55 of 64	282	UNT White Oak Bay.	R6	3	143.6	430.8	NRPW	34.900837	-92.332069	White Oak Bay.	111102070401
S408PU	24.71	55 of 64	283	UNT White Oak Bay.	R6	Swale	398.4	0	NRPW	34.900664	-92.331364	White Oak Bay.	111102070401
S183PU	24.72	55 of 64	199	UNT White Oak Bay.	R4	12	0.6	7.2	RPW	34.900729	-92.330405	White Oak Bay.	111102070401
S183BPU	24.75	55 of 64	200	UNT White Oak Bay.	R6	4	389.4	1557.6	NRPW	34.900935	-92.33004	White Oak Bay.	111102070401
S184PU	24.86	56 of 64	201	UNT White Oak Bay.	R6	3	165.1	495.3	NRPW	34.9007013	-92.328097	White Oak Bay.	111102070401
S141PU	25.36	57 of 64	202	UNT White Oak Bay.	R6	4	166.4	665.6	NRPW	34.900696	-92.319486	White Oak Bay.	111102070401
S140PU	25.78	57 of 64	204	White Oak Bay.	R4	20	373.6	7472	RPW	34.895304	-92.318425	White Oak Bay.	111102070401
S139PU	26.25	58 of 64	205	UNT White Oak Bay.	R6	6	109.5	657	NRPW	34.888707	-92.318562	White Oak Bay.	111102070401
S138APU	26.26	58 of 64	206	UNT White Oak Bay.	R6	4	174.9	699.6	NRPW	34.888534	-92.318777	White Oak Bay.	111102070401
S138BPU	26.26	58 of 64	207	UNT White Oak Bay.	R6	4	15.5	62	NRPW	34.888365	-92.318579	White Oak Bay.	111102070401
S137PU	26.41	58 of 64	208	UNT White Oak Bay.	R6	6	258	1548	NRPW	34.886511	-92.319306	White Oak Bay.	111102070401

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Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
S136PU	26.6	58 of 64	209	UNT White Oak Bay.	R6	6	143	858	NRPW	34.883731	-92.319341	White Oak Bay.	111102070401
S135PU	26.73	59 of 64	210	UNT White Oak Bay.	R6	4	186.9	747.6	NRPW	34.881934	-92.319534	White Oak Bay.	111102070401
S134PU	26.93	59 of 64	211	UNT Winifree Cr.	R6	Swale	169.3	NA	NRPW	34.879064	-92.319207	Winifree Creek	111102070401
S132PU	27.27	60 of 64	213	UNT Winifree Cr.	R6	8	184.4	1475.2	NRPW	34.874185	-92.319788	Winifree Creek	111102070401
S128BPU	27.44	60 of 64	214	UNT Winifree Cr.	R4	12	108.8	1305.6	RPW	34.871781	-92.319571	Winifree Creek	111102070401
S128PU	27.45	60 of 64	215	Winifree Cr.	R4	25	229	5725	RPW	34.871595	-92.319564	Winifree Creek	111102070401
S127PU	28	62 of 64	222	UNT Newton Cr.	R6	8	189	1512	NRPW	34.863687	-92.319842	Newton Creek	111102070401
S126CPU	28.25	63 of 64	285	UNT Newton Cr.	R4	8	193.4	1547.2	RPW	34.860076	-92.320146	Newton Creek	111102070401
S126DPU	28.25	63 of 64	286	UNT Newton Cr.	R6	Swale	66.2	NA	NRPW	34.860051	-92.320003	Newton Creek	111102070401
S126EPU	28.25	63 of 64	287	UNT Newton Cr.	R6	Swale	30.5	NA	NRPW	34.860022	-92.320016	Newton Creek	111102070401
S126PU	28.33	63 of 64	223	Newton Cr.	R5	30	427.2	12816	RPW	34.85879	-92.32019	Newton Creek	111102070401
S126BPU	28.34	63 of 64	224	UNT Newton Cr.	R6	8	123.4	987.2	NRPW	34.85876	-92.320069	Newton Creek	111102070401
Access Roads and Yards													
S119FA see data for MP 1.35	AR-7.75	21 of 64	52	UNT Tupelo Bay.	R6	Swale	124.4	NA	NRPW	35.042165	-92.501278	Tupelo Bayou	111102030405
S23FA	AR-9.28	23 of 64	69	UNT Tupelo Bay.	R6	Swale	69.5	NA	NRPW	35.021207	-92.494426	Tupelo Bayou	111102030505
S34FA	AR-12.43	29 of 64	99	UNT Tupelo Bay.	R6	Swale	78.2	NA	NRPW	34.984188	-92.468927	Tupelo Bayou	111102030505
S35FA	AR-12.43	29 of 64	100	UNT Gold Cr.	R6	Swale	87.5	NA	NRPW	34.983717	-92.467277	Gold Creek	111102030505
S36FA	AR-12.43	29 of 64	101	UNT Gold Cr.	R6	Swale	51.6	NA	NRPW	34.98333	-92.464849	Gold Creek	111102030505
S33FA	AR-12.43	29 of 64	**NA**	UNT Gold Cr.	R6	Swale	47.2	NA	NRPW	34.98284	-92.452137	Gold Creek	111102030505
S37FA	AR-12.43	29 of 64	102	UNT Gold Cr.	R6	Swale	45.3	NA	NRPW	34.981672	-92.457566	Gold Creek	111102030505
S57FA	AR-16.62	38 of 64	131	UNT Palarm Cr.	R6	4	61	244	NRPW	34.940855	-92.436608	Palarm Creek	111102030405

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S59FA	AR-17.72	43 of 64	139	UNT Palarm Cr.	R4	6	50.8	304.8	RPW	34.938772	-92.42309	Palarm Creek	111102030405
S142PU	AR-23.56	54 of 64	174	UNT White Oak Bay.	R6	Swale	54.6	NA	NRPW	34.901929	-92.349737	White Oak Bay.	111102070401
S143PU	AR-23.56	54 of 64	175	UNT White Oak Bay.	R6	Swale	55.2	NA	NRPW	30.903419	-92.34532	White Oak Bay.	111102070401
S144PU	AR-23.56	54 of 64	176	UNT White Oak Bay.	R6	Swale	51.1	NA	NRPW	34.903565	-92.344706	White Oak Bay.	111102070401
S145PU	AR-23.56	54 of 64	177	UNT White Oak Bay.	R6	Swale	75.8	NA	NRPW	34.90361	-92.344341	White Oak Bay.	111102070401
S146PU	AR-23.56	54 of 64	178	UNT White Oak Bay.	R6	Swale	48.4	NA	NRPW	34.903833	-92.343145	White Oak Bay.	111102070401
S147PU	AR-23.56	54 of 64	179	UNT White Oak Bay.	R6	Swale	50.5	NA	NRPW	34.903959	-92.341956	White Oak Bay.	111102070401
S148PU	AR-23.56	54 of 64	180	UNT White Oak Bay.	R6	Swale	55.5	NA	NRPW	34.903995	-92.341531	White Oak Bay.	111102070401
S148APU	AR-23.56	54 of 64	181	UNT White Oak Bay.	R6	Swale	52.1	NA	NRPW	34.903971	-92.341345	White Oak Bay.	111102070401
S149PU	AR-23.56	54 of 64	182	UNT White Oak Bay.	R6	Swale	50	NA	NRPW	34.90394	-92.341052	White Oak Bay.	111102070401
S150PU	AR-23.56	54 of 64	183	UNT White Oak Bay.	R6	Swale	56.9	NA	NRPW	34.903612	-92.337835	White Oak Bay.	111102070401
S151PU	AR-23.56	54 of 64	184	UNT White Oak Bay.	R6	Swale	62.1	NA	NRPW	34.904019	-92.33502	White Oak Bay.	111102070401
S152PU	AR-23.56	54 of 64	185	UNT White Oak Bay.	R6	Swale	51.4	NA	NRPW	34.904507	-92.333199	White Oak Bay.	111102070401
S153PU	AR-23.56	54 of 64	186	UNT White Oak Bay.	R6	Swale	75.9	NA	NRPW	34.904475	-92.332959	White Oak Bay.	111102070401
S154PU	AR-23.56	54 of 64	187	UNT White Oak Bay.	R6	Swale	66.9	NA	NRPW	34.9044	-92.33148	White Oak Bay.	111102070401
S155PU	AR-23.56	54 of 64	188	UNT White Oak Bay.	R6	Swale	61.8	NA	NRPW	34.904322	-92.330159	White Oak Bay.	111102070401
S156PU	AR-23.56	54 of 64	189	UNT White Oak Bay.	R6	Swale	50.1	NA	NRPW	34.904241	-92.32969	White Oak Bay.	111102070401
S157PU	AR-23.56	54 of 64	190	UNT White Oak Bay.	R6	Swale	77.1	NA	NRPW	34.904232	-92.329364	White Oak Bay.	111102070401

Table 3A. Waterbodies Identified within the Proposed Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2A Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
S133PU	AR-27.14	61 of 64	212	UNT Winifree Cr.	R6	3	50.7	152.1	NRPW	34.877354	-92.371134	Winifree Creek	111102070401
S131PU	AR-27.49	61 of 64	217	UNT Winifree Cr.	R6	Swale	57.7	NA	NRPW	34.871254	-92.318981	Winifree Creek	111102070401
S130PU	AR-27.49	61 of 64	219	UNT Winifree Cr.	R6	3	60.8	182.4	NRPW	34.871237	-92.317099	Winifree Creek	111102070401
S130BPU	AR-27.49	61 of 64	NA	UNT Winifree Cr.	R6	2	367	734	NRPW	34.871273	-92.317805	Winifree Creek	111102070401
S129PU	AR-27.49	61 of 64	220	UNT Winifree Cr.	R6	Swale	35.8	NA	NRPW	34.871188	-92.313966	Winifree Creek	111102070401
S52FA	Contractor Yard 3	40 of 64	129	UNT Beaverdam Cr.	R6	Swale	174.9	NA	NRPW	34.929935	-92.448722	Beaverdam Cr.	111102030507

1 FA=Faulkner County, PU=Pulaski County

2 UNT= Unnamed Tributary

3 Cowardin Classification: R5=Unknown Perennial- Riverine, R4=Intermittent- Riverine, R6=A wetland, spring, stream, river, pond or lake that only exists for a short period

4 Width represents approximate average distance from top-of-bank to top-of-bank.

5 Area represents area of feature **within the Project study corridor**

6 Waters Type: RPW=relatively permanent water (perennial and intermittent), NRPW= non-relatively permanent water (ephemeral)

7 HUC= Hydrologic unit code

*Features Summary **Tables 3A+3B**: Swales-62, RPWs-50, NRPWs-110, and Total Stream Features= 222 (**Table 3A** total features= 198)*

Table 3B. Waterbodies Identified in the Abandonment Facilities Study Area
Central Arkansas Pipeline Enhancement Project

Feature ID (*1)	Milepost	Figure 2B Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
Pipeline Facilities													
S120FA	24.58	4 of 39	229	UNT Tucker Creek	R5	50	149.5	7474.9	RPW	35.090411	-92.494	Tucker Creek	111102030405
S121FA	24.56	4 of 39	230	UNT Tucker Creek	R6	Swale	56.1	NA	NRPW	35.090059	-92.493823	Tucker Creek	111102030405
S123FA	23.5	7 of 39	231	UNT Tucker Creek	R6	4	76.3	305.3	NRPW	35.077195	-92.482098	Tucker Creek	111102030405
S122FA	23.45	7 of 39	232	Tucker Creek	R5	60	113.9	6833.7	RPW	35.076806	-92.481553	Tucker Creek	111102030405
S124FA	20.7	12 of 39	234	UNT Gold Creek	R6	Swale	44.6	NA	NRPW	35.044657	-92.453881	Gold Creek	111102030505
S202PU	14.72	22 of 39	236	UNT Lake Conway	R5	8	102.2	817.4	RPW	34.962611	-92.424313	Lake Conway	111102030405
S203PU	14.13	23 of 39	237	UNT Palarm Creek	R6	Swale	52.7	NA	NRPW	34.955912	-92.418751	Palarm Creek	111102070401
S185PU	11.5	28 of 39	240	UNT Grassy Lake	R6	3	88.5	265.5	NRPW	34.928325	-92.386501	Grassy Lake	111102030405
S186PU	11.41	28 of 39	242	UNT Grassy Lake	R6	5	279.7	1398.6	NRPW	34.927833	-92.385735	Grassy Lake	111102030405
S187PU	11.41	28 of 39	241	UNT Grassy Lake	R6	4	213.7	854.6	NRPW	34.928066	-92.386125	Grassy Lake	111102030405
S188PU	11.37	28 of 39	243	UNT Grassy Lake	R6	4	38.9	155.5	NRPW	34.92745	-92.385299	Grassy Lake	111102030405
S196PU	11.33	28 of 39	244	UNT Grassy Lake	R6	5	137.4	687	NRPW	34.926918	-92.384431	Grassy Lake	111102030405
S195PU	11.25	28 of 39	245	UNT Grassy Lake	R6	4	13.2	52.9	NRPW	34.92638	-92.383645	Grassy Lake	111102030405
S195BPU	11.25	28 of 39	246	UNT Grassy Lake	R6	4	152.3	609.3	NRPW	34.926264	-92.383559	Grassy Lake	111102030405
S194PU	11.2	28 of 39	247	UNT Grassy Lake	R6	2	53.7	107.4	NRPW	34.925757	-92.382714	Grassy Lake	111102030405
S193PU	11.16	28 of 39	248	UNT Grassy Lake	R6	4	118.2	472.9	NRPW	34.924957	-92.38153	Grassy Lake	111102030405
S191PU	11.1	28 of 39	250	UNT Grassy Lake	R6	5	122.8	614	NRPW	34.924807	-92.381333	Grassy Lake	111102030405
S192PU	11.1	28 of 39	249	UNT Grassy Lake	R6	5	64.4	322	NRPW	34.924957	-92.38153	Grassy Lake	111102030405
S190PU	10.95	29 of 39	252	UNT Grassy Lake	R6	3	46.3	139	NRPW	34.379303	-92.379303	Grassy Lake	111102030405
S189PU	10.75	29 of 39	253	UNT Jim Creek	R6	6	10.8	64.9	NRPW	34.921525	-92.376619	Jim Creek	111102030405
S189BPU	10.75	29 of 39	254	UNT Jim Creek	R6	6	49.3	296	NRPW	34.921451	-92.376655	Jim Creek	111102030405
S201PU	8.31	33 of 39	255	UNT White Oak Bay.	R6	4	67.4	269.6	NRPW	34.895569	-92.349169	White Oak Bay.	111102070401
S200PU	5.26	39 of 39	257	Newton Creek	R6	4	50.9	203.7	NRPW	34.858012	-92.322313	Newton Creek	111102070401
Access Roads													
S125FA	AR-21	16 of 39	235	UNT Gold Creek	R5	20	104.2	2084.2	RPW	35.009924	-92.444759	Gold Creek	111102030505

1 FA=Faulkner County, PU=Pulaski County

2 UNT= Unnamed Tributary

Table 3B. Waterbodies Identified in the Abandonment Facilities Study Area
Central Arkansas Pipeline Enhancement Project

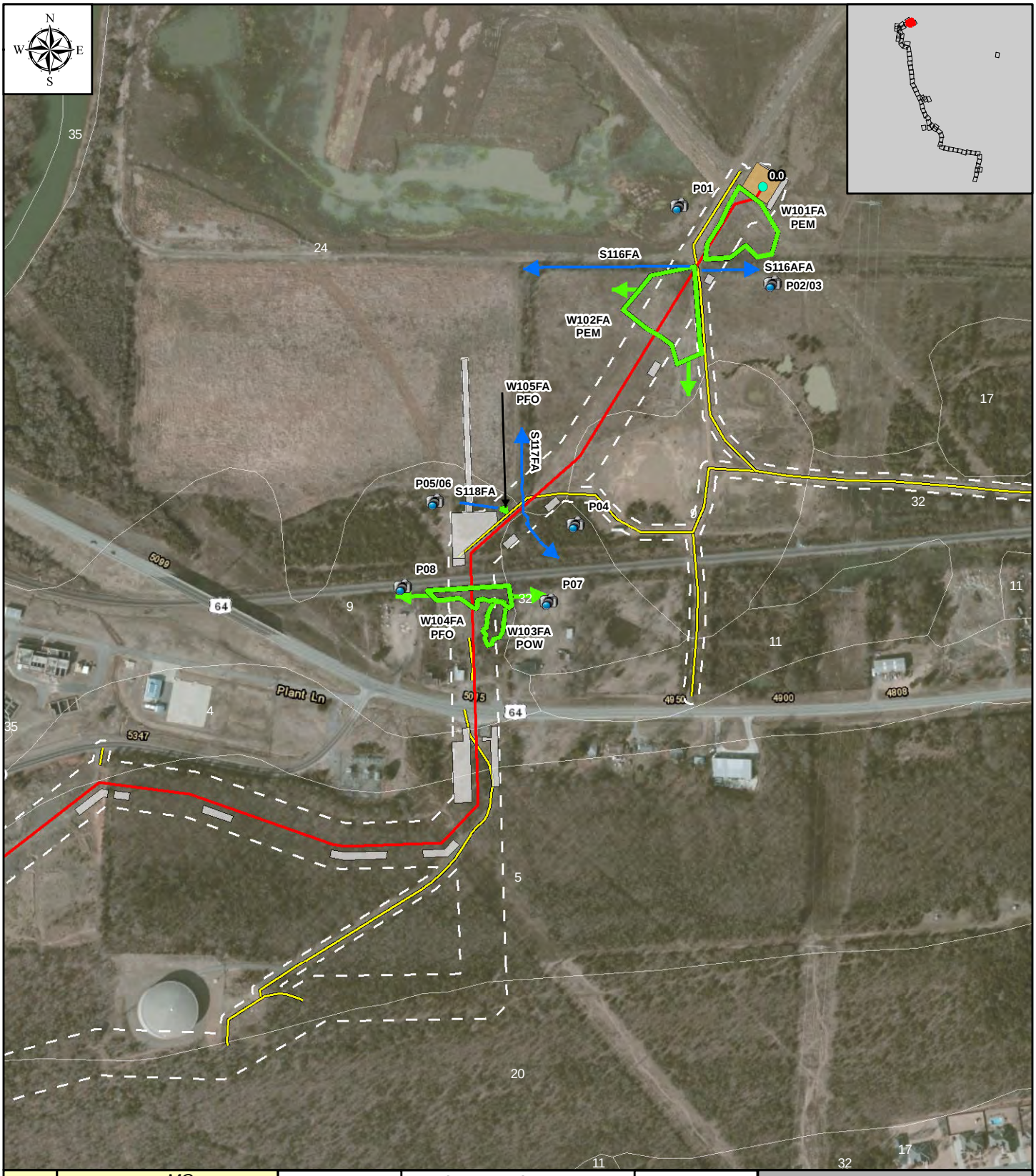
Feature ID (*1)	Milepost	Figure 2B Sheet #	Photo #	Waters Name (*2)	Cowardin Code (*3)	Width (ft) (*4)	Survey Length (ft)	Area (sq.ft.) (*5)	Waters Types (*6)	Latitude (N)	Longitude (W)	Local Waterway	12-Digit HUC (*7)
3	Cowardin Classification: R5=Unknown Perennial- Riverine, R4=Intermittent- Riverine, R6=A wetland, spring, stream, river, pond or lake that only exists for a short period												
4	Width represents approximate average distance from top-of-bank to top-of-bank.												
5	Area represents area of feature within the Project study corridor												
6	Waters Type: RPW=relatively permanent water (perennial and intermittent), NRPW= non-relatively permanent water (ephemeral)												
7	HUC= Hydrologic unit code												
	*Features Summary **Tables 3A+3B**: Swales-62, RPWs-50, NRPWs-110, and Total Stream Features= 222 (**Table 3B** total features= 24)*												

APPENDIX B

Figure 2A

Proposed

Facilities



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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 1 of 64

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

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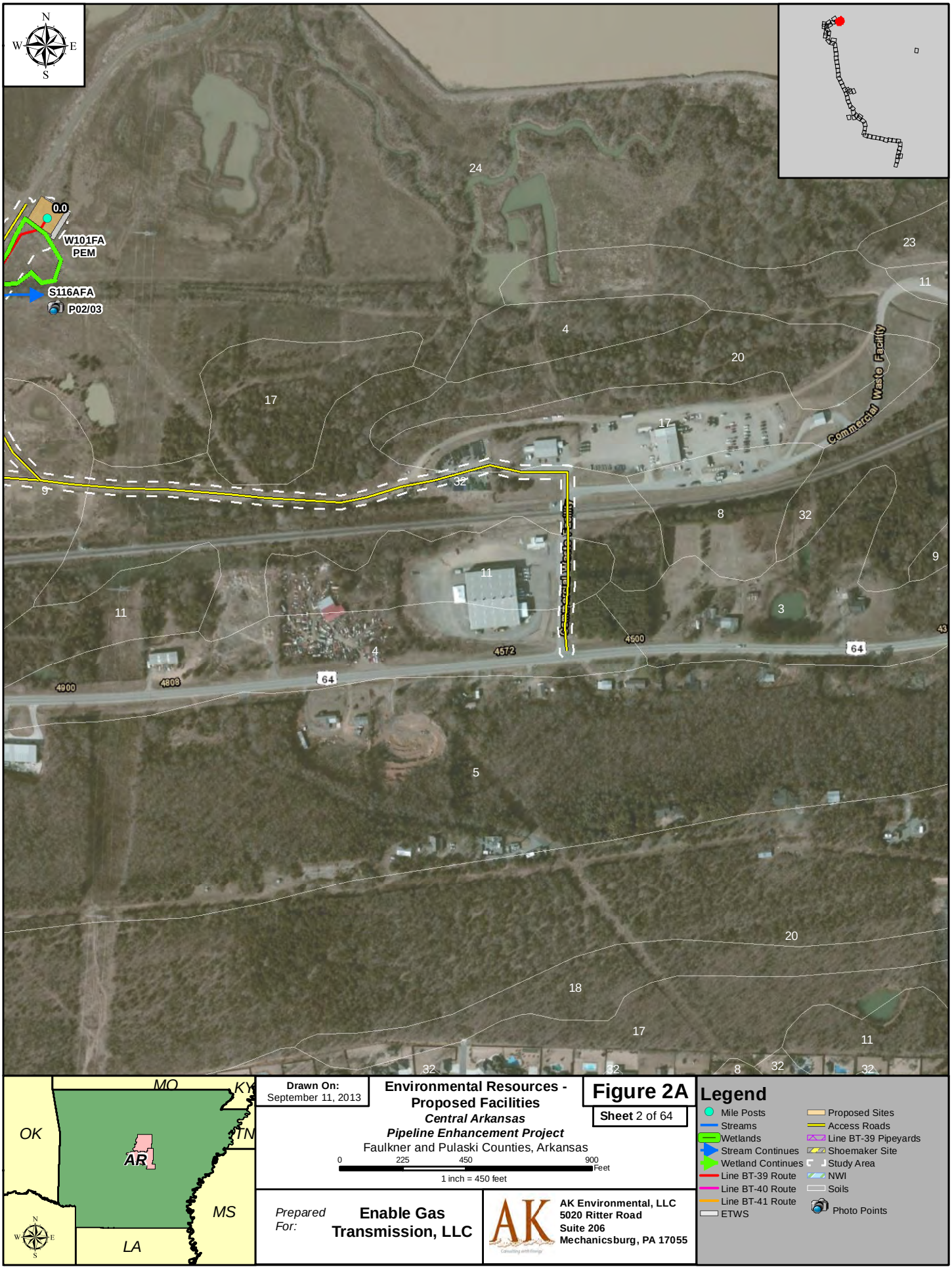

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2A
Sheet 2 of 64

Legend

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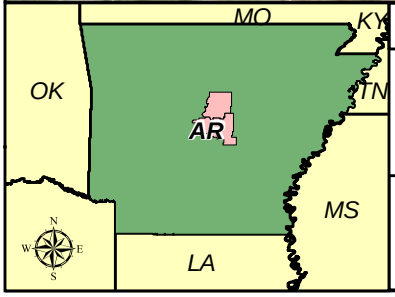

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0 225 450 900 Feet
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Figure 2A
Sheet 3 of 64

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Legend

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Central Arkansas
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0 225 450 900 Feet
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Figure 2A
Sheet 4 of 64

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Legend

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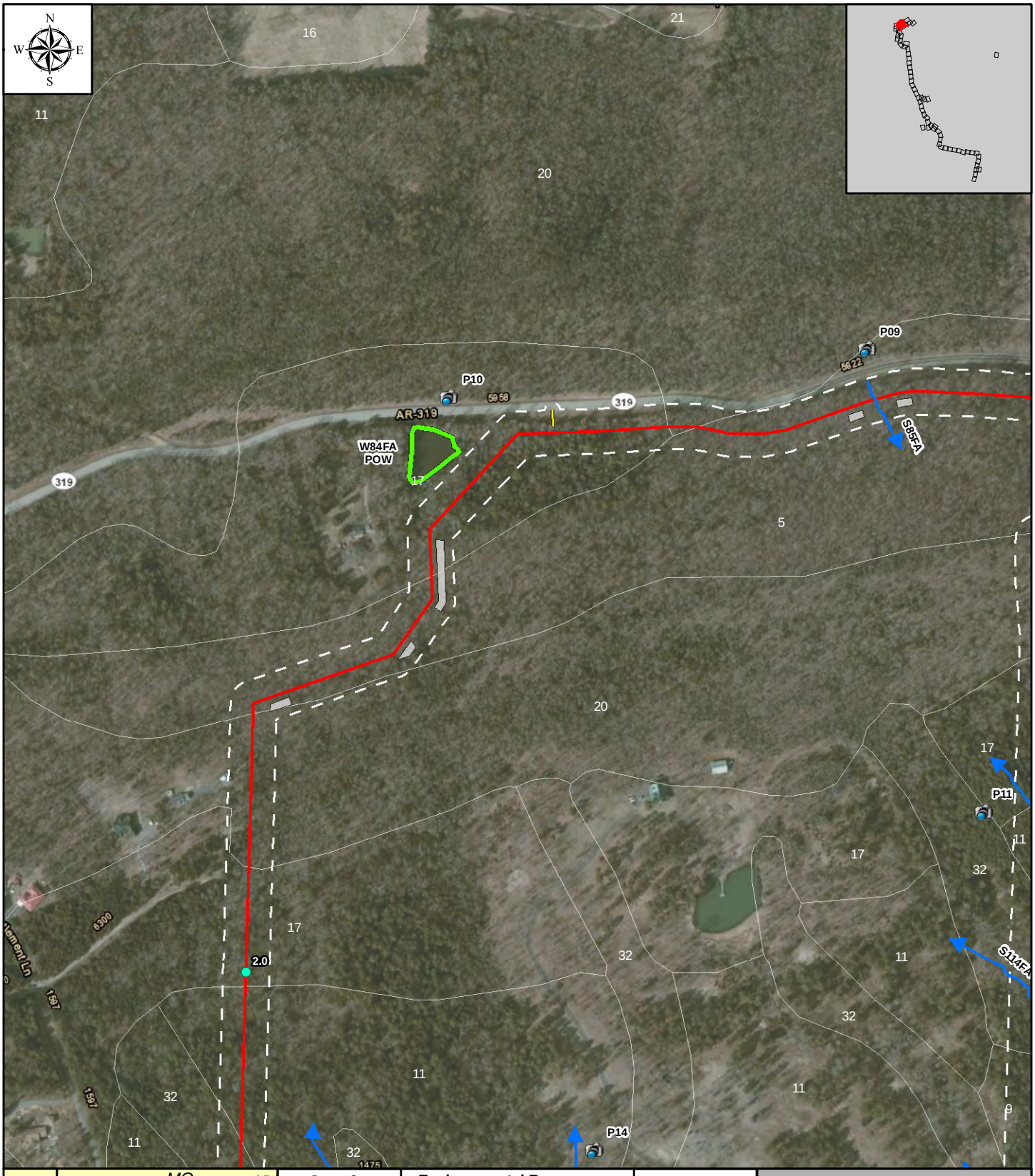

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Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2A
Sheet 5 of 64

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Legend

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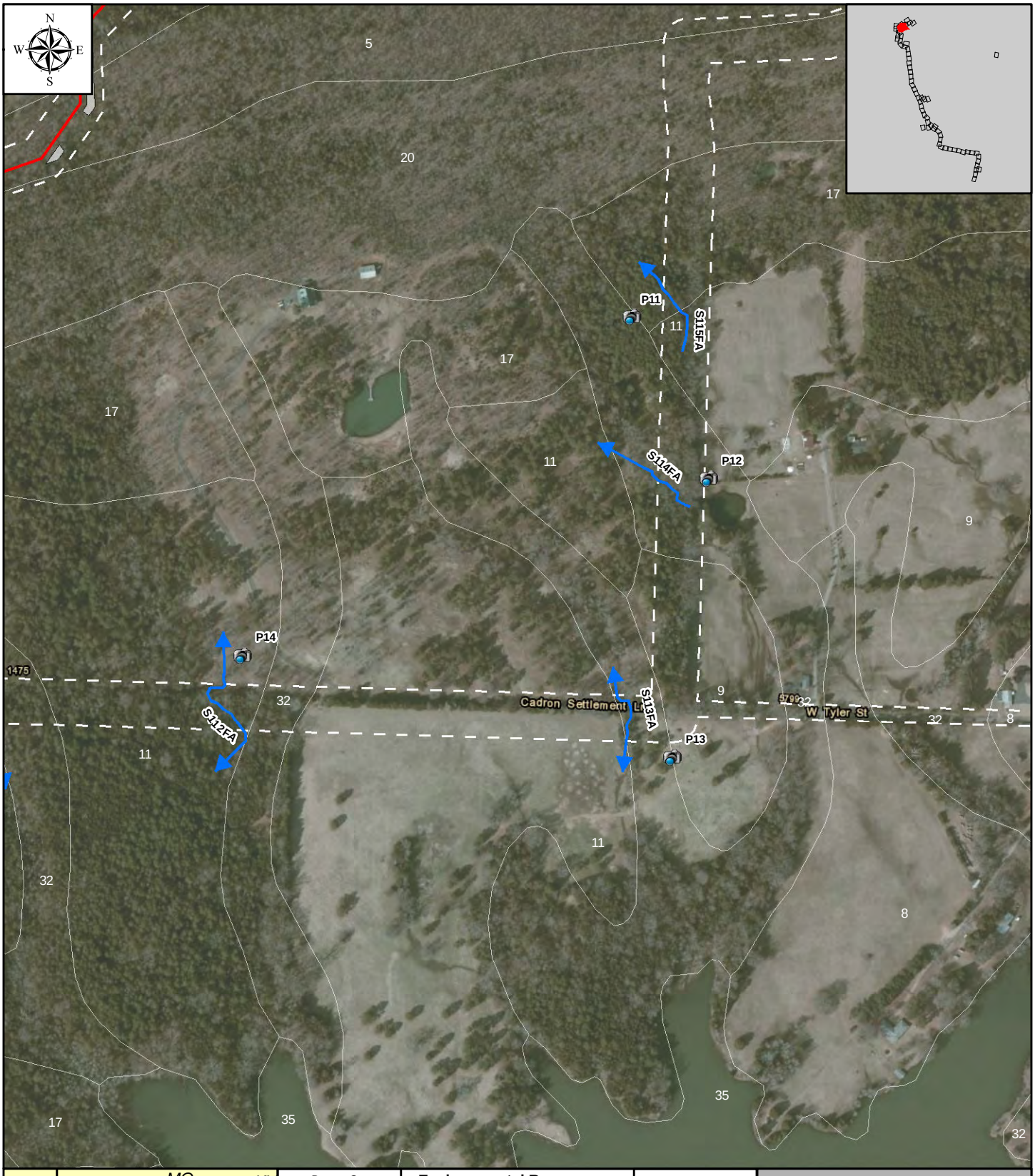

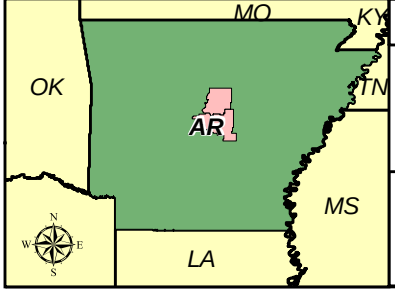

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Central Arkansas
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Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 6 of 64

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Legend

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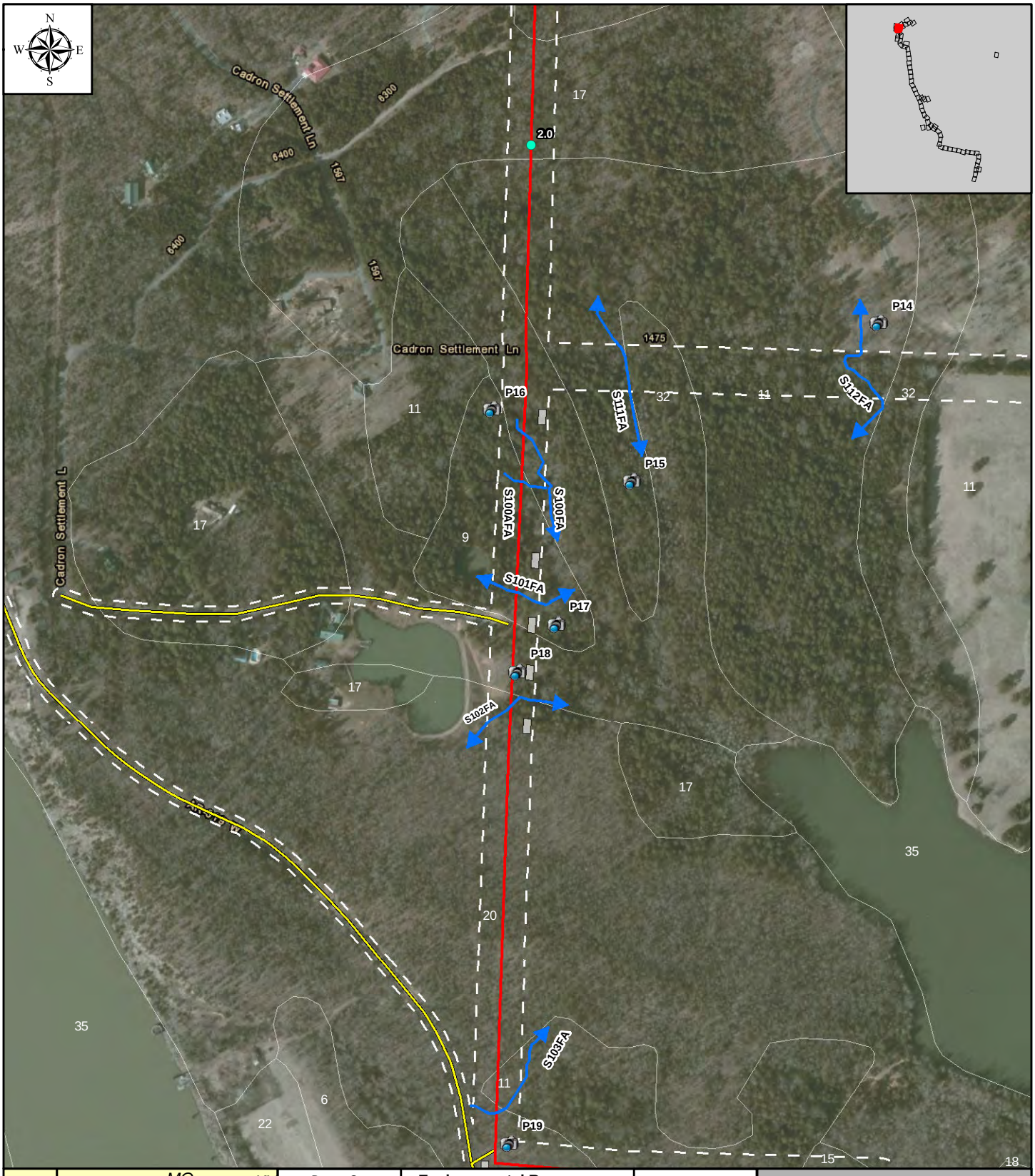

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Central Arkansas
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0 225 450 900 Feet
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Figure 2A
Sheet 7 of 64

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Legend

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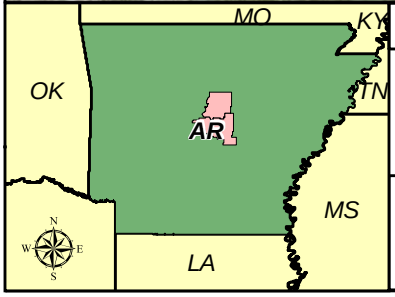

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Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

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Figure 2A

Sheet 8 of 64

Legend

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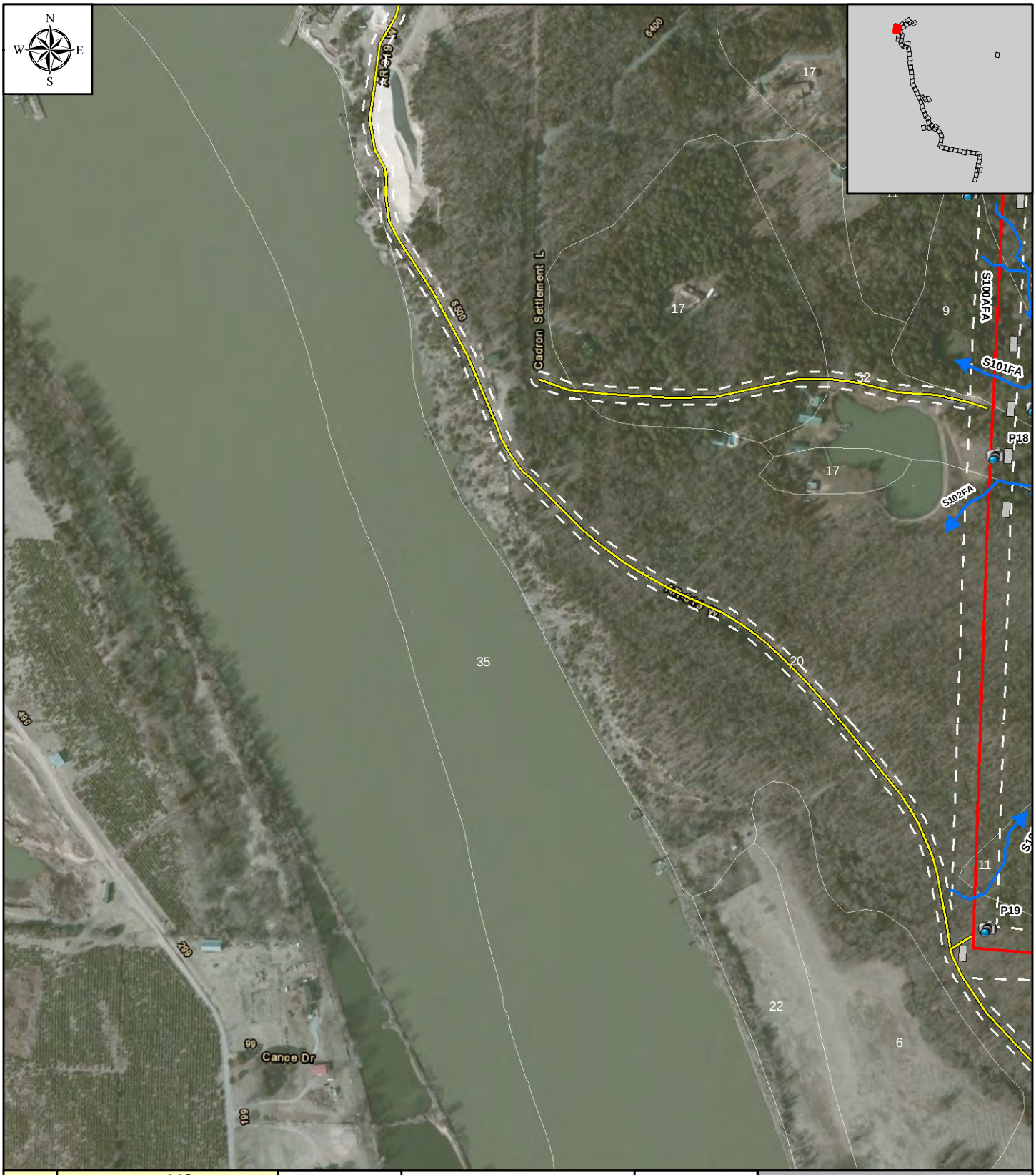

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2A
Sheet 9 of 64

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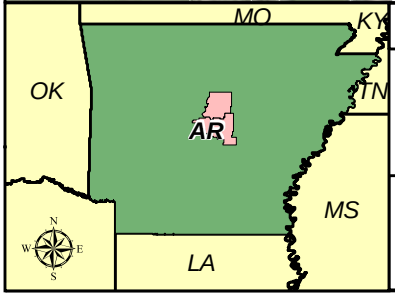

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 10 of 64

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Legend

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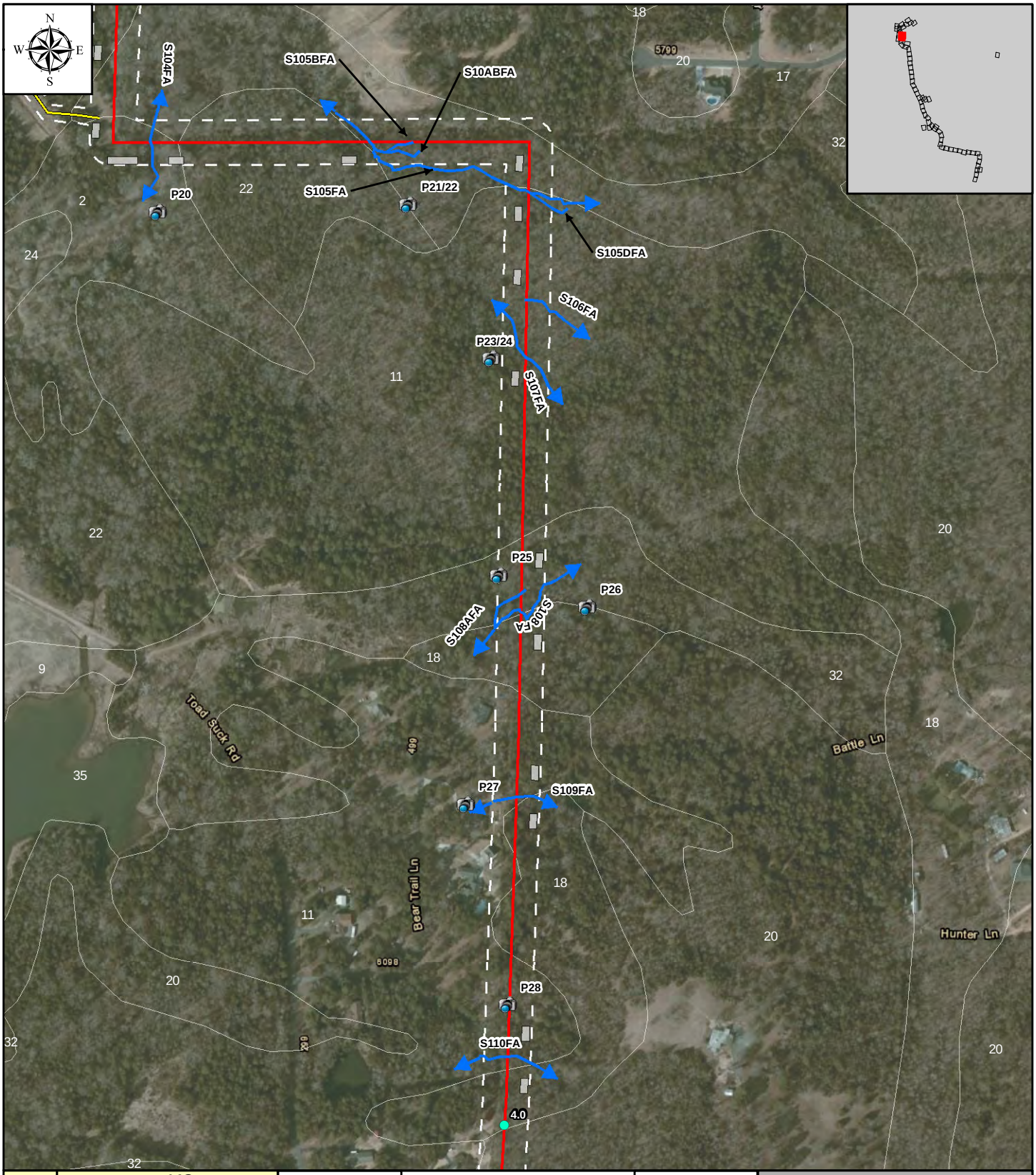

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2A
Sheet 11 of 64

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Legend

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 12 of 64

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Legend

- Mile Posts
- Streams
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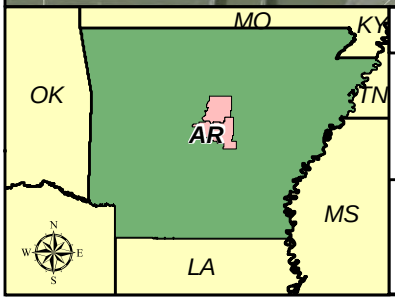

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 13 of 64

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Legend

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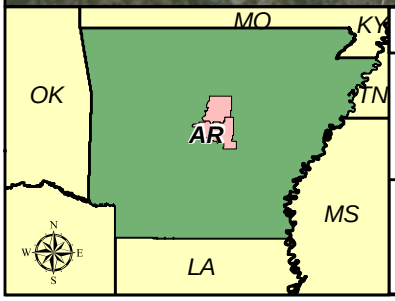

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A

Sheet 14 of 64

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
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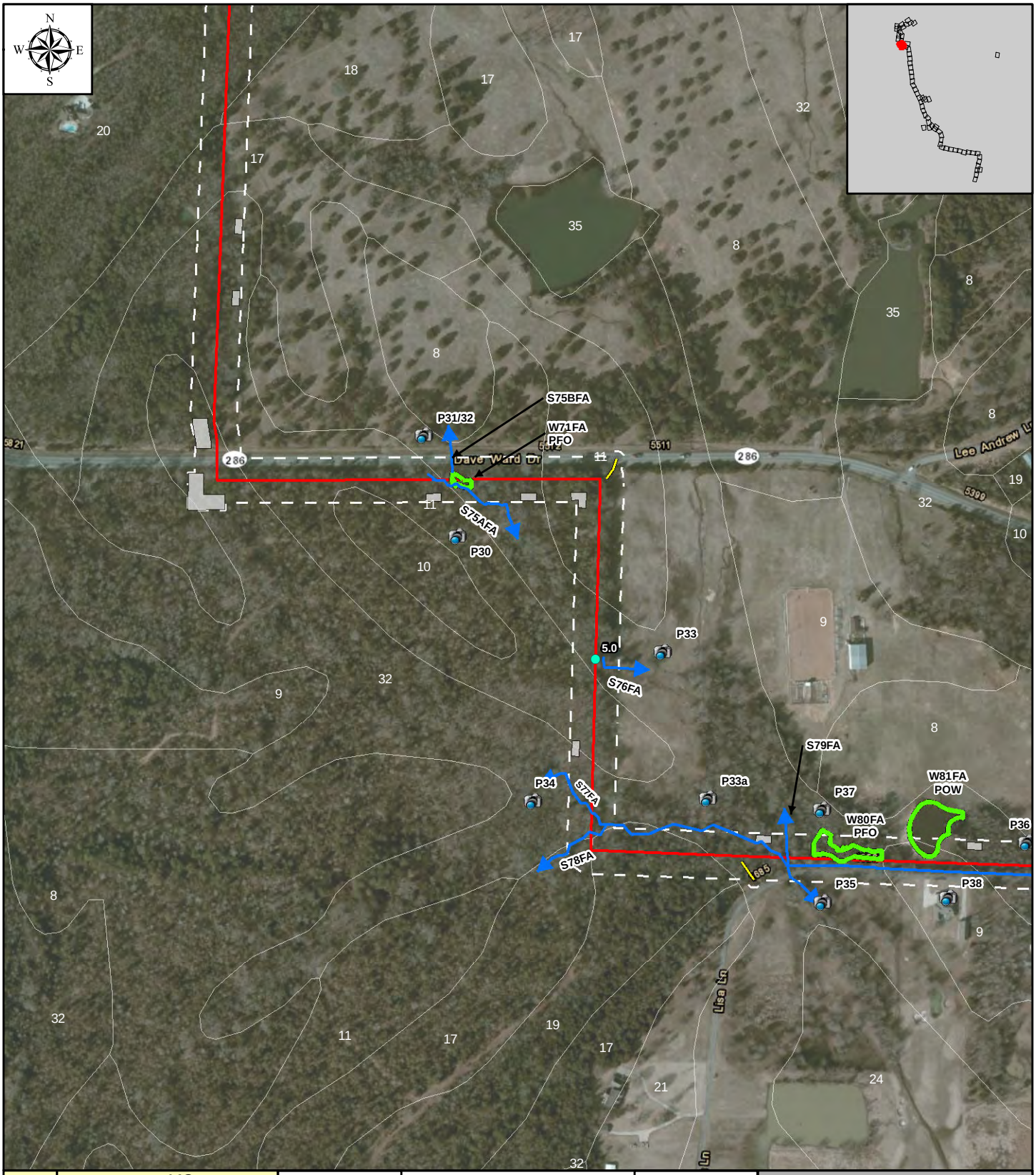

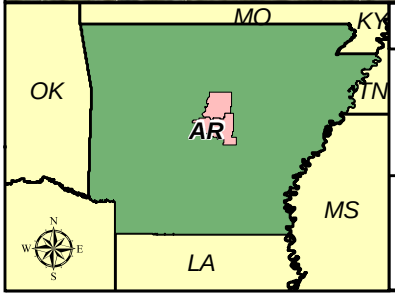

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

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Figure 2A
Sheet 15 of 64

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Legend

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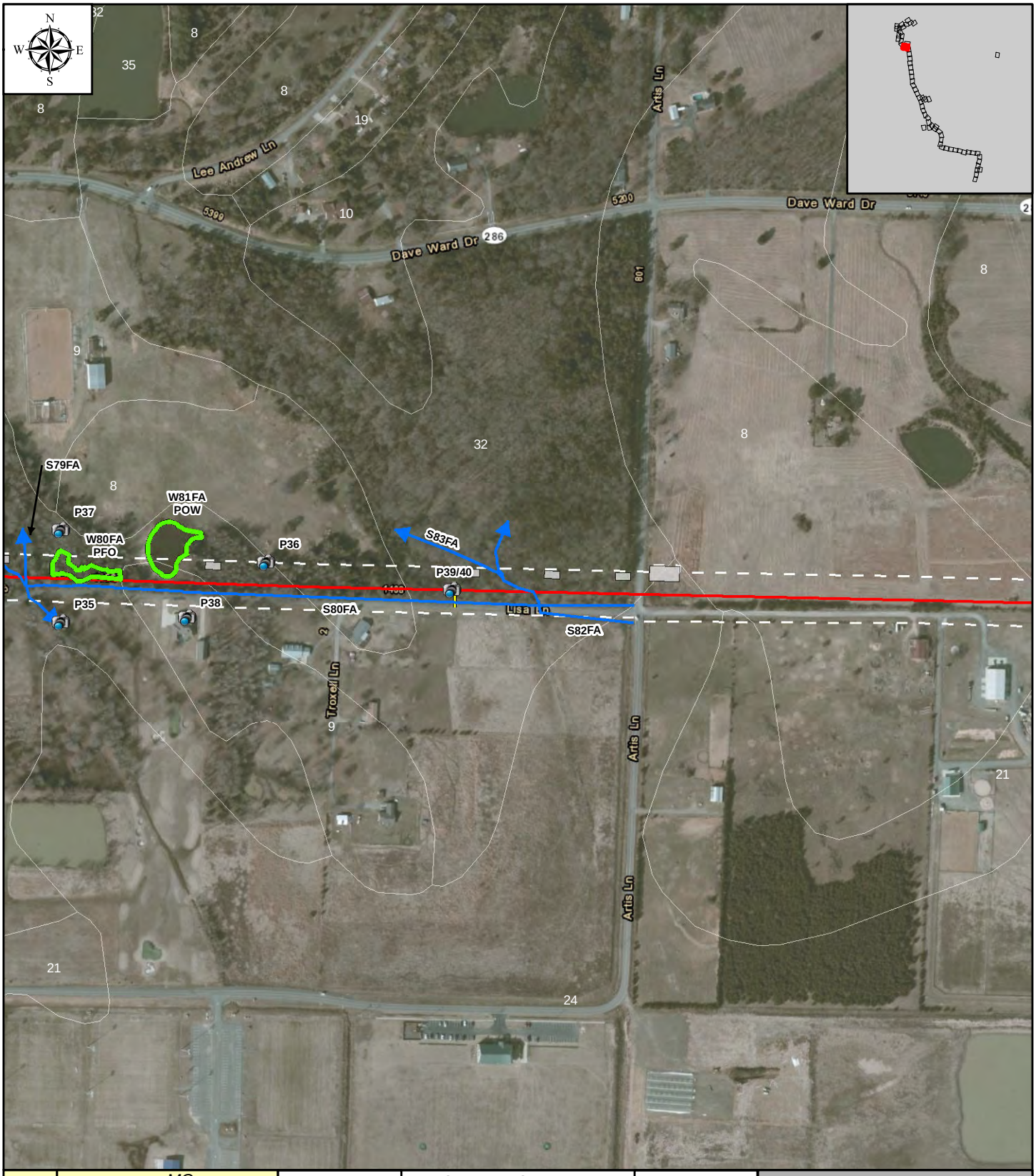
- Soils
- Photo Points



Drawn On: September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

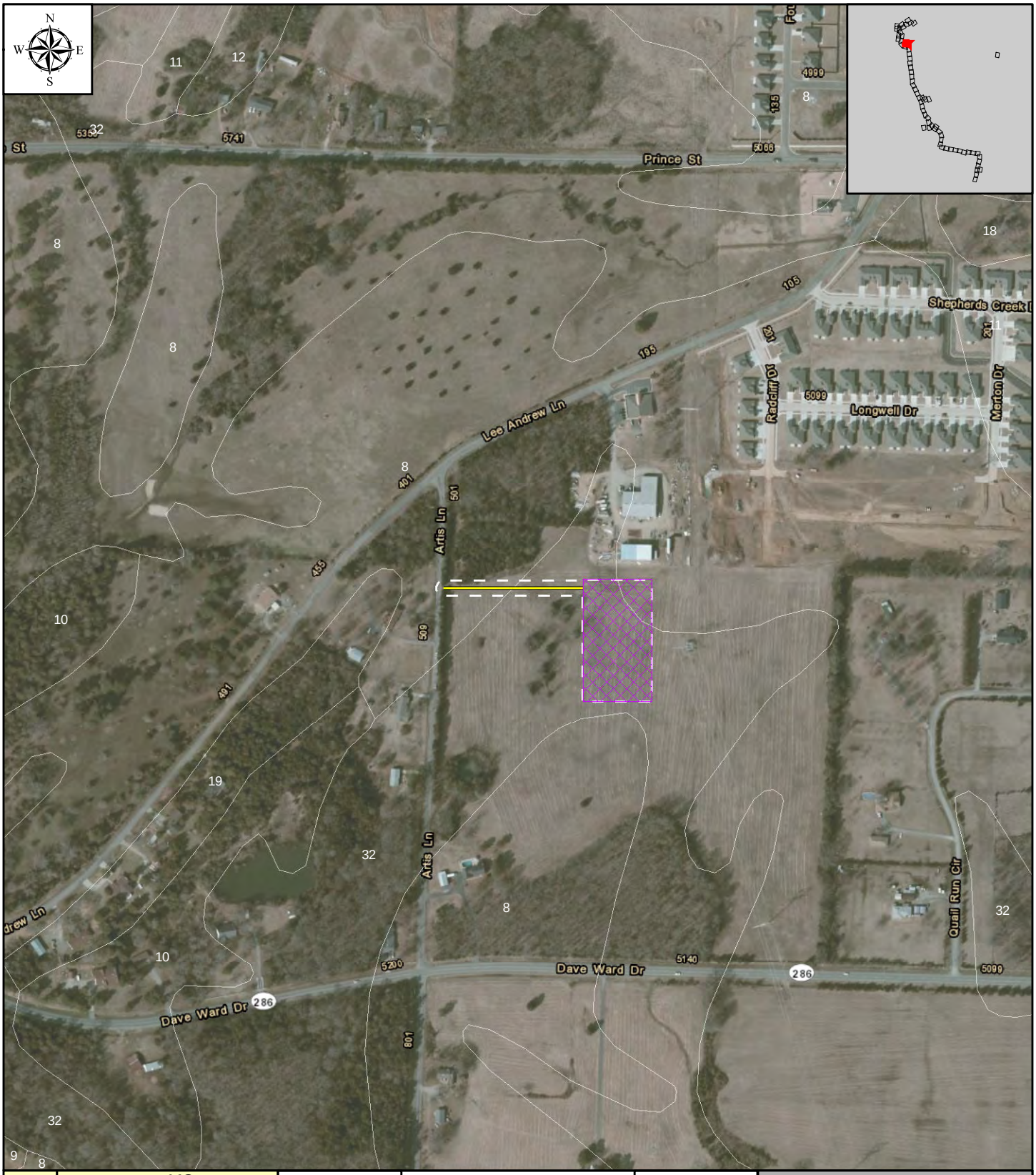
Figure 2A
Sheet 16 of 64

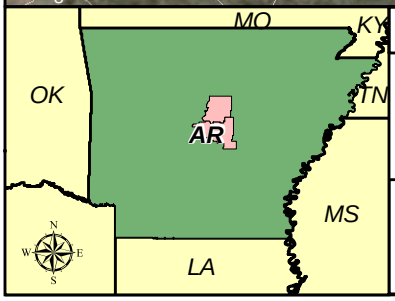
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





Drawn On:
September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

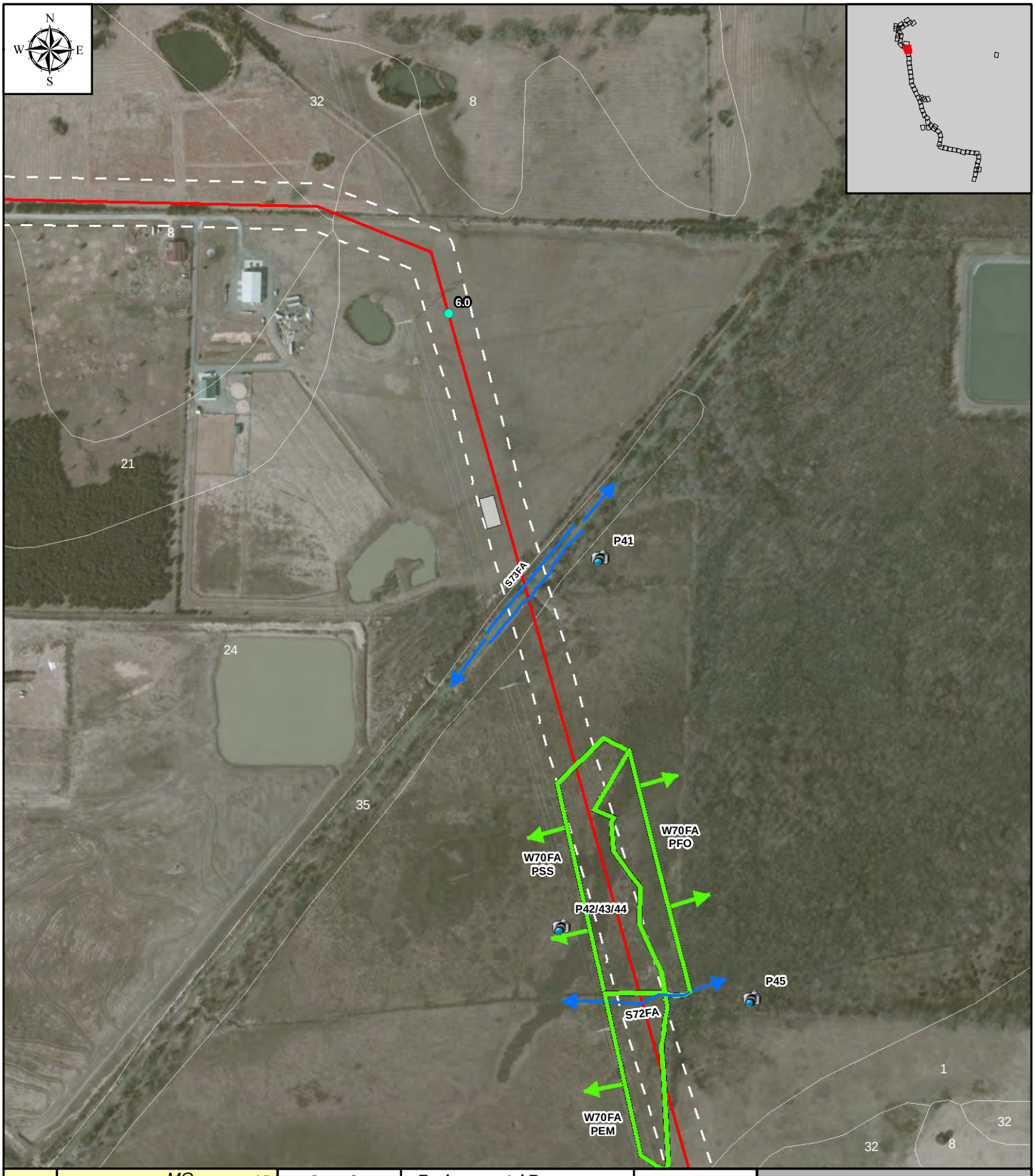
Figure 2A
Sheet 17 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points



Drawn On:
September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A

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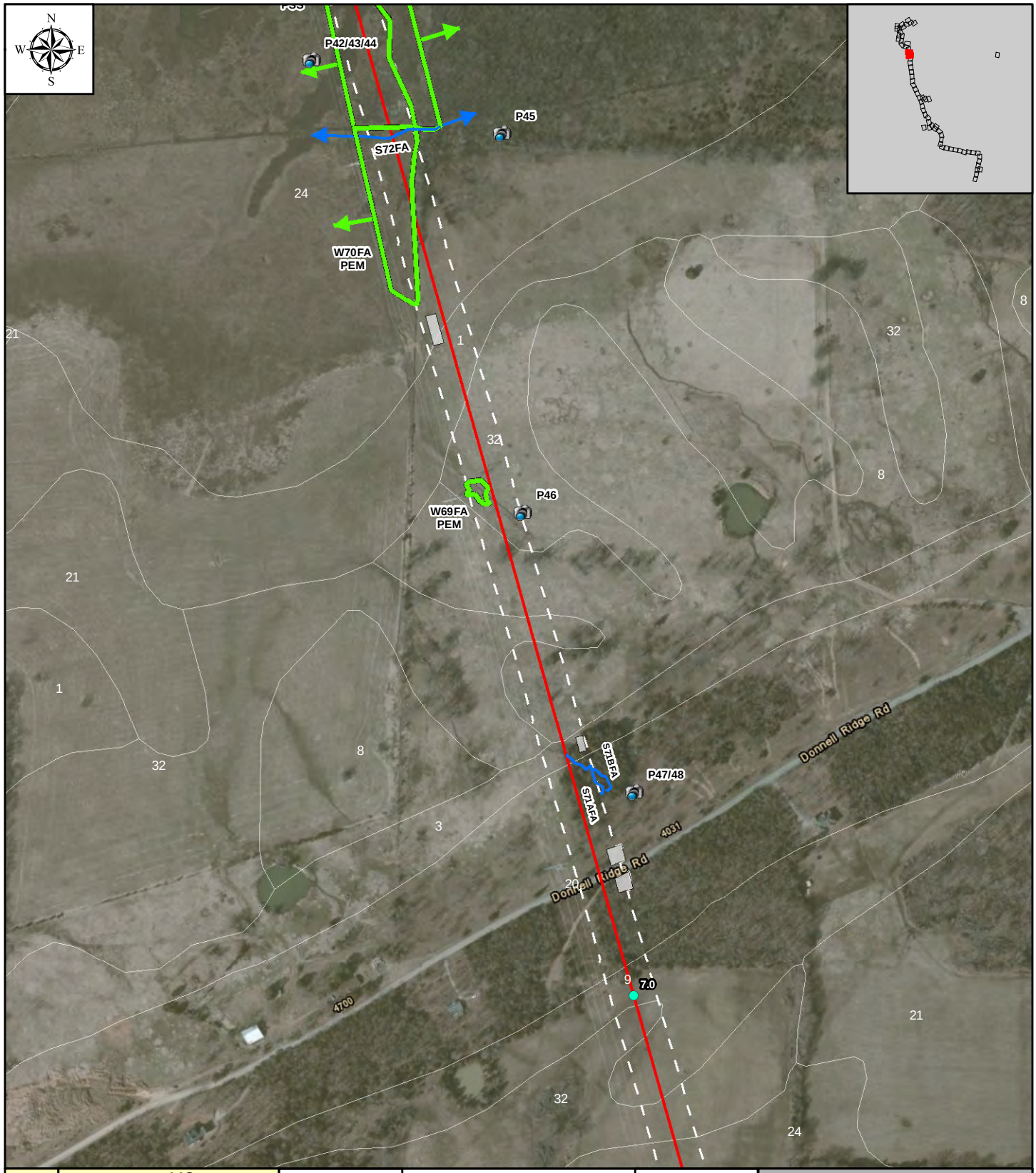
Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055



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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
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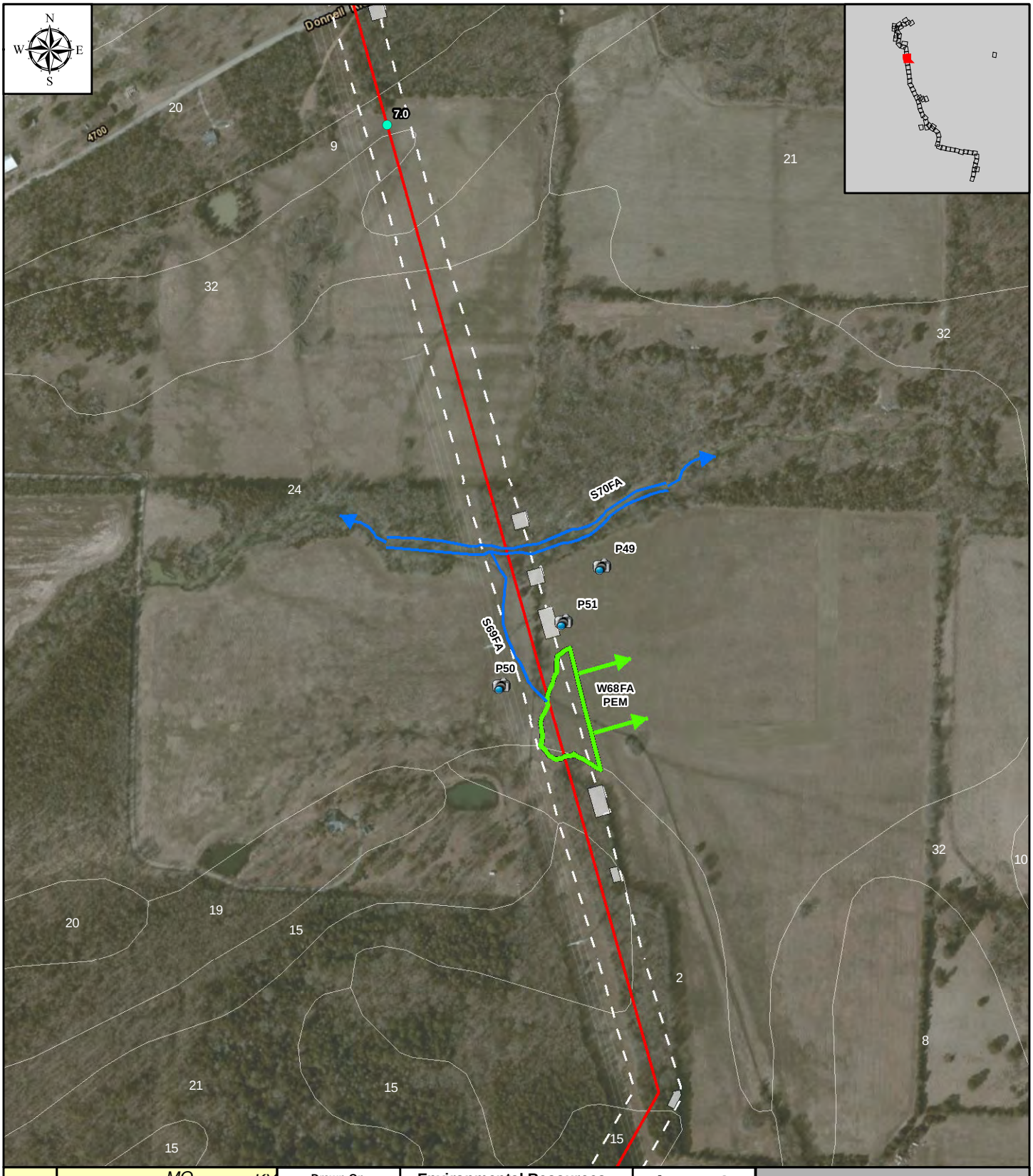
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points



Drawn On: September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 20 of 64

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

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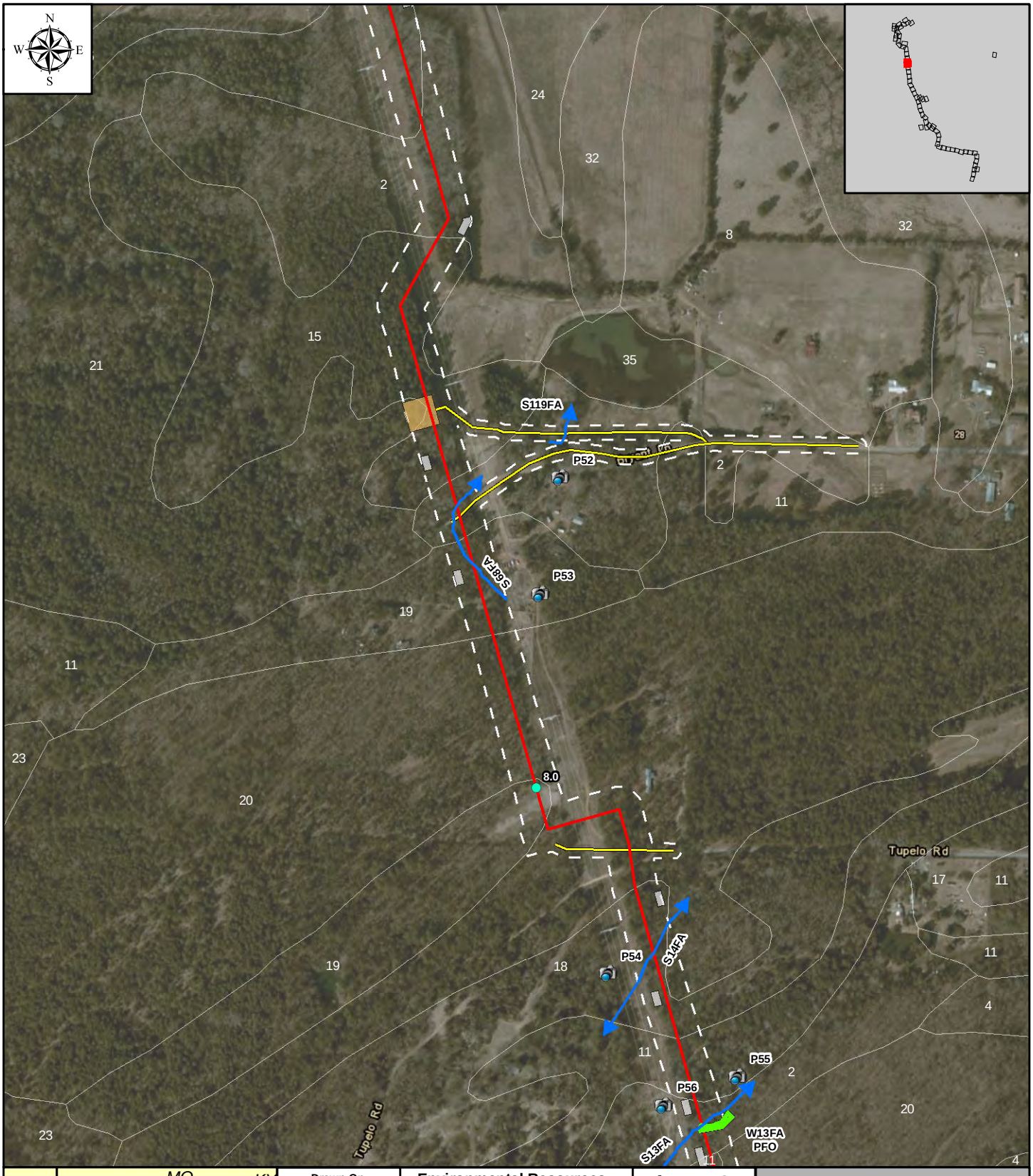
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055



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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A

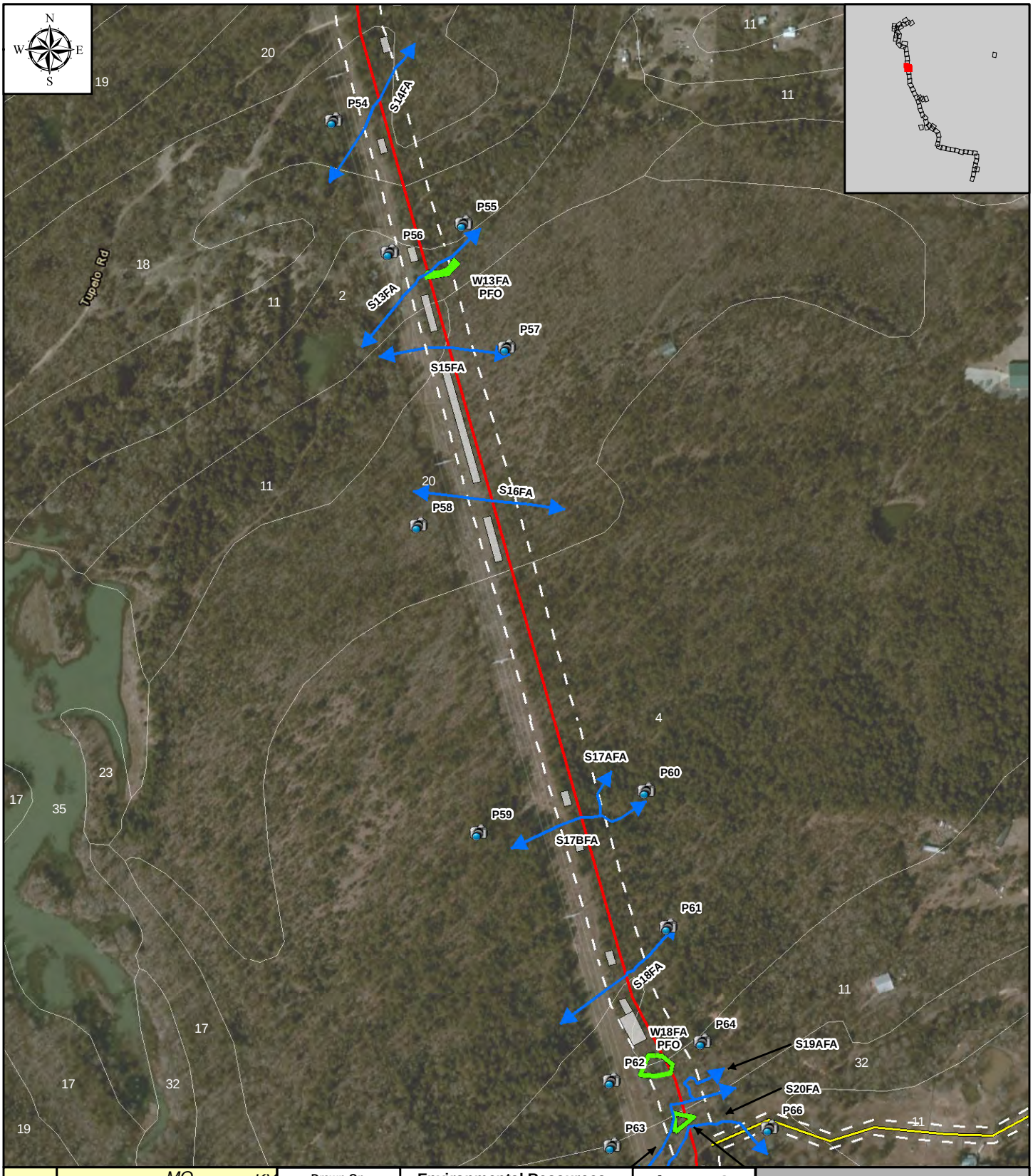
Sheet 21 of 64

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

Prepared For:
Enable Gas Transmission, LLC

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055



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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A

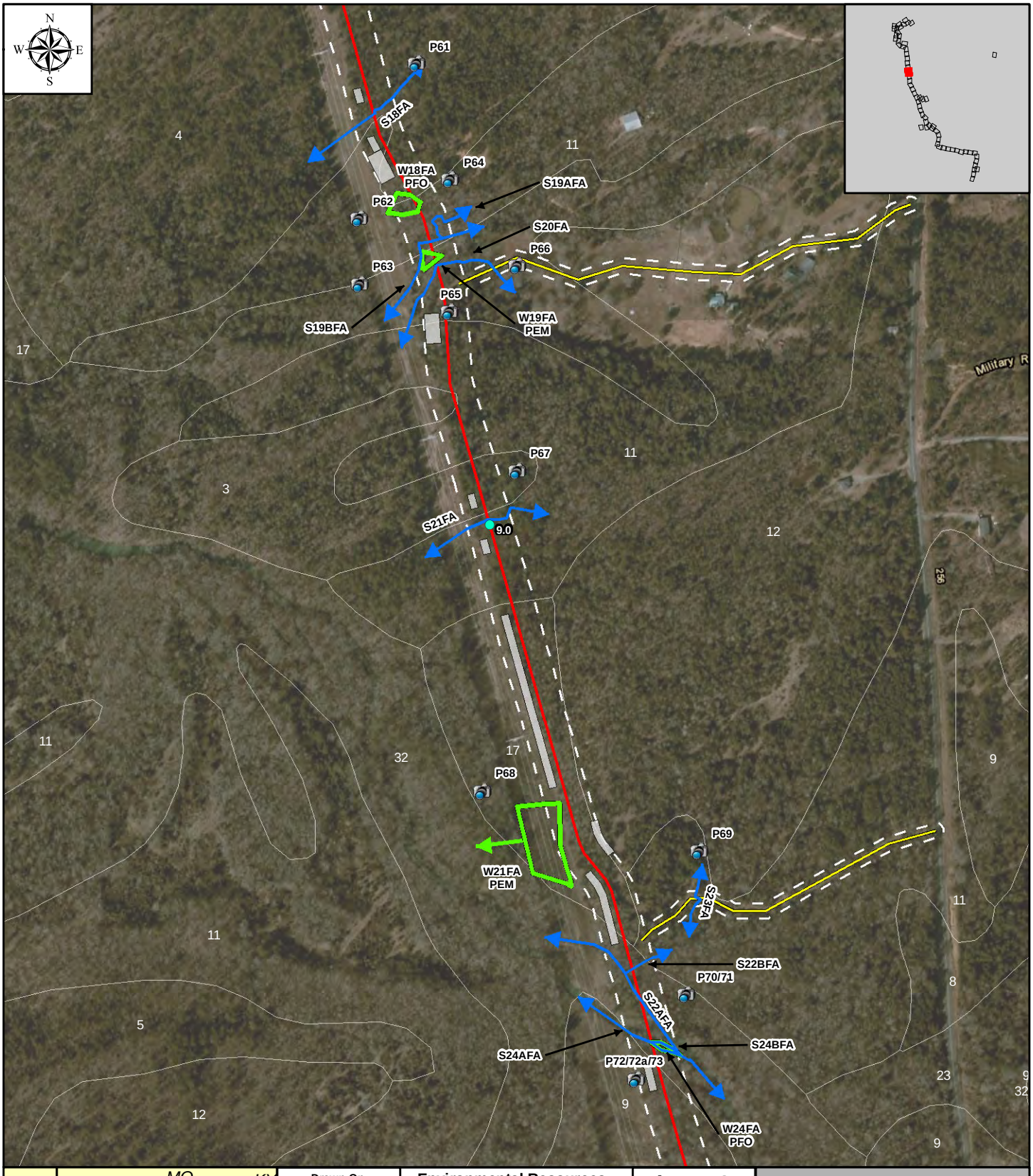
Sheet 22 of 64

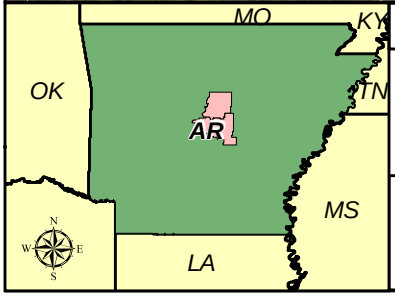
Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055





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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

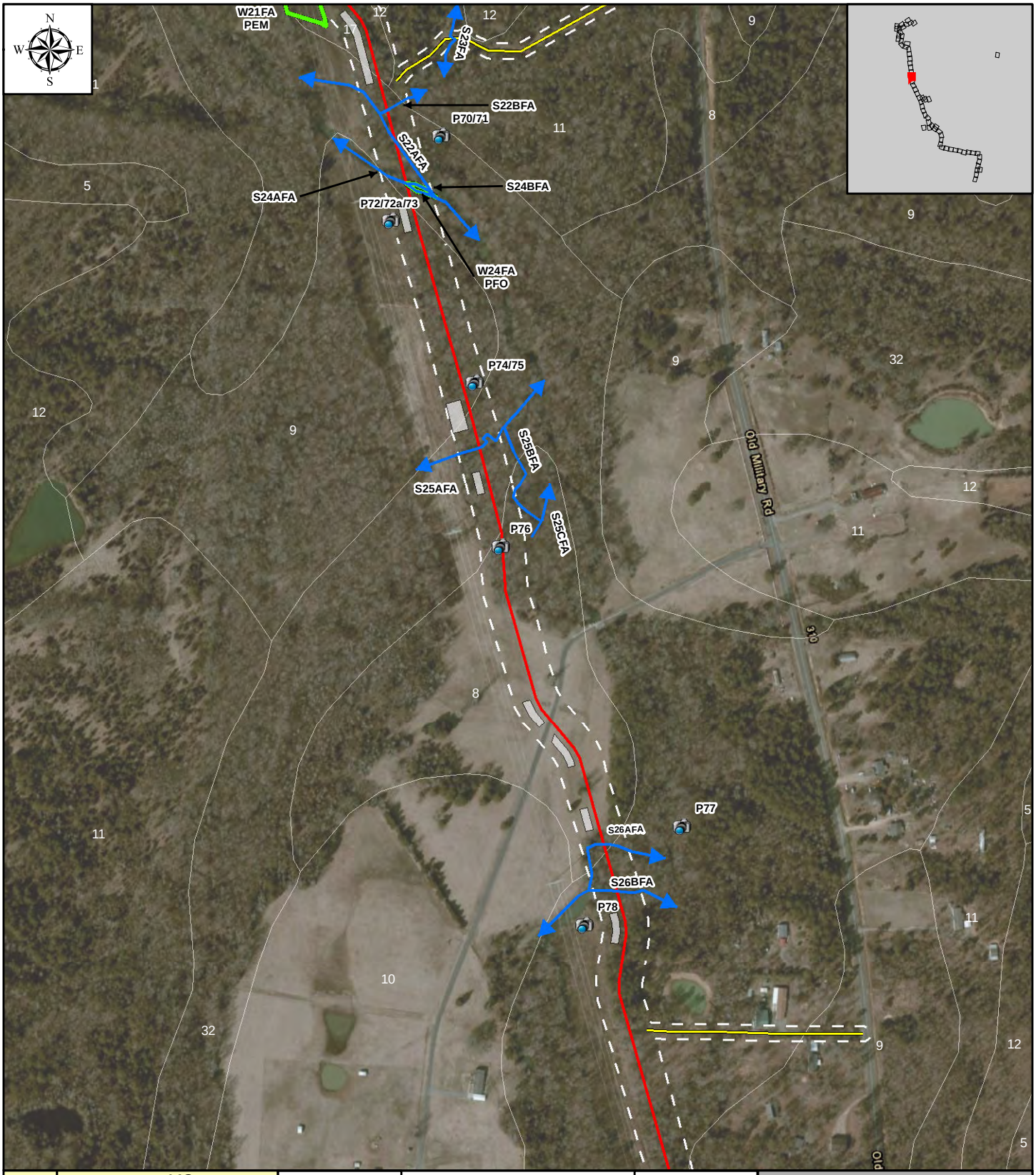
Figure 2A
Sheet 23 of 64

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055



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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 24 of 64

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
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- Study Area
- NWI
- Soils
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

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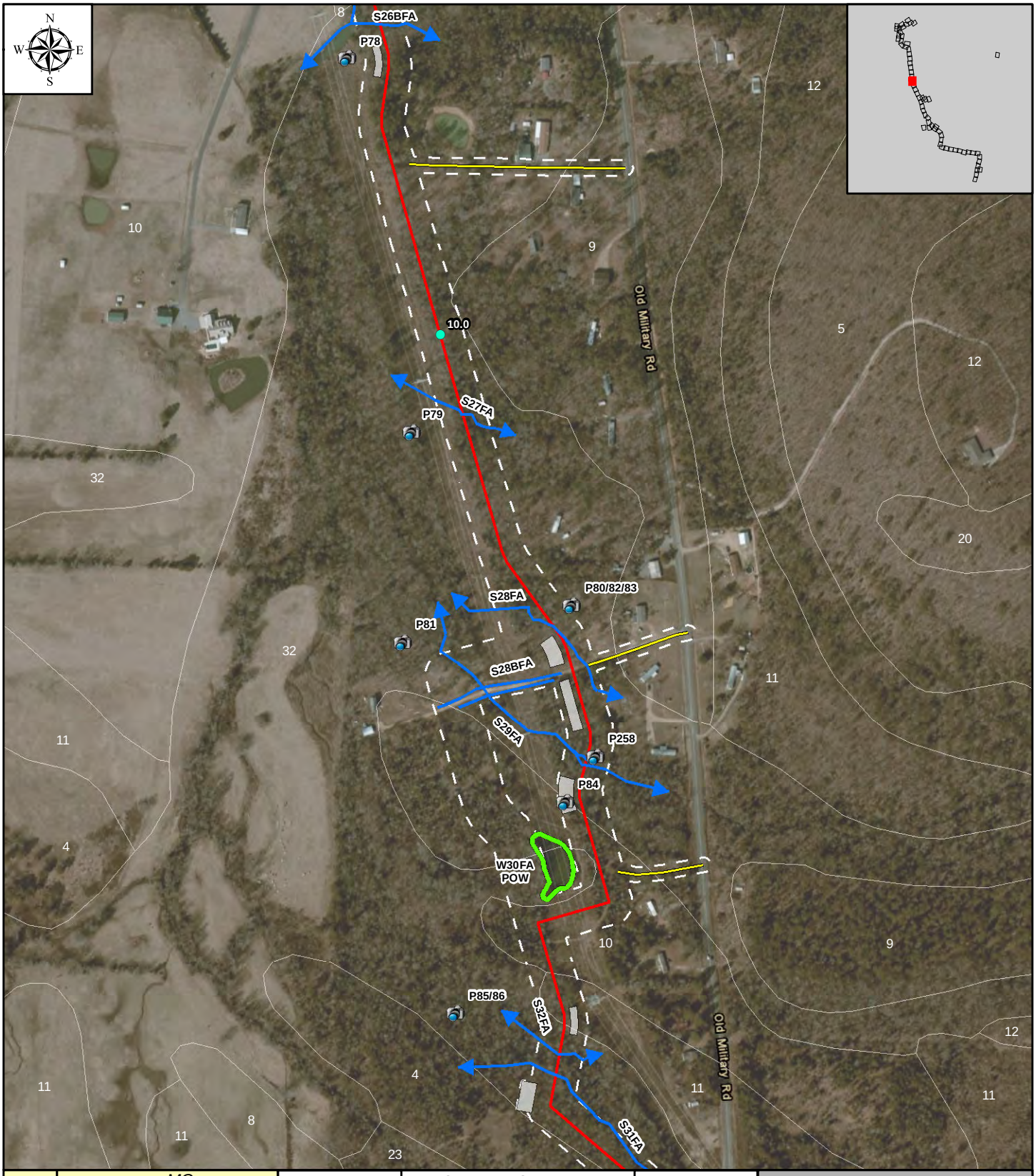
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055



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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

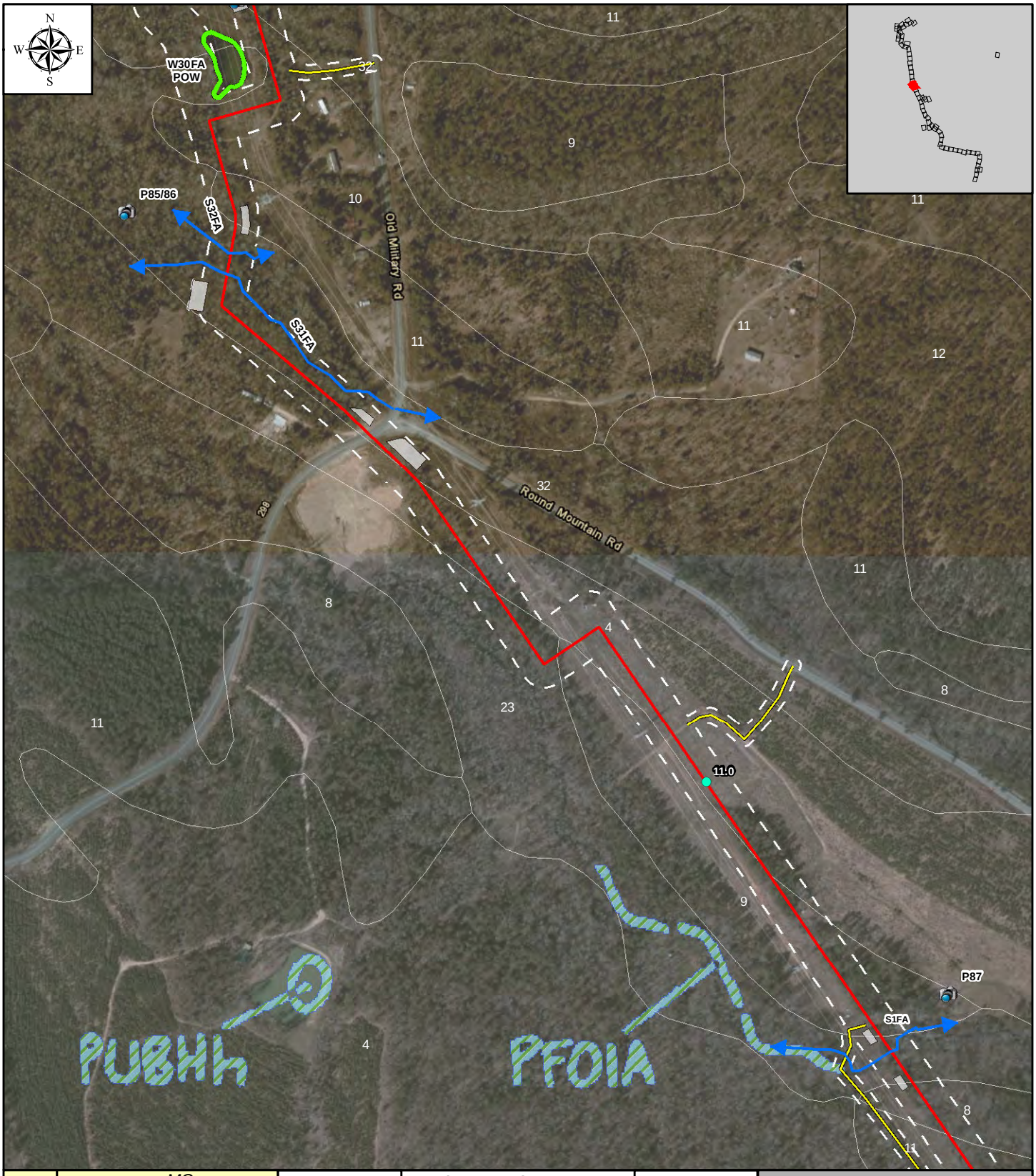
Figure 2A
Sheet 25 of 64

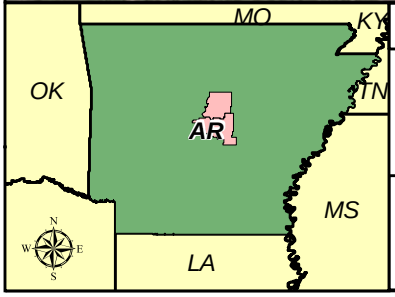
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A

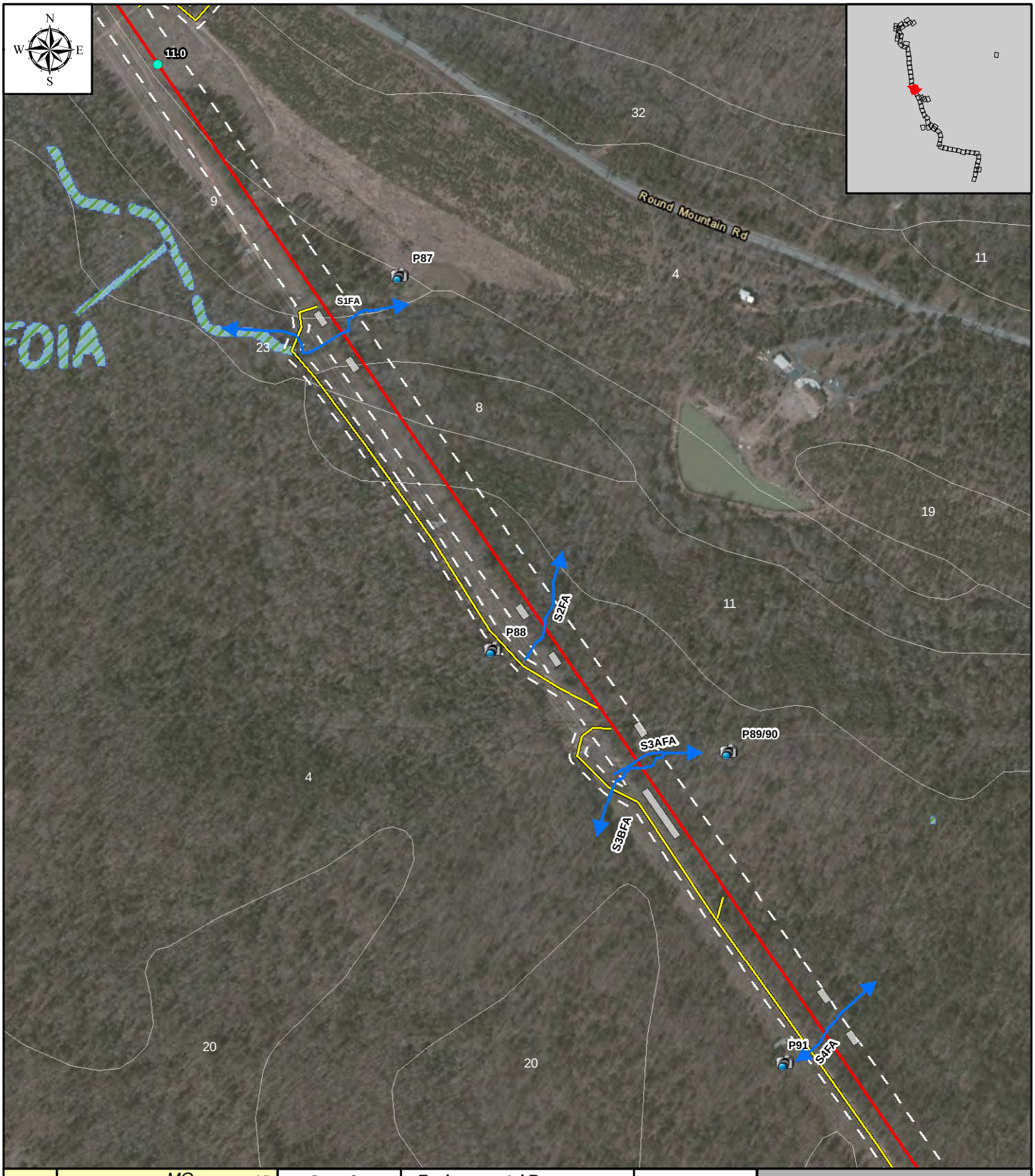
Sheet 26 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points



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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

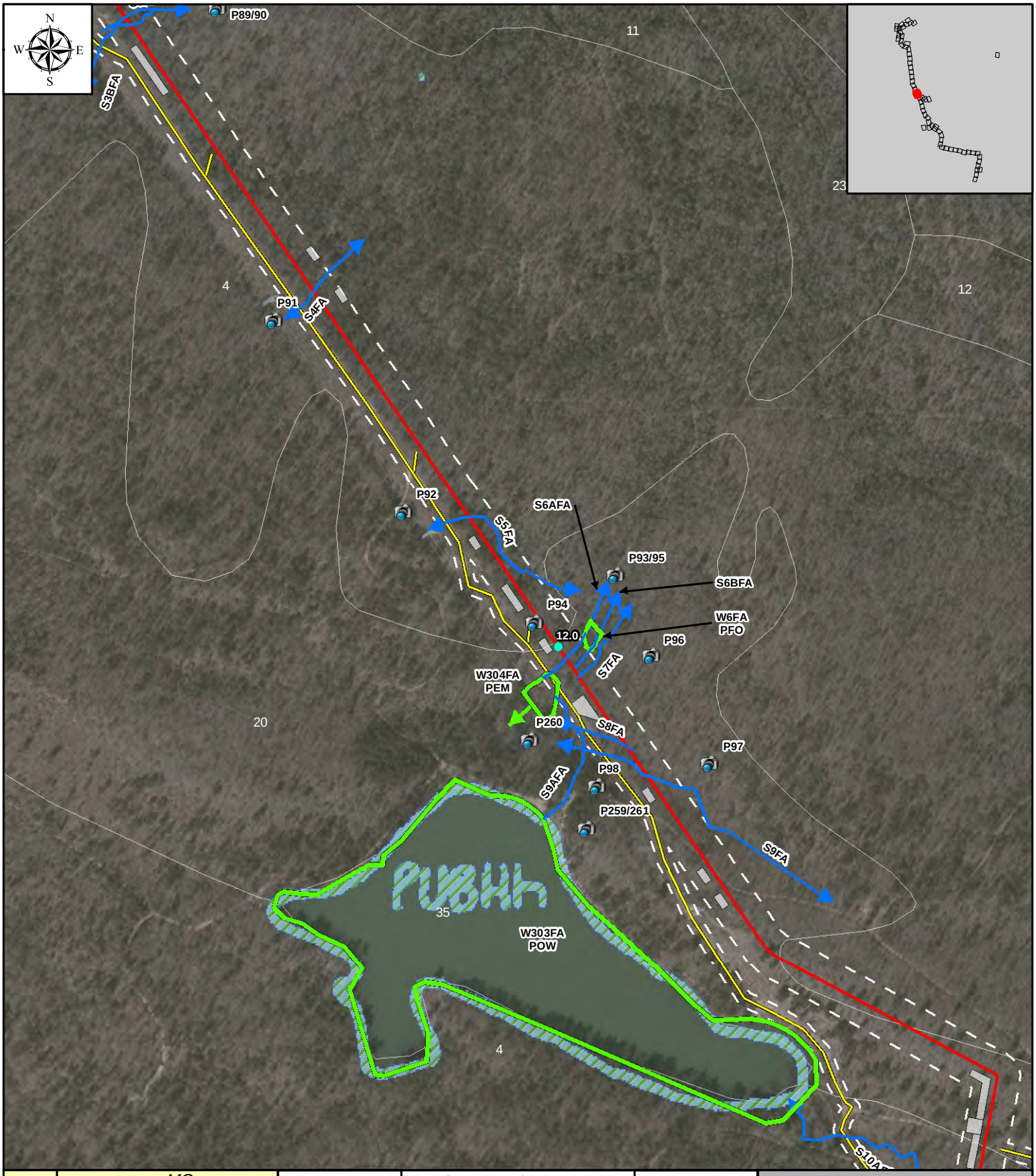
Figure 2A
Sheet 27 of 64

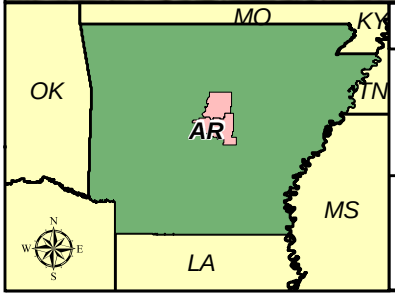
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

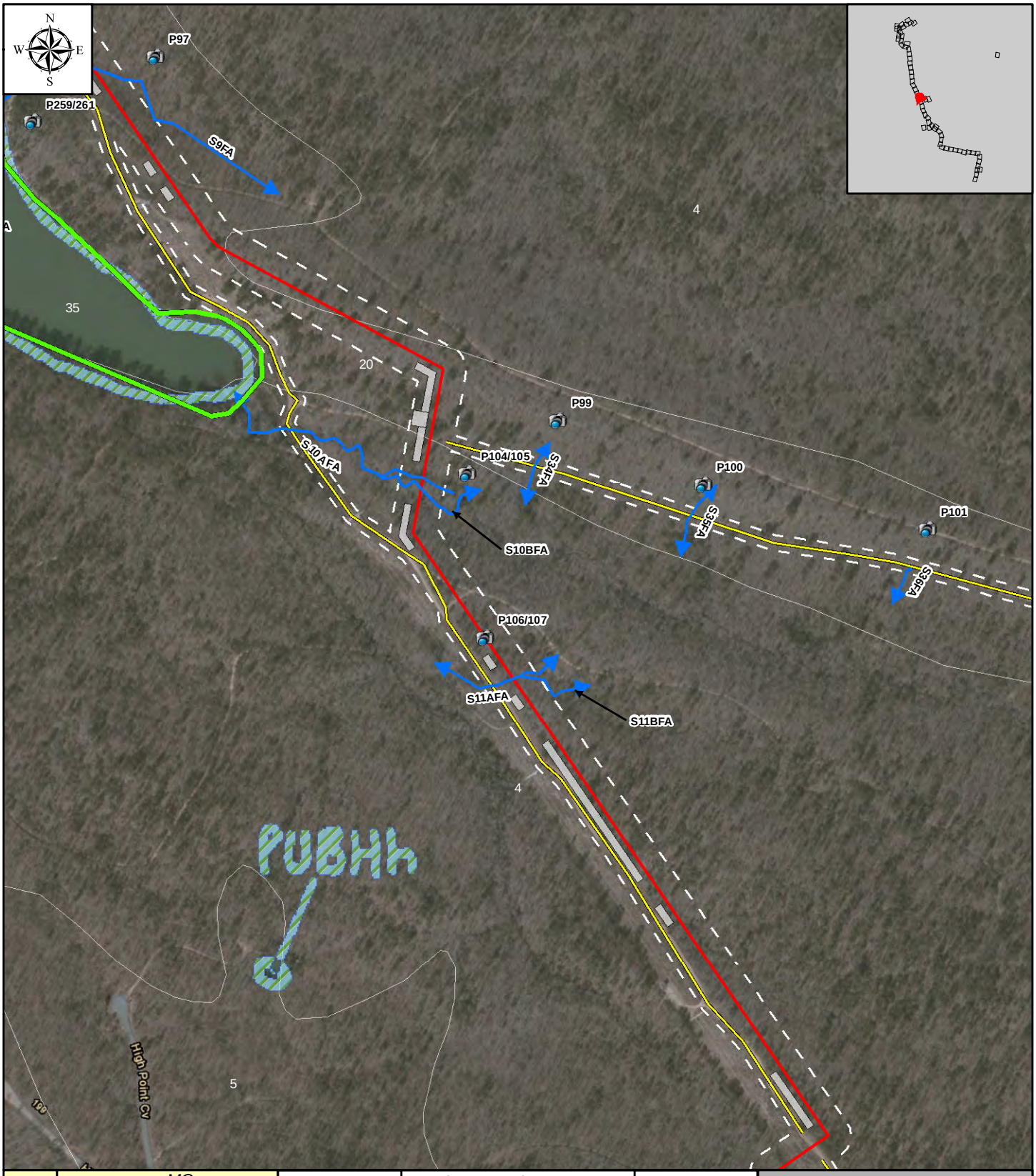
Figure 2A
Sheet 28 of 64

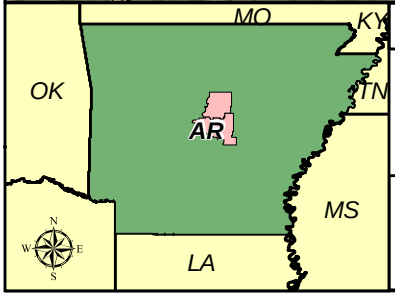
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

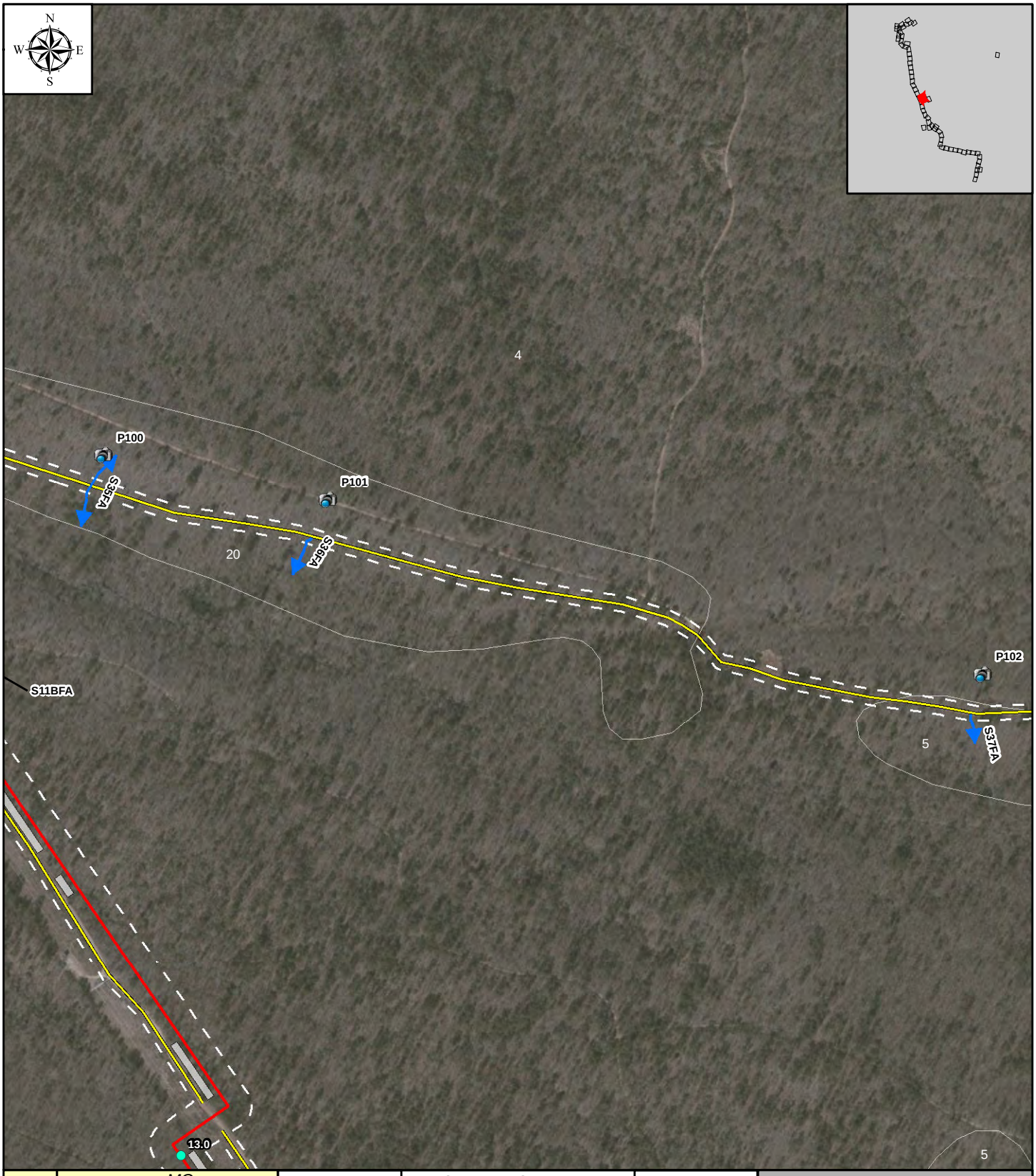
Figure 2A
Sheet 29 of 64

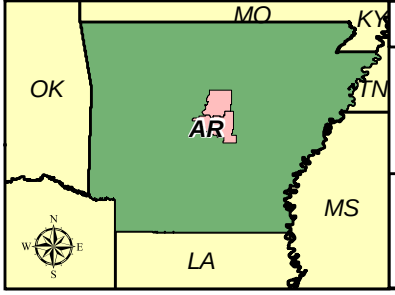
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

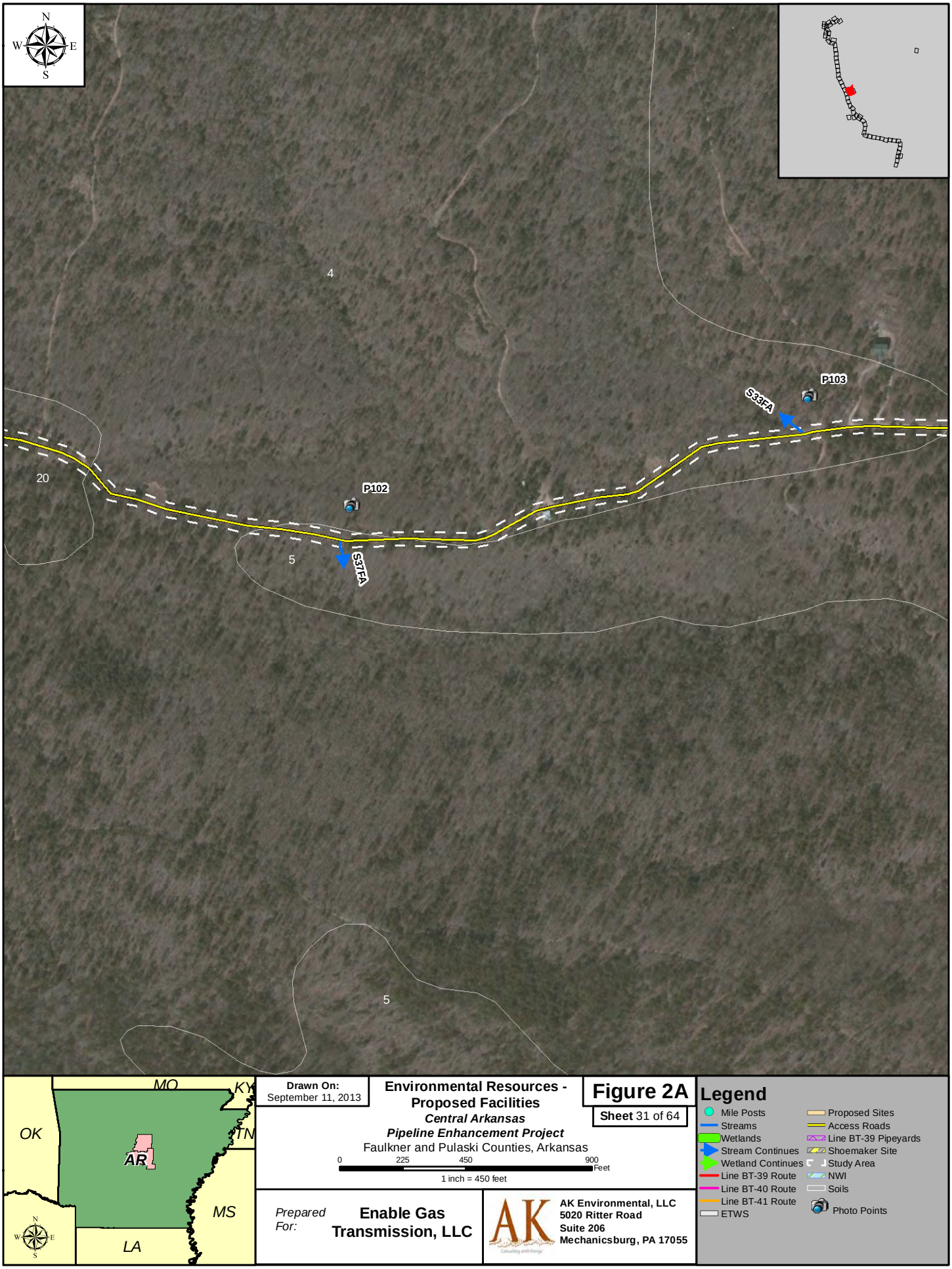
Figure 2A
Sheet 30 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points



Drawn On:
September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

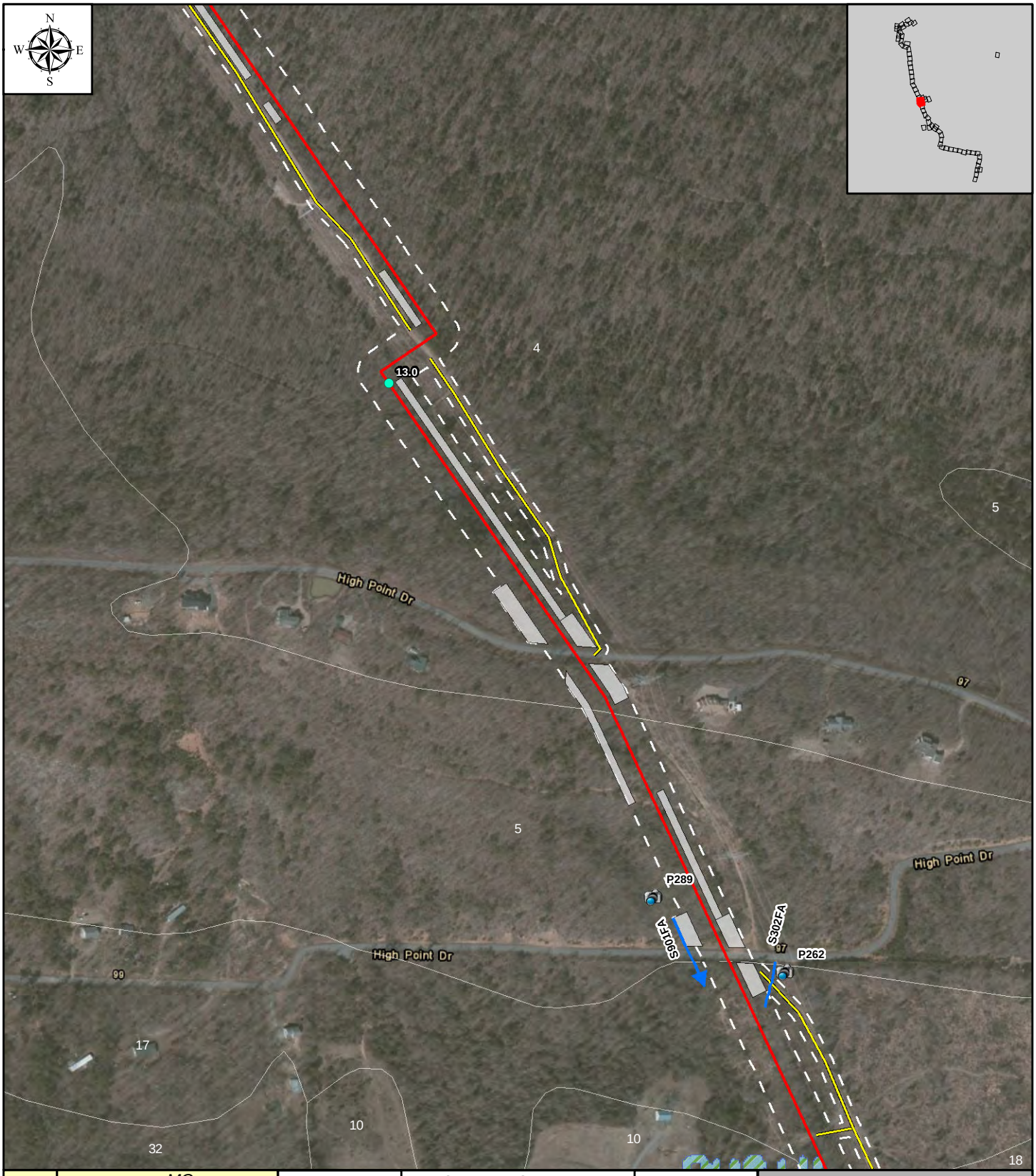
Figure 2A
Sheet 31 of 64

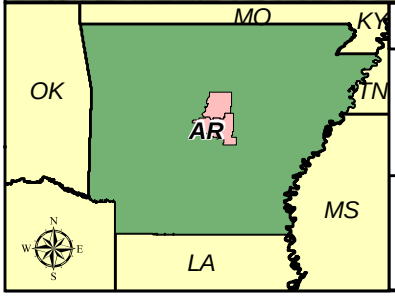
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





Drawn On: September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 32 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

Drawn On:
September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 33 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
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- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
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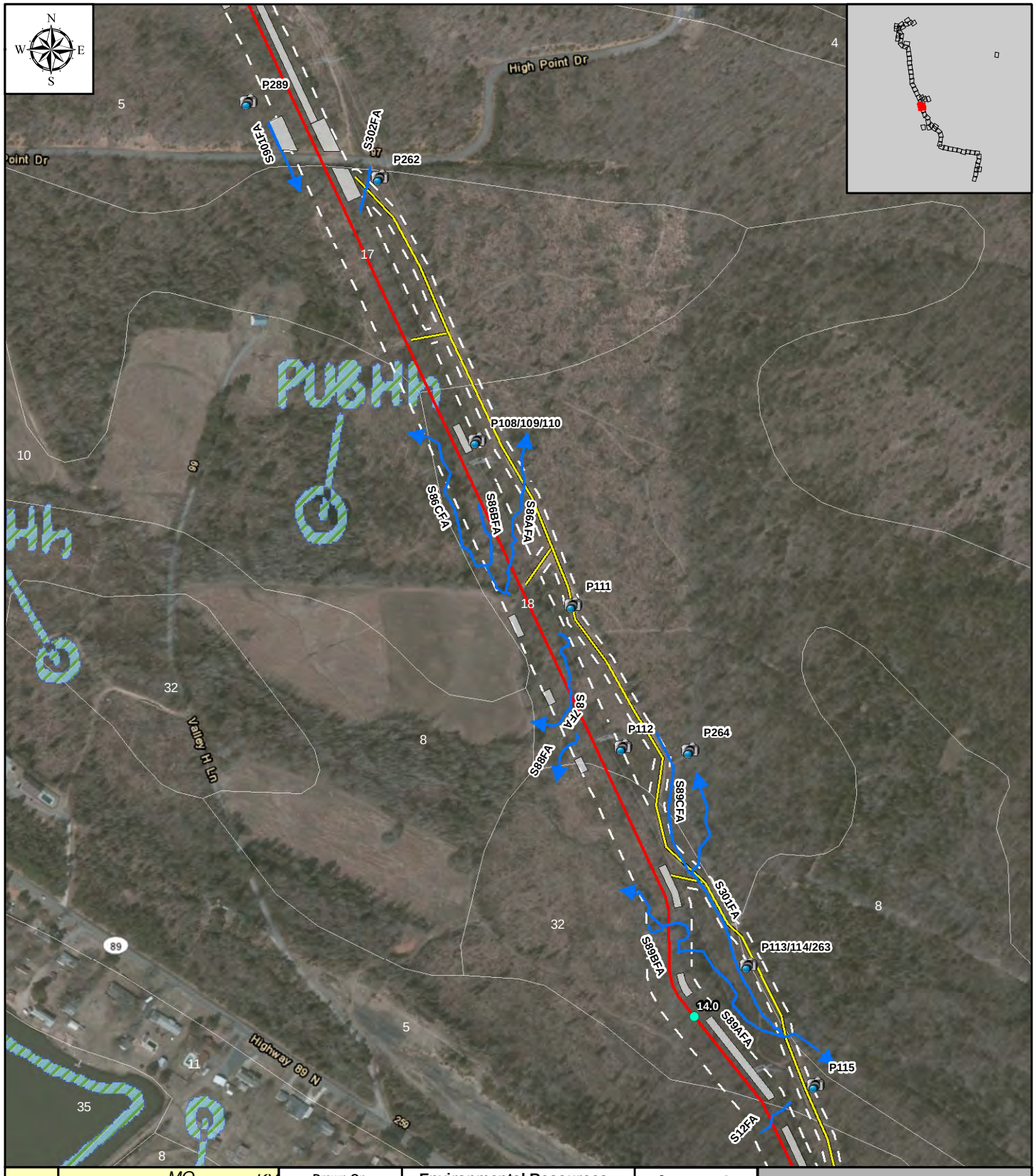
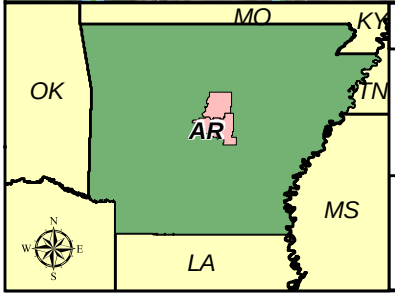
- Soils
- Photo Points





Drawn On: September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 34 of 64

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
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- Access Roads
- Line BT-39 Pipeyards
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- NWI
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Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
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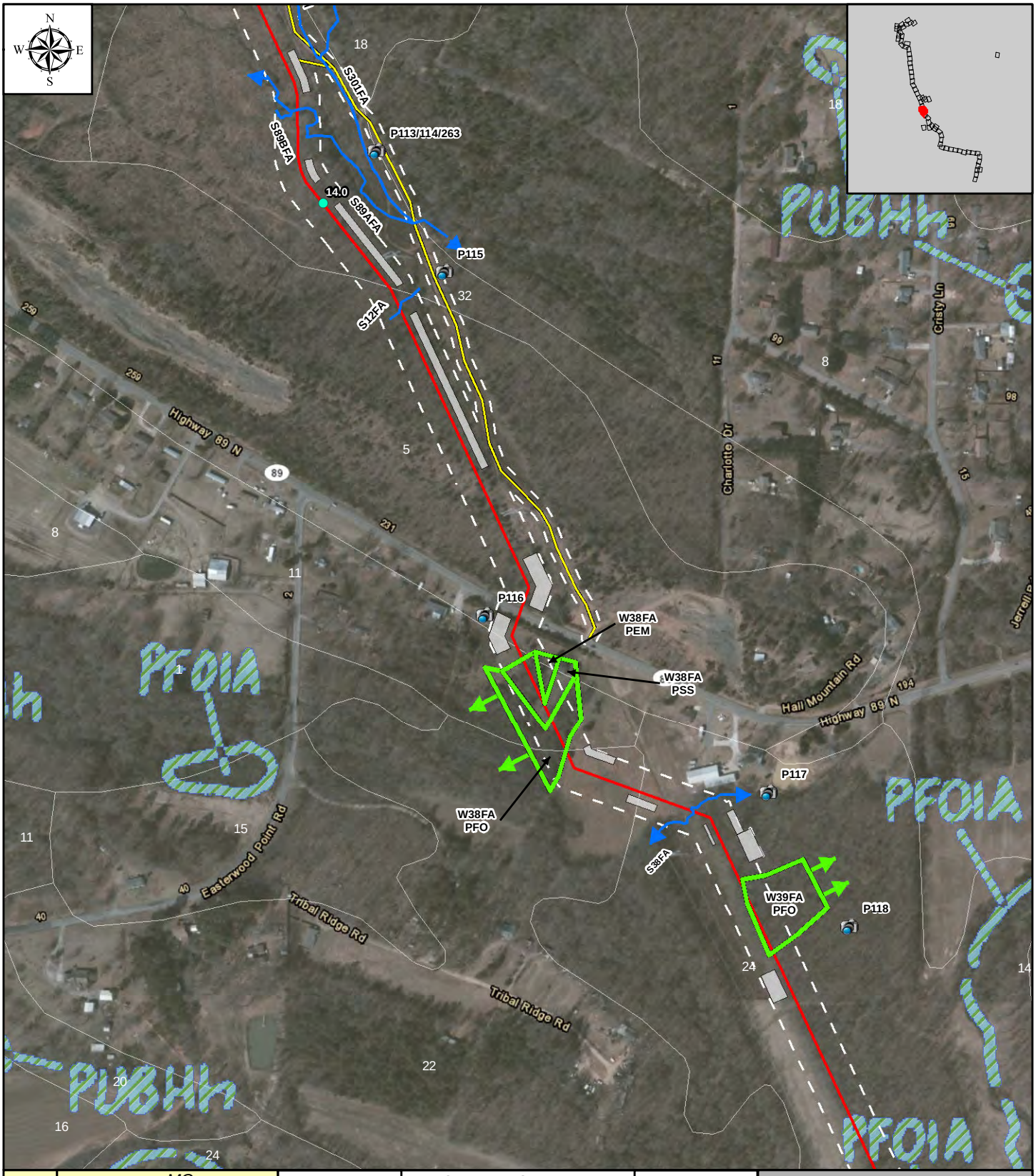
Mechanicsburg, PA 17055



Drawn On: September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 35 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
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- Line BT-39 Pipeyards
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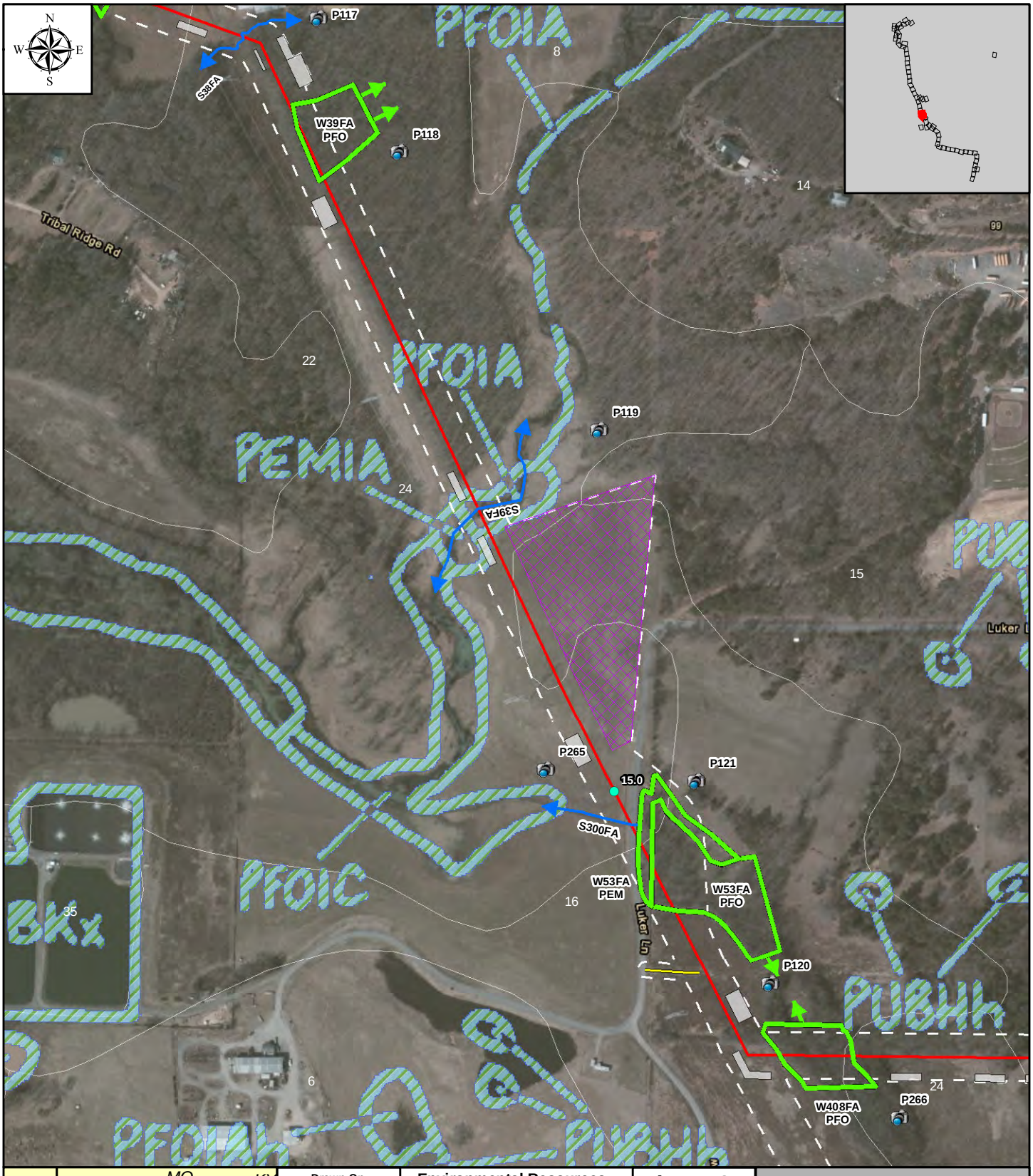
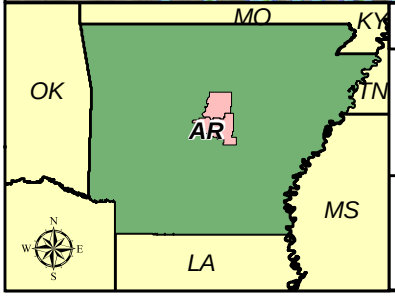




Drawn On:
September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

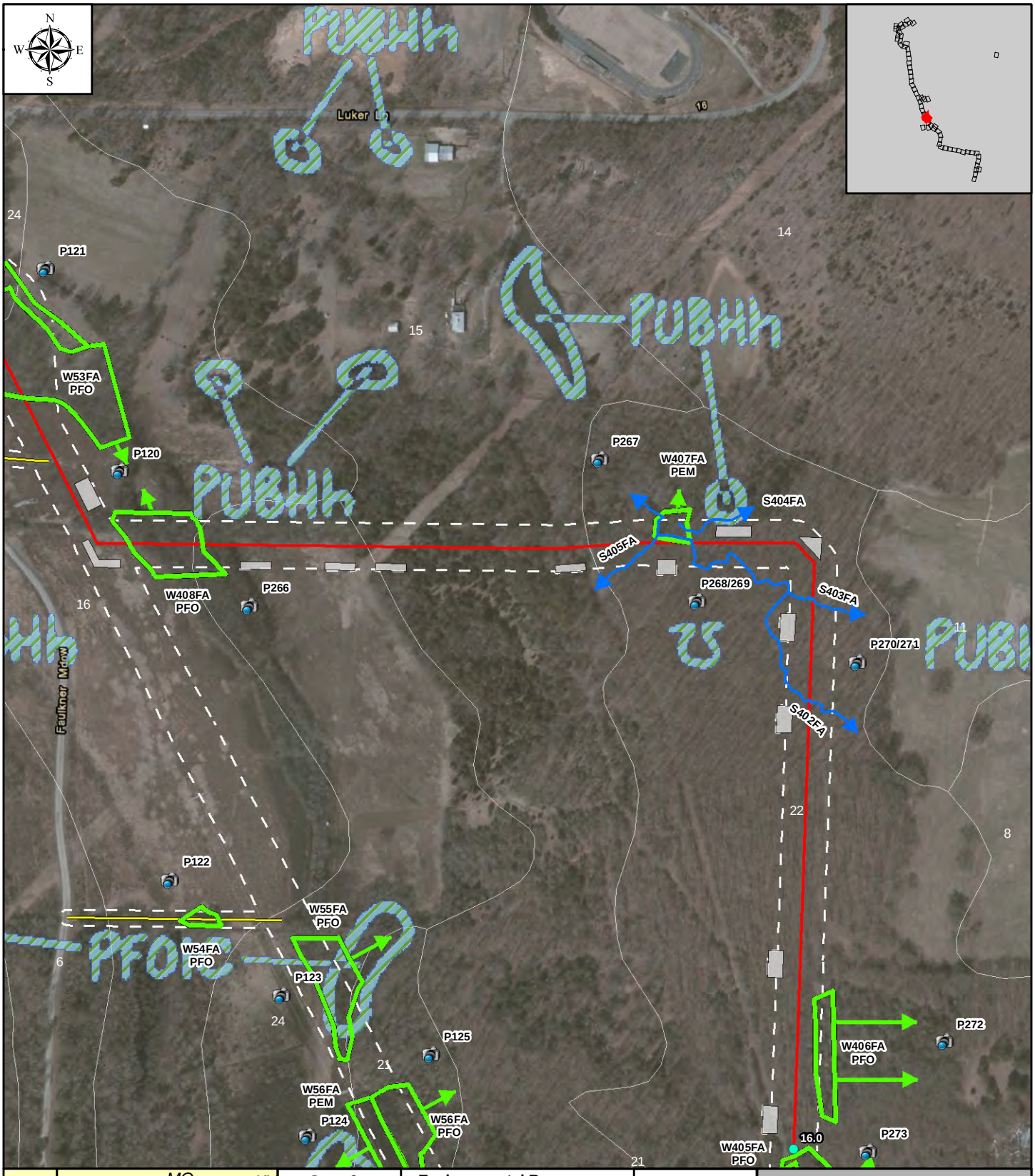
Figure 2A
Sheet 36 of 64

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055



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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 37 of 64

Legend
- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
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- Access Roads
- Line BT-39 Pipeyards
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- NWI
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5020 Ritter Road
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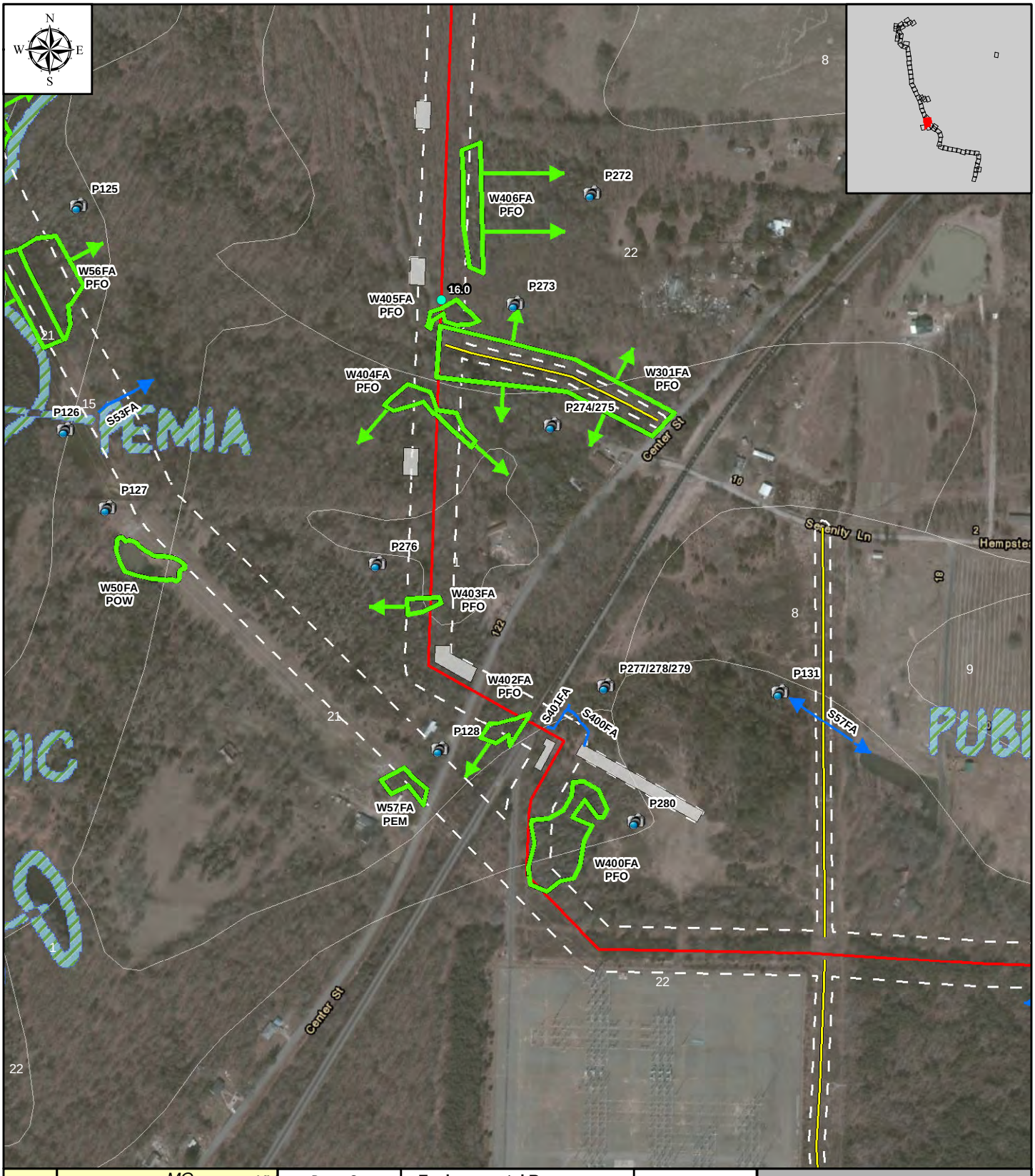
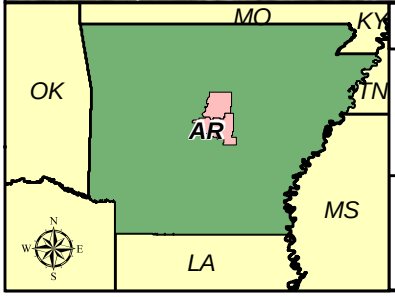
Mechanicsburg, PA 17055





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Environmental Resources - Proposed Facilities

Central Arkansas Pipeline Enhancement Project

Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet

1 inch = 450 feet

Figure 2A

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Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
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- Shoemaker Site
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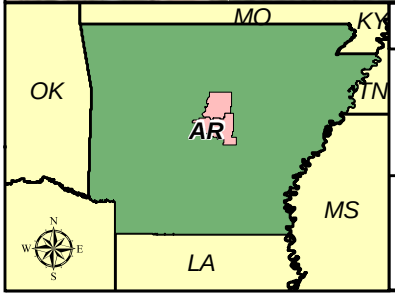

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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 39 of 64

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
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Prepared For: **Enable Gas Transmission, LLC**

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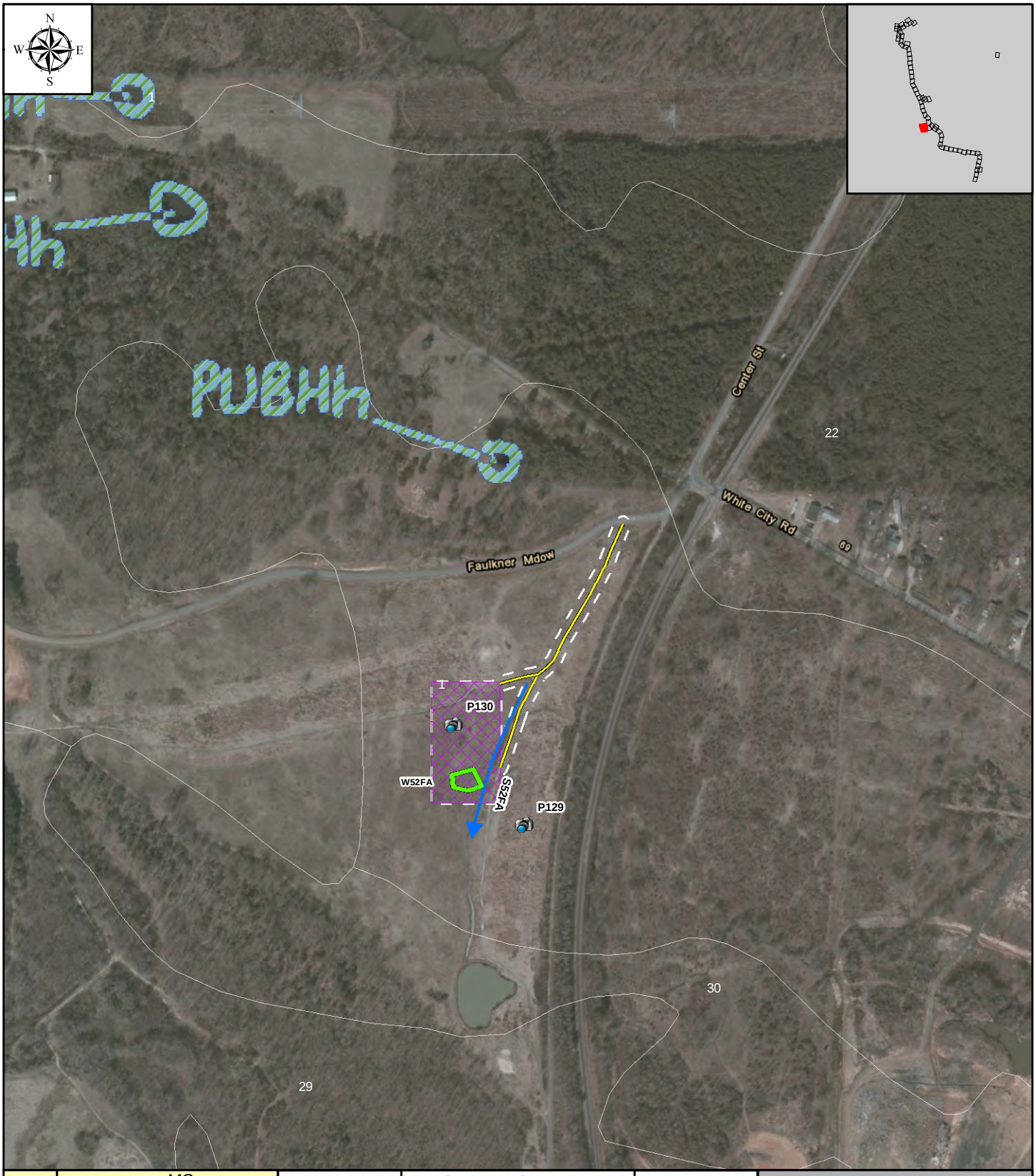

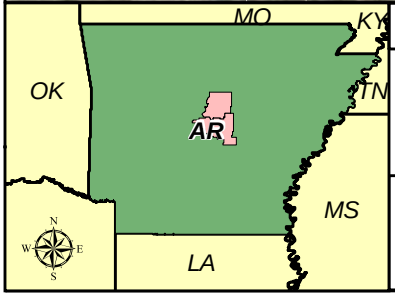

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
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Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
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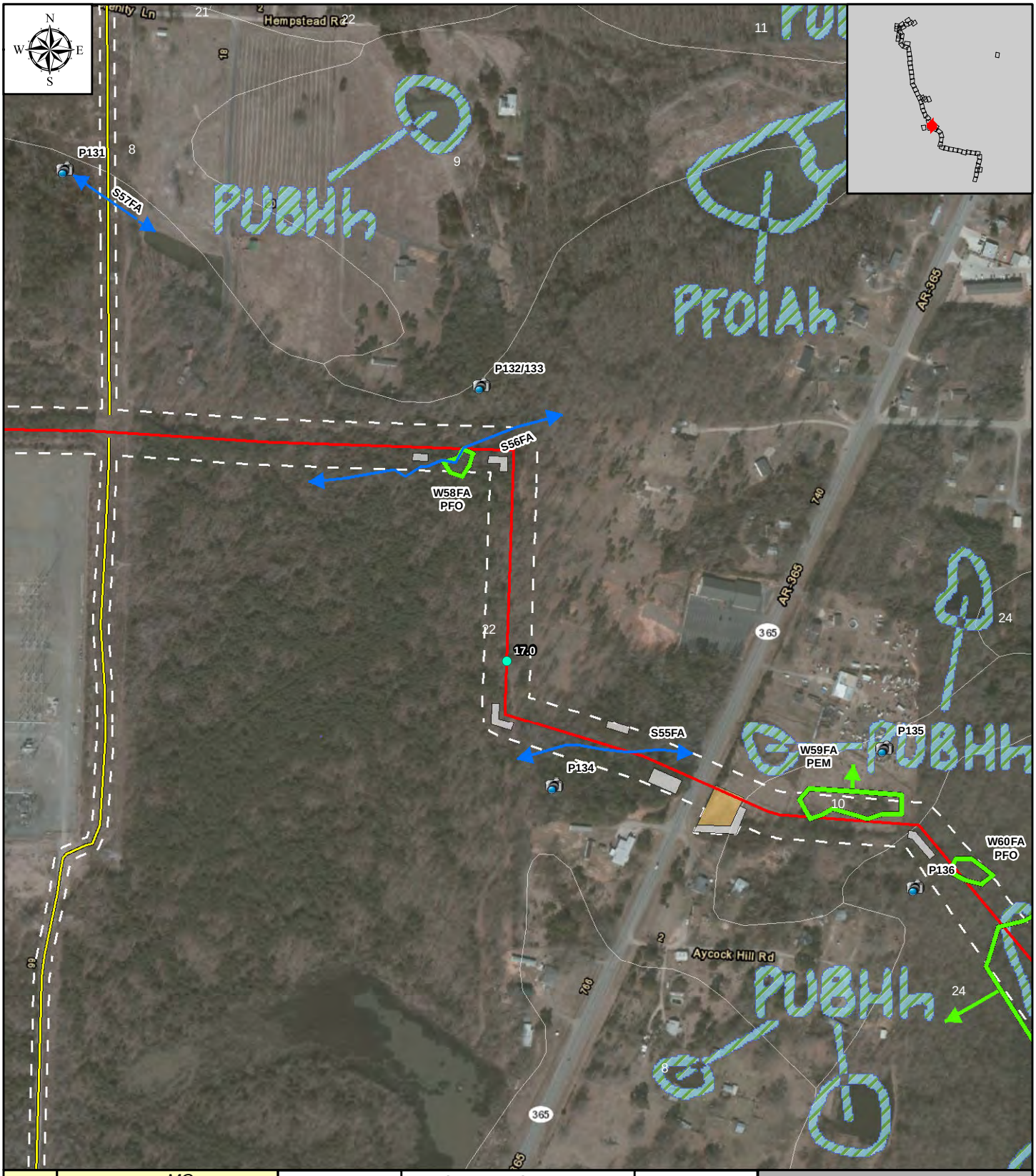

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 41 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
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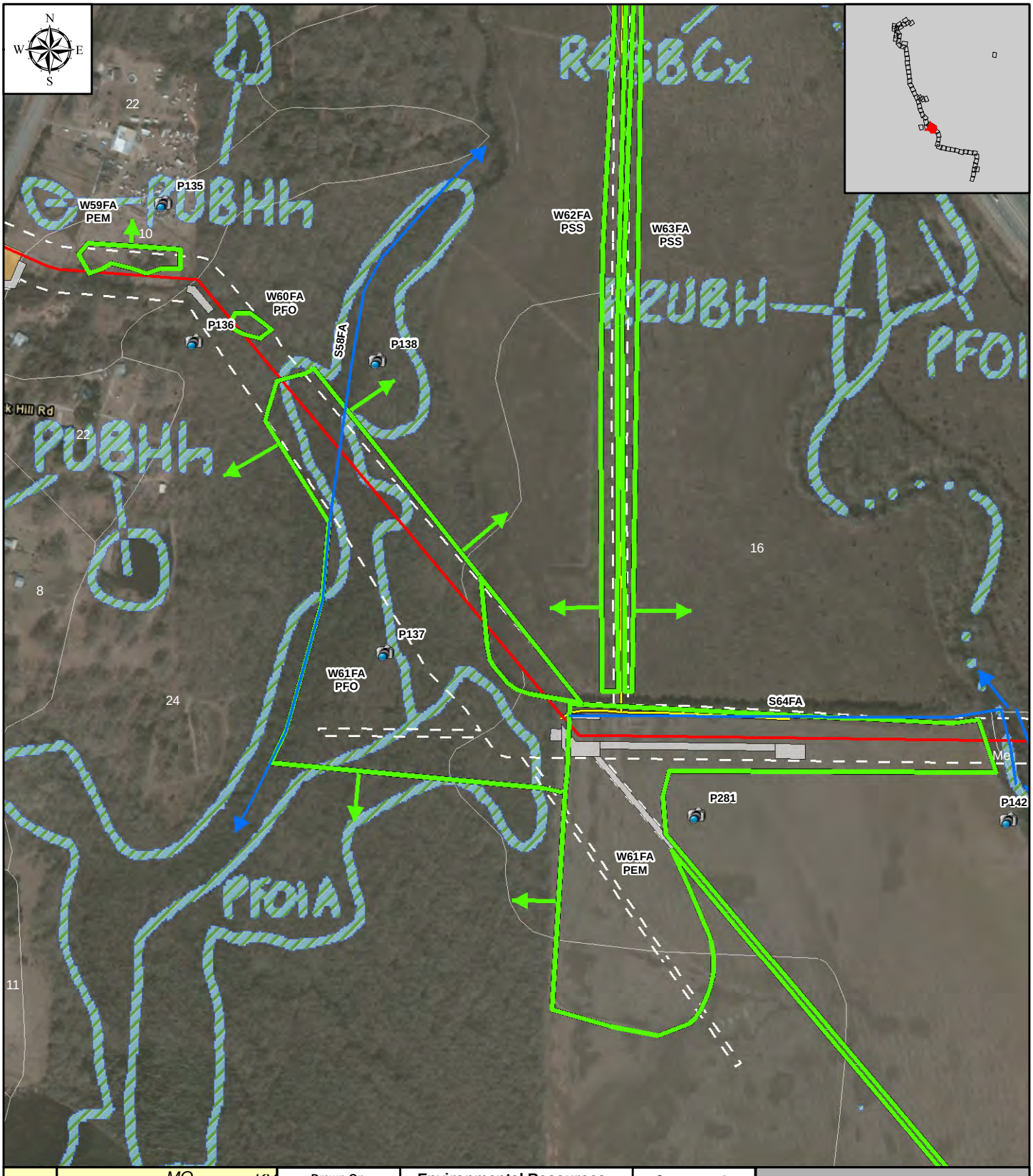

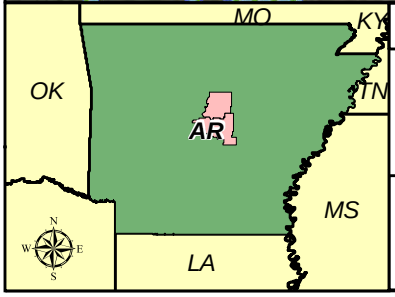

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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
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Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
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- Shoemaker Site
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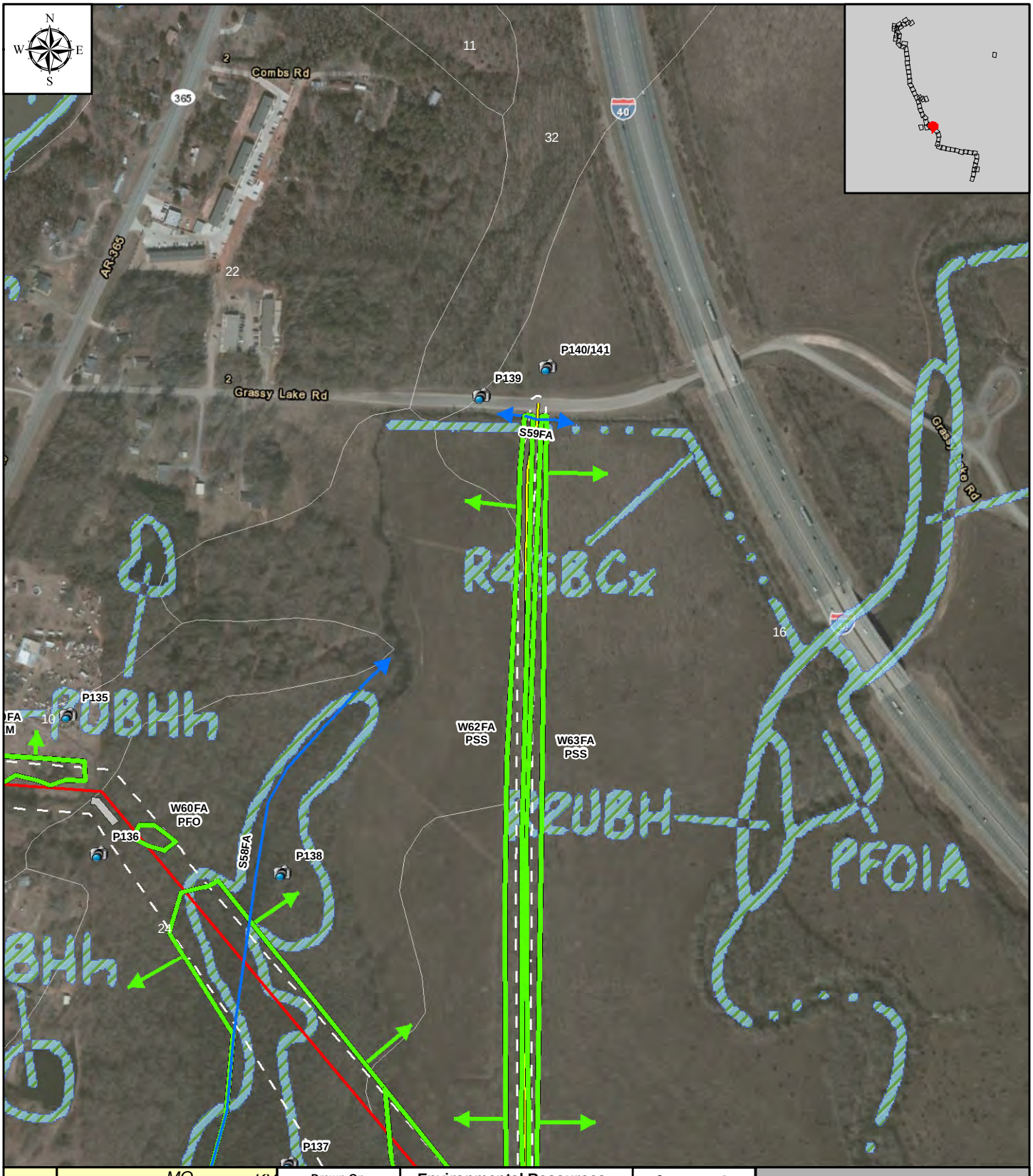

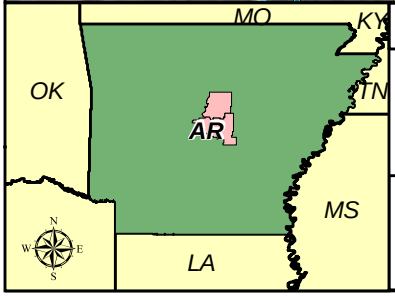

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
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Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
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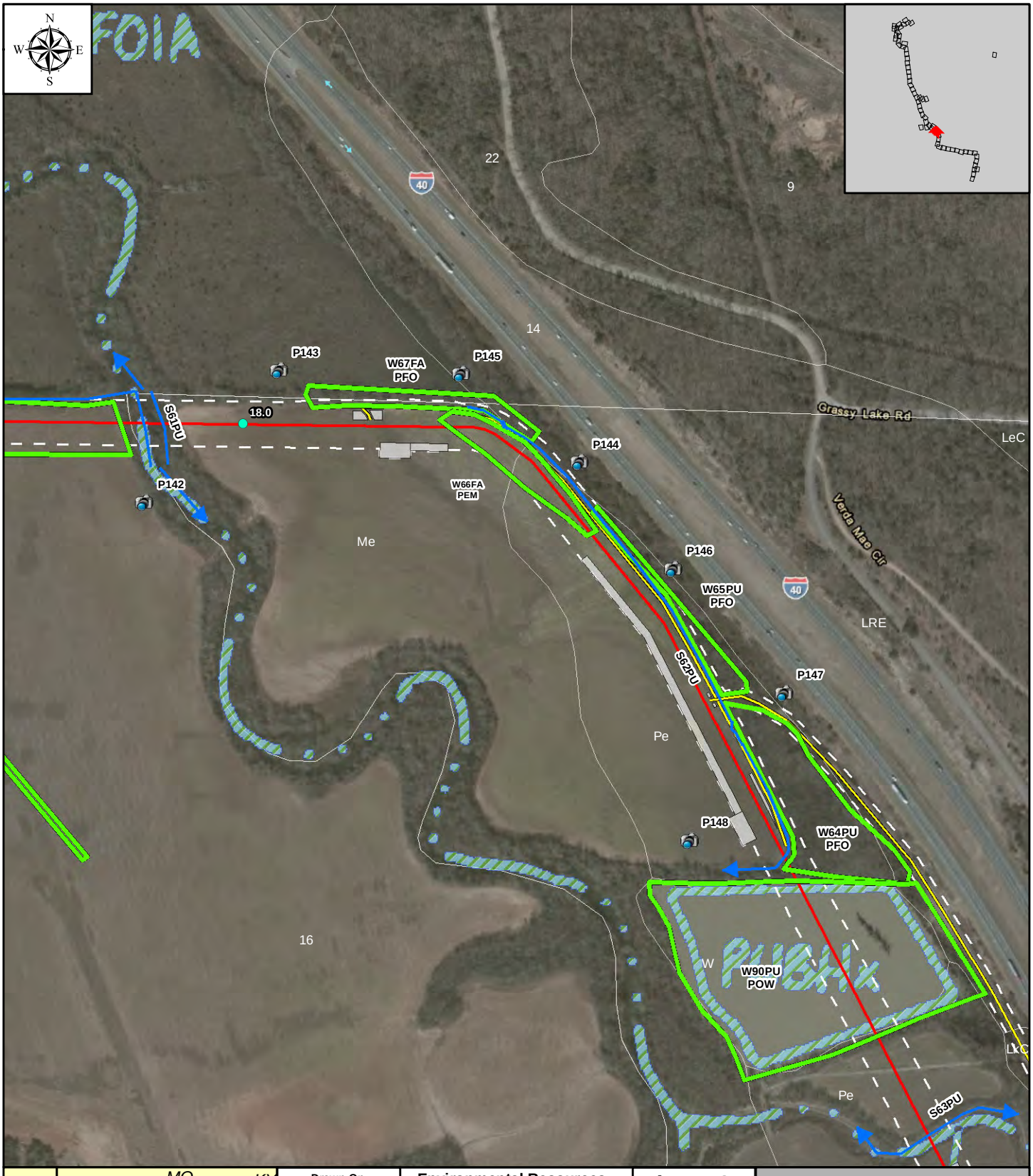

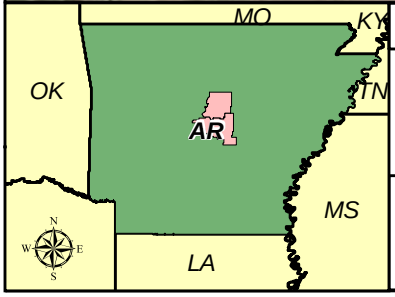

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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 44 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
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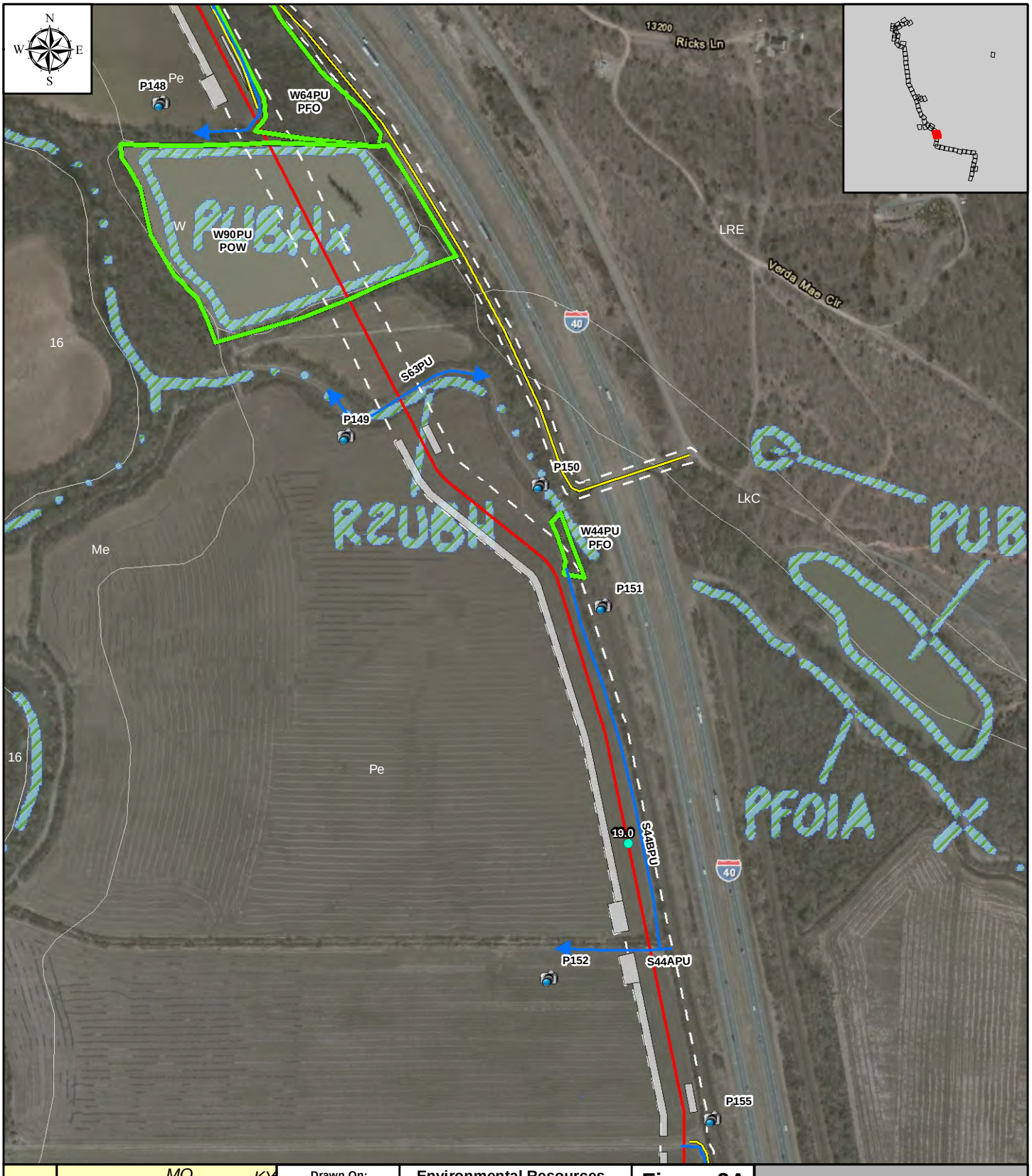

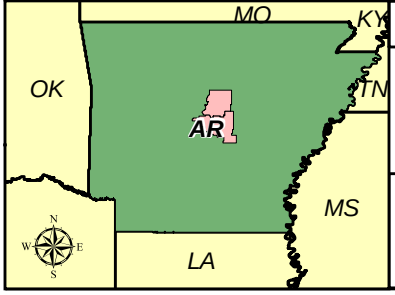

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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 45 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
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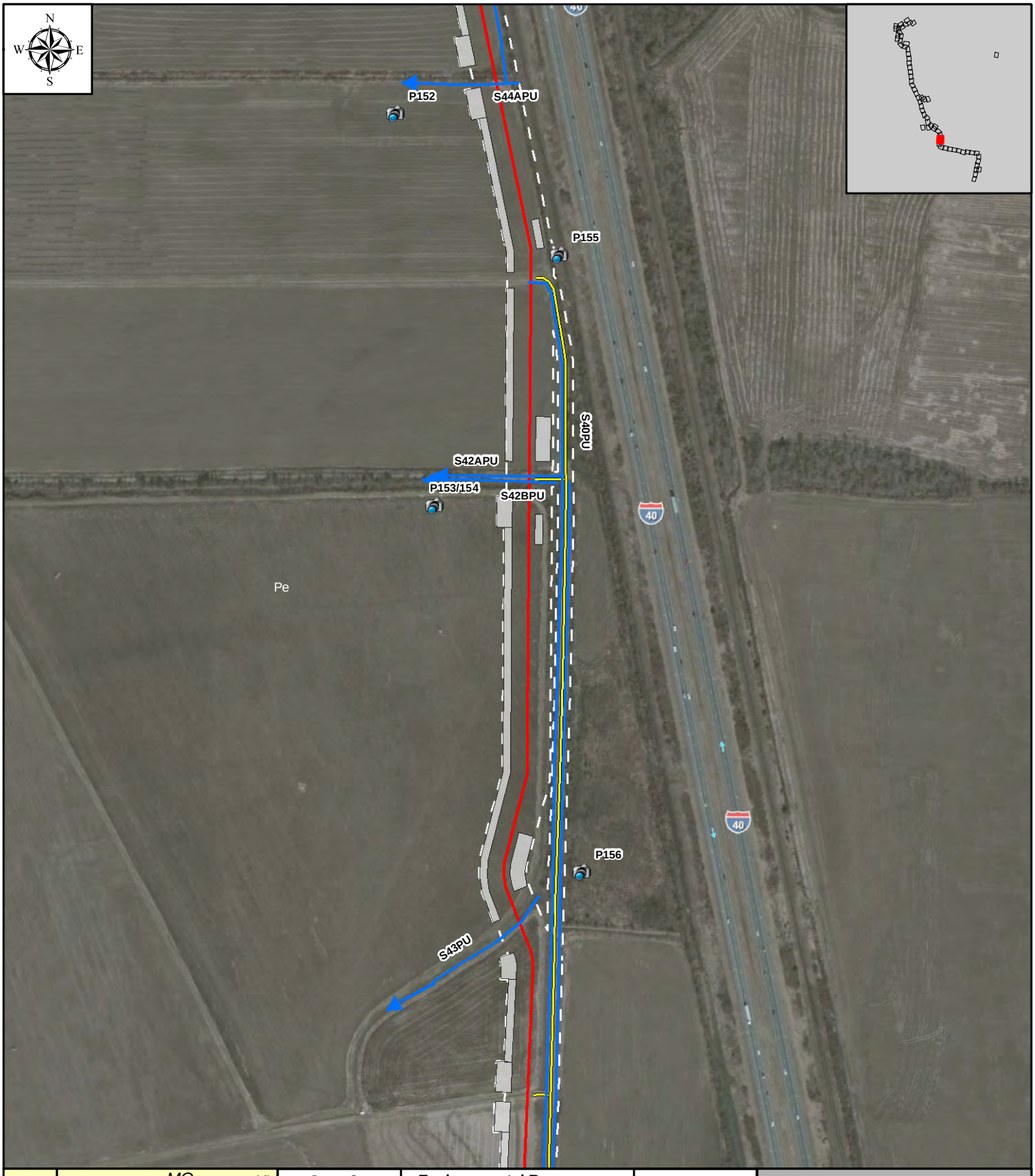

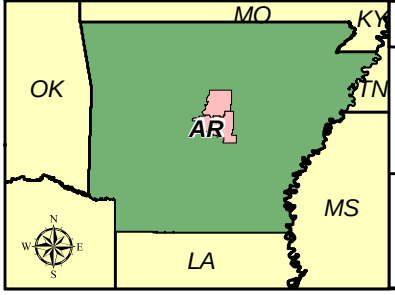

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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 46 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
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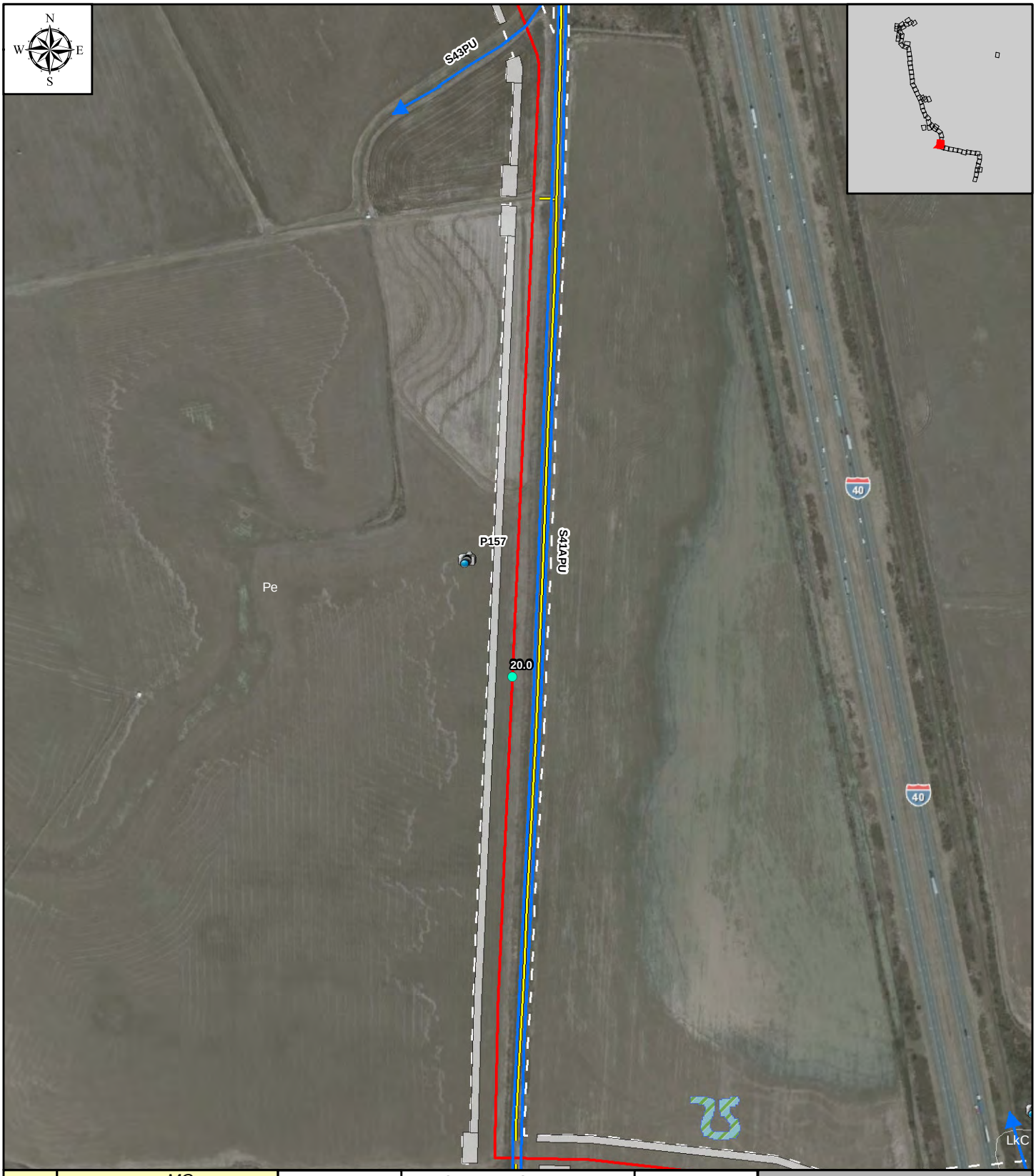

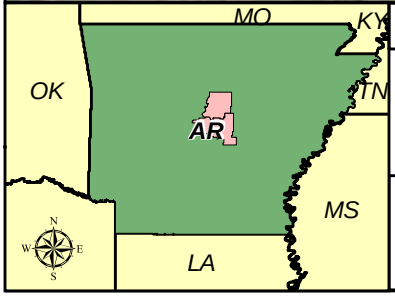

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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 47 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
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- Stream Continues
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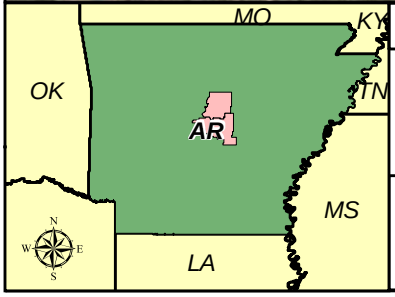

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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 48 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
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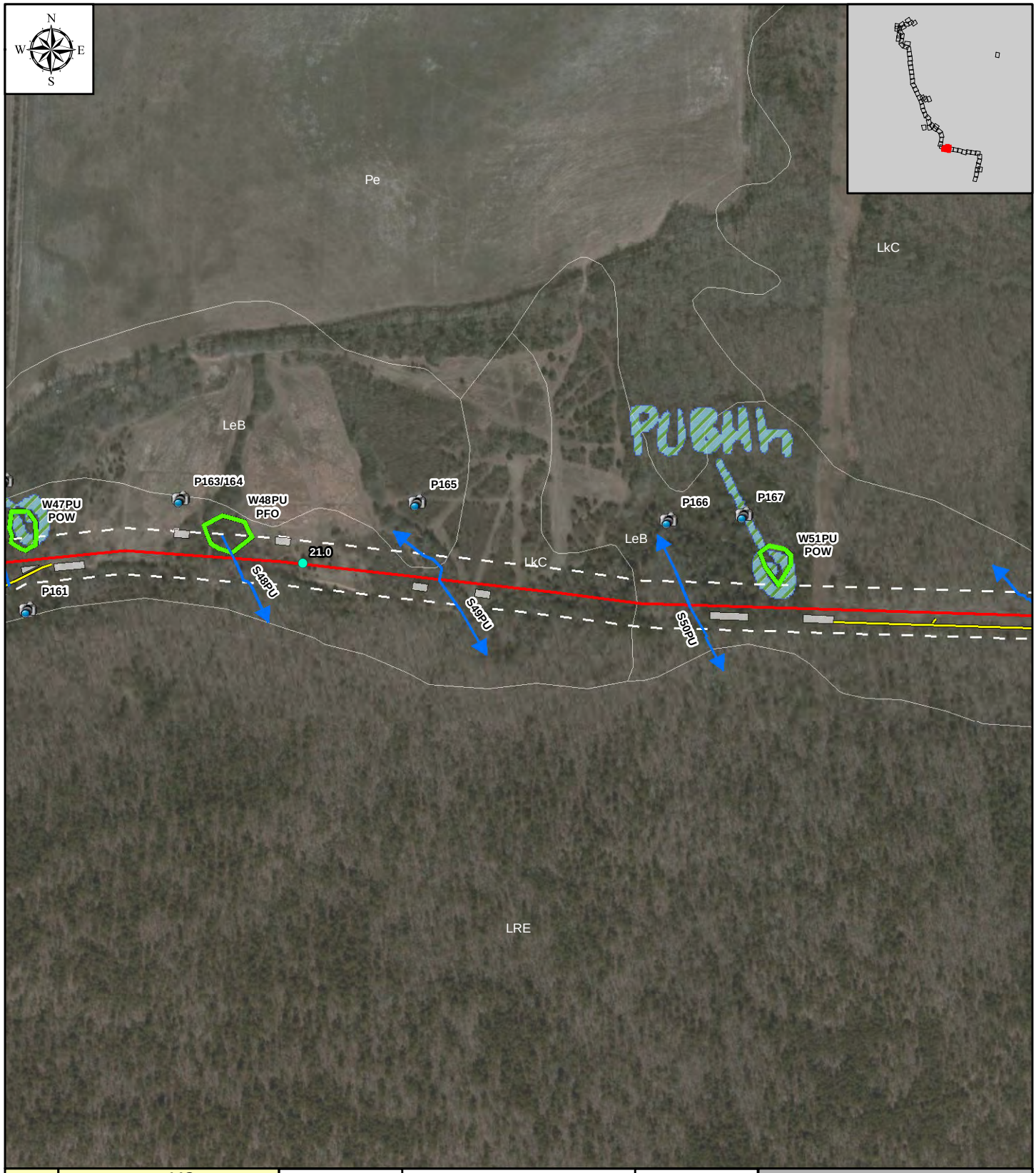

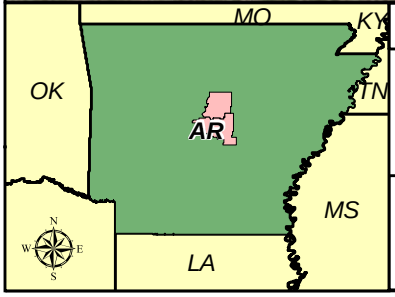

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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2A
Sheet 49 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
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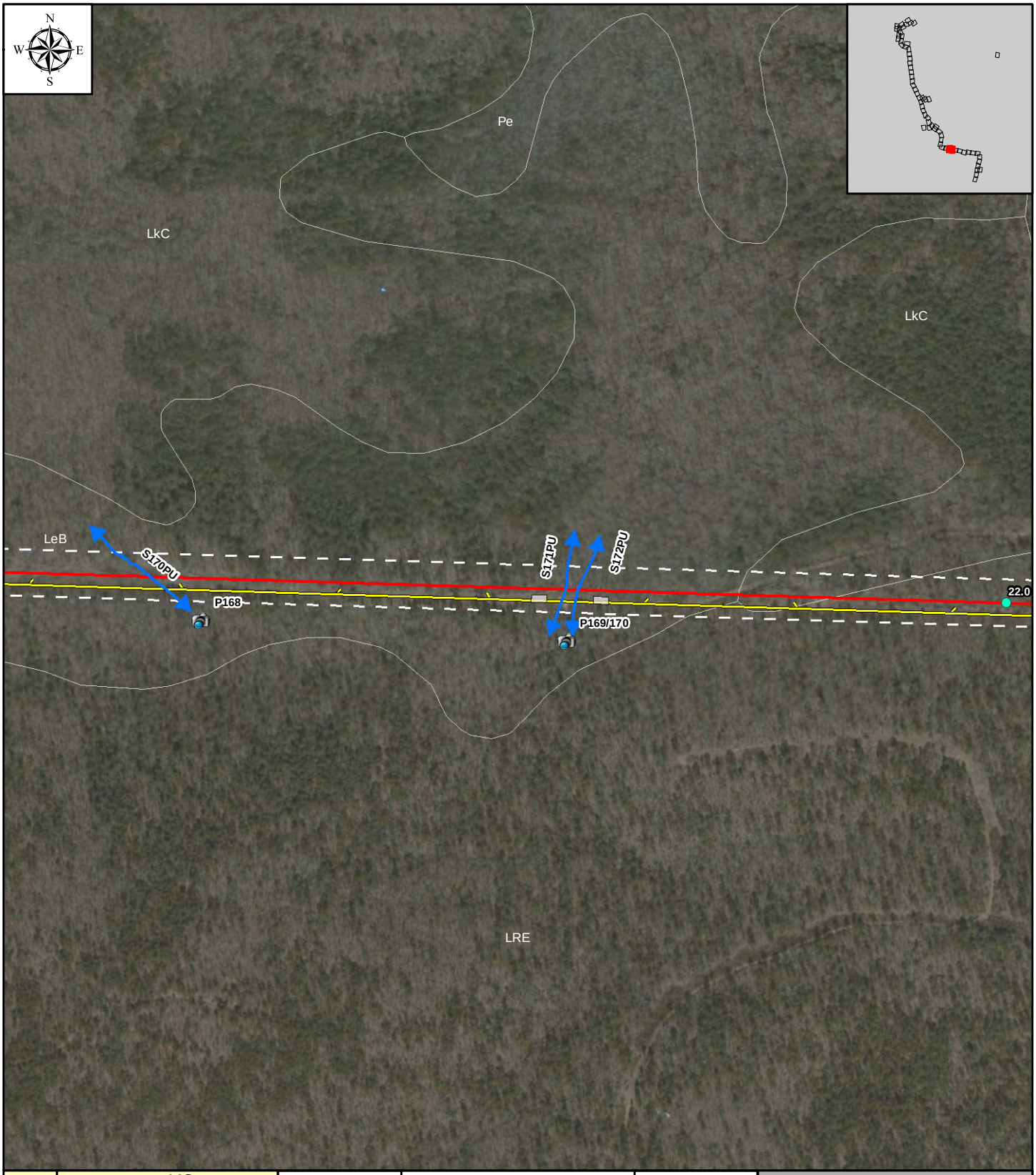

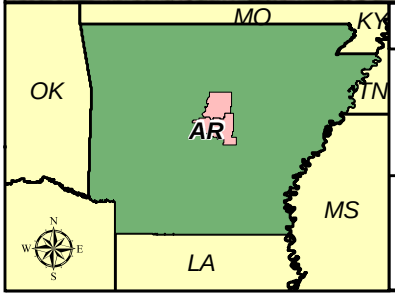

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 50 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
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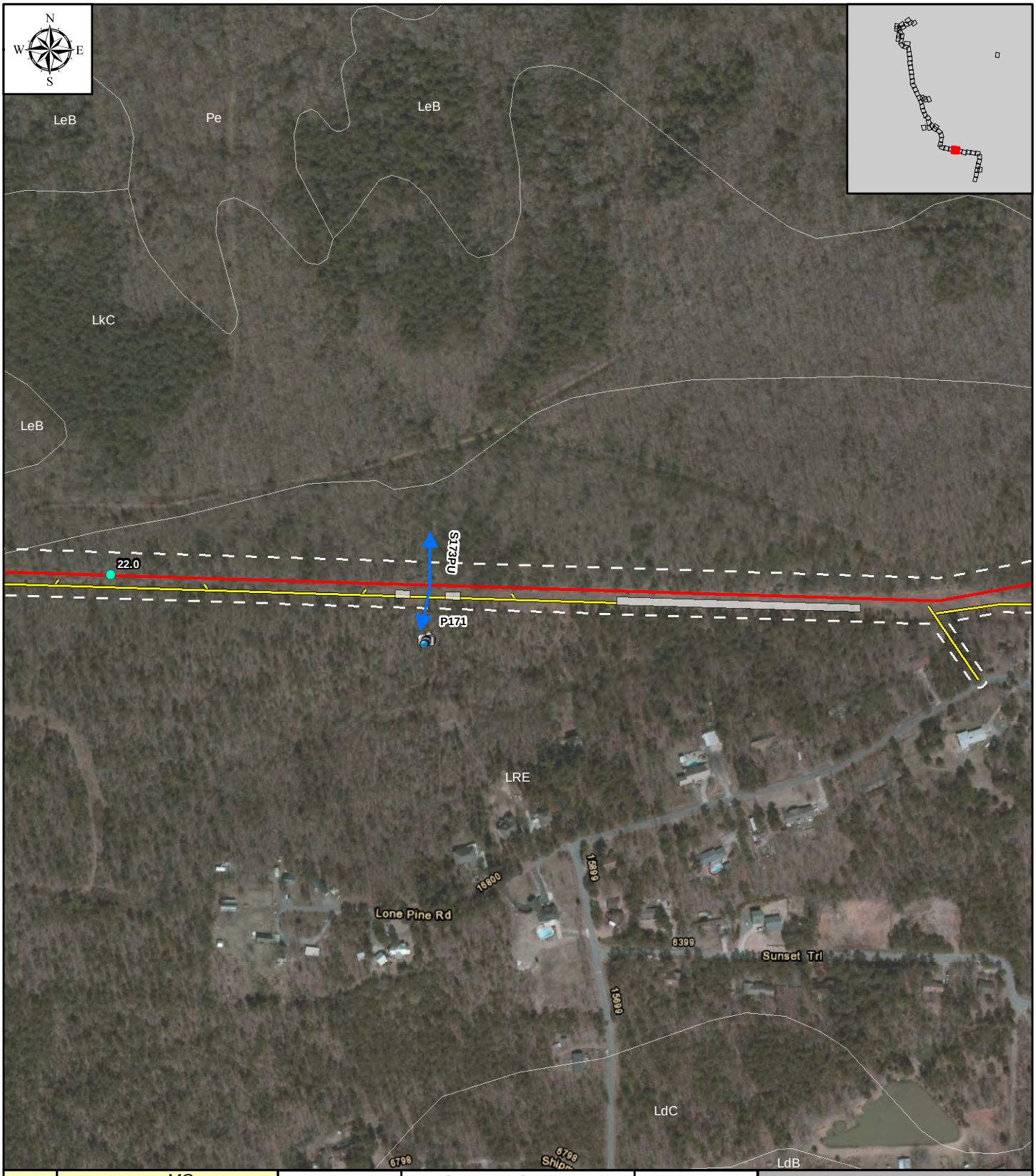

Drawn On: September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2A
Sheet 51 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
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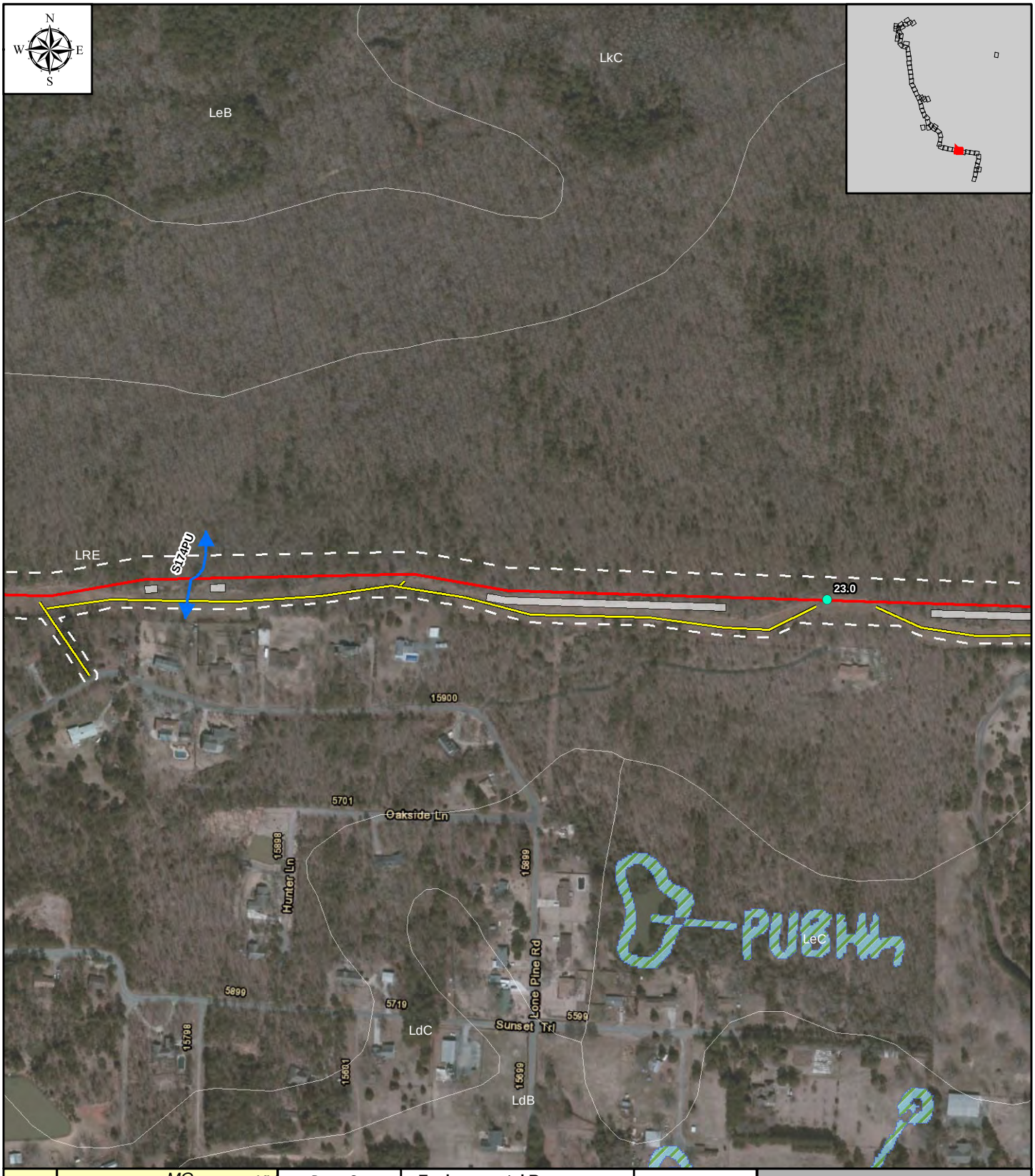

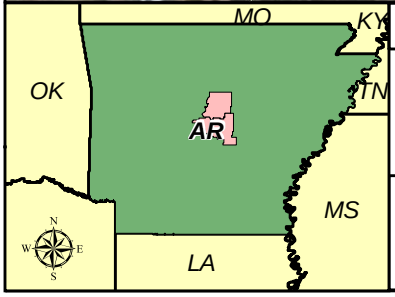

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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2A
Sheet 52 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

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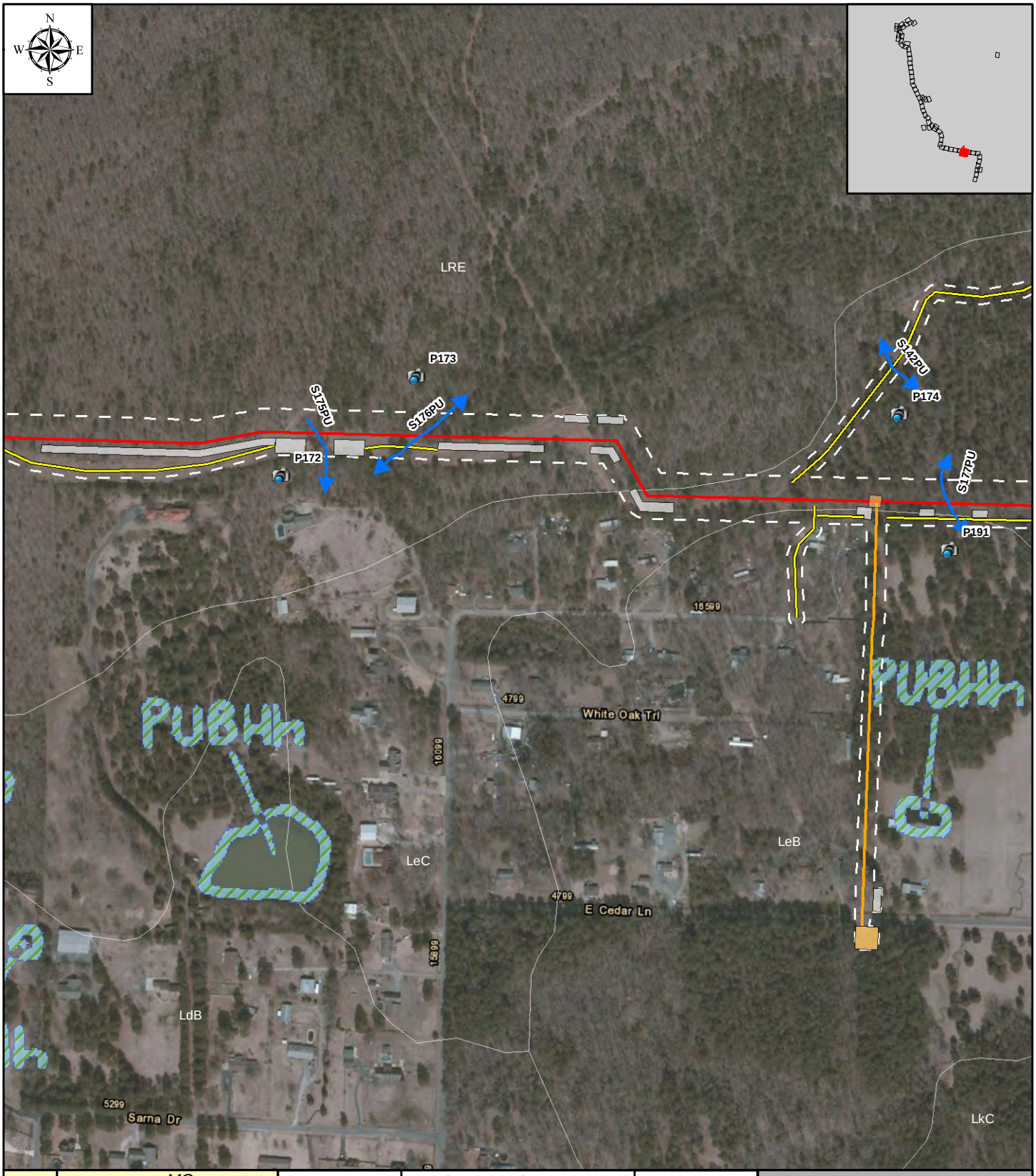

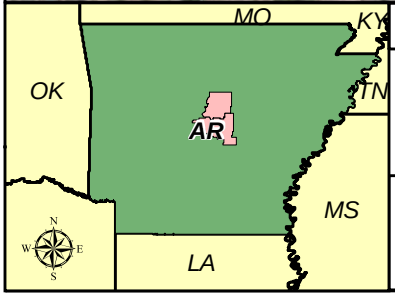

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2A
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Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
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Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
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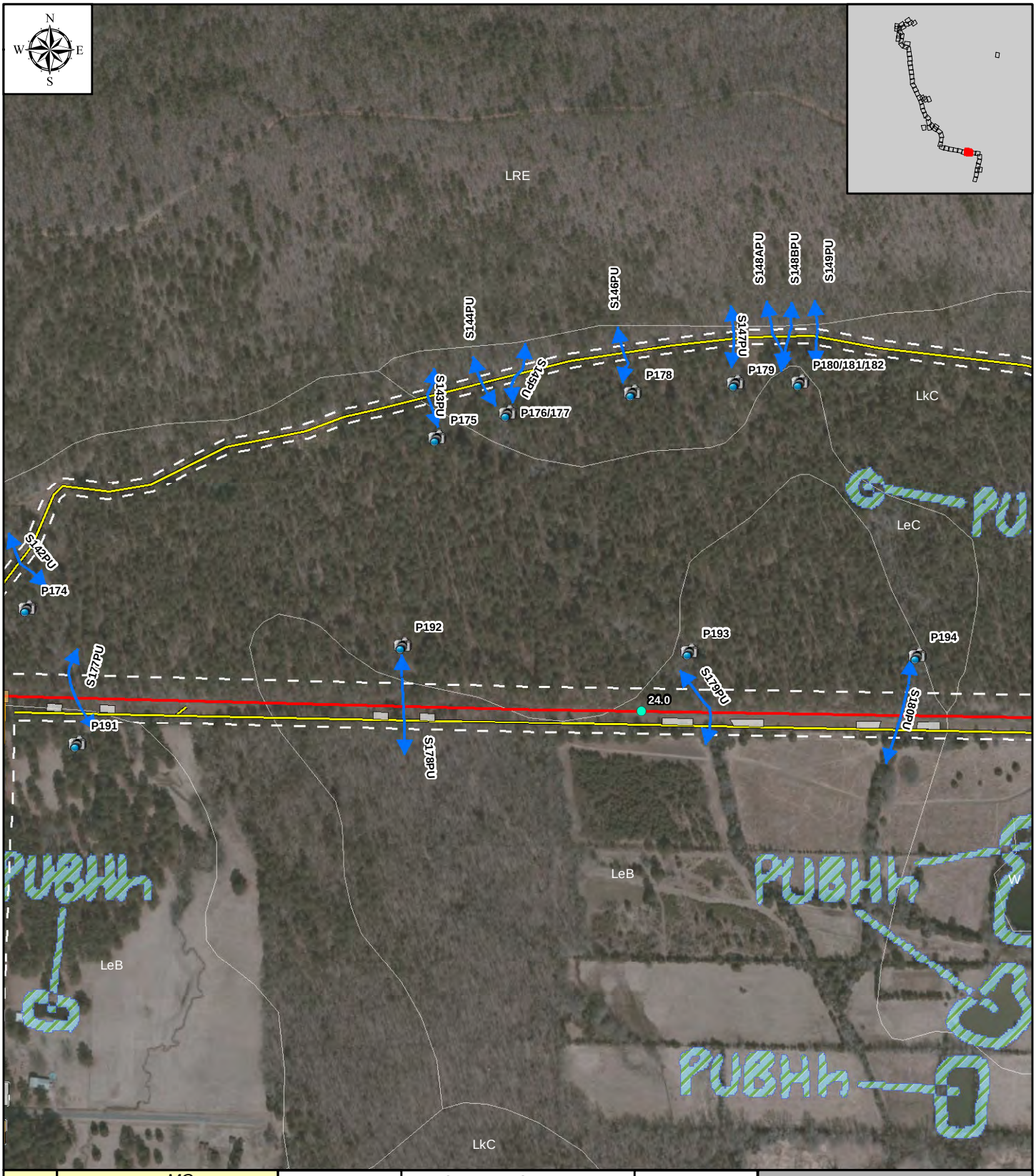

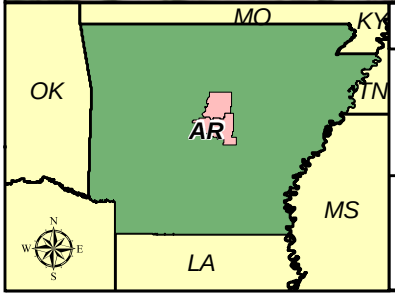

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2A
Sheet 54 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
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Legend

- Mile Posts
- Streams
- Wetlands
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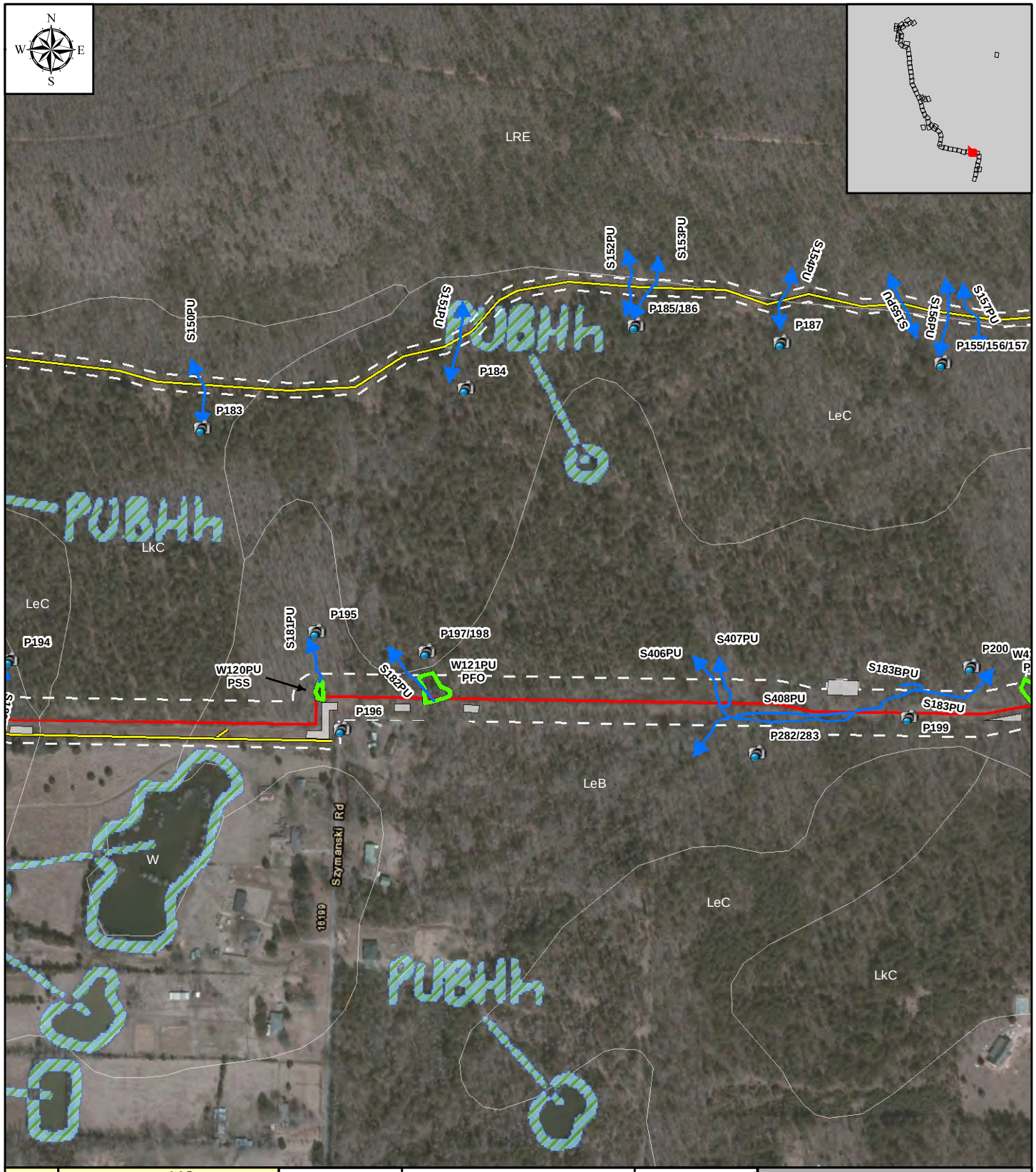

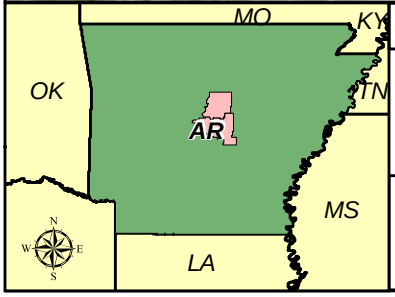

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Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

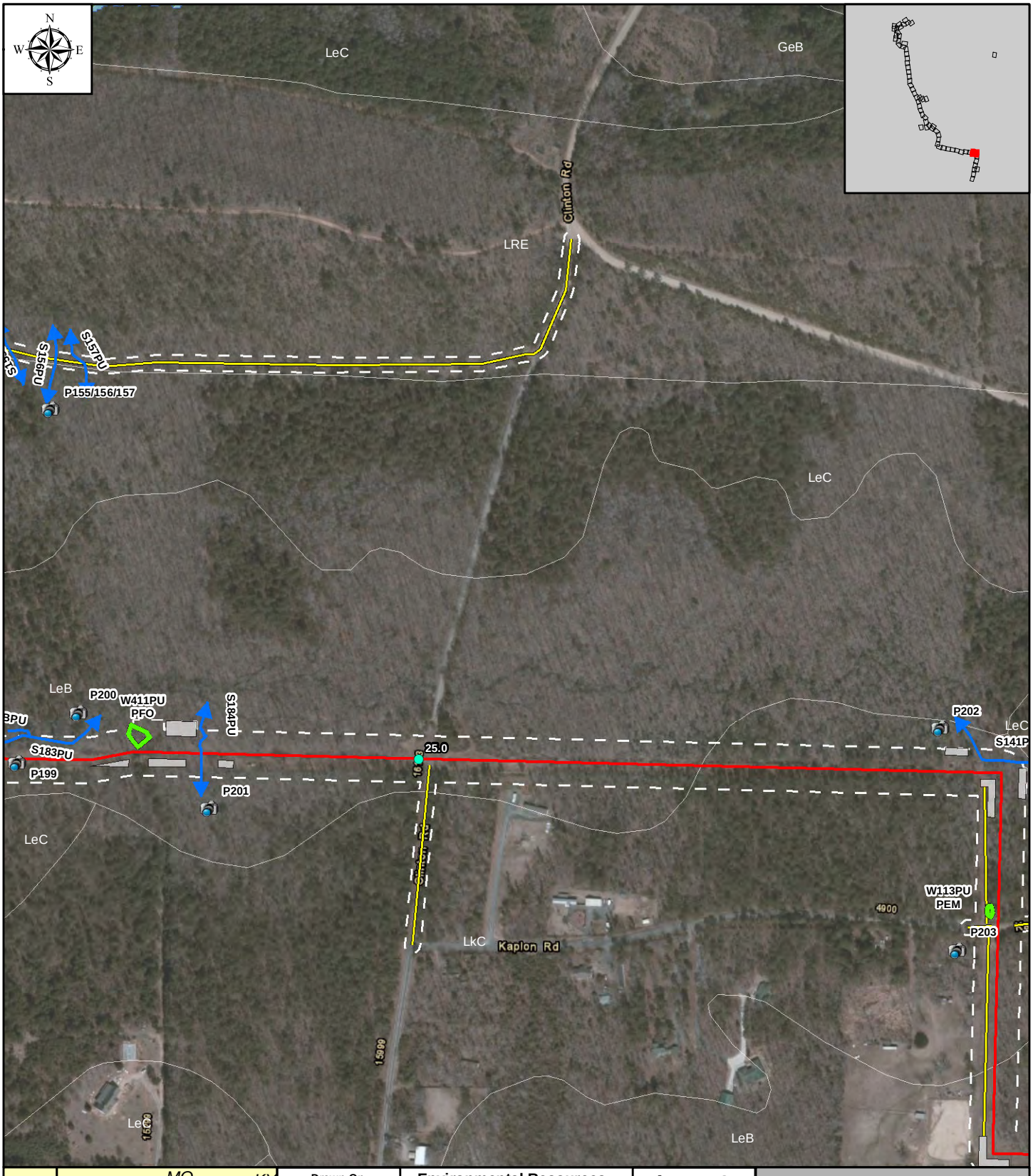
Figure 2A
Sheet 55 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points



Drawn On: September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

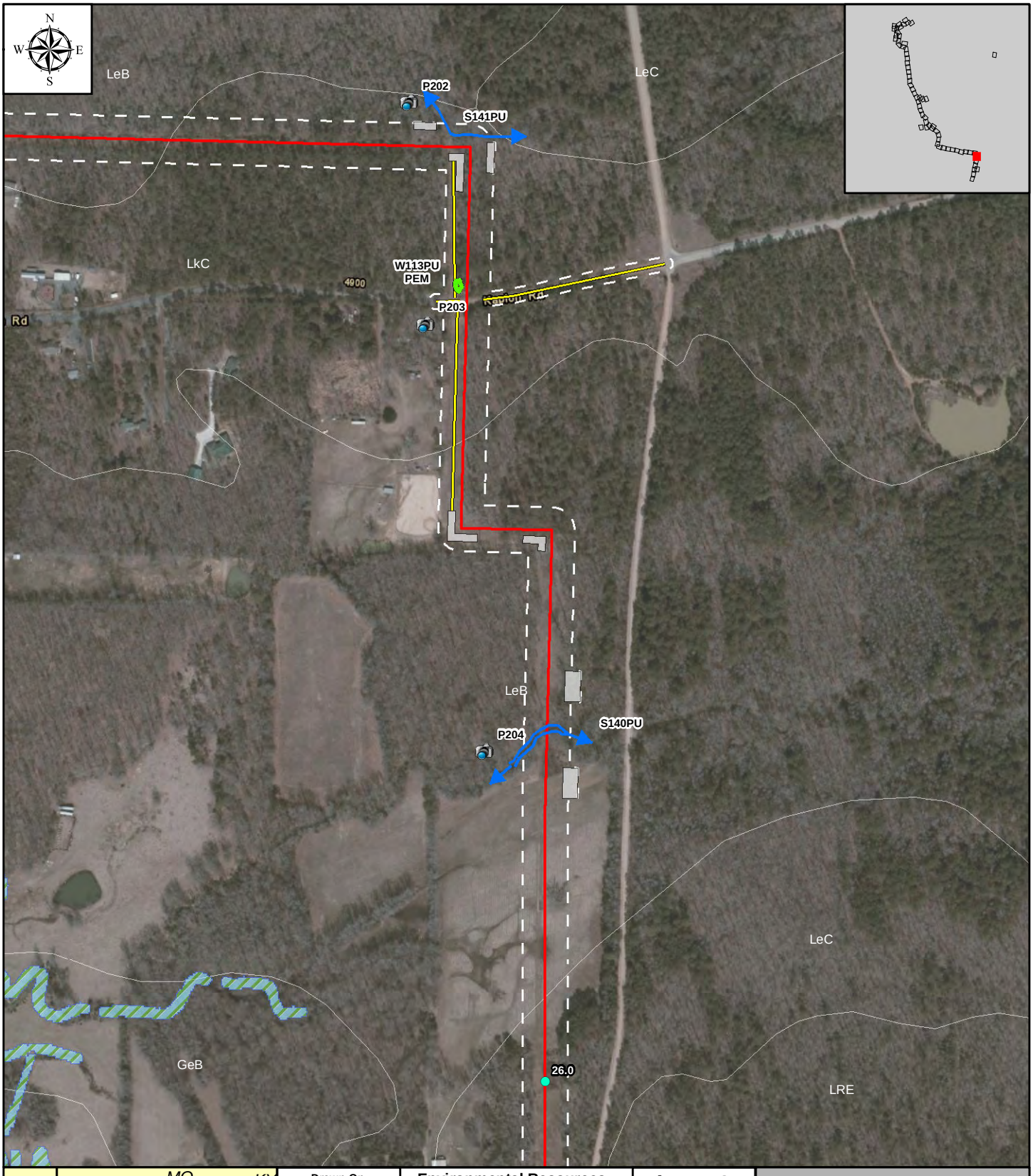
Figure 2A
Sheet 56 of 64

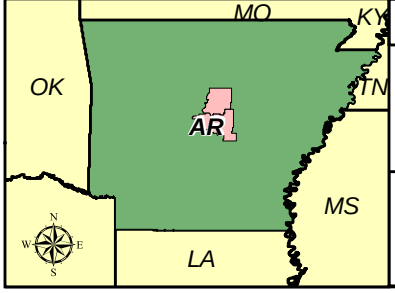
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

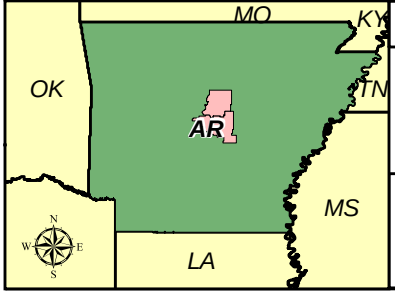
Figure 2A
Sheet 57 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points



Drawn On:
September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

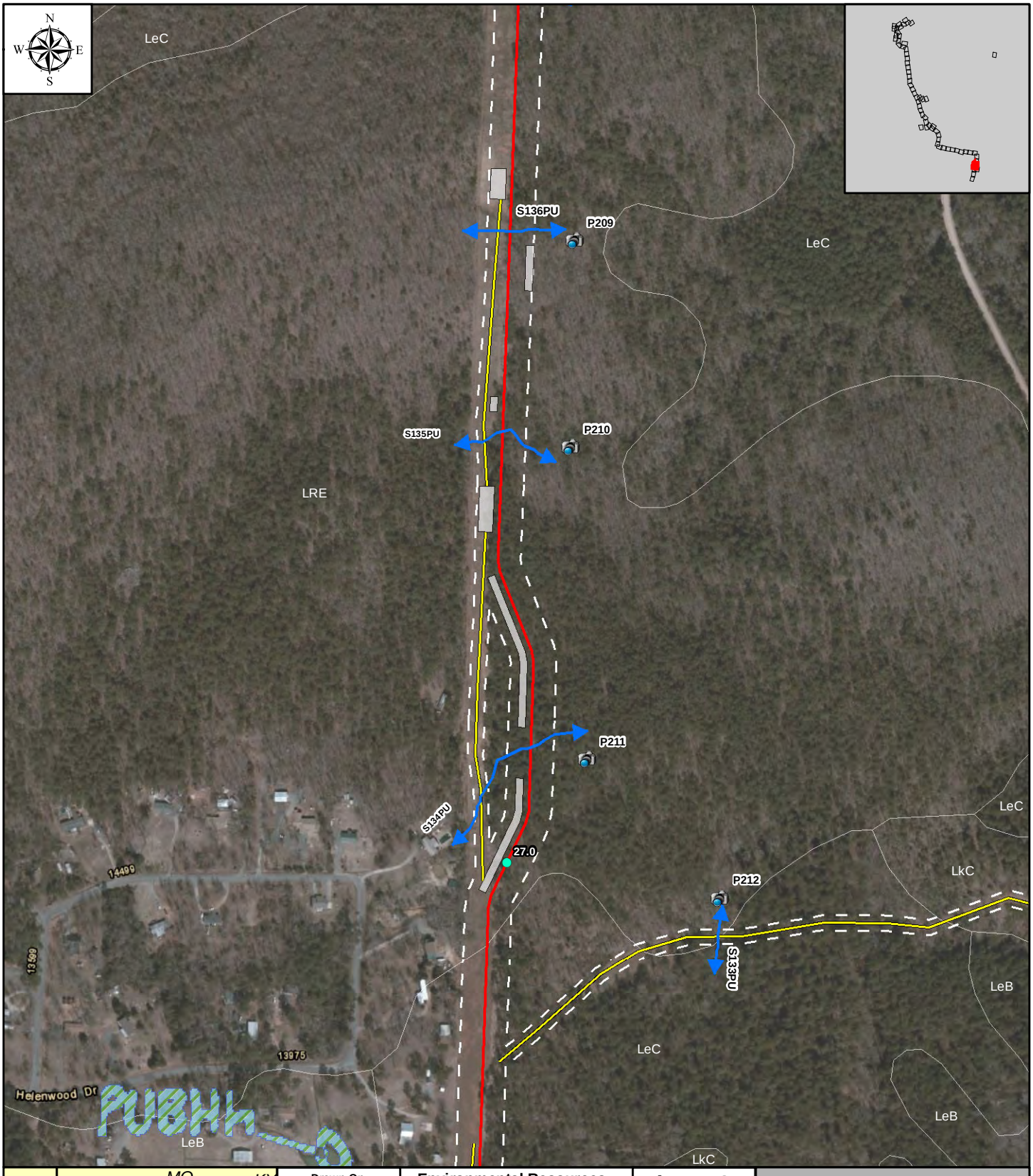
Figure 2A
Sheet 58 of 64

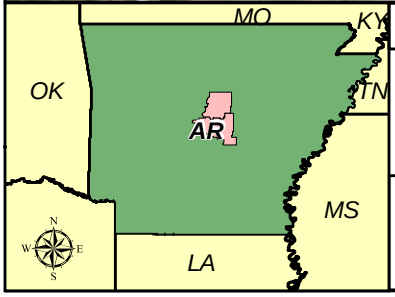
Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055





Drawn On: September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

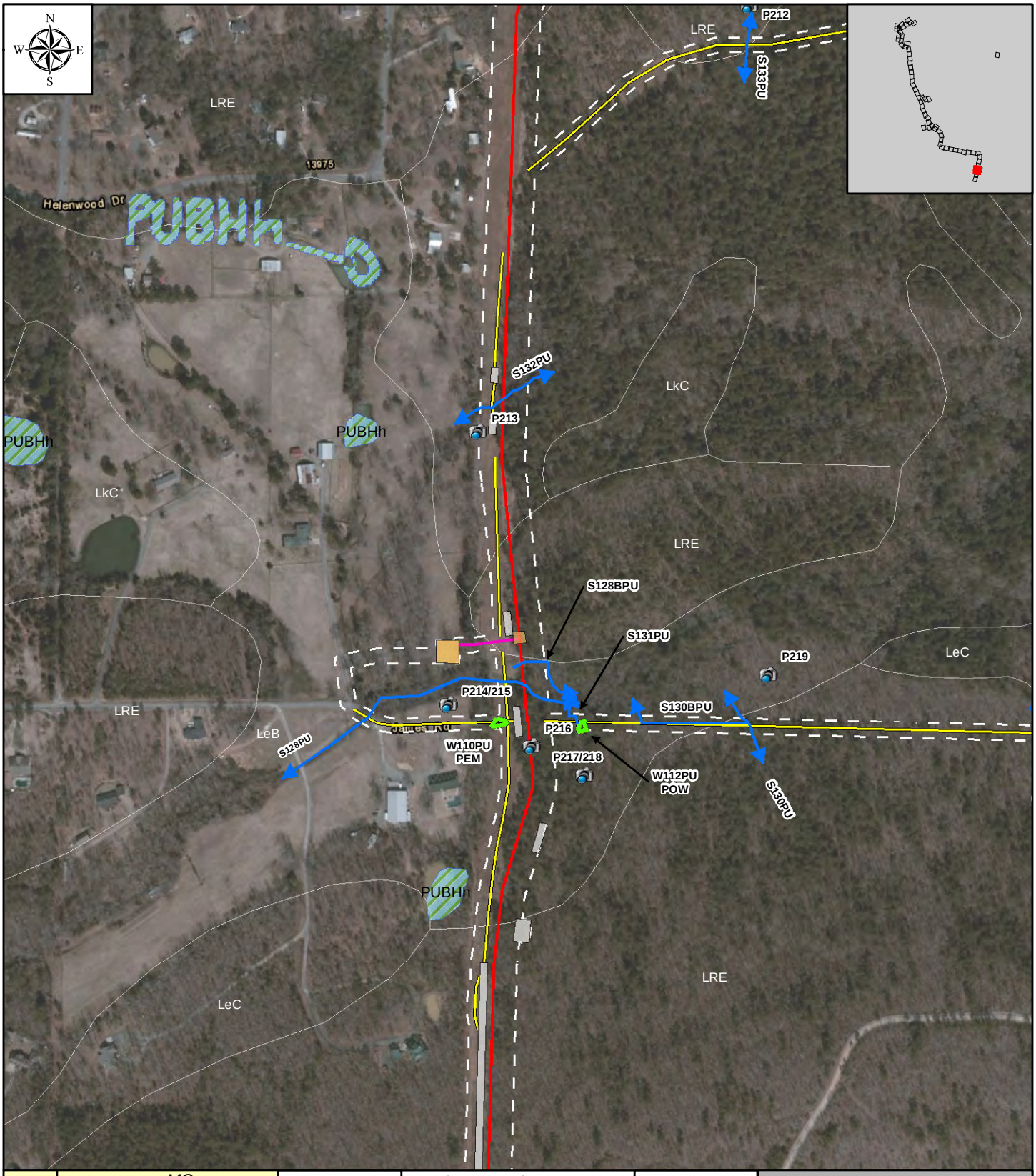
Figure 2A
Sheet 59 of 64

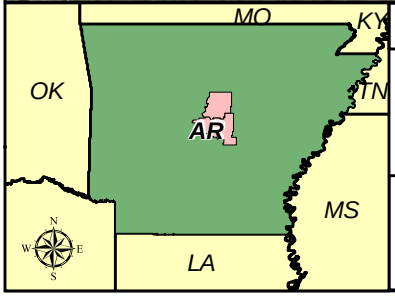
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

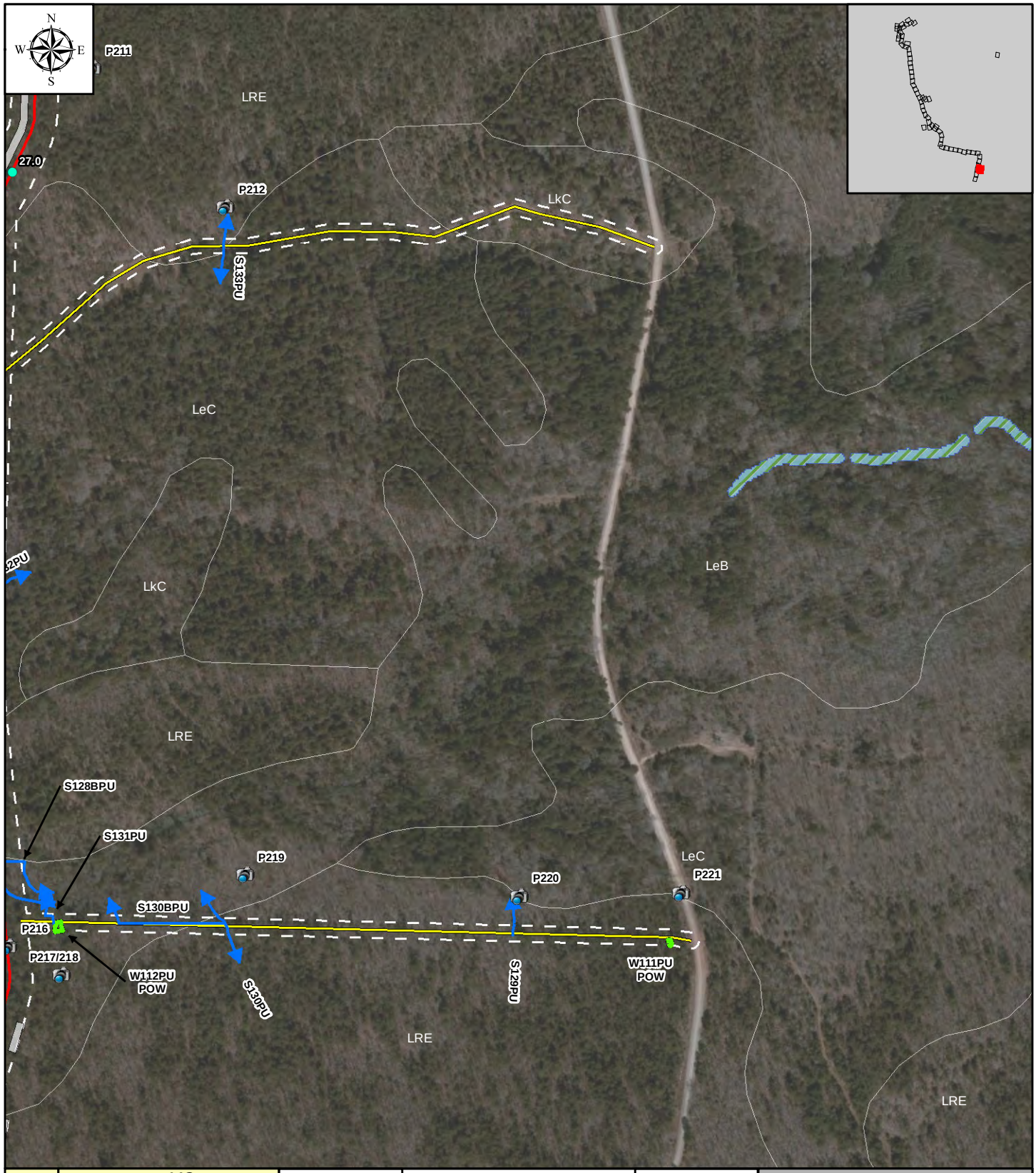
Figure 2A
Sheet 60 of 64

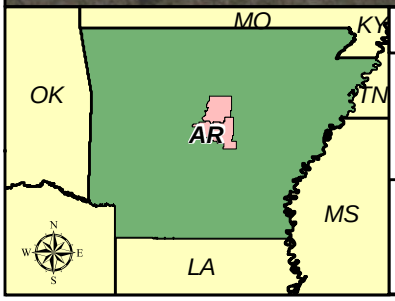
Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055





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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

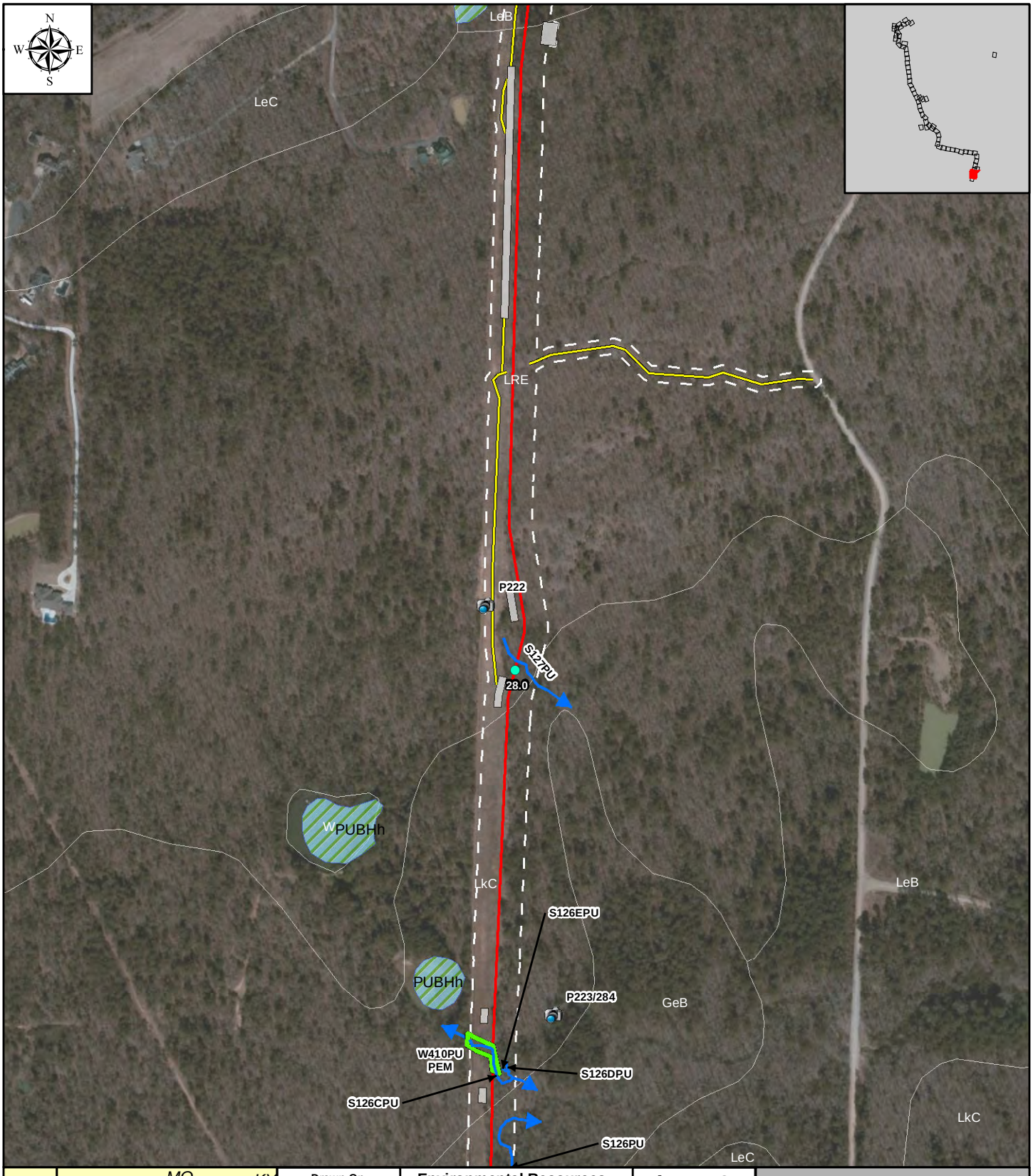
Figure 2A
Sheet 61 of 64

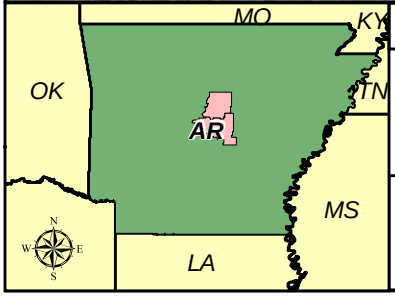
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

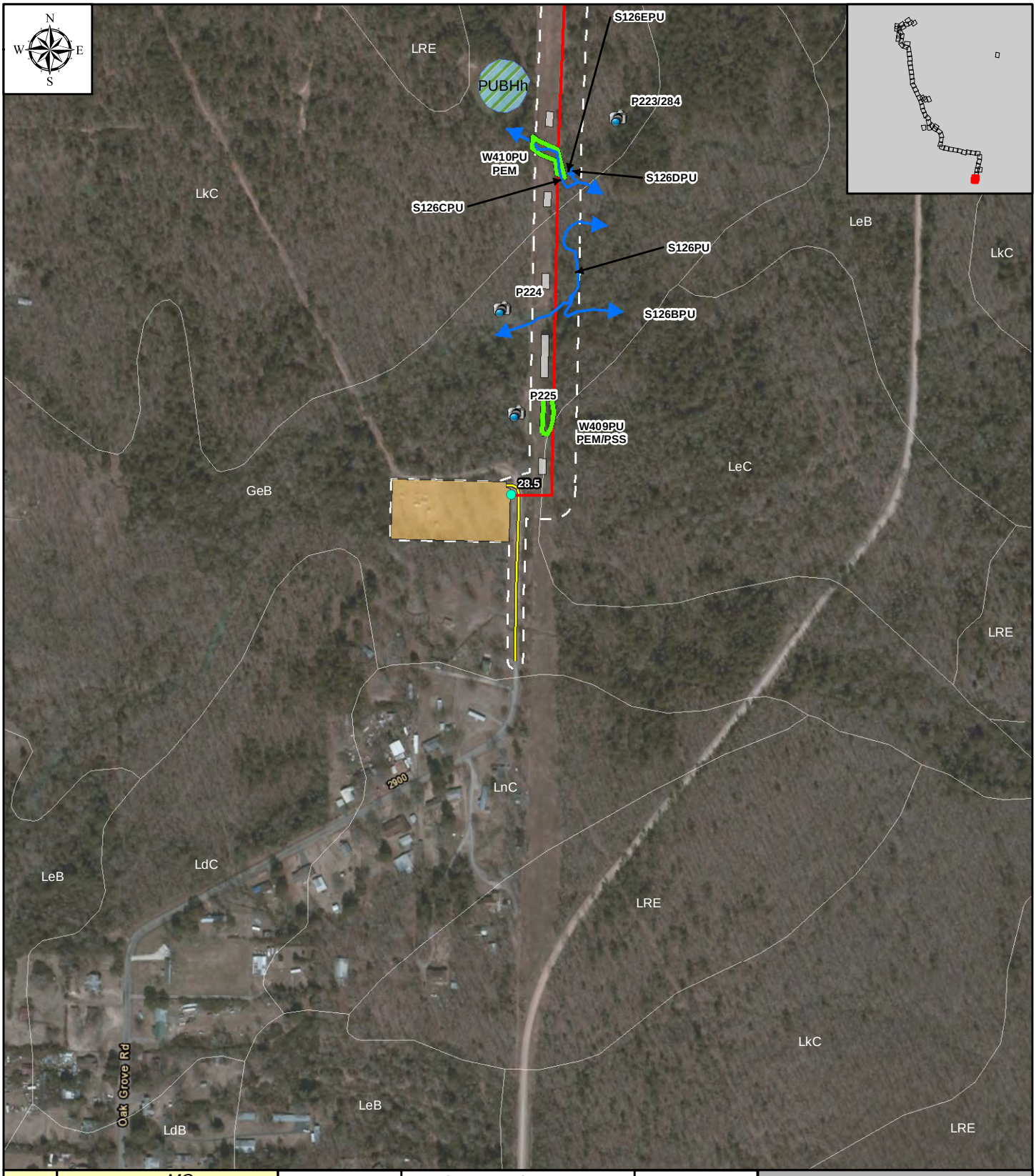
Figure 2A
Sheet 62 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points



Drawn On: September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

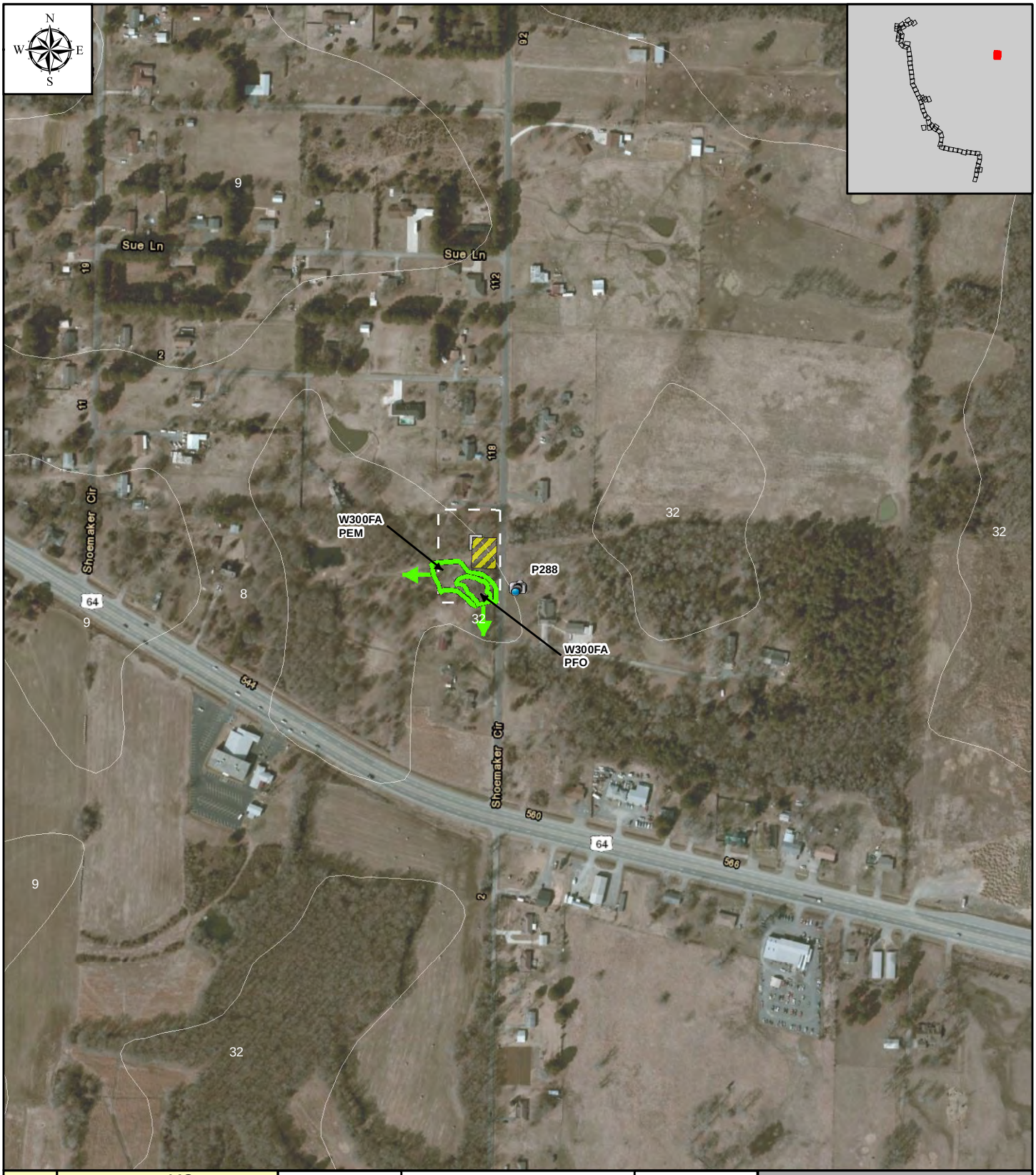
Figure 2A
Sheet 63 of 64

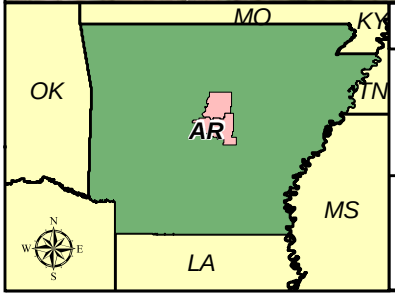
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points





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September 11, 2013

Environmental Resources - Proposed Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2A
Sheet 64 of 64

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

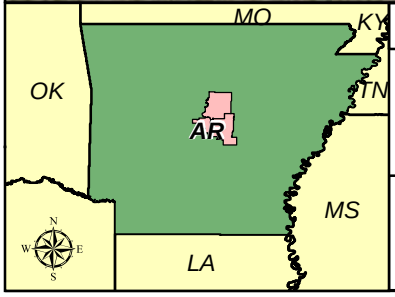
- Mile Posts
- Streams
- Wetlands
- Stream Continues
- Wetland Continues
- Line BT-39 Route
- Line BT-40 Route
- Line BT-41 Route
- ETWS
- Proposed Sites
- Access Roads
- Line BT-39 Pipeyards
- Shoemaker Site
- Study Area
- NWI
- Soils
- Photo Points

APPENDIX B

Figure 2B

Abandonment

Facilities



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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

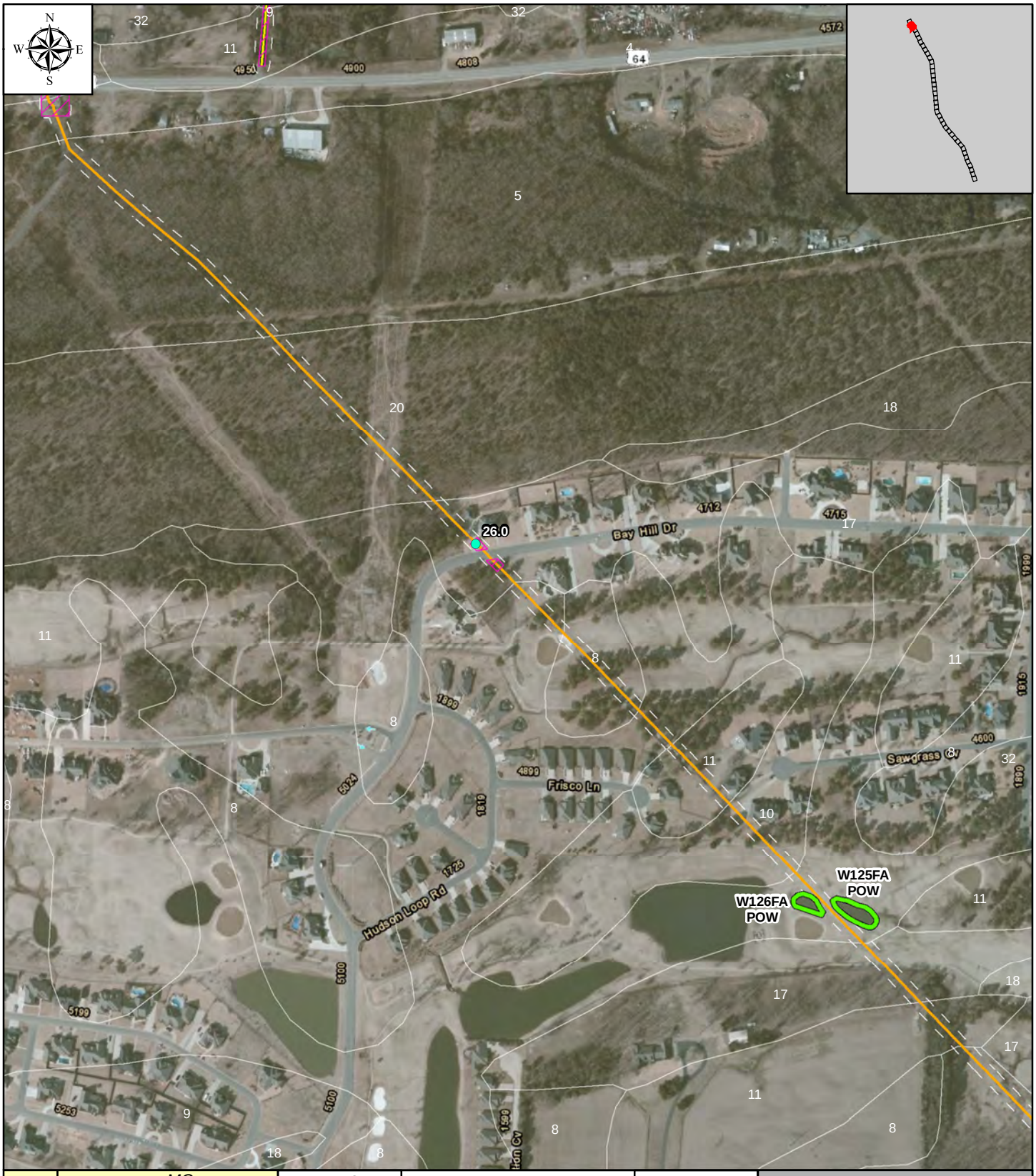
Figure 2B
Sheet 1 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points



Drawn On:
September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 2 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points

Drawn On: September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

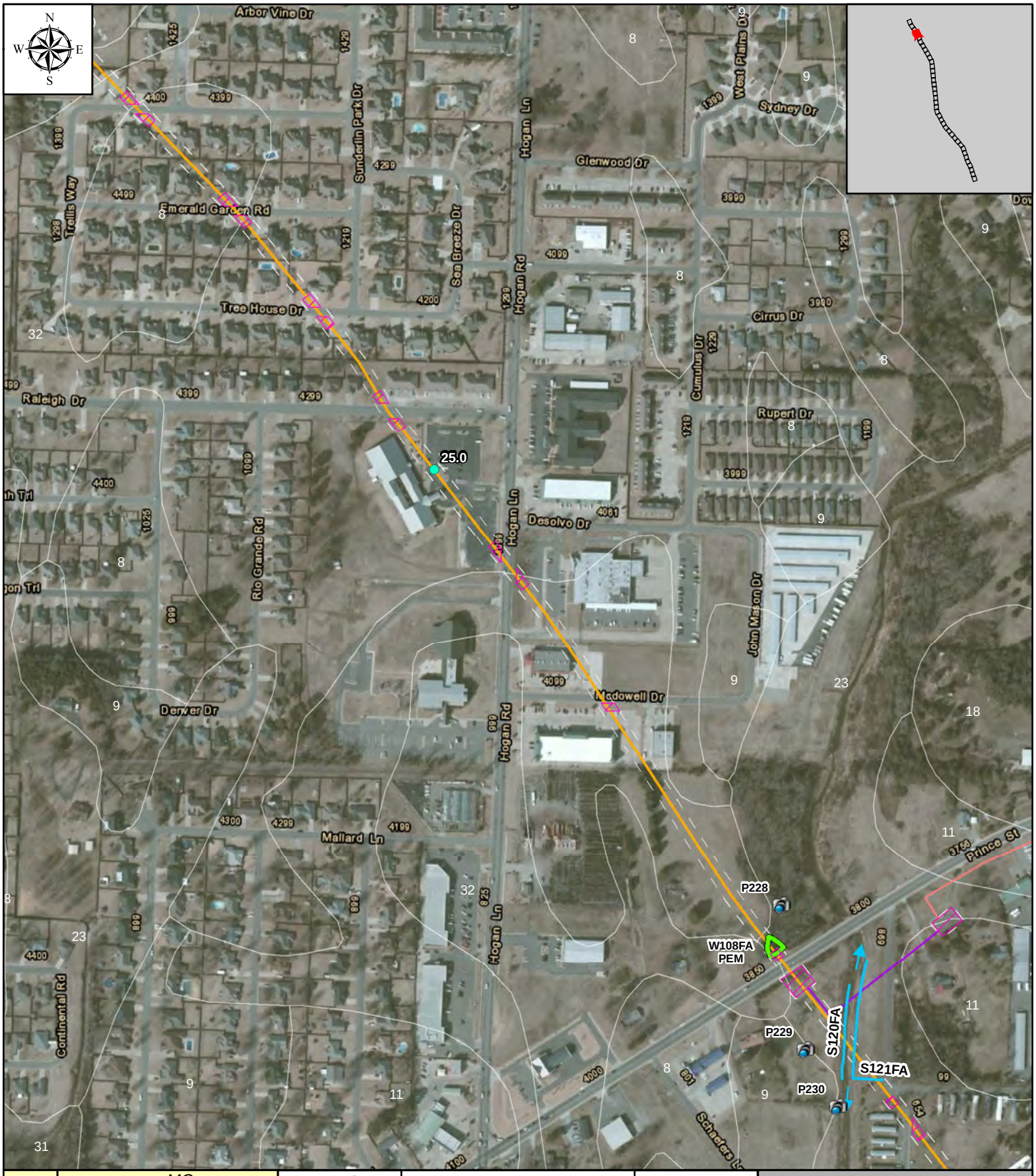
Figure 2B
Sheet 3 of 39

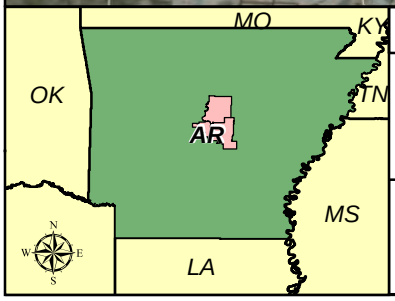
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points





Drawn On: September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B

Sheet 4 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points

Drawn On:
September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

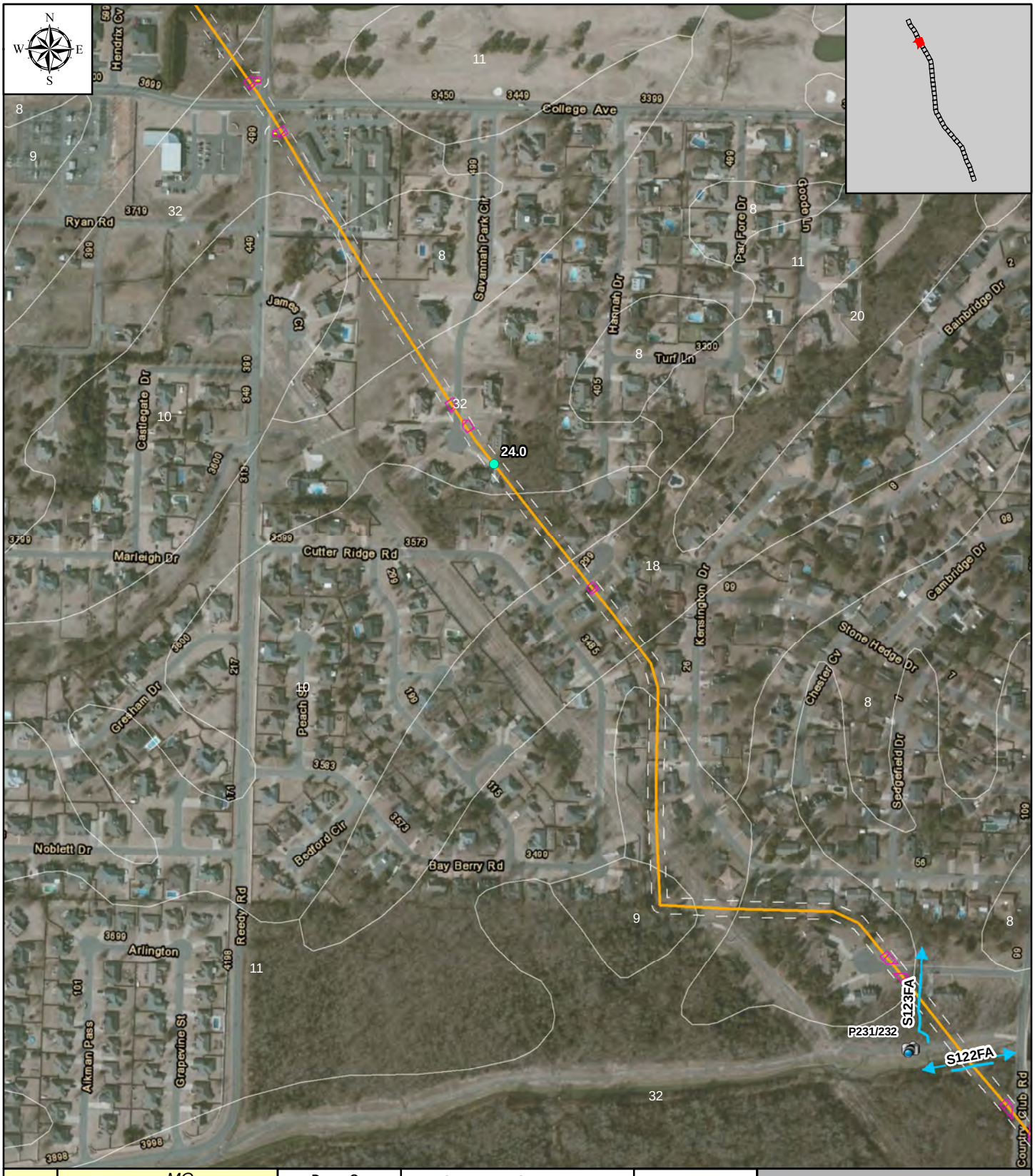
Figure 2B
Sheet 5 of 39

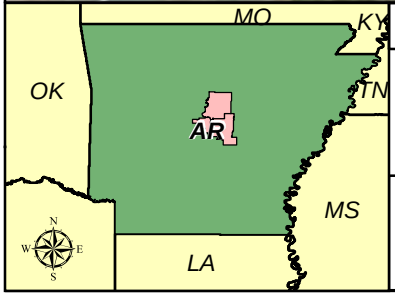
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points





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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

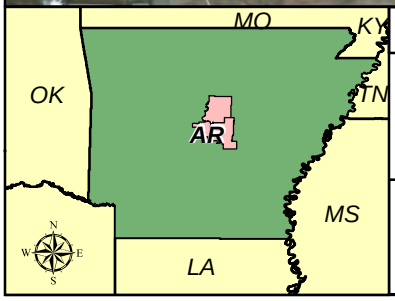
Figure 2B
Sheet 6 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points



Drawn On: September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 7 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
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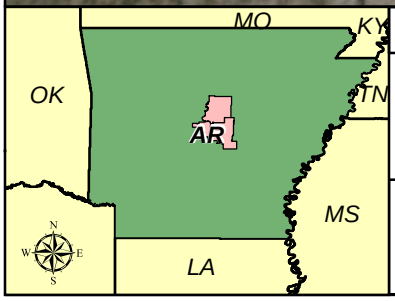
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points



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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 8 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
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- Line B Abandonment Sites
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- NWI
- Soils
- Mile Posts
- Photo Points

Drawn On:
September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 9 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
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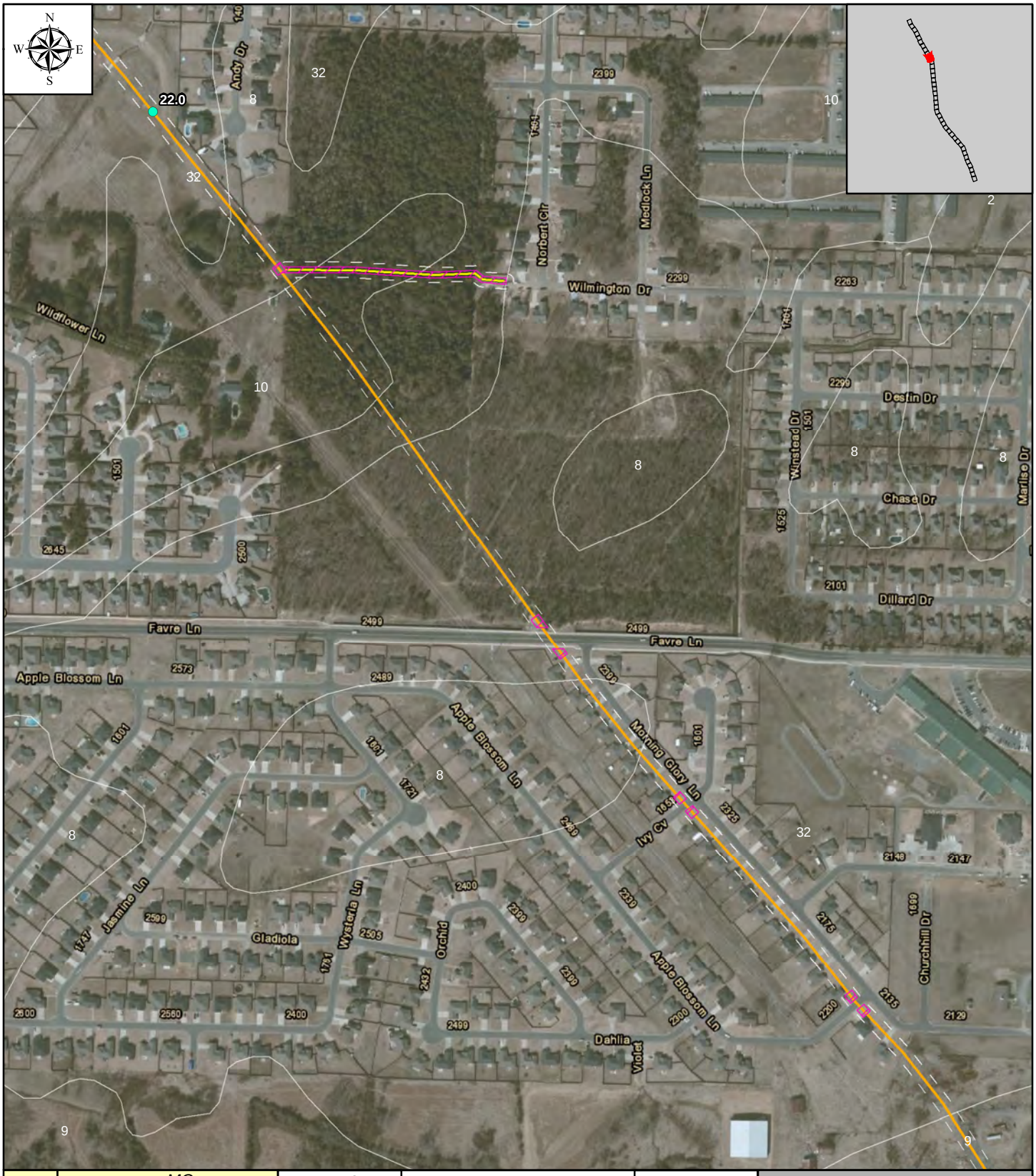
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points



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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 10 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
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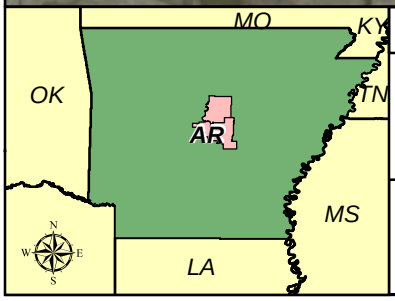
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points



Drawn On: September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B

Sheet 11 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
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- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
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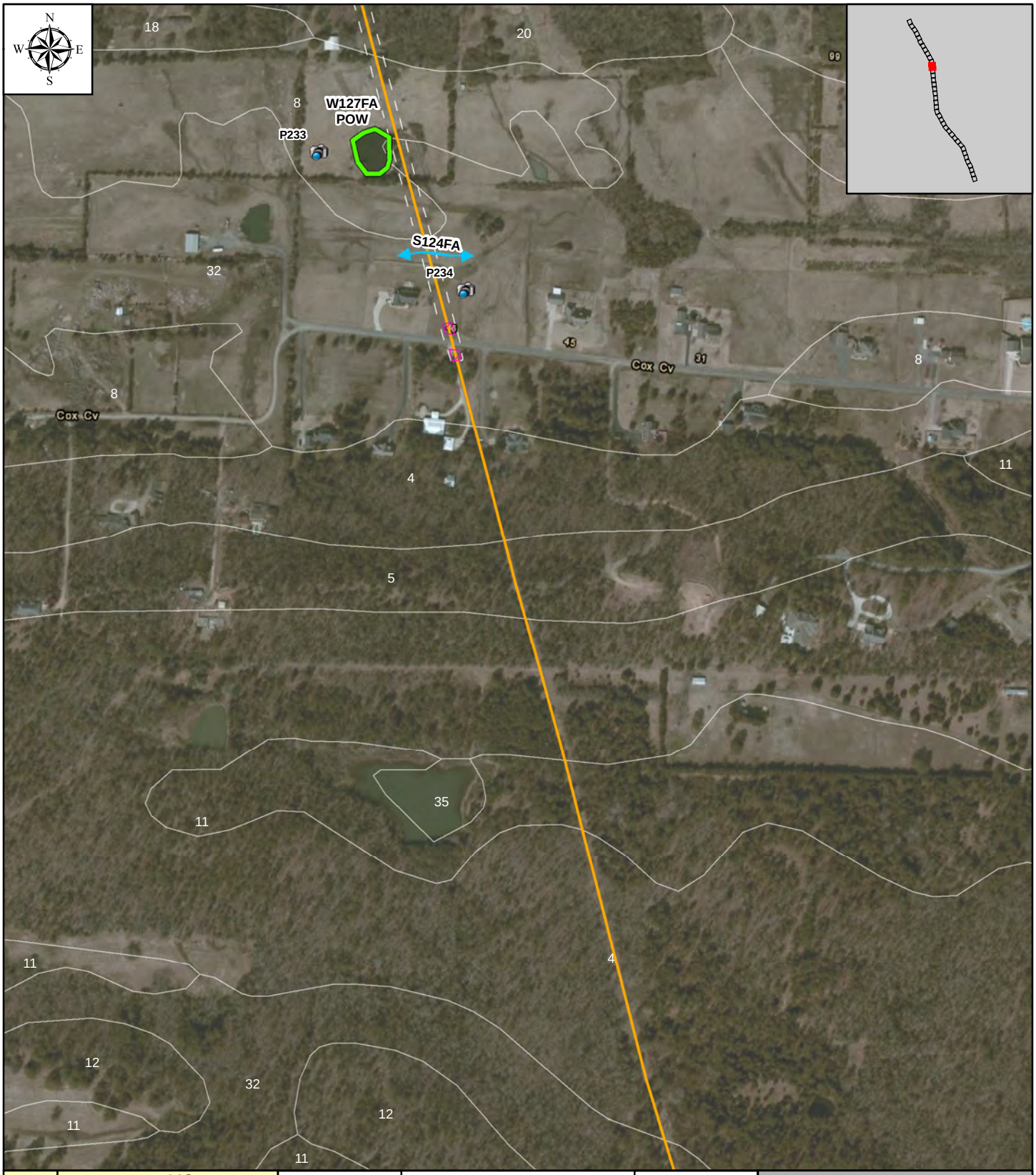
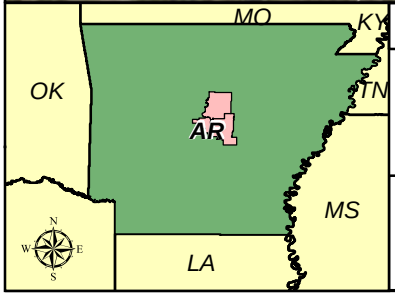
- Photo Points





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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B

Sheet 12 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
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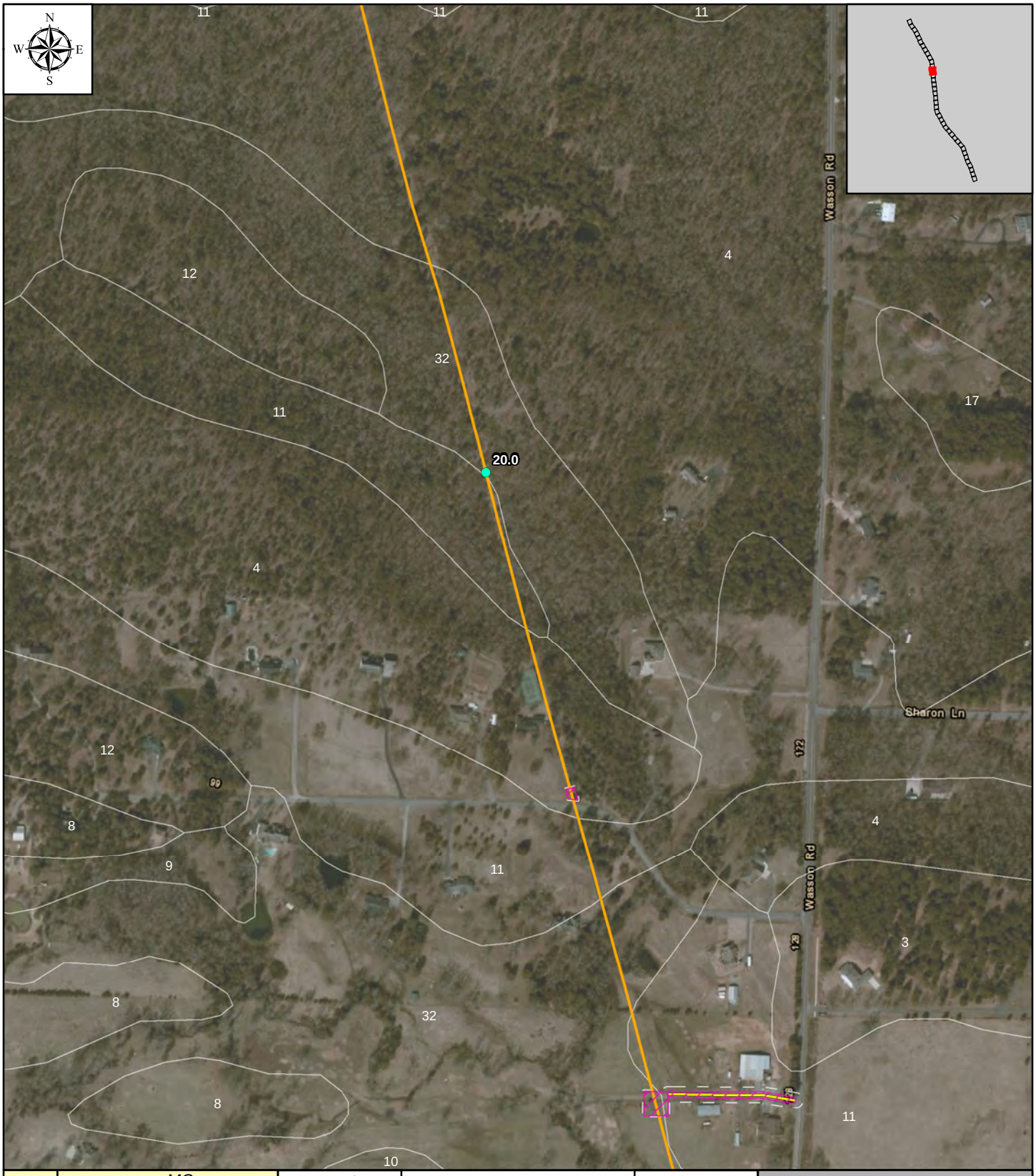
- Soils
- Mile Posts
- Photo Points



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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B

Sheet 13 of 39

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B

Sheet 14 of 39

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
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- NWI
- Soils
- Mile Posts
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B

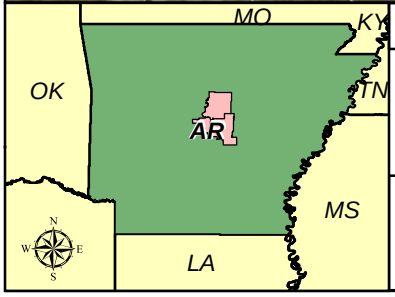
Sheet 15 of 39

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055



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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

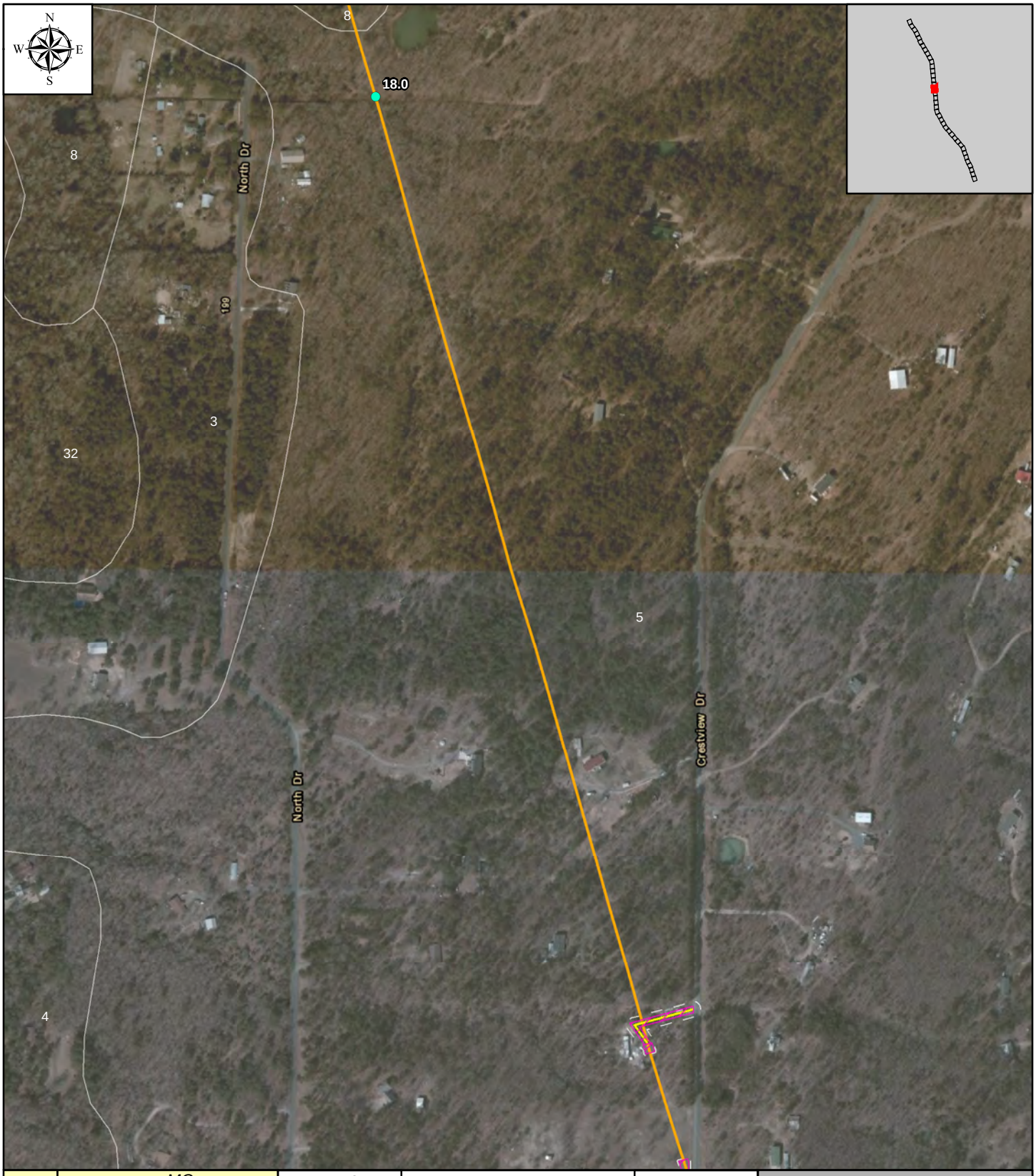
Figure 2B
Sheet 16 of 39

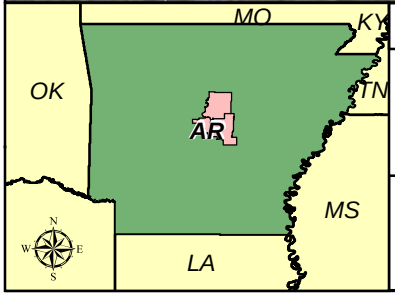
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points





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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

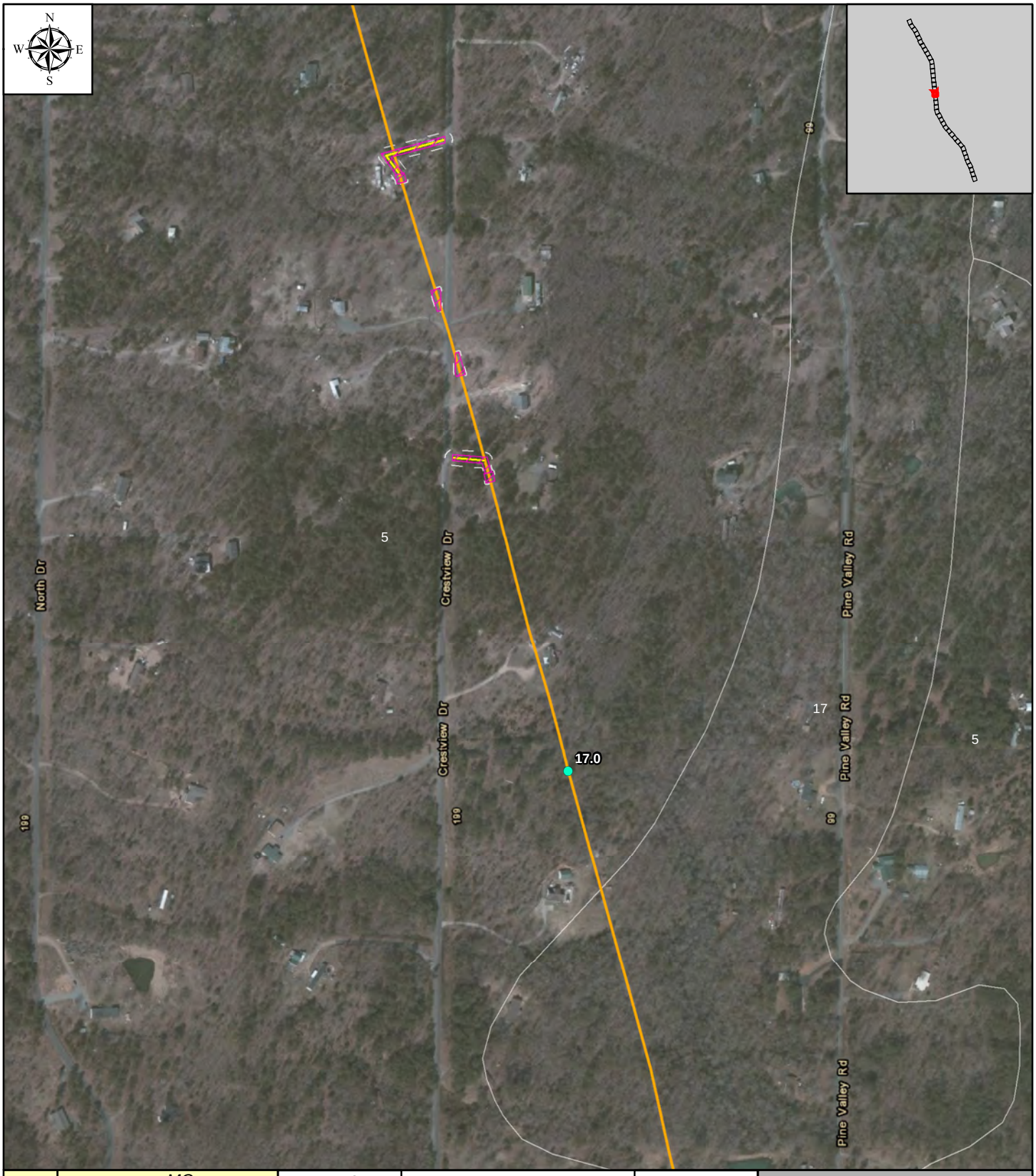
Figure 2B
Sheet 17 of 39

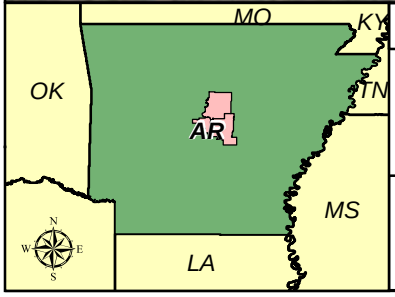
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points





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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B

Sheet 18 of 39

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
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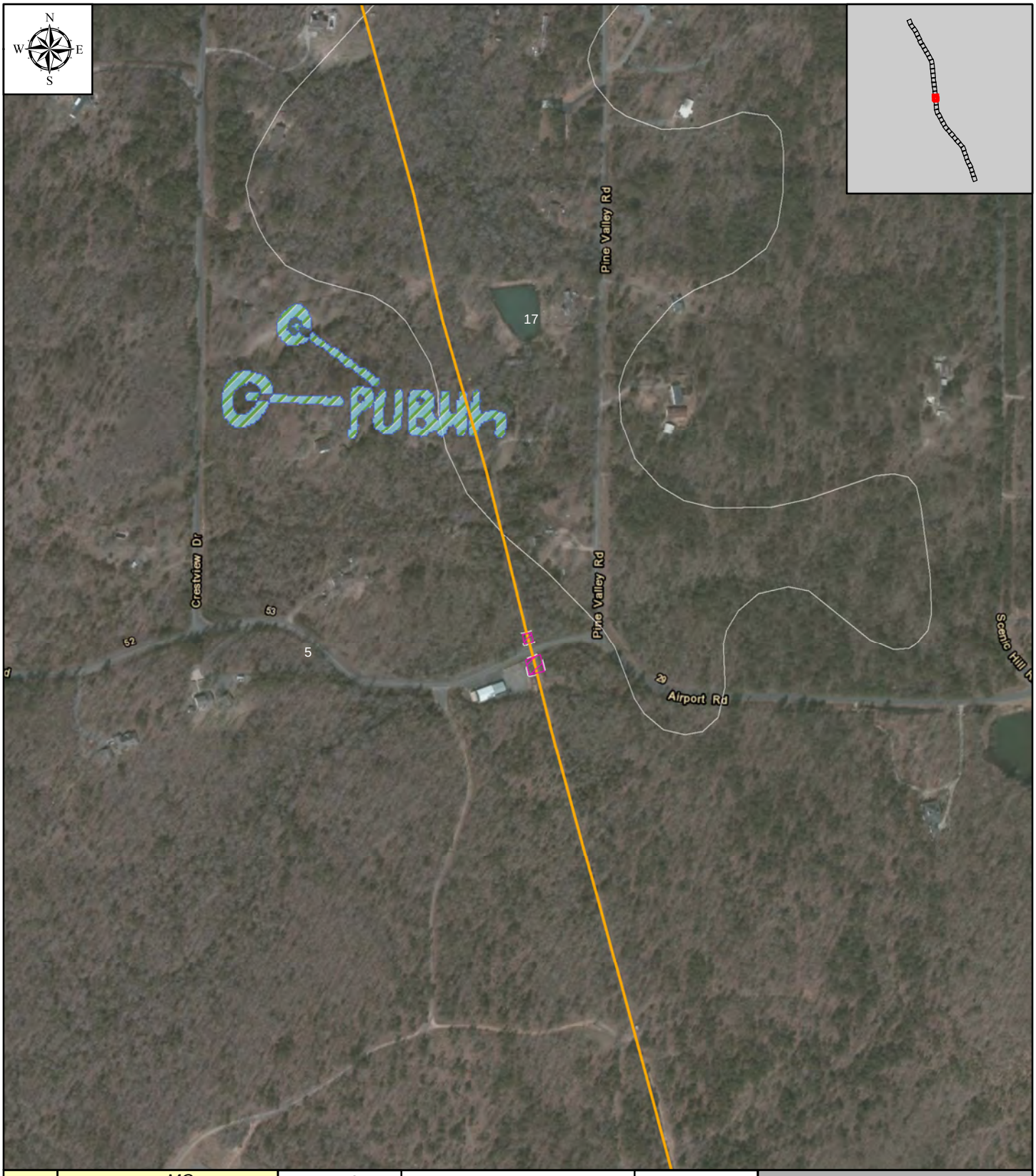
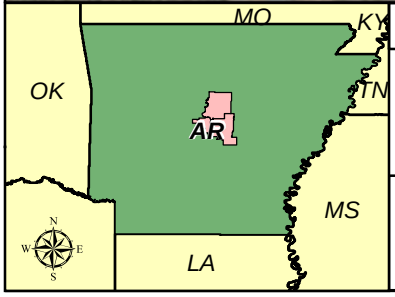
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055





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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

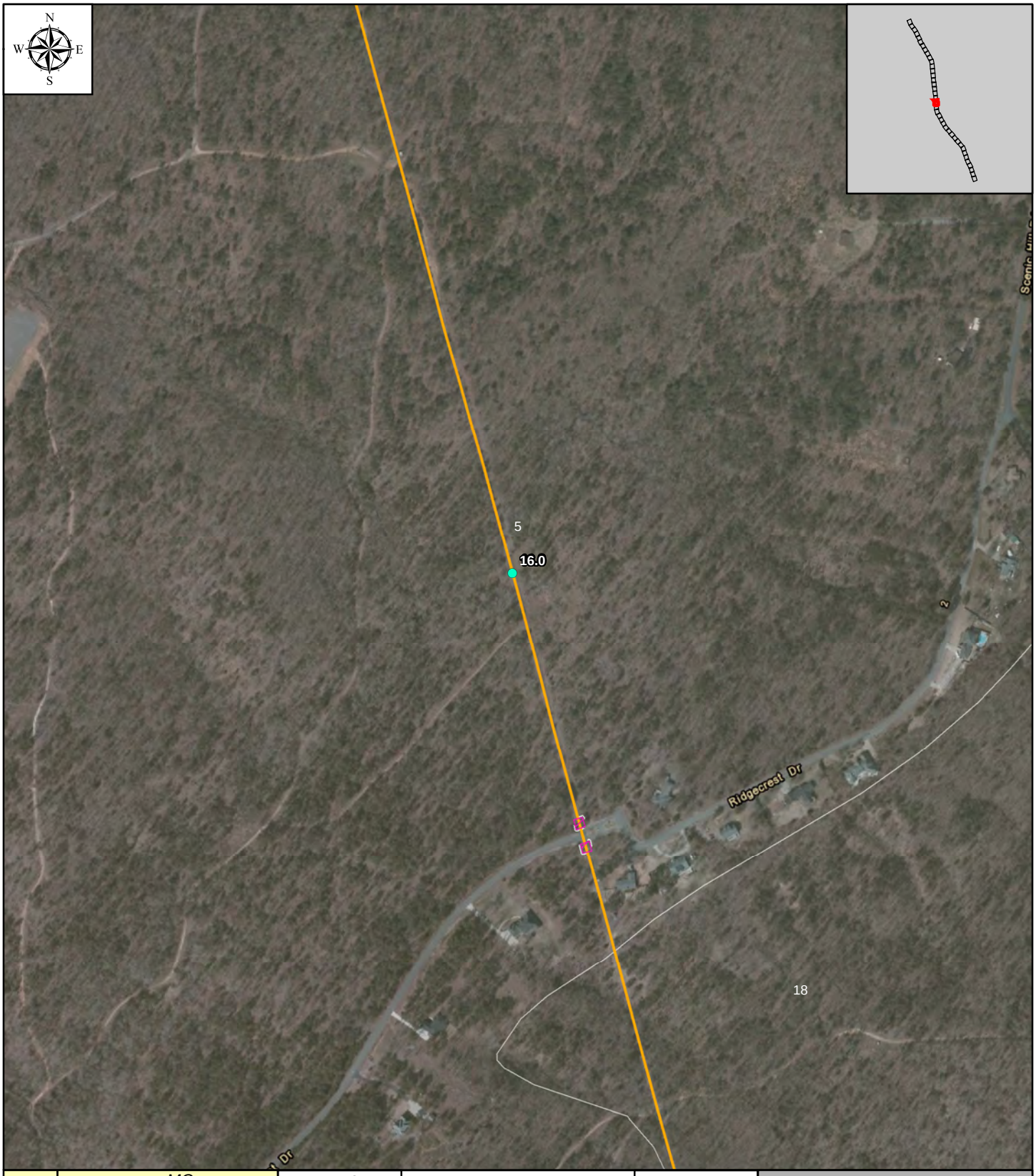
Figure 2B
Sheet 19 of 39

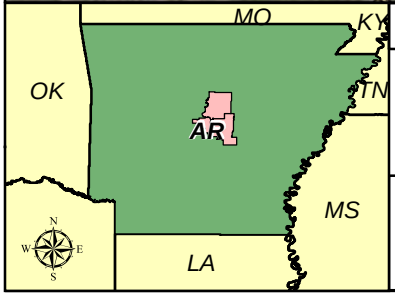
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points





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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 20 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
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- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
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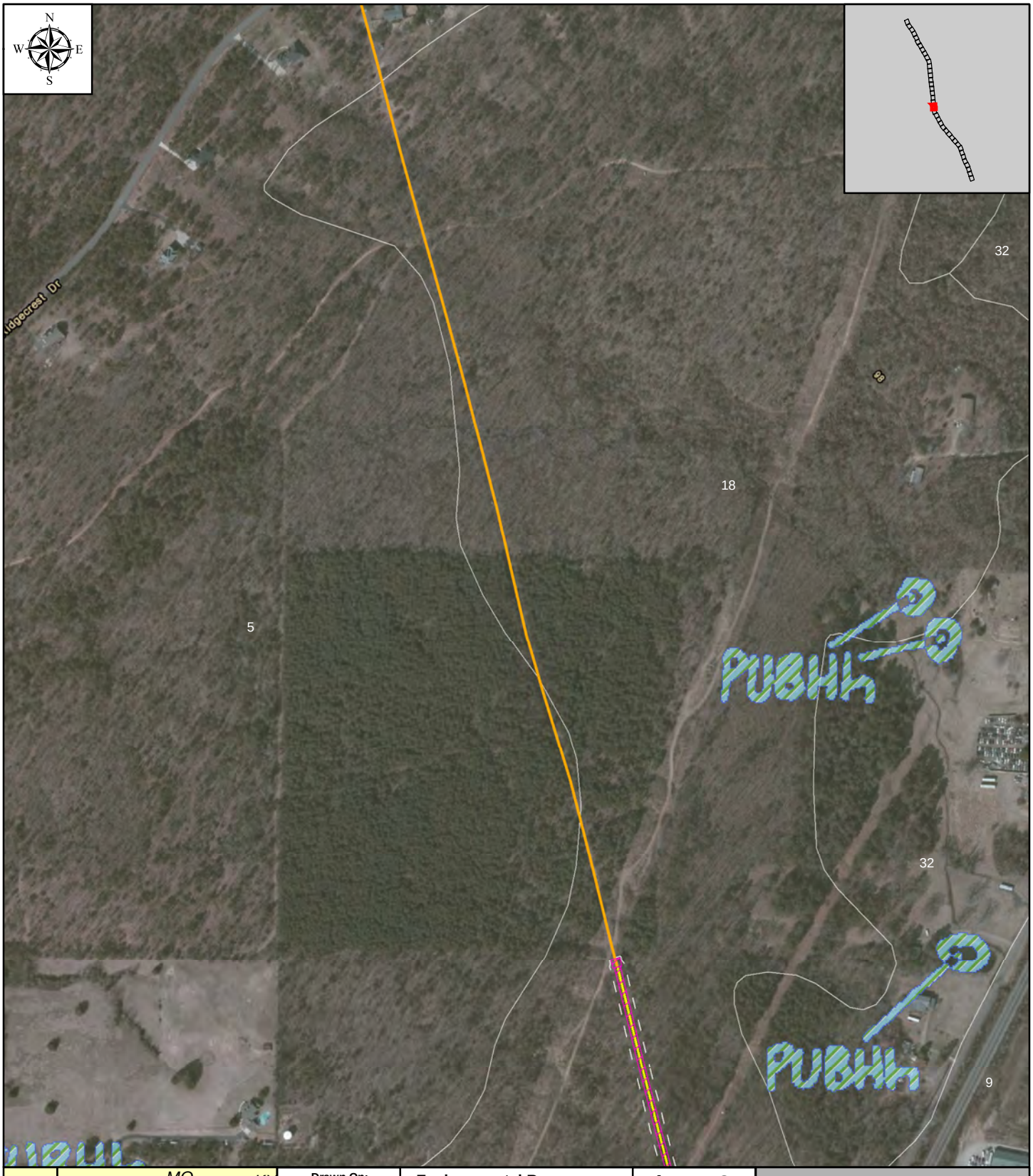
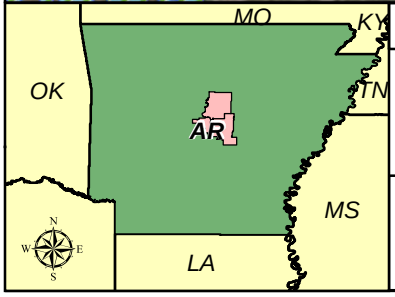
- NWI
- Soils
- Mile Posts
- Photo Points





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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 21 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
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- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
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- NWI
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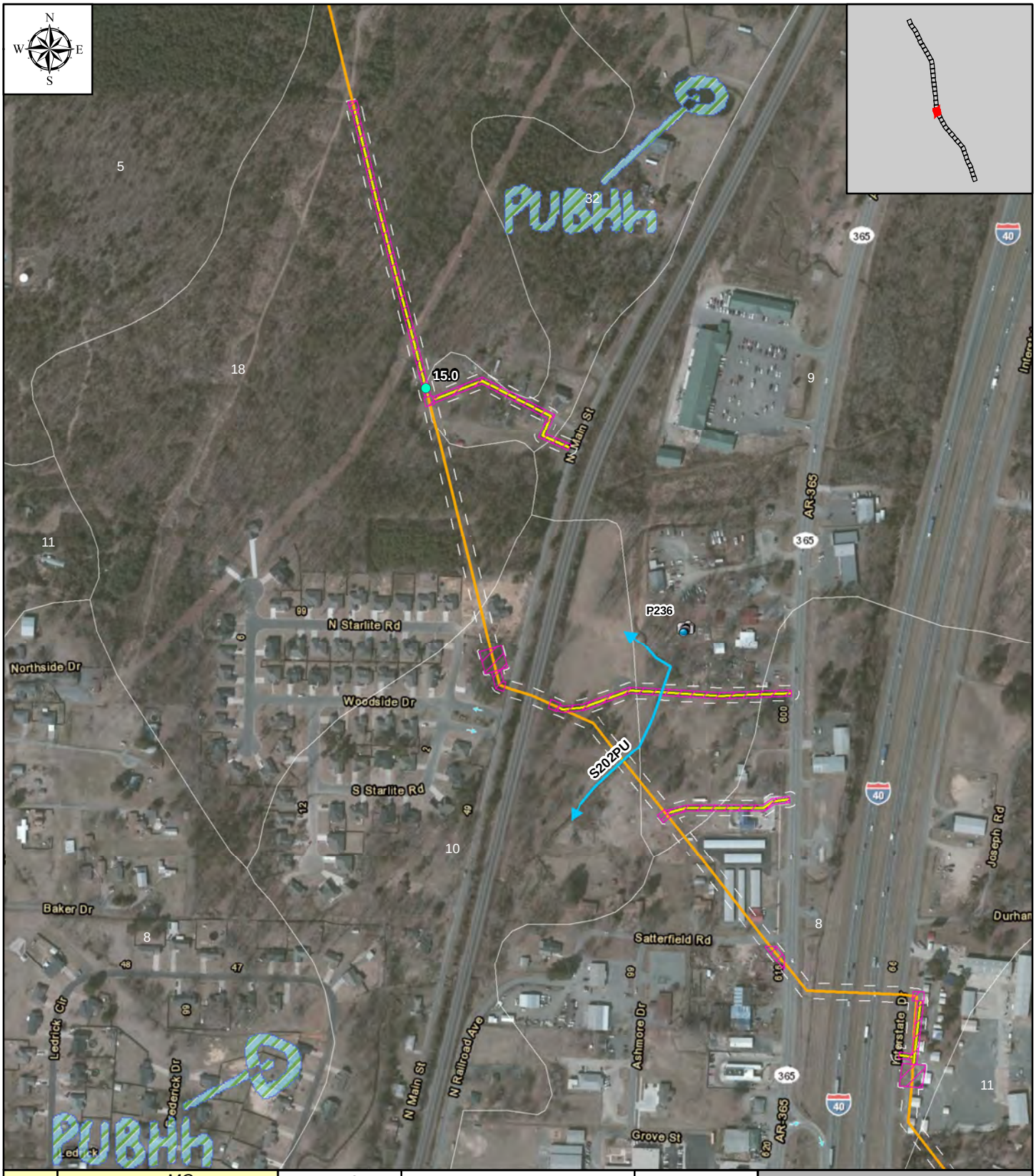
- Mile Posts
- Photo Points



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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 22 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
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- Stream Continues
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- Line BT-19 Abandonment
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- Line B Abandonment Sites
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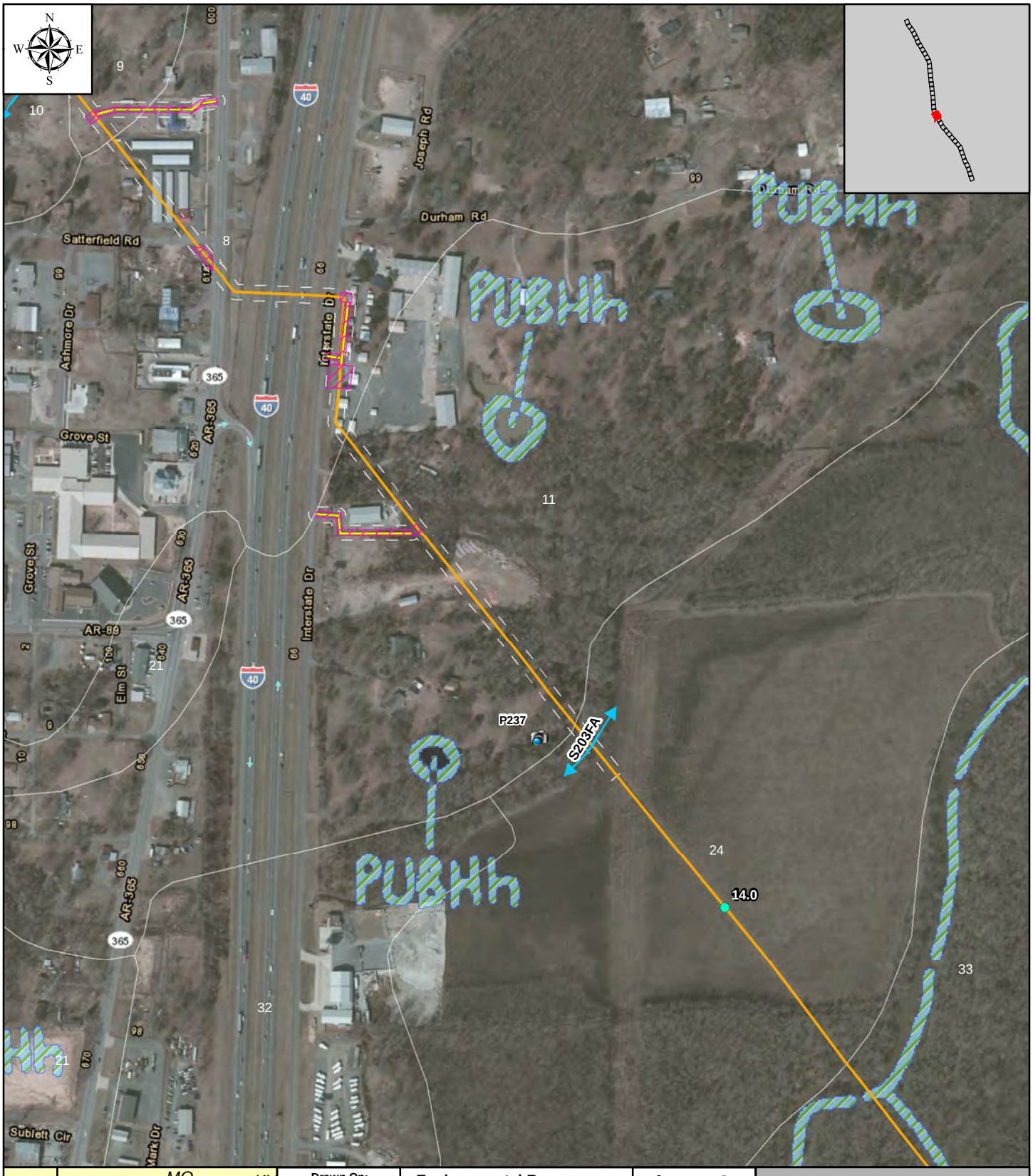
- Soils
- Mile Posts
- Photo Points



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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 23 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
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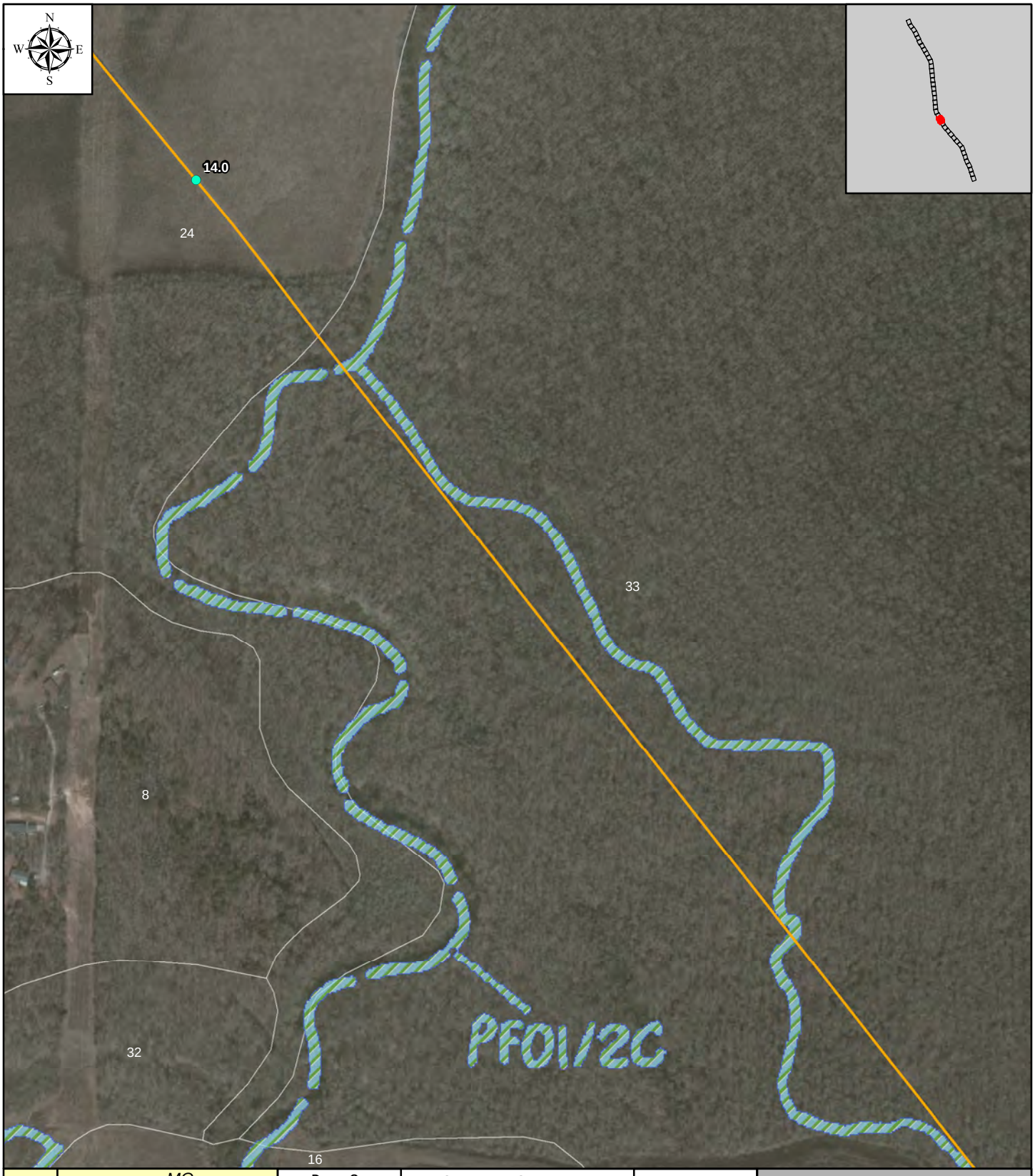
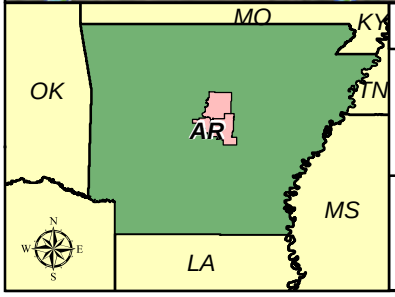
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points





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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 24 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
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- Line BT-19 Abandonment
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- Line B Abandonment Sites
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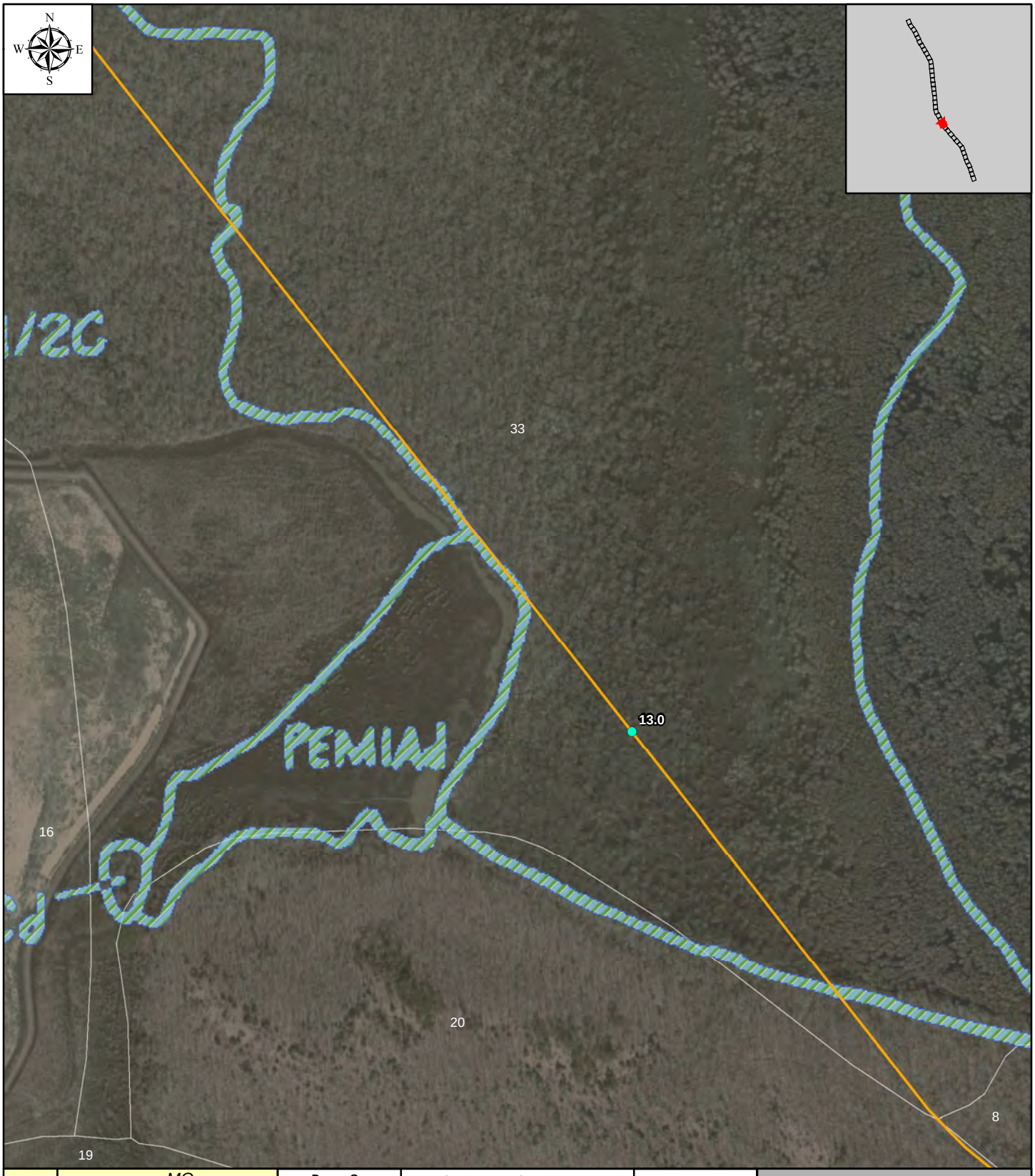
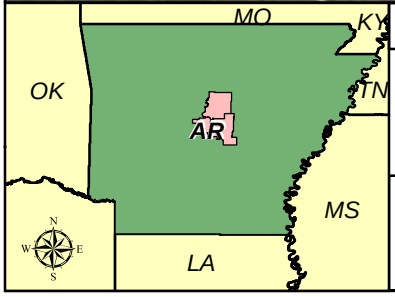
- NWI
- Soils
- Mile Posts
- Photo Points





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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

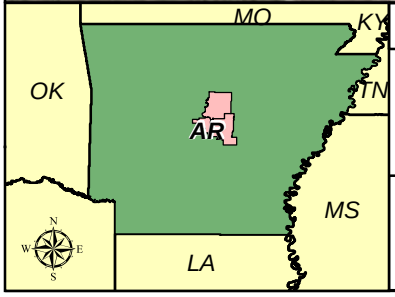
Figure 2B
Sheet 25 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points



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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 26 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
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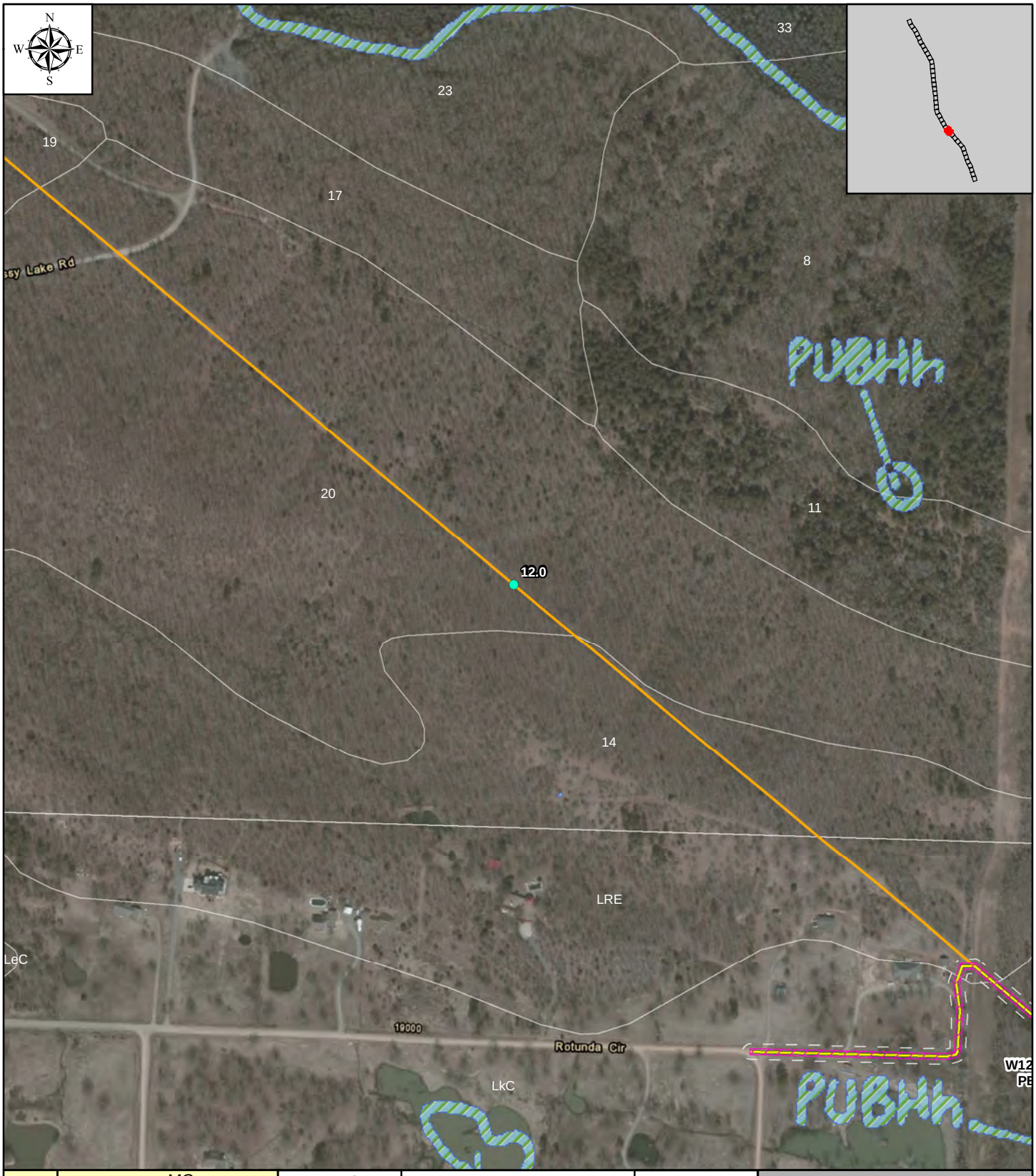

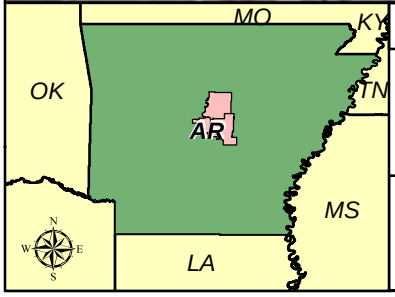

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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 27 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
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- Line B Abandonment Sites
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- NWI
- Soils
- Mile Posts
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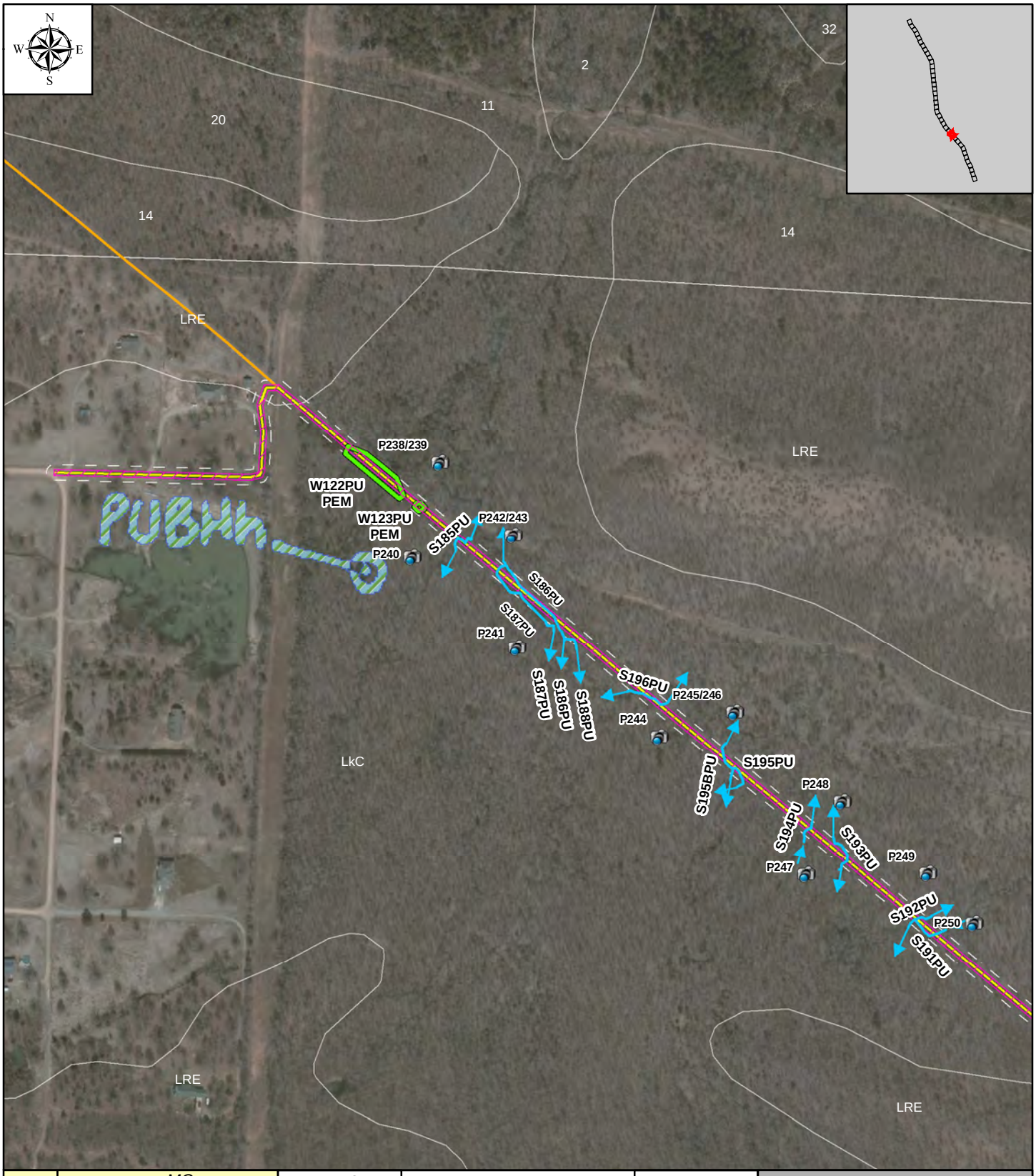

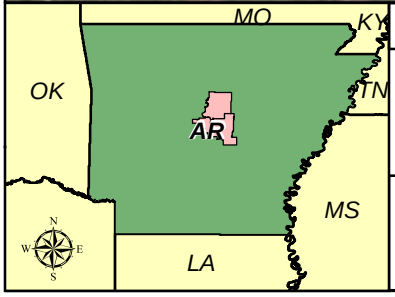

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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 28 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
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- Line B Abandonment Sites
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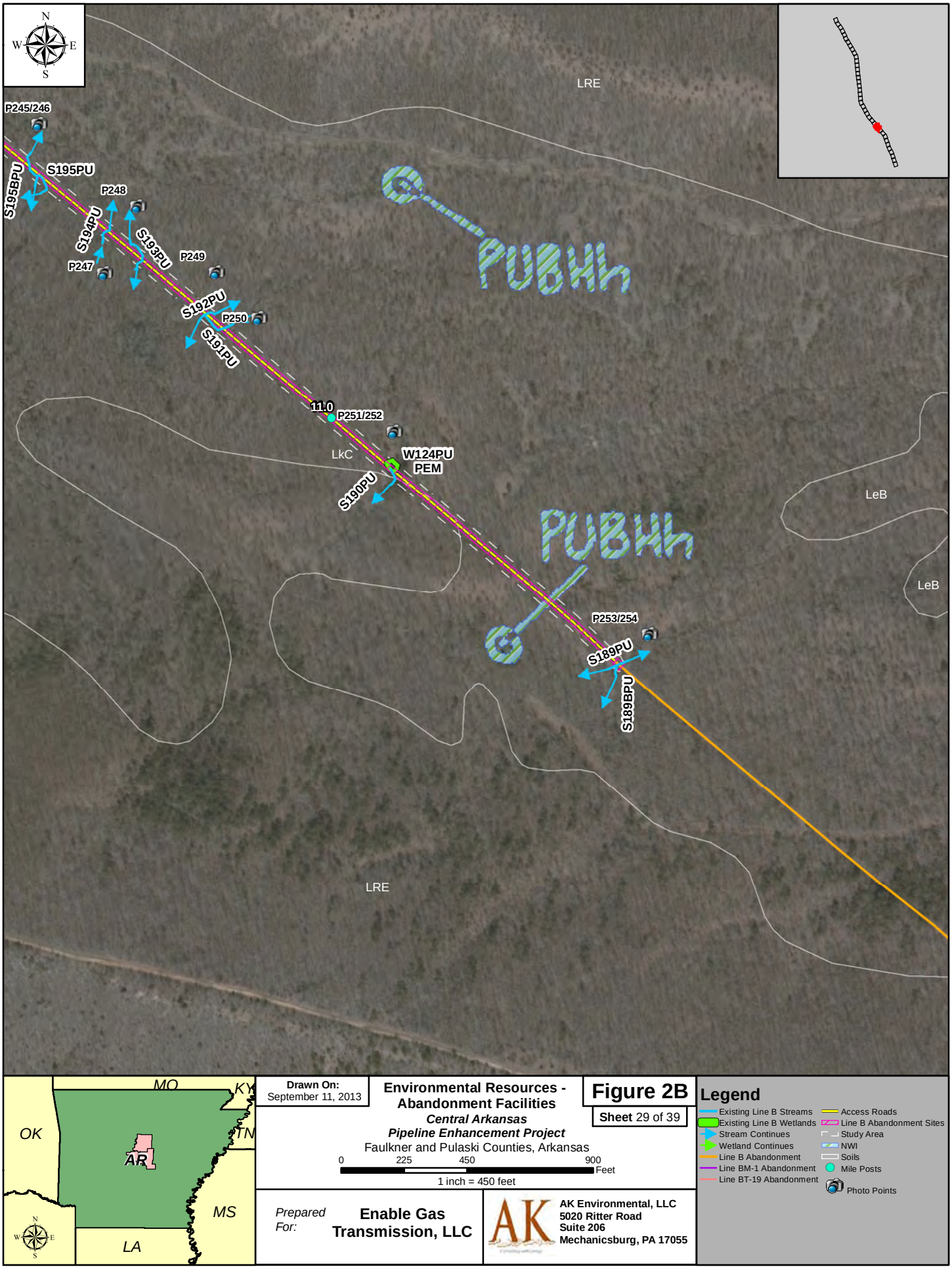
- Mile Posts
- Photo Points



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Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
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Figure 2B
Sheet 29 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
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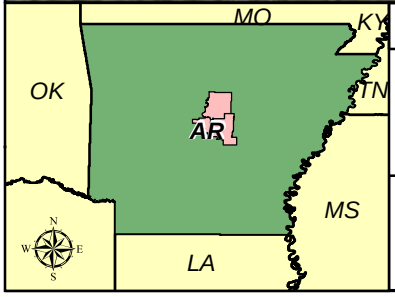

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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 30 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
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Drawn On:
September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B

Sheet 31 of 39

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
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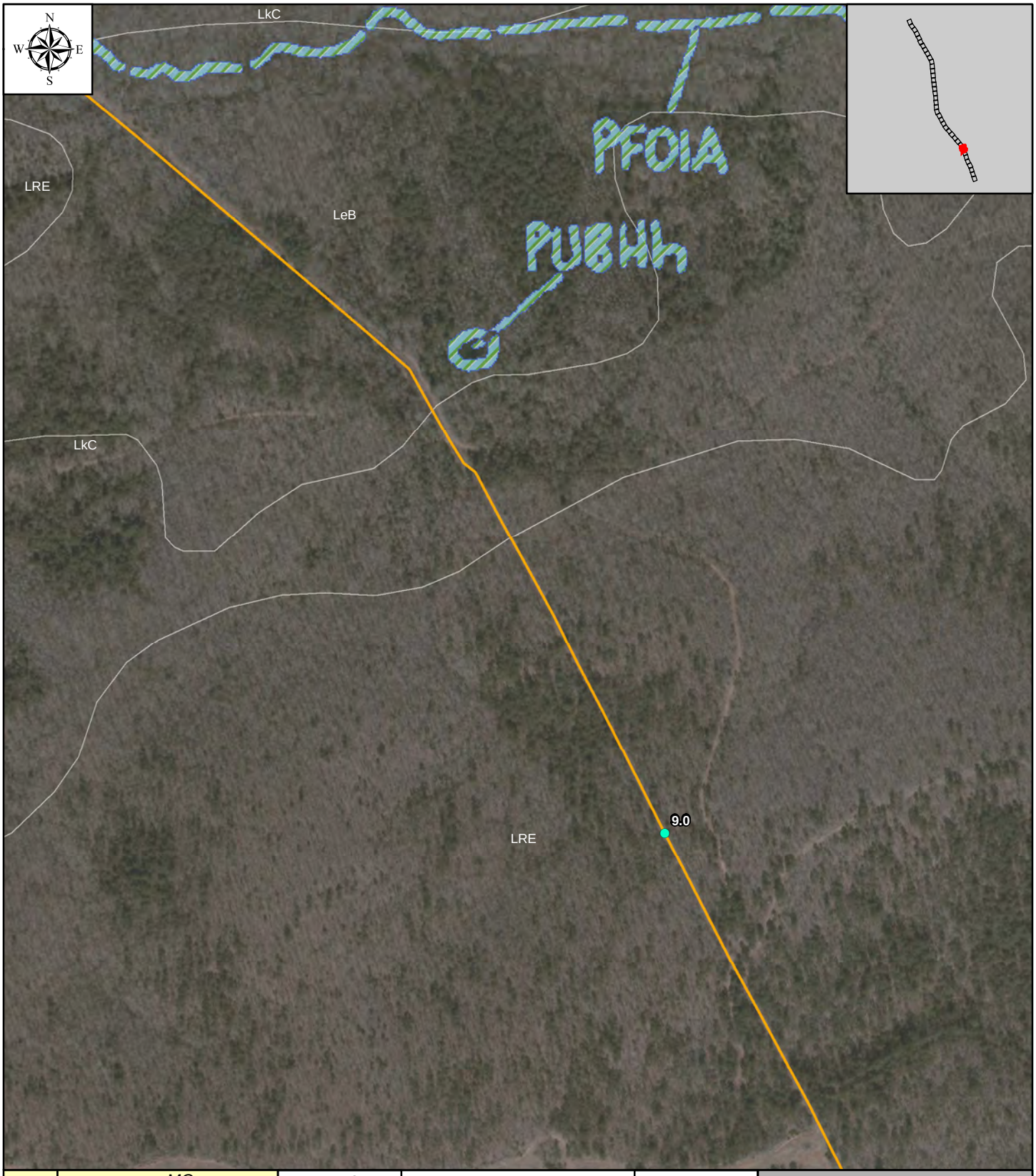
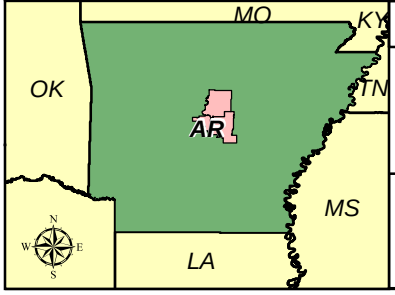
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055





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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 32 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
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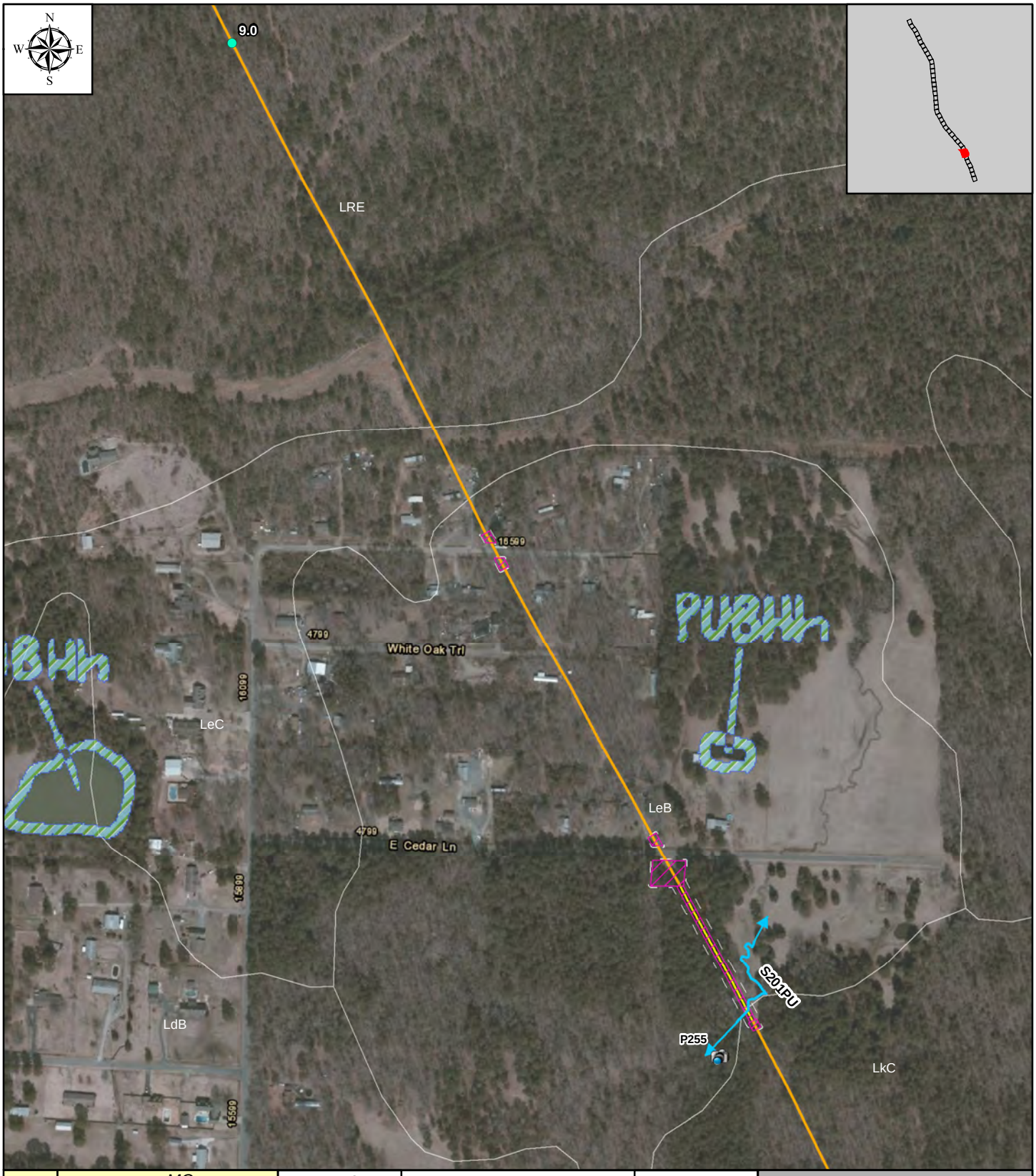

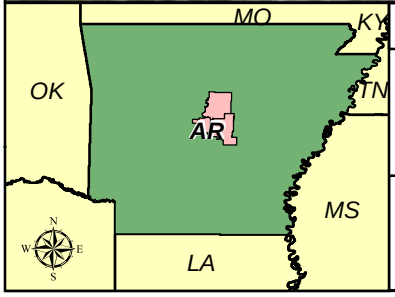

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September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B
Sheet 33 of 39

Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
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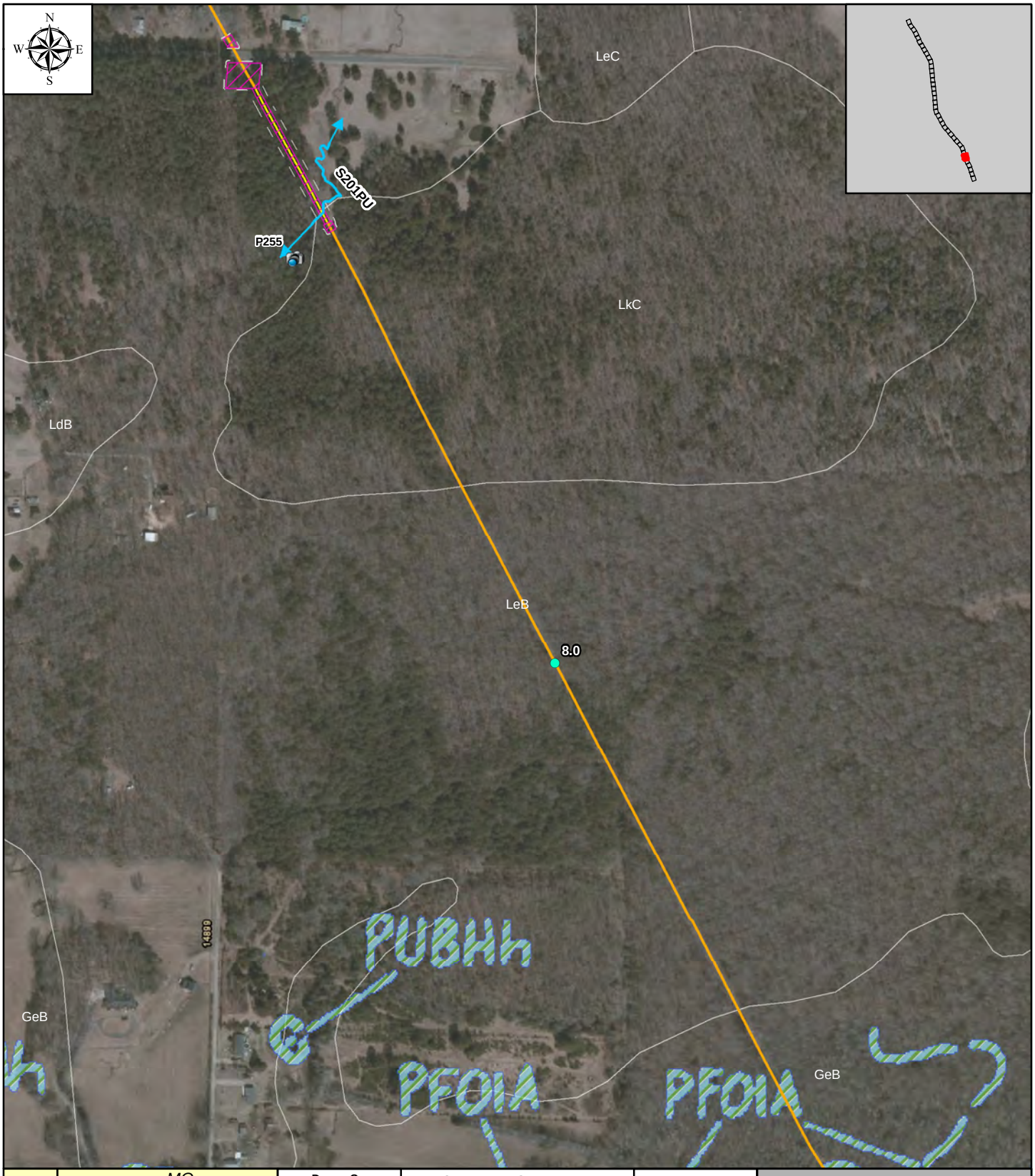
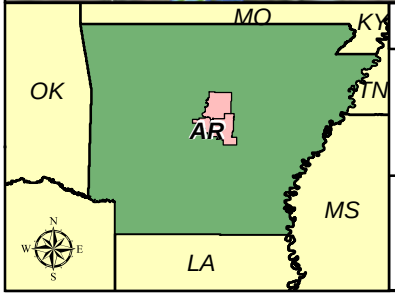
- Photo Points





Drawn On: September 11, 2013

Environmental Resources - Abandonment Facilities
Central Arkansas
Pipeline Enhancement Project
Faulkner and Pulaski Counties, Arkansas

0 225 450 900 Feet
1 inch = 450 feet

Figure 2B

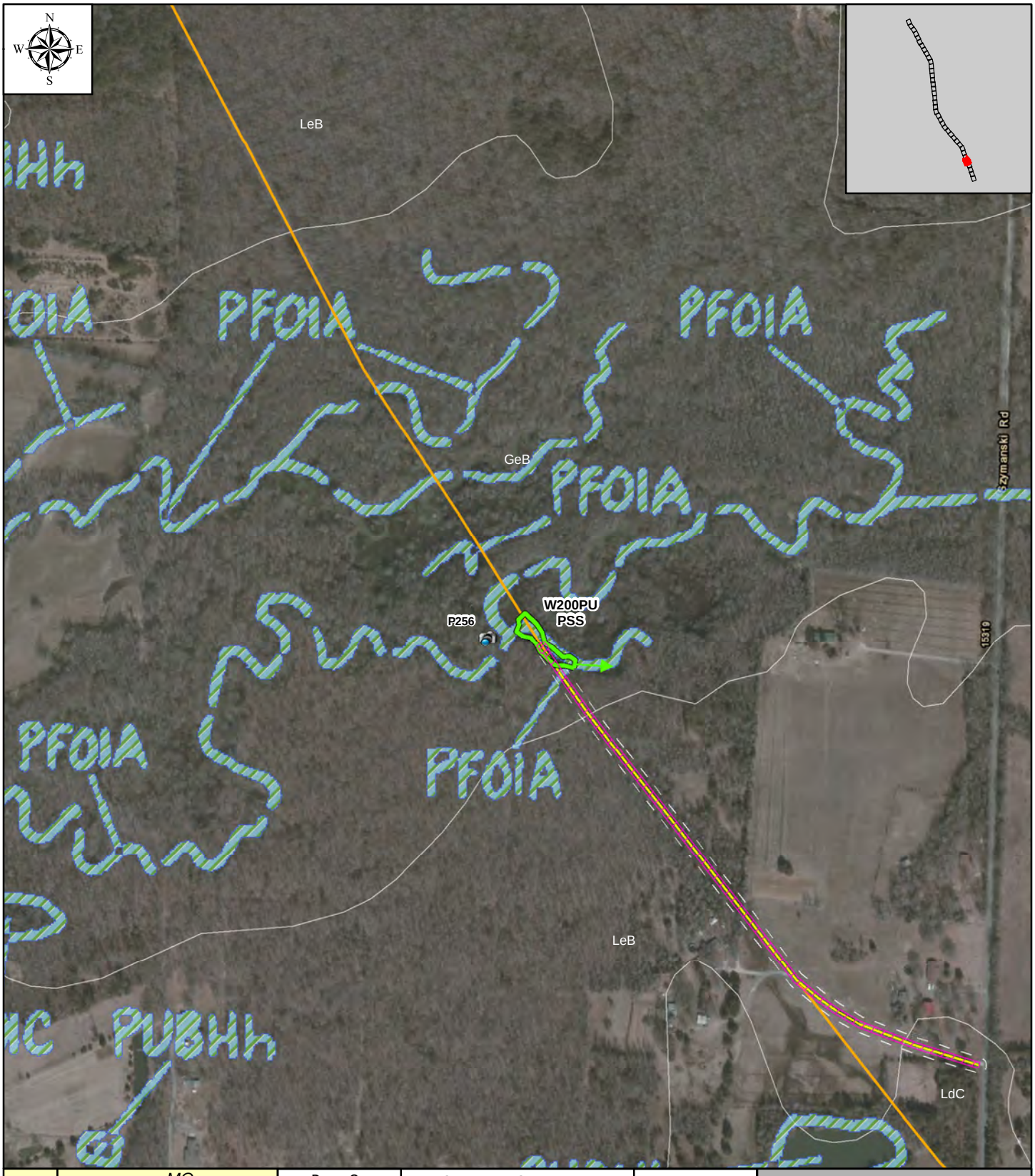
Sheet 34 of 39

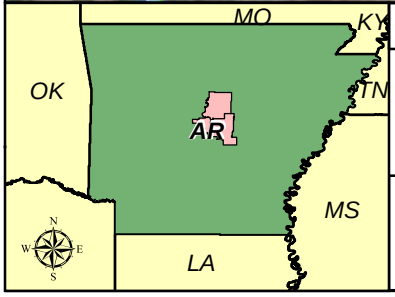
Prepared For: **Enable Gas Transmission, LLC**

AK Environmental, LLC
5020 Ritter Road
Suite 206
Mechanicsburg, PA 17055

Legend

- Existing Line B Streams
- Existing Line B Wetlands
- Stream Continues
- Wetland Continues
- Line B Abandonment
- Line BM-1 Abandonment
- Line BT-19 Abandonment
- Access Roads
- Line B Abandonment Sites
- Study Area
- NWI
- Soils
- Mile Posts
- Photo Points





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Pipeline Enhancement Project
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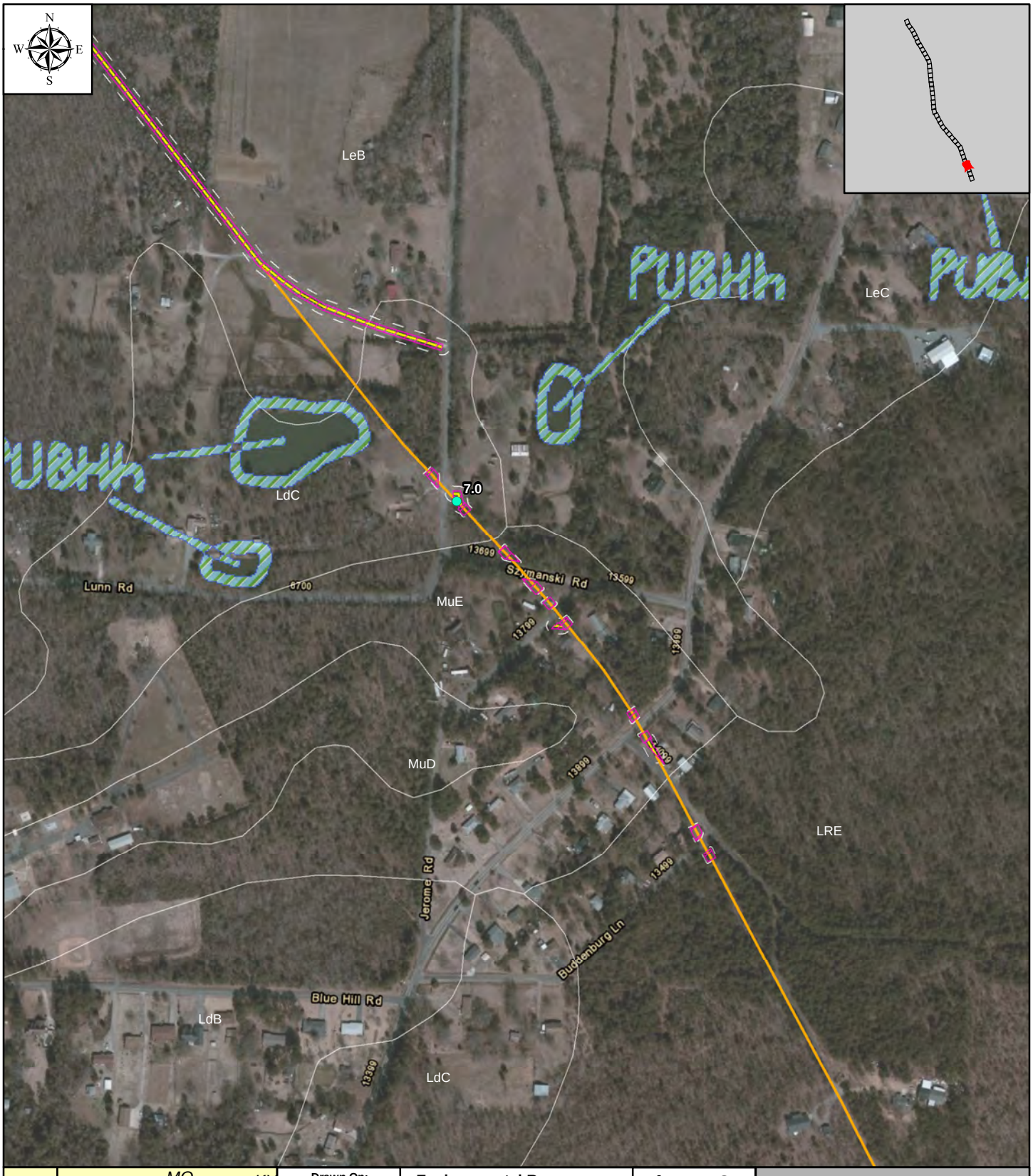

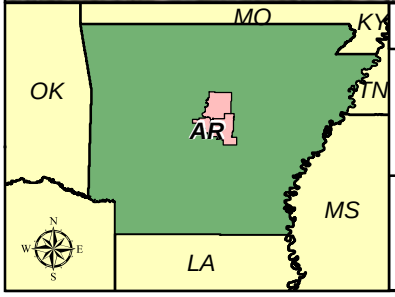

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Central Arkansas
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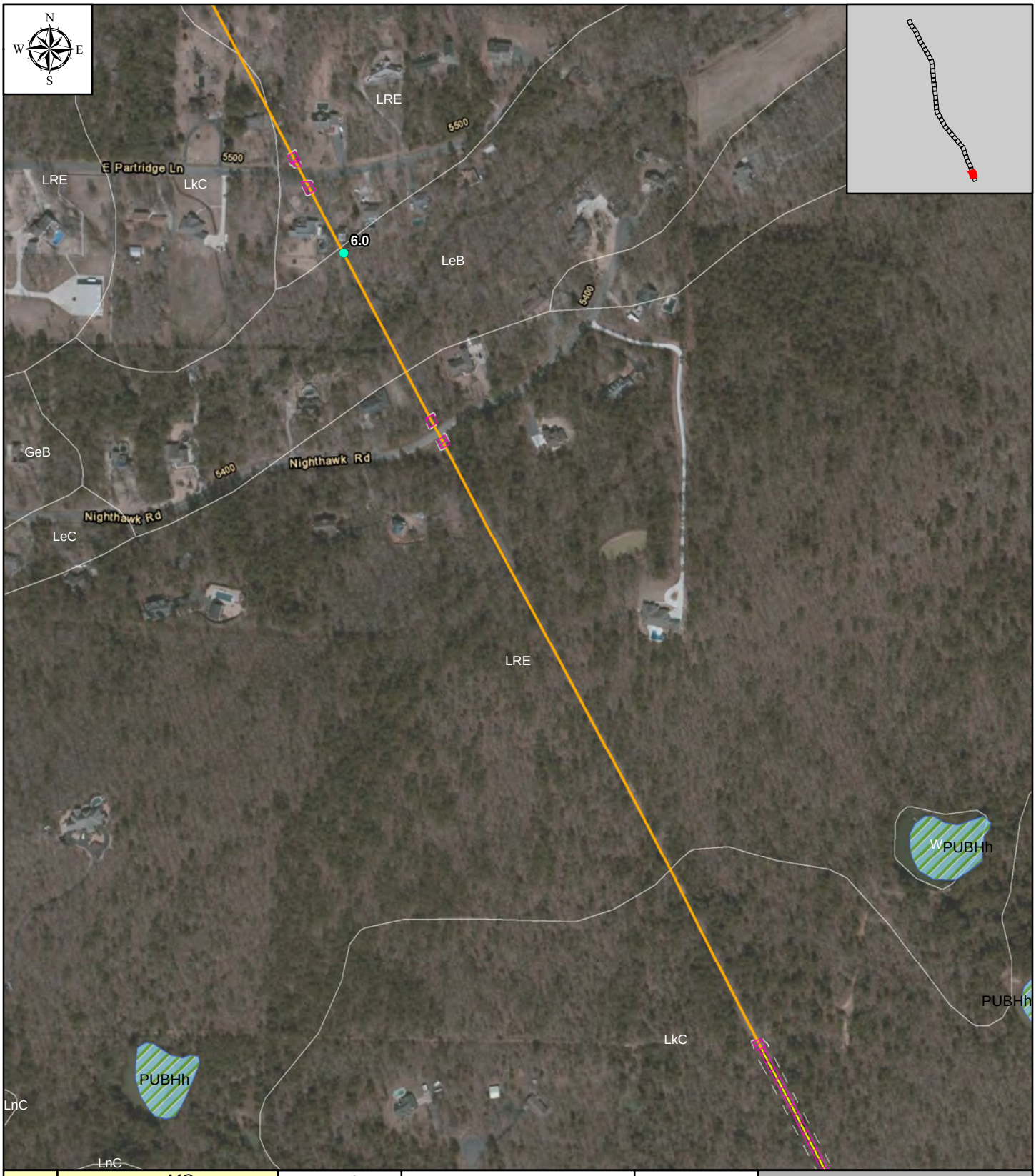

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Central Arkansas
Pipeline Enhancement Project
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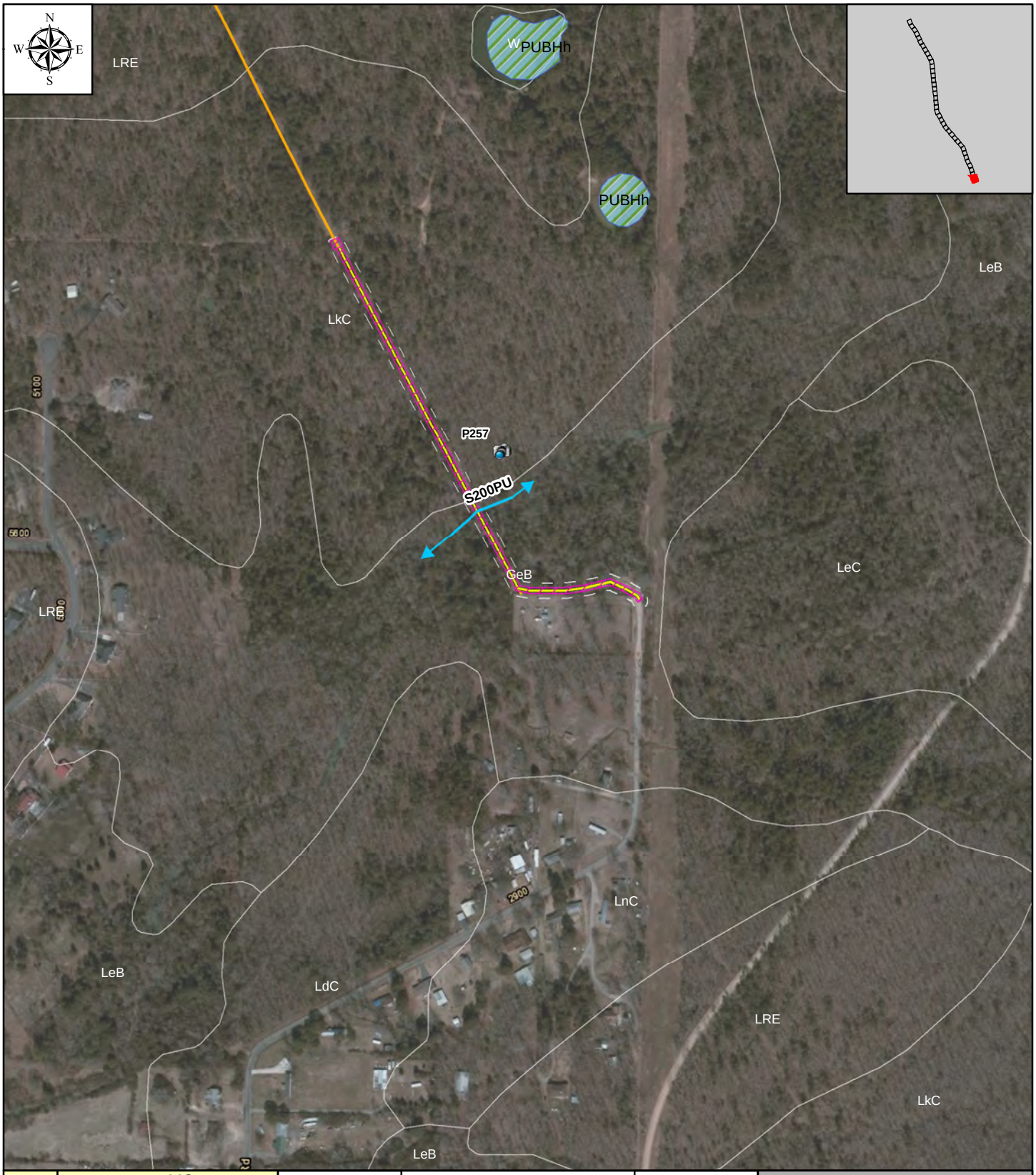

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APPENDIX C

Professional Qualifications

REBECCA WEISSMAN

Senior Scientist, PWS

SUMMARY

Professionally-certified Wetland Scientist with over 9 years in the environmental consulting industry. Experienced in all phases of the environmental permitting process including leading wetland and natural resource field assessments, preparing permit applications, coordinating with regulatory agencies, and environmental compliance monitoring; has a wide-breadth of project experience, including energy (wind, electrical transmission, and natural gas), transportation, and retail and commercial development projects. Recent emphasis on environmental permitting for natural gas and electric transmission facilities.

EDUCATION

M.S., Zoology / University of New Hampshire, 1998
B.S., Biology and Environmental Studies / Tufts University, 1995

LICENSES, TRAINING & CERTIFICATES

Professional Wetland Scientist #1709
NH Certified Wetland Scientist #241

EXPERIENCE

Senior Scientist, 2011 – present
AK Environmental, LLC

Senior Scientist, 2009 – 2011
AECOM

Ecologist, 2001 – 2006
ESS Group, Inc.

Environmental Scientist, 2000 – 2002
Vanasse Hangen Brustlin, Inc. (VHB)

Representative Project Experience

Dominion Pipeline Transmission / Southwestern NY, 2012
DTI L14, L24, L554 Cathodic Protection Project. Conducted wetland delineations and serve as task manager responsible for preparation and submittal of environmental permit applications for a proposed cathodic protection project in southwestern NY.

Boardwalk Pipeline Partners/Gulf South / Bienville Parish, LA, 2012
Bistineau D-21H Horizontal Well Project. Prepared environmental permit applications for a proposed new horizontal well and associated appurtenances, including preparation of Environmental Reports (ERs) for submittal to the Federal Energy Regulatory Commission (FERC) under their Prior Notice Blanket Certificate process.

Boardwalk Pipeline Partners/Texas Gas / Carlisle, IN, 2012
Bear Run Pipeline Replacement Project. Conducted wetland delineations and prepared environmental permit applications for a proposed 10-mile replacement project. Prepared ERs for submittal to the FERC under their Prior Notice Blanket Certificate process. Prepared Pre-Construction Notification to the U.S. Army Corps of Engineers under Nationwide Permit 12, conducted agency consultations, and

drafted an Erosion and Sediment Control Plan for submittal to the Sullivan County Conservation District.

Northeast Utilities / Southwestern CT, 2010 – 2011
1990 Transmission Line Structure Replacement Project. Led field teams in conducting wetland delineations for an approximately 20-mile 115-kV transmission line structure replacement. Served as a Task Manager responsible for designing and developing the compensatory mitigation plan for the project for submittal to the U.S. Army Corps of Engineer (USACE) under Section 404 of the Clean Water Act, and the Connecticut Department of Energy and Environmental Protection (CTDEEP) under Section 401 of the Clean Water Act.

El Paso/Tennessee Gas Pipeline Company, PA & NJ, 2010 – 2012
Northeast Upgrade Project. Coordinated preparation and submittal of the draft and final ERs to the FERC for the proposed project, which consists of approximately 40 miles of 30-inch looping. Was responsible for QA/QC of all Resource Reports, participated in Resource Report page-turns with client, and coordinated final packaging and submittal of ER to FERC.

El Paso/Tennessee Gas Pipeline Company / Southwick, MA, 2010 – 2011
Northampton Expansion Project. Delineated jurisdictional wetlands and watercourses and prepared the environmental permit applications for the construction of a new 2,000-horsepower electric compressor station. Environmental permit applications included an ER for submittal to FERC, an Environmental Notification Form (ENF) under the Massachusetts Environmental Policy Act (MEPA), and a Notice of Intent under the Massachusetts Wetlands Protection Act.

Northeast Utilities/Western Massachusetts Electric Company & Connecticut Light & Power Company / MA, 2009 – 2011
Greater Springfield Reliability Project. Prepared the Final Environmental Impact Report (FEIR) for installation of new 345-kV transmission lines, including expansion of existing substations and rebuilds of existing 115-kV transmission lines in western Massachusetts, in conjunction with Burns & McDonnell. Prepared Compensatory Wetland Mitigation Reports for offsite wetland creation and enhancement efforts in Massachusetts and Connecticut in accordance with the USACE's Mitigation Checklist and the Department of Environmental Protection's (MADEP) Massachusetts Inland Wetland Replication Guidelines. Participated in pre-construction and construction-phase monitoring of eastern box turtles. Served as a Deputy Project Manager, responsible for QA/QC of project deliverables, managing the project budget, and preparing and submitting change order requests.

Northeast Utilities/Western Massachusetts Electric Company / Western MA, 2009-2011
Agawam to West Springfield Circuit Separation Project. Prepared Compensatory Wetland Mitigation Report for offsite wetland mitigation efforts associated with proposed upgrades to existing 115-kV transmission lines, in accordance with the USACE Mitigation Checklist and MADEP's Massachusetts Inland Wetland Replication Guidelines.

Northeast Utilities/Connecticut Light & Power Company / Northeast CT, 2004 – 2011
Interstate Reliability Project. Led field crews in the delineation of wetlands occurring on approximately 40 miles of existing transmission line. Prepared data forms and summary reports, conducted wetland wildlife habitat evaluations and vernal pool assessments, reviewed wetland delineations performed by others, and mapped vegetative cover types along the existing right-of-way.

LAURA VRABEL
Staff Scientist, PWS

SUMMARY
Over five years of experience in environmental consulting with a technical knowledge in water quality, wetland delineation, NPDES permitting, species of special concern/T&E species, and noxious weed surveys. Ms. Vrabel has also monitored wetland and stream mitigation sites, as well as planned and implemented small scale mitigation projects.

EDUCATION
B.S., Environmental Science / Southeast Missouri State University, Cape Girardeau, Missouri, 2006
A.A., Liberal Arts / St. Charles Community College, St. Charles, Missouri, 2002

LICENSES, TRAINING & CERTIFICATES
Society of Wetland Scientists- Professional Wetland Scientist (PWS- #2273), 2012
PA-DCNR Wild Plant Management Permit (#12-577), 2012
USACE Interim Regional Supplement Training (Eastern Mountain and Piedmont), 2011
USACE Regional Supplement Training (Atlantic & Gulf Coast Supplement), 2011
NIOSH 582 Equivalent (Sampling and Evaluating Asbestos Dust), 2010
Asbestos Air Sampling Technician (AST), 2010
Certified Erosion, Sediment and Stormwater Inspector (CESSWI), 2009
Special Inspector, Major Land Disturbances projects, St. Louis, MO – 2008
USACE Regional Supplements Training, 2008

PROFESSIONAL AFFILIATIONS
Member, Engineers Without Borders (EWB) Gateway Professionals Chapter, 2010

EXPERIENCE
Environmental Scientist, 2011 to present
AK Environmental, LLC

Relevant Project Experience:

Staff Scientist, 2012
NiSource Gas Transmission and Storage / PA & NJ
East Side Expansion Pipeline Looping Project. Lead wetland scientist for the wetland delineation of two portions of the Line 1278 Loop and Line 10345 Loop, in Pennsylvania and New Jersey respectively. The Line 1278 Loop consisted of approximately 8.9 miles of 300-foot survey corridor for a 26-inch pipeline and the Line 10345 Loop consisted of approximately 7.45 miles of 700-foot survey corridor for a 20-inch pipeline.

Staff Scientist, 2012
CenterPoint Energy and Gas Transmission Co. / AR
Line B Replacement and Abandonment Pipeline Project. Lead wetland scientist for the wetland delineation of approximately 28 miles of natural gas pipeline and associated facilities in Pulaski and Falkner Counties, Arkansas.

Staff Scientist, 2011 - 2012
Hemlock and Wheelerville Pipelines, PVR / PA
Served as a wetland scientist for delineation of wetlands and waterbodies and species of special concern. The projects consist of approximately 7.5 miles of natural gas gathering pipeline, access roads, and associated facilities.

Staff Scientist, 2011 – 2012
MARC I Project, Central New York Oil and Gas / PA
Served as a wetland scientist for the field delineation of wetlands and waterbodies. The project consisted of approximately 40 miles of natural gas pipeline, two compressor stations and associated facilities.

Staff Scientist, 2011 – present
Susquehanna Gathering Company- ULS / PA
For gathering systems throughout Susquehanna County connecting various existing well leases. Field delineation and survey of wetlands and waterbodies to support Pennsylvania Department of Environmental Protection (PADEP) and U.S. Army Corps of Engineers permits.

Staff Scientist, 2011 – present
Lycoming County Pipeline Project, ULS / PA
For a proposed 6-mile, 30-inch pipeline plus interconnects to 2 wells, responsibilities include environmental mitigation, planting plan and permitting.

Field Ecologist, 2011 – present
Coal Mountain Pipeline Project, ULS / PA
For a proposed 13-mile, 30-inch pipeline with 3 compressor stations and 3 miles of gathering laterals, assisted in field delineation and survey of wetlands and waterbodies to support Pennsylvania Department of Environmental Protection (PADEP) Wetland, and Erosion and Sedimentation Control General Permit requirements.

Field Ecologist, 2010 – present
Laurel Mountain Pipeline Project and Hickok Pipeline Extension, ULS / PA
For a proposed 13-mile, 30-inch pipeline, responsible for agency consultation and permitting assisted in field delineation and survey of wetlands and waterbodies to support Pennsylvania Department of Environmental Protection (PADEP) Wetland, and Erosion and Sedimentation Control General Permit requirements.

Field Ecologist, 2010 – present
Hickok Pipeline Extension/Canton, ULS / PA
For a proposed 22-mile, 30-inch pipeline, assisted in field delineation and survey of wetlands and waterbodies to support Pennsylvania Department of Environmental Protection (PADEP) Wetland, and Erosion and Sedimentation Control General Permit requirements.

Staff Scientist, 2006 – 2011
SCI Engineering, Inc. / St. Charles, MO
Responsibilities included acquiring nationwide and individual Sections 404/401 permits for commercial, residential, industrial and municipal clients in Missouri and Illinois; performing delineations of wetlands and waterbodies according to Corps methodology and Regional Supplements; performing detailed sensitive species habitat surveys and documentation of noxious weed species; coordination of biological field survey for staff on pipeline projects. that traversed various counties in Montana, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Missouri and Illinois; acquiring NPDES Section 402 permits; assisting project scientist in developing Stormwater Pollution Prevention Plans; providing third-party land disturbance inspections of construction sites; development of simple mitigation plans, corrective action plans and performance of annual mitigation monitoring as required by the Corps; performing aquatic invertebrate sampling and partial identification.

Relevant Project Experience:

Staff Scientist, 2006 – 2010
TransCanada- Keystone Pipeline Phases I and II and Keystone XL- Phase IV
Biological team survey lead for the U.S. portion of the Keystone Pipeline Phase I including 1,084 miles of new Right-of-Way in North Dakota, South Dakota, Nebraska, Kansas, Missouri and Illinois. Associated facilities were also surveyed including 23 pump stations and delivery facilities at Wood River and Patoka, Illinois. The second phase of Keystone included survey of a 298 mile extension from Steele City, Nebraska to Cushing, Oklahoma. Field survey and team coordination for the biological survey of the U.S. portion of Phase IV approximately 1,179-miles in length (Keystone XL Pipeline from Hardisty, Alberta to Steele City, Nebraska).

COMPUTER PROFICIENCIES

Adept with MSOffice applications, including Word, Excel and Outlook; proficient with Trimble handheld GPS units.